



Aidan Griffin, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W Center St., Suite 301
West Bridgewater, MA 02379
Mobile: (617) 838-6796
agriffin@clinellc.com

May 31, 2019

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

**RE: Notice of Exempt Modification // Site Number: CT1182
138 Main Street, Coventry, CT 06238 (Site Name: Coventry CT Main St.)
N 41.7519444 // W 72.268333**

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains nine (9) antennas at the 90-foot level of the existing 100-foot monopole tower at 138 Main Street, Coventry, CT 06238. The tower is owned by Pelletier Builders, Inc., a Connecticut Corporation. The property is also owned by Pelletier Builders, Inc., a Connecticut Corporation. AT&T now intends to add three (3) new LTE antennas and swap six (6) antennas for its LTE upgrade. These antennas would be installed at the same 90-foot level of the tower. AT&T also intends to install six (6) new RRUS (radios), swap three (3) RRUS, add two (2) Surge Arrestors and associated four (4) DC and one (1) fiber cables along existing runs.

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 Joan A. Lewis, Chair of the Town Council, as well as the tower/ground owner, Pelletier Builders, Inc., a Connecticut Corporation and the town of Coventry Building & Zoning/Land Use departments.

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

Attached to accommodate this filing are construction drawings dated 05/21/2019 by Hudson Design Group LLC, a structural analysis dated 05/17/2019 by Hudson Design Group LLC, a mount analysis dated 04/17/2019 by Hudson Design Group, LLC and an Emissions Analysis Report dated 05/31/2019 by Centerline Communications, LLC.

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 as shown in the attached structural analysis by Hudson Design Group LLC, dated 05/17/2019, and by completing the recommended modifications included in the mount analysis by Hudson Design Group LLC, dated 04/17/2019.

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,



Aidan Griffin, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W Center Street, Suite 301
West Bridgewater, MA 02379
Mobile: (617) 838-6796
agriffin@clinellc.com

Attachments: Structural Analysis, Mount Analysis, Property Card, Emissions Analysis, Construction Drawings

cc: Joan A. Lewis, Chair of the Town Council
Pelletier Builders, Inc., a Connecticut Corporation - as tower owner
Pelletier Builders, Inc., a Connecticut Corporation - as property owner
Building & Zoning/Land Use, Town of Coventry

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:

- NEW AT&T ANTENNAS: (HPA-65R-BU6A) MOUNTED @ POSITION 2 & 3 (TYP. OF 2 PER SECTOR, TOTAL OF 6)
- NEW AT&T ANTENNAS: (800-10965) MOUNTED @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T RRUS: 4449 B5/B12 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66 (PCS) (TOTAL OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4415 B25 (PCS) (TOTAL OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL (1) DC/FIBER SQUID WITH (2) DC LINES & (1) FIBER AND INSTALL (1) DC ONLY SQUID WITH (2) DC LINES.
- INSTALL NEW HANDRAIL KIT.
- INSTALL NEW 2-1/2" STD. (2.88" O.D.) PIPE MAST BEHIND NEW 800-10965 @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL NEW 2" STD. (2.38" O.D.) PIPE MAST @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- SWAP BB FOR (1) 6630 & ADD 2ND 6630.
- ADD (1) XMU.
- ADD (3) LOW BAND COMBINERS (DBCT108F1V92-1)
- ADD (2) B14 4478 (700)
- ADD (12) SURGE ARRESTORS

ITEMS TO REMAIN:

- (3) ANTENNAS, (6) TMAS (12) 1-5/8" COAX CABLES, (1) SURGE ARRESTOR, (2) DC POWER & (1) FIBER.

SITE ADDRESS: 138 MAIN STREET
COVENTRY, CT 06238

LATITUDE: 41.7519444° N 41° 45' 6.99" N
LONGITUDE: 72.2683333° W 72° 16' 5.99" W
TYPE OF SITE: MONOPOLE/INDOOR EQUIPMENT
TOWER HEIGHT: 100'-0"±
RAD CENTER: 90'-0"±
CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT1182

SITE NAME: COVENTRY CT MAIN ST.

PACE ID: MRCT024523, MRCTB024401, MRCTB038216, MRCTB038218, MRCTB038217

PROJECT: LTE 2C/3C/4C/5C/4TX4RX 2019 UPGRADE

DRAWING INDEX

| SHEET NO. | DESCRIPTION | REV. |
|-----------|-----------------------------|------|
| T-1 | TITLE SHEET | 1 |
| GN-1 | GENERAL NOTES | 1 |
| A-1 | COMPOUND AND EQUIPMENT PLAN | 1 |
| A-2 | ANTENNA LAYOUTS & ELEVATION | 1 |
| A-3 | DETAILS | 1 |
| SN-1 | STRUCTURAL NOTES | 1 |
| S-1 | STRUCTURAL DETAILS | 1 |
| RF-1 | RF PLUMBING DIAGRAM | 1 |
| G-1 | GROUNDING DETAILS | 1 |

VICINITY MAP

DIRECTIONS TO SITE:
DEPART ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI TURN LEFT ONTO CAPITOL BLVD. 0.2 MI TURN LEFT ONTO WEST ST. 0.2 MI TAKE RAMP LEFT FOR I-91 N. 7.8 MI AT EXIT 29, TAKE RAMP RIGHT FOR US-5 NORTH / CT-15 NORTH TOWARD BOSTON / E. HARTFORD. 0.6 MI KEEP STRAIGHT ONTO CT-15 N. 1.5 MI KEEP STRAIGHT ONTO I-84 E / US-6 E. 1.6 MI TAKE RAMP RIGHT FOR I-384 E. 8.5 MI ROAD NAME CHANGES TO US-6 E / US-44 E. 0.3 MI KEEP LEFT ONTO US-44 E. 0.2 MI BEAR RIGHT ONTO US-44 / BOSTON TPKE. 3.8 MI TURN RIGHT ONTO CT-31 / MAIN ST. 6.5 MI ARRIVE AT 138 MAIN ST, COVENTRY, CT 06238.



GENERAL NOTES

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

SITE NUMBER: CT1182
SITE NAME:
COVENTRY CT MAIN ST.
138 MAIN STREET
COVENTRY, CT 06238
TOLLAND COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|-----|----------|-------------------------|----|-----|-------|
| 1 | 05/21/19 | ISSUED FOR CONSTRUCTION | SG | AT | DJG |
| A | 03/22/19 | ISSUED FOR REVIEW | MR | AT | DJG |

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR

STATE OF CONNECTICUT
REGISTERED PROFESSIONAL ENGINEER
16,235
Edmund Crum

| SITE NUMBER | DRAWING NUMBER | REV |
|-------------|----------------|-----|
| CT1182 | T-1 | 1 |

AT&T
TITLE SHEET
(LTE 2C/3C/4C/5C/4TX4RX)

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 – CENTERLINE
 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 | | |

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

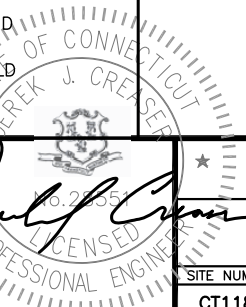
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WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT1182
SITE NAME:
COVENTRY CT MAIN ST.
 138 MAIN STREET
 COVENTRY, CT 06238
 TOLLAND COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

| | | | | | |
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| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| 1 | 05/21/19 | ISSUED FOR CONSTRUCTION | SG | AT | DJC |
| A | 03/22/19 | ISSUED FOR REVIEW | MR | AT | DJC |

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR



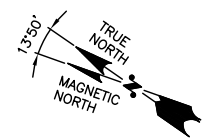
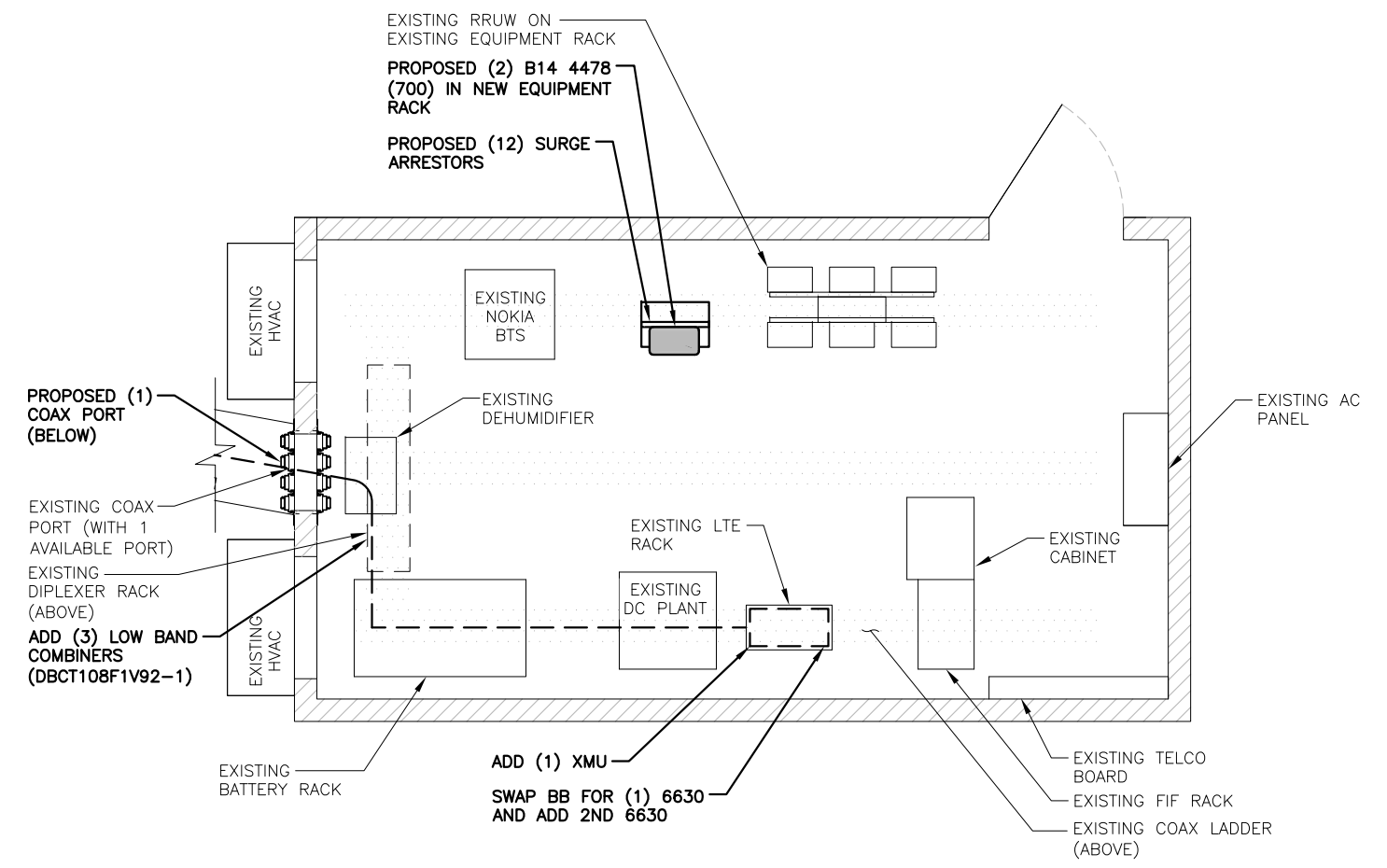
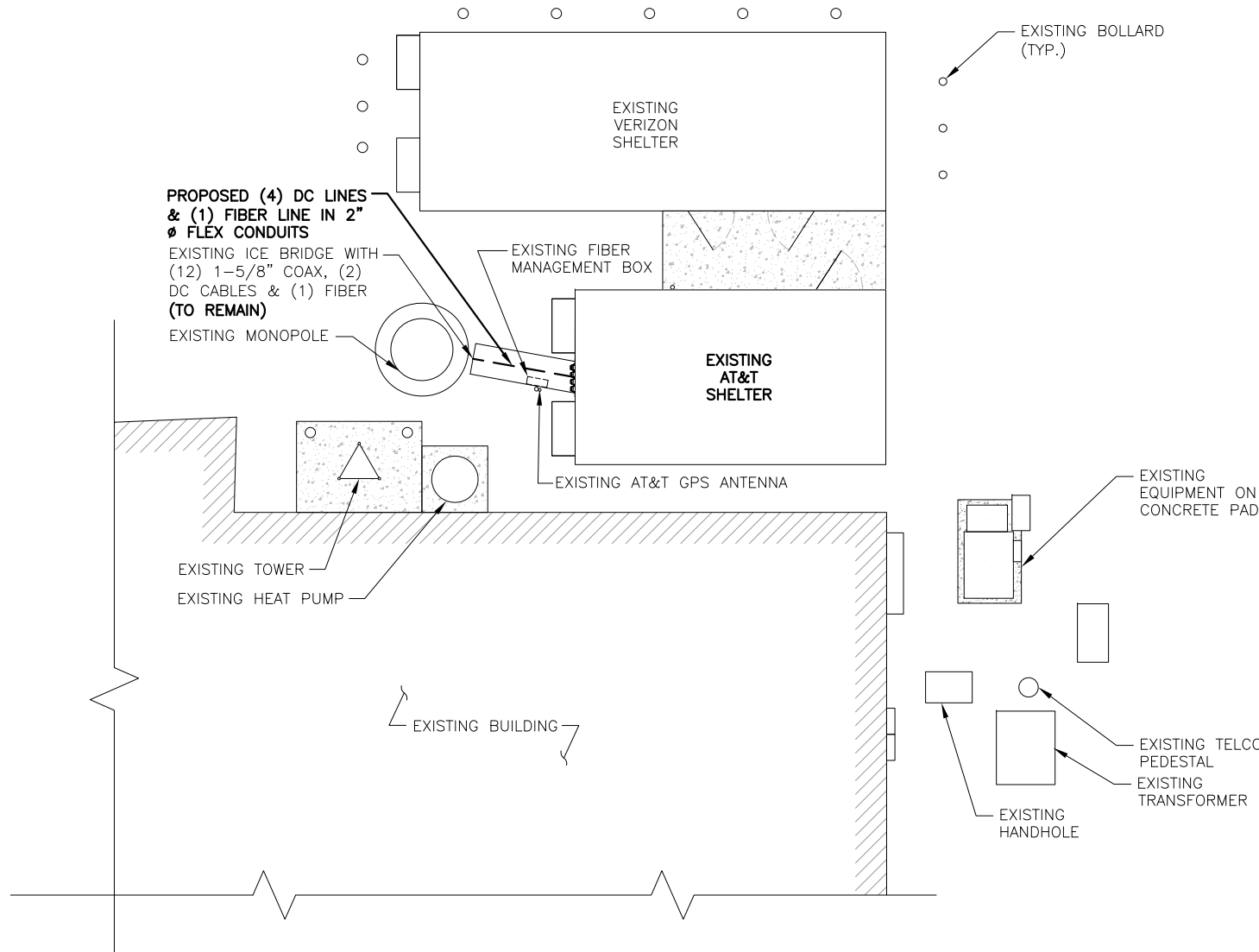
AT&T
GENERAL NOTES
 (LTE 2C/3C/4C/5C/4TX4RX)

| | | |
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| SITE NUMBER | DRAWING NUMBER | REV |
| CT1182 | GN-1 | 1 |

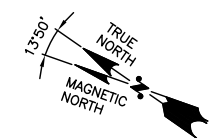
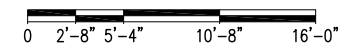
NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: MAY 17, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC, DATED: APRIL 17, 2019

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



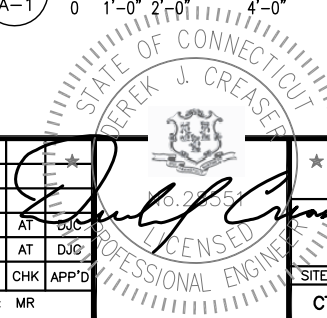
COMPOUND PLAN
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

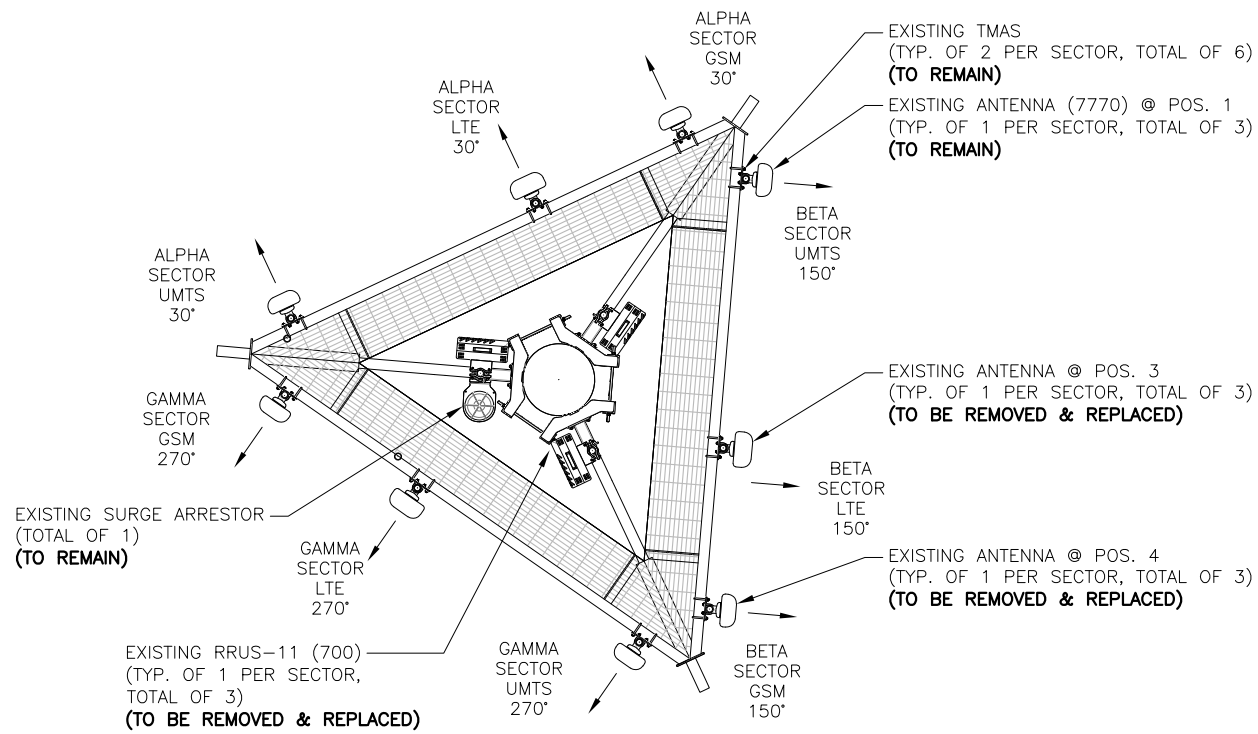


EQUIPMENT PLAN
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

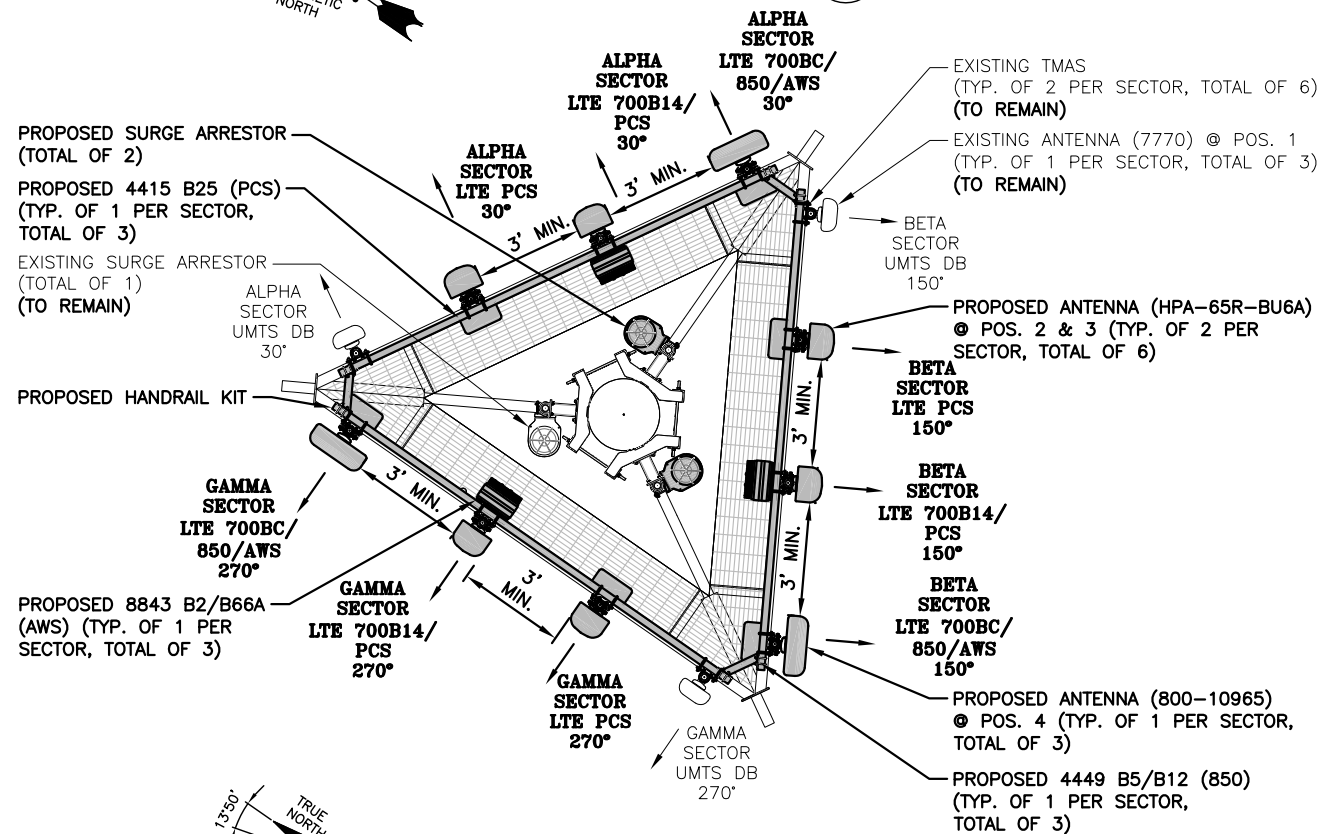


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| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| SCALE: AS SHOWN | | DESIGNED BY: AT | DRAWN BY: MR | | |

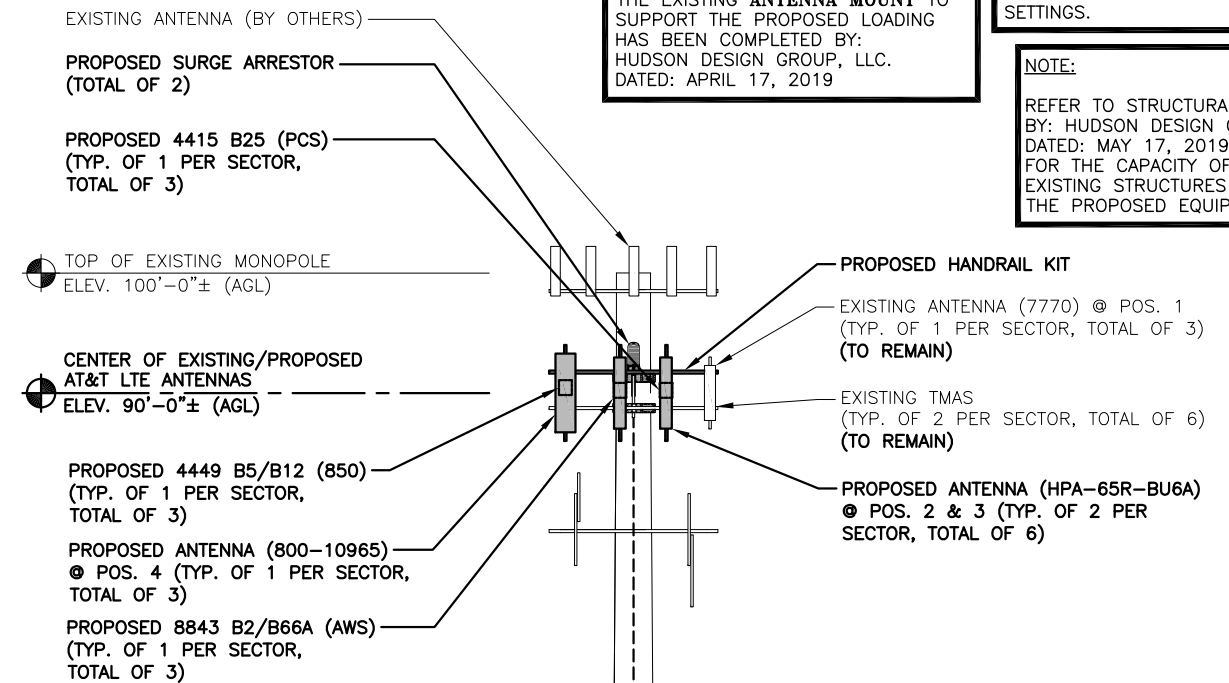




EXISTING ANTENNA PLAN
SCALE: N.T.S.



PROPOSED ANTENNA PLAN
SCALE: N.T.S.



ELEVATION
ELEV. 0'-0"± (AGL)

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

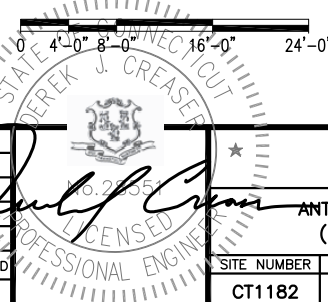
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: APRIL 17, 2019

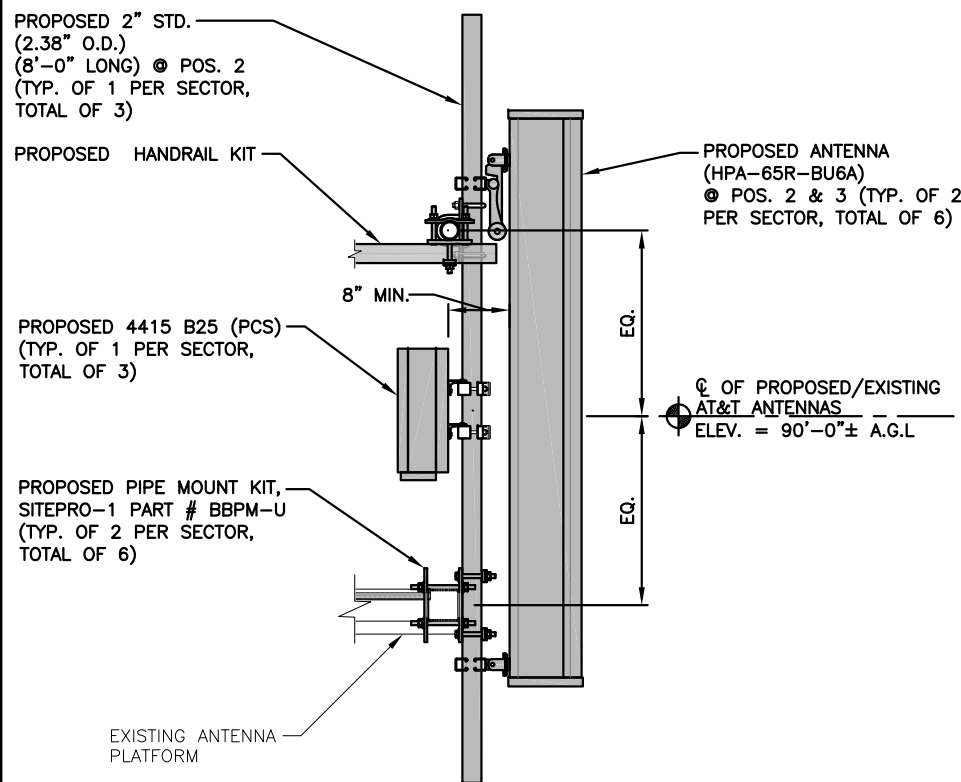
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: MAY 17, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
EQUIPMENT NOT SHOWN FOR CLARITY

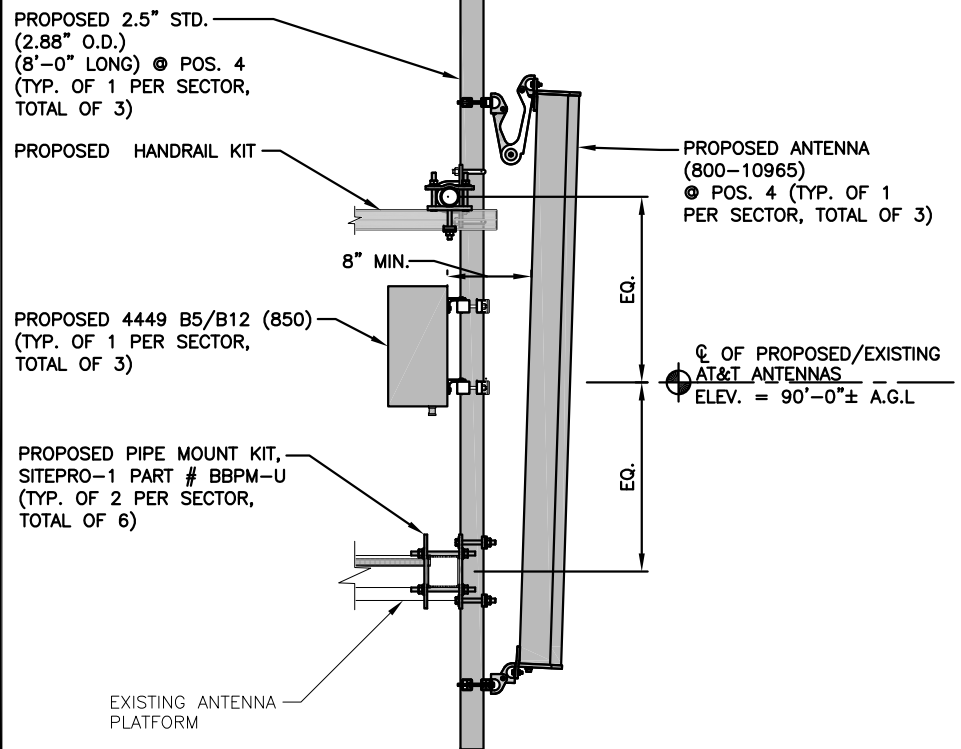
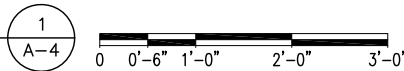
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|-----------------|----------|-------------------------|--------------|-----|-------|
| 1 | 05/21/19 | ISSUED FOR CONSTRUCTION | SG | AT | DJC |
| A | 03/22/19 | ISSUED FOR REVIEW | MR | AT | DJC |
| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| SCALE: AS SHOWN | | DESIGNED BY: AT | DRAWN BY: MR | | |





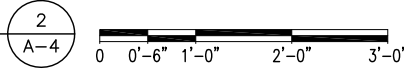
PROPOSED ANTENNA & RRU'S MOUNTING DETAIL @ POS. 2

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



PROPOSED ANTENNA & RRU'S MOUNTING DETAIL @ POS. 4

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

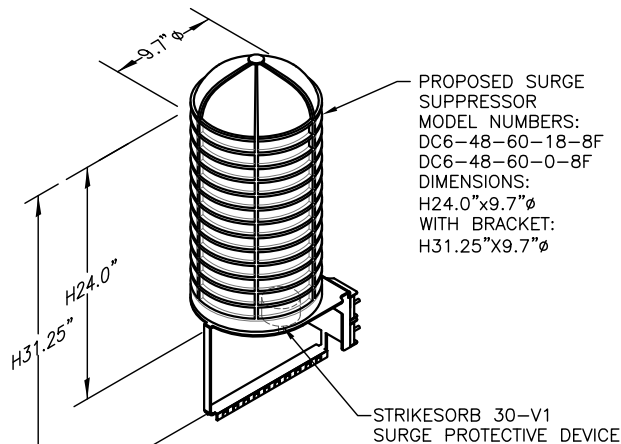


| ANTENNA SCHEDULE | | | | | | | | | | | |
|------------------|-------------------|-------------------|--------------|---------------------------|----------------|---------|---------------------------------------|---|---------------------------------|-------------------------------|--------------------------------|
| 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 | ±90' | 30° | (E)(2) LGP21401 (E)(2)(G) LGP21903 | - | - | (2) 1-5/8 COAX (LENGTH=115'±) | - |
| A2 | PROPOSED | LTE PCS | HPA-65R-BU6A | 71.2X11.7X8.4 | ±90' | 30° | - | (P) 4415 B25 (PCS) | 16.5X13.4X5.9 | - | (E) (1) RAYCAP DC6-48-60-18-8F |
| A3 | PROPOSED | LTE 700B14/PCS | HPA-65R-BU6A | 71.2X11.7X8.4 | ±90' | 30° | (P)(1)(G) (DBCT108F1V92-1) | (P)(G) B14 4478 (700) (P) 8843 B2/B66A (PCS/AWS) | 18.1X13.4X8.3 14.9X13.2X10.9 | (2) 1-5/8 COAX (LENGTH=115'±) | (E) (1) RAYCAP DC6-48-60-18-8F |
| A4 | PROPOSED | LTE 700BC/850/AWS | 800-10965 | 78.7X20X6.9 | ±90' | 30° | - | (P) 4449 B5/B12 (850) | 14.9X13.2X10.4 | - | (E) (1) RAYCAP DC6-48-60-18-8F |
| B1 | EXISTING | UMTS DB | 7770 | 55X11X5 | ±90' | 150° | (E)(2) LGP21401 (E)(2)(G) LGP21903 | - | - | (2) 1-5/8 COAX (LENGTH=115'±) | - |
| B2 | PROPOSED | LTE PCS | HPA-65R-BU6A | 71.2X11.7X8.4 | ±90' | 150° | - | (P) 4415 B5 (PCS) | 16.5X13.4X5.9 | - | (P) (1) RAYCAP DC6-48-60-18-8F |
| B3 | PROPOSED | LTE 700B14/PCS | HPA-65R-BU6A | 71.2X11.7X8.4 | ±90' | 150° | (P)(1)(G) (DBCT108F1V92-1) | (P)(G) B14 4478 (700) (P) 8843 B2/B66A (PCS/AWS) | 18.1X13.4X8.3 14.9X13.2X10.9 | (2) 1-5/8 COAX (LENGTH=115'±) | (P) (1) RAYCAP DC6-48-60-18-8F |
| B4 | PROPOSED | LTE 700BC/850/AWS | 800-10965 | 78.7X20X6.9 | ±90' | 150° | - | (P) 4449 B5/B12 (850) | 14.9X13.2X10.4 | - | (P) (1) RAYCAP DC6-48-60-18-8F |
| C1 | EXISTING | UMTS DB | 7770 | 55X11X5 | ±90' | 270° | (E)(2) LGP21401 (E)(2)(G) LGP21903 | - | - | (2) 1-5/8 COAX (LENGTH=115'±) | - |
| C2 | PROPOSED | LTE PCS | HPA-65R-BU6A | 71.2X11.7X8.4 | ±90' | 270° | - | (P) 4415 B5 (PCS) | 16.5X13.4X5.9 | - | (P) (1) RAYCAP DC6-48-60-18-8F |
| C3 | PROPOSED | LTE 700B14/PCS | HPA-65R-BU6A | 71.2X11.7X8.4 | ±90' | 270° | (P)(1)(G) (DBCT108F1V92-1) | (P) 8843 B2/B66A (PCS/AWS) | 14.9X13.2X10.9 | (2) 1-5/8 COAX (LENGTH=115'±) | (P) (1) RAYCAP DC6-48-60-18-8F |
| C4 | PROPOSED | LTE 700BC/850/AWS | 800-10965 | 78.7X20X6.9 | ±90' | 270° | - | (P) 4449 B5/B12 (850) | 14.9X13.2X10.4 | - | (P) (1) RAYCAP DC6-48-60-18-8F |

FINAL ANTENNA CONFIGURATION TABLE

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: MAY 17, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 17, 2019



DC SURGE SUPPRESSOR DETAIL

SCALE: N.T.S

| RRU CHART | | | | |
|-----------|--------------|-------|-------|-------|
| QUANTITY | MODEL | L | W | D |
| 2(P)(G) | B14 4478 | 18.1" | 13.4" | 8.3" |
| 3(P) | 4449 B5/B12 | 14.9" | 13.2" | 10.4" |
| 3(P) | 8843 B2/B66A | 14.9" | 13.2" | 10.9" |
| 3(P) | 4415 B25 | 16.5" | 13.4" | 5.9" |

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

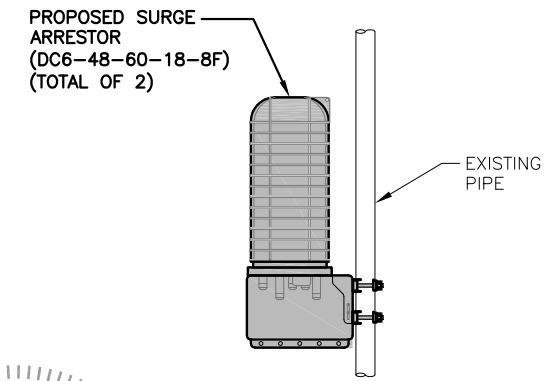
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

NOTE:
SEE RFDS FOR RRU FREQUENCY AND MODEL NUMBER

RRU DETAIL

SCALE: N.T.S



SURGE ARRESTOR MOUNTING DETAIL

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

STRUCTURAL NOTES:

- 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.
- 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.
- 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".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- 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.
- 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.
- 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.
- 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.
- 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 LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- 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 D.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- 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:

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- 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.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4" A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- 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.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

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

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

SITE NUMBER: CT1182
SITE NAME:
COVENTRY CT MAIN ST.
138 MAIN STREET
COVENTRY, CT 06238
TOLLAND COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

| | | | | | |
|-----------------|----------|-------------------------|-----------------|--------------|-------|
| 1 | 05/21/19 | ISSUED FOR CONSTRUCTION | SG | AT | DJC |
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| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| SCALE: AS SHOWN | | | DESIGNED BY: AT | DRAWN BY: MR | |

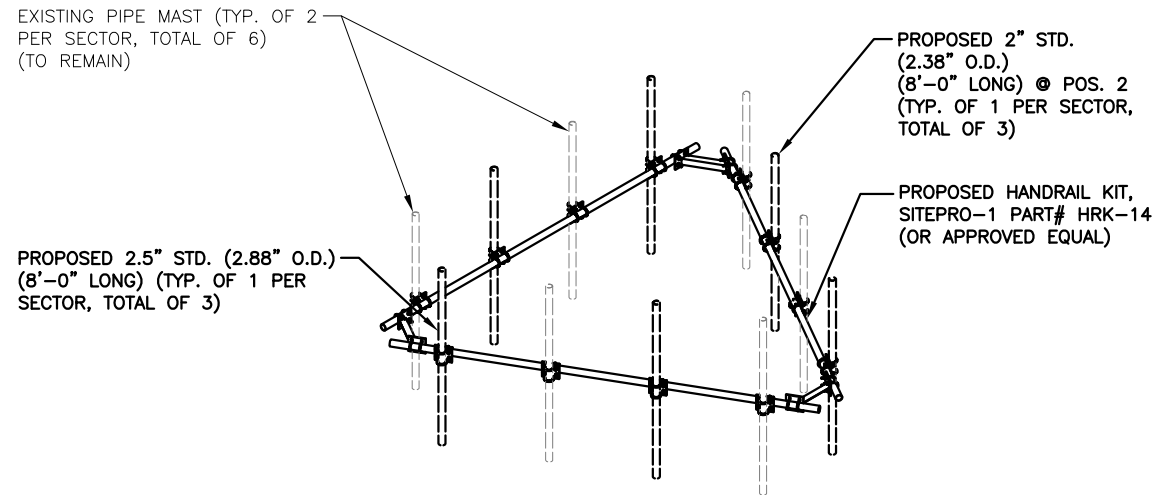
AT&T
DETAILS
(LTE 2C/3C/4C/5C/4TXRX)

| | | |
|-------------|----------------|-----|
| SITE NUMBER | DRAWING NUMBER | REV |
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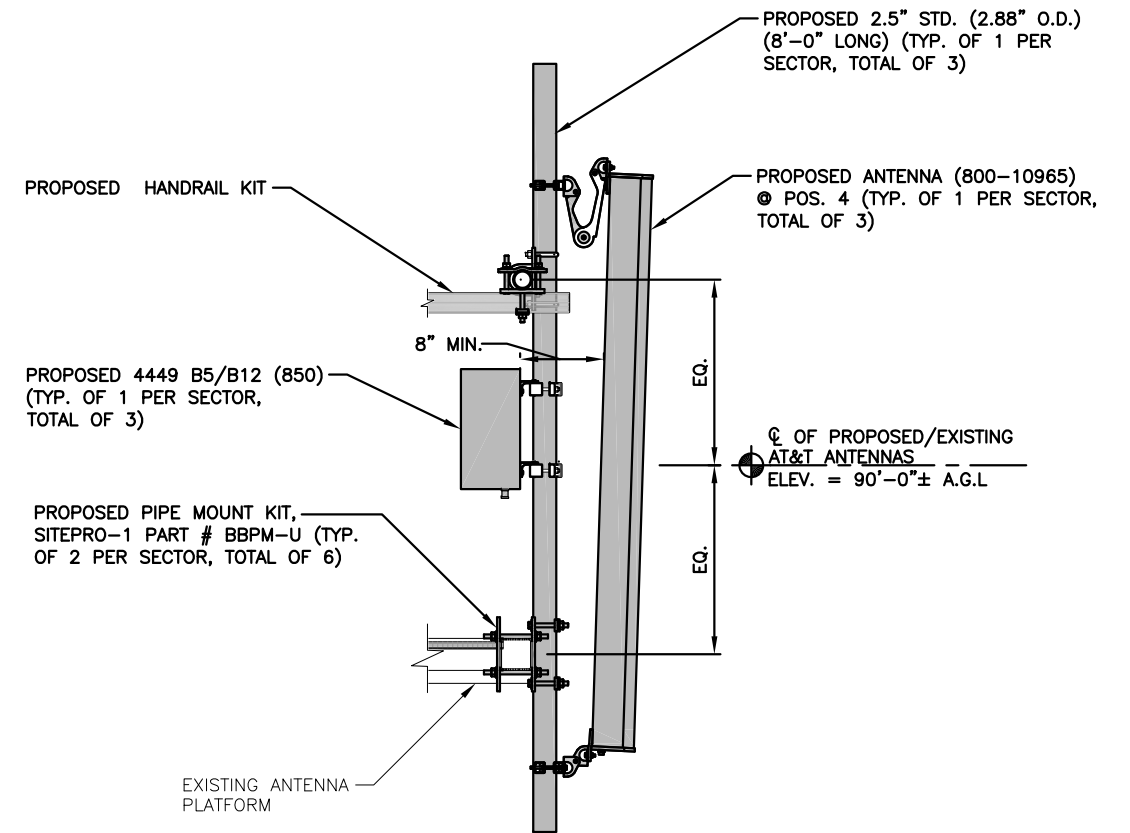
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: MAY 17, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

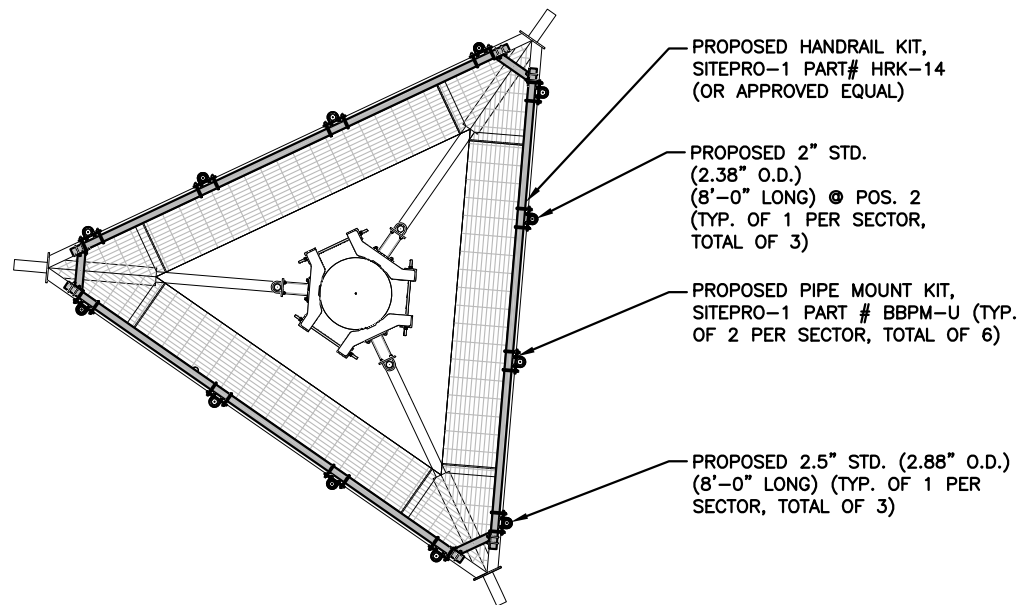
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 17, 2019



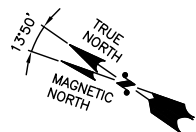
HANDRAIL KIT DETAIL 3 / S-1
SCALE: N.T.S



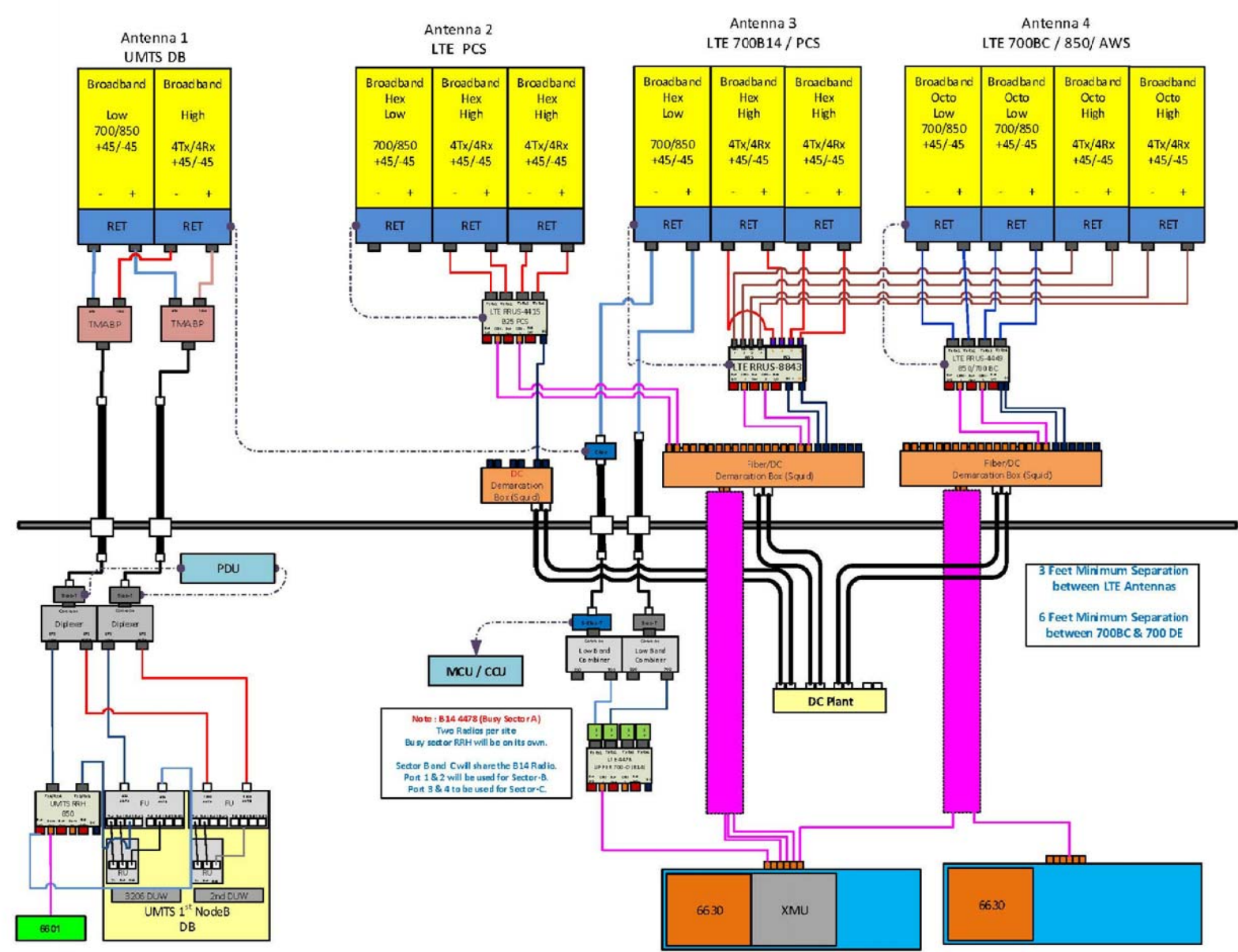
MOUNT MODIFICATION DETAIL 2 / S-1
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"



PLATFORM REINFORCEMENT PLAN 1 / S-1
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"



| | | | | | |
|-----------------|----------|-------------------------|-----------------|-------------------------------------|-------|
| | | | | AT&T | |
| | | | | DETAILS (LTE 2C/3C/4C/5C/4TX4RX) | |
| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| 1 | 05/21/19 | ISSUED FOR CONSTRUCTION | SG | AT | DJC |
| A | 03/22/19 | ISSUED FOR REVIEW | MR | AT | DJC |
| SCALE: AS SHOWN | | | DESIGNED BY: AT | DRAWN BY: MR | |
| SITE NUMBER | | | DRAWING NUMBER | | REV |
| CT1182 | | | A-4 | | 1 |



Note: B14 4678 (Busy Sector A)
 Two Radios per site
 Busy sector or RRH will be on its own.
 Sector B and C will share the B14 Radio.
 Port 1 & 2 will be used for Sector-B.
 Port 3 & 4 to be used for Sector-C.

3 Feet Minimum Separation
 between LTE Antennas
 6 Feet Minimum Separation
 between 700BC & 700 DE

RF PLUMBING DIAGRAM 1
 SCALE: N.T.S. RF-1

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.

| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|-----|----------|-------------------------|----|-----|-------|
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| A | 03/22/19 | ISSUED FOR REVIEW | MR | AT | DJC |

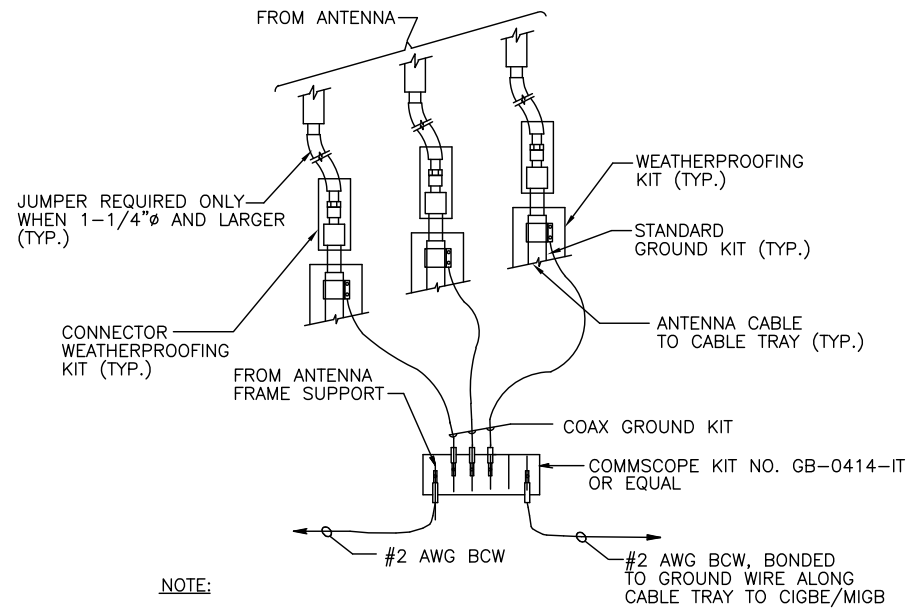
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR

Professional Engineer Seal
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CONNECTICUT
 16235

AT&T

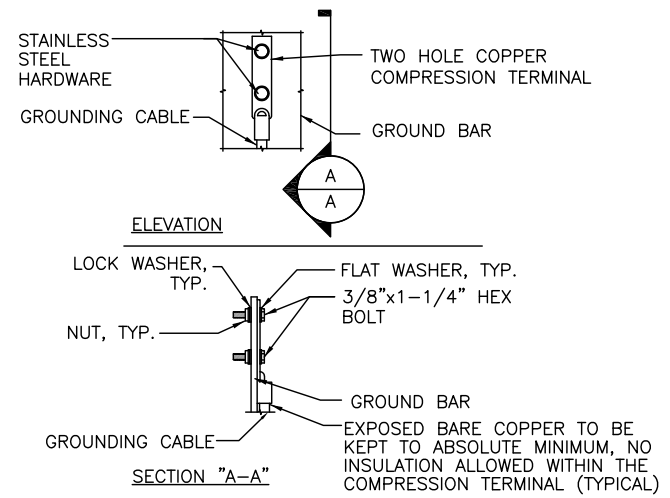
RF PLUMBING DIAGRAM
 (LTE 2C/3C/4C/5C/4TX4RX)

| SITE NUMBER | DRAWING NUMBER | REV |
|-------------|----------------|-----|
| CT1182 | RF-1 | 1 |



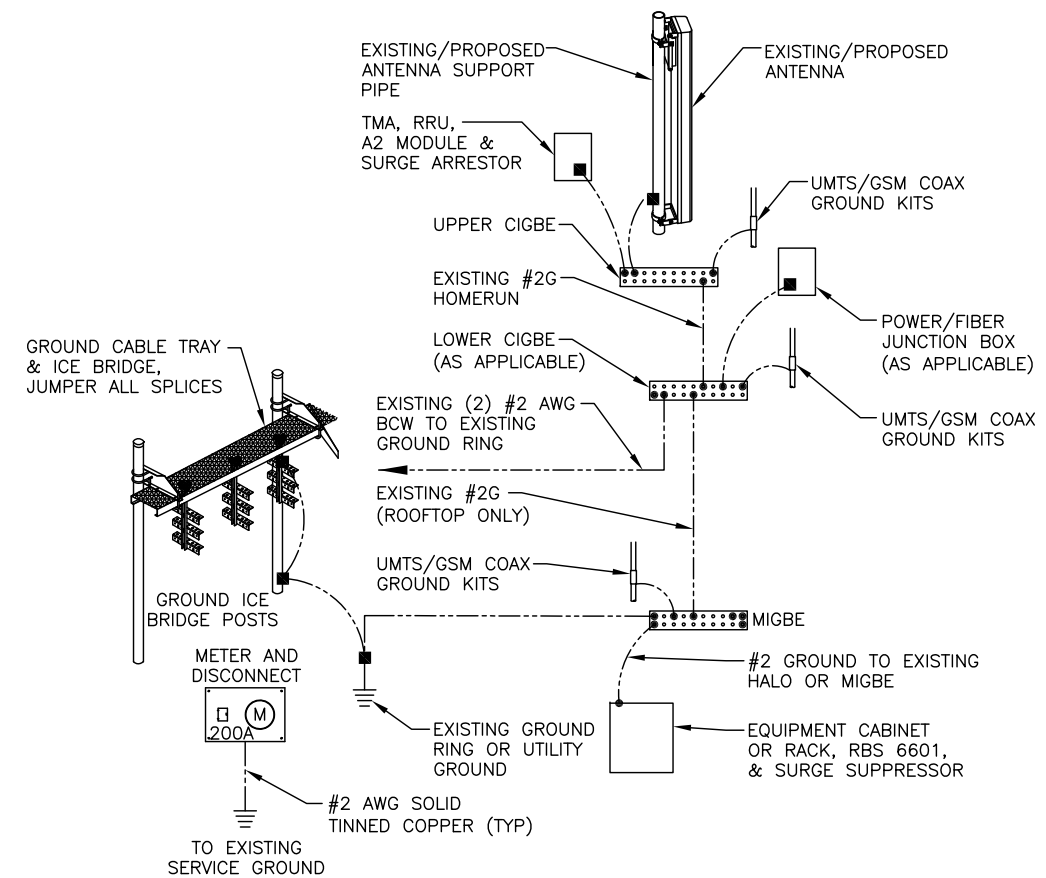
NOTE:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
 SCALE: N.T.S. 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 3
 SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
 SCALE: N.T.S. G-1

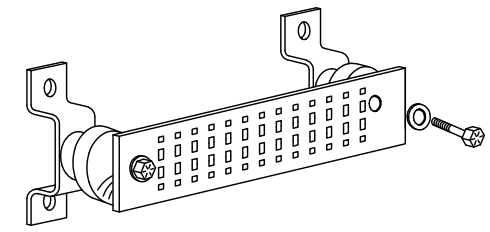
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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

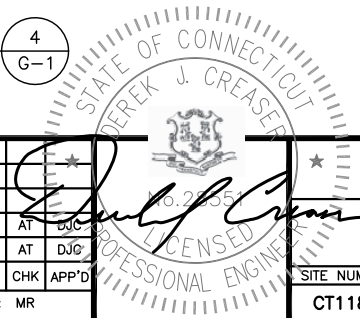
- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)



GROUND BAR - DETAIL 4
 SCALE: N.T.S. G-1

| | | | | | |
|-----|----------|-------------------------|----|-----|-------|
| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| 1 | 05/21/19 | ISSUED FOR CONSTRUCTION | SG | AT | DJC |
| A | 03/22/19 | ISSUED FOR REVIEW | MR | AT | DJC |

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR





Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CTL01182

Coventry CT Main Street
138 Main Street
Coventry, CT 06238

May 31, 2019

Centerline Communications Project Number: 950012-214

| Site Compliance Summary | |
|---|------------------|
| Compliance Status: | COMPLIANT |
| Site total MPE% of FCC general population allowable limit: | 18.34 % |



May 31, 2019

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

Emissions Analysis for Site: **CLT01182 – Coventry CT Main Street**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **138 Main Street in Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **138 Main Street in Coventry, Connecticut**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

| Technology | Frequency Band | Channel Count | Transmit Power per Channel (W) |
|------------|----------------|---------------|--------------------------------|
| UMTS | 850 MHz | 2 | 30 |
| 5G | 850 MHz | 2 | 25 |
| LTE | 700 MHz | 2 | 40 |
| LTE | 850 MHz | 2 | 40 |
| LTE | 2300 MHz (WCS) | 4 | 30 |
| LTE | 1900 MHz (PCS) | 4 | 40 |

Table 1: Channel Data Table



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

| Sector | Antenna Number | Antenna Make / Model | Antenna Centerline (ft) |
|--------|----------------|----------------------|-------------------------|
| A | 1 | Powerwave 7770 | 90 |
| A | 2 | CCI HPA-65R-BU6A | 90 |
| A | 3 | CCI HPA-65R-BU6A | 90 |
| A | 4 | Kathrein 800-10965 | 90 |
| B | 1 | Powerwave 7770 | 90 |
| B | 2 | CCI HPA-65R-BU6A | 90 |
| B | 3 | CCI HPA-65R-BU6A | 90 |
| B | 4 | Kathrein 800-10965 | 90 |
| C | 1 | Powerwave 7770 | 90 |
| C | 2 | CCI HPA-65R-BU6A | 90 |
| C | 3 | CCI HPA-65R-BU6A | 90 |
| C | 4 | Kathrein 800-10965 | 90 |

Table 2: Antenna Data

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



RESULTS

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

| Antenna ID | Antenna Make / Model | Frequency Bands | Antenna Gain (dBd) | Channel Count | Total TX | ERP (W) | MPE % |
|-------------------------|----------------------|--|-------------------------------|---------------|----------|----------|--------------|
| Antenna A1 | Powerwave 7770 | 850 MHz | 11.5 | 2 | 60 | 847.52 | 0.66 |
| Antenna A2 | CCI HPA-65R-BU6A | 1900 MHz (PCS) | 14.75 | 4 | 160 | 4,776.61 | 2.12 |
| Antenna A3 | CCI HPA-65R-BU6A | 700 MHz / 1900 MHz (PCS) | 10.85 / 13.85 | 6 | 240 | 4,855.52 | 2.53 |
| Antenna A4 | Kathrein 800-10965 | 700 MHz / 850 MHz / 2100 MHz (AWS) / 850 MHz | 12.65 / 13.45 / 15.95 / 13.45 | 10 | 330 | 9,072.24 | 5.75 |
| Sector A Composite MPE% | | | | | | | 11.84 |
| Antenna B1 | Powerwave 7770 | 850 MHz | 11.5 | 2 | 60 | 847.52 | 0.66 |
| Antenna B2 | CCI HPA-65R-BU6A | 1900 MHz (PCS) | 14.75 | 4 | 160 | 4,776.61 | 2.12 |
| Antenna B3 | CCI HPA-65R-BU6A | 700 MHz / 1900 MHz (PCS) | 10.85 / 13.85 | 6 | 240 | 4,855.52 | 2.53 |
| Antenna B4 | Kathrein 800-10965 | 700 MHz / 850 MHz / 2100 MHz (AWS) / 850 MHz | 12.65 / 13.45 / 15.95 / 13.45 | 10 | 330 | 9,072.24 | 5.75 |
| Sector B Composite MPE% | | | | | | | 11.84 |
| Antenna C1 | Powerwave 7770 | 850 MHz | 11.5 | 2 | 60 | 847.52 | 0.66 |
| Antenna C2 | CCI HPA-65R-BU6A | 1900 MHz (PCS) | 14.75 | 4 | 160 | 4,776.61 | 2.12 |
| Antenna C3 | CCI HPA-65R-BU6A | 700 MHz / 1900 MHz (PCS) | 10.85 / 13.85 | 6 | 240 | 4,855.52 | 2.53 |
| Antenna C4 | Kathrein 800-10965 | 700 MHz / 850 MHz / 2100 MHz (AWS) / 850 MHz | 12.65 / 13.45 / 15.95 / 13.45 | 10 | 330 | 9,072.24 | 5.75 |
| Sector C Composite MPE% | | | | | | | 11.84 |

Table 3: AT&T Emissions Levels



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

| Site Composite MPE% | |
|-----------------------------|----------------|
| Carrier | MPE% |
| AT&T – Max Per Sector Value | 11.84 % |
| Verizon | 6.26 % |
| Pelletier Builders | 0.24 % |
| | |
| | |
| | |
| Site Total MPE %: | 18.34 % |

Table 4: All Carrier MPE Contributions

| | |
|----------------------|----------------|
| AT&T Sector A Total: | 11.84 % |
| AT&T Sector B Total: | 11.84 % |
| AT&T Sector C Total: | 11.84 % |
| | |
| Site Total: | 18.34 % |

Table 5: Site MPE Summary



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

| AT&T _ Frequency Band / Technology Max Power Values (Per Sector) | # Channels | Watts ERP (Per Channel) | Height (feet) | Total Power Density (i.tW/cm ²) | Frequency (MHz) | Allowable MPE (i.tW/cm ²) | Calculated % MPE |
|--|---------------|----------------------------|------------------|---|--------------------|---|---------------------|
| AT&T 850 MHz UMTS – Antenna 1 | 2 | 423.76 | 90 | 3.76 | 850 MHz | 567 | 0.66% |
| AT&T 1900 MHz LTE – Antenna 2 | 4 | 1194.15 | 90 | 21.20 | 1900 MHz | 1000 | 2.12 % |
| AT&T 700 MHz LTE – Antenna 3 | 2 | 626.70 | 90 | 5.56 | 700 MHz | 467 | 1.19% |
| AT&T 1900 MHz (PCS) LTE – Antenna 3 | 4 | 1194.15 | 90 | 21.20 | 1900 MHz (PCS) | 1000 | 2.12 % |
| AT&T 700 MHz LTE – Antenna 4 | 2 | 736.31 | 90 | 6.54 | 700 MHz | 467 | 1.40% |
| AT&T 850 MHz LTE – Antenna 4 | 2 | 885.24 | 90 | 7.86 | 850 MHz | 567 | 1.39% |
| AT&T 2100 MHz LTE- AWS Antenna 4 | 4 | 1180.65 | 90 | 20.96 | 2100 MHz (AWS) | 1000 | 2.10 % |
| AT&T 850 MHz- 5G Antenna 4 | 2 | 553.27 | 90 | 4.91 | 850 MHz 5G | 567 | 0.87% |
| | | | | | | Total: | 11.84% |

Table 6: AT&T Maximum Sector MPE Power Values



Summary

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

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

| AT&T Sector | Power Density Value (%) |
|-------------------------------------|-------------------------|
| Sector A: | 11.84 % |
| Sector B: | 11.84 % |
| Sector C: | 11.84 % |
| AT&T Maximum Total (per sector): | 11.84 % |
| | |
| Site Total: | 18.34 % |
| | |
| Site Compliance Status: | COMPLIANT |

The anticipated composite MPE value for this site assuming all carriers present is **18.34 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

A handwritten signature in black ink that reads 'Ryan B. McManus'.

Ryan McManus
Senior RF EME Compliance Manager
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

April 17, 2019



Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE: Site Number: CT1182 (LTE 2C-3C-4C-5C)
 FA Number: 10113179
 PACE Number: MRCTB024523
 PT Number: 2101A0BGBH
 Site Name: COVENTRY CT MAIN ST
 Site Address: 138 Main Street
 Coventry, CT 06238

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the existing AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" - Wt. = 19 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Φ - Wt. = 33 lbs. /each) (Tower Mount)
- **(6) HPA65R-BU6A Antennas (71.1"x11.7"x7.6" - Wt. = 42 lbs. /each)**
- **(3) 800-10965 Antennas (78.7"x20.0"x6.9" - Wt. = 109 lbs. /each)**
- **(3) 4415 B25 RRH's (16.5"x13.4"x5.9" - Wt. = 46 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" - Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (14.9"x13.2"x10.4" - Wt. = 73 lbs. /each)**
- **(2) Squid Surge Arrestor (24.0"x9.7" Φ - Wt. = 33 lbs. /each) (Tower Mount)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on March 26, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R12.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.11 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mount. The connection is considered OK by visual inspection.

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

- **Install new 2-1/2" std. (2.88" O.D.) pipe mast behind new 800-10965 antennas secured to existing mount (typ. of 1 per sector, total of 3).**
- **Install new handrail kit, SitePro1 P/N HRK14 (or approved equal). Handrail kit is required per AT&T Technical Directive to stabilize existing cantilevered antennas.**

| | Component | Controlling Load Case | Stress Ratio | Pass/Fail |
|--|-----------|-----------------------|--------------|-------------|
| Existing (LTE 2C/3C/4C/5C) Mount Rating | 15/12 | LC2 | 123% | FAIL |
| Modified (LTE 2C/3C/4C/5C) Mount Rating | 47 | LC4 | 81% | PASS |

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. 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.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC



Michael Cabral
Structural Dept. Head



Daniel P. Hamm, PE
Principal



FIELD PHOTOS:







HUDSON
Design Group LLC

Wind & Ice Calculations

Date: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: LBW Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

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

$K_z = 1.238$ $z = 90$ (ft)
 $z_g = 900$ (ft)
 $\alpha = 9.5$

$K_{zmin} \leq K_z \leq 2.01$

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 |

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

$$K_h = e^{(fz/H)}$$

$K_{zt} = \text{\#DIV/0!}$

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

Category = 1

$K_h = \text{\#DIV/0!}$

$K_c = 1$ (from Table 2-4)

$K_t = 0$ (from Table 2-5)

$f = 0$ (from Table 2-5)

$z = 90$

$z_s = 270$ (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)

$K_e = 0.99$ (from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness = $t_i = 1.00$ in

Importance Factor = $I = 1.0$ (from Table 2-3)

$K_{iz} = 1.11$ (from Sec. 2.6.10)

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

$t_{iz} = 1.11$ in

Date: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: LBW Checked By: MSC



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

$h = 100$ $G_h = 0.85$

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

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

$G_h = 1.35$ $G_h = 1.00$

2.6.11.2 Design Wind Force on Appurtenances

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

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

$q_z = 50.38$
 $q_z (ice) = 7.45$
 $q_z (30) = 2.68$

$K_z = 1.238$ (from 2.6.5.2)
 $K_{zt} = 1.0$ (from 2.6.6.2.1)
 $K_s = 1.0$ (from 2.6.7)
 $K_e = 0.99$ (from 2.6.8)
 $K_d = 0.95$ (from Table 2-2)
 $V_{max} = 130$ 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: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: LBW Checked By: MSC



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 = **1.11 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 | 278 | 51 | 15 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 6.08 | 1.36 | 396 | 72 | 21 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.94 | 1.26 | 696 | 118 | 37 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 1.14 | 1.20 | 83 | 16 | 4 |
| 4415 B25 RRH (Shielded) | 15.0 | 1.5 | 5.4 | 0.16 | 10.00 | 1.50 | 12 | 5 | 1 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.20 | 83 | 16 | 4 |
| B2/B66A 8843 RRH (Shielded) | 14.9 | 1.5 | 10.9 | 0.16 | 9.93 | 1.50 | 12 | 5 | 1 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.13 | 1.20 | 83 | 16 | 4 |
| B5/B12 4449 RRH (Shielded) | 14.9 | 0.0 | 10.4 | 0.00 | 0.00 | 1.20 | 0 | 2 | 0 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 5.33 | 1.33 | 18 | 6 | 1 |
| Surge Arrestor | 24.0 | 9.7 | 9.7 | 1.62 | 2.47 | 0.70 | 57 | 11 | 3 |
| 2" Pipe | 2.4 | 12.0 | | 0.20 | 0.20 | 1.20 | 12 | 4 | 1 |
| HSS 4X4 | 4.0 | 12.0 | | 0.33 | 0.33 | 1.25 | 21 | 6 | 1 |

Date: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: L8W Checked By: MSC



WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

| Appurtenances | Height | Width | Depth | Flat Area (normal) | Flat Area (side) | Aspect Ratio | Aspect Ratio | Ca (normal) | Ca (side) | Force (lbs) (normal) | Force (lbs) (side) | Force (lbs) (angle) |
|--------------------------|--------|-------|-------|--------------------|------------------|--------------|--------------|-------------|-----------|----------------------|--------------------|---------------------|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 278 | 148 | 245 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 396 | 280 | 367 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 696 | 294 | 595 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 83 | 34 | 71 |
| 4415 B25 RRH (Shielded) | 15.0 | 6.6 | 5.4 | 0.69 | 0.56 | 2.27 | 2.78 | 1.20 | 1.21 | 42 | 34 | 40 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 83 | 68 | 79 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 6.6 | 10.9 | 0.68 | 1.13 | 2.26 | 1.37 | 1.20 | 1.20 | 41 | 68 | 48 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 83 | 65 | 78 |
| B5/B12 4449 RRH (Shielc) | 14.9 | 6.6 | 10.4 | 0.68 | 1.08 | 2.26 | 1.43 | 1.20 | 1.20 | 41 | 65 | 47 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 18 | 54 | 27 |

WIND LOADS WITH ICE:

| | | | | | | | | | | | | |
|--------------------------|------|------|------|-------|------|------|------|------|------|-----|----|-----|
| 7770 Antenna | 57.2 | 13.2 | 7.2 | 5.25 | 2.86 | 4.33 | 7.93 | 1.28 | 1.43 | 50 | 31 | 45 |
| HPA65R-BU6A Antenna | 73.3 | 13.9 | 9.8 | 7.08 | 4.99 | 5.27 | 7.47 | 1.32 | 1.42 | 70 | 53 | 66 |
| 800-10965 Antenna | 80.9 | 22.2 | 9.1 | 12.48 | 5.12 | 3.64 | 8.88 | 1.25 | 1.46 | 116 | 56 | 101 |
| 4415 B25 RRH | 17.2 | 15.4 | 7.6 | 1.84 | 0.91 | 1.12 | 2.26 | 1.20 | 1.20 | 16 | 8 | 14 |
| 4415 B25 RRH (Shielded) | 17.2 | 7.7 | 7.6 | 0.92 | 0.91 | 2.23 | 2.26 | 1.20 | 1.20 | 8 | 8 | 8 |
| B2/B66A 8843 RRH | 17.1 | 15.4 | 13.1 | 1.83 | 1.56 | 1.11 | 1.31 | 1.20 | 1.20 | 16 | 14 | 16 |
| B2/B66A 8843 RRH (Shie) | 17.1 | 7.7 | 13.1 | 0.92 | 1.56 | 2.22 | 1.31 | 1.20 | 1.20 | 8 | 14 | 10 |
| B5/B12 4449 RRH | 17.1 | 15.4 | 12.6 | 1.83 | 1.50 | 1.11 | 1.36 | 1.20 | 1.20 | 16 | 13 | 16 |
| B5/B12 4449 RRH (Shielc) | 17.1 | 7.7 | 12.6 | 0.92 | 1.50 | 2.22 | 1.36 | 1.20 | 1.20 | 8 | 13 | 9 |
| LGP21401 TMA | 16.6 | 4.9 | 11.2 | 0.57 | 1.29 | 3.38 | 1.48 | 1.24 | 1.20 | 5 | 12 | 7 |

WIND LOADS AT 30 MPH:

| | | | | | | | | | | | | |
|--------------------------|------|------|------|-------|------|------|-------|------|------|----|----|----|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 15 | 8 | 13 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 21 | 15 | 20 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 37 | 16 | 32 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 4 | 2 | 4 |
| 4415 B25 RRH (Shielded) | 15.0 | 6.6 | 5.4 | 0.69 | 0.56 | 2.27 | 2.78 | 1.20 | 1.21 | 2 | 2 | 2 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 4 | 4 | 4 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 6.6 | 10.9 | 0.68 | 1.13 | 2.26 | 1.37 | 1.20 | 1.20 | 2 | 4 | 3 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 4 | 3 | 4 |
| B5/B12 4449 RRH (Shielc) | 14.9 | 6.6 | 10.4 | 0.68 | 1.08 | 2.26 | 1.43 | 1.20 | 1.20 | 2 | 3 | 3 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 1 | 3 | 1 |

Date: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

| Appurtenances | Height | Width | Depth | Flat Area (normal) | Flat Area (side) | Ratio (normal) | Ratio (side) | Ca (normal) | Ca (side) | Force (lbs) (normal) | Force (lbs) (side) | Force (lbs) (angle) |
|-------------------------|--------|-------|-------|--------------------|------------------|----------------|--------------|-------------|-----------|----------------------|--------------------|---------------------|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 278 | 148 | 180 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 396 | 280 | 309 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 696 | 294 | 394 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 83 | 34 | 47 |
| 4415 B25 RRH (Shielded) | 15.0 | 9.9 | 5.4 | 1.03 | 0.56 | 1.52 | 2.78 | 1.20 | 1.21 | 62 | 34 | 41 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 83 | 68 | 72 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 9.9 | 10.9 | 1.02 | 1.13 | 1.51 | 1.37 | 1.20 | 1.20 | 62 | 68 | 67 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 83 | 65 | 69 |
| B5/B12 4449 RRH (Shiel) | 14.9 | 9.9 | 10.4 | 1.02 | 1.08 | 1.51 | 1.43 | 1.20 | 1.20 | 62 | 65 | 64 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 18 | 54 | 45 |

WIND LOADS WITH ICE:

| | | | | | | | | | | | | |
|-------------------------|------|------|------|-------|------|------|------|------|------|-----|----|----|
| 7770 Antenna | 57.2 | 13.2 | 7.2 | 5.25 | 2.86 | 4.33 | 7.93 | 1.28 | 1.43 | 50 | 31 | 35 |
| HPA65R-BU6A Antenna | 73.3 | 13.9 | 9.8 | 7.08 | 4.99 | 5.27 | 7.47 | 1.32 | 1.42 | 70 | 53 | 57 |
| 800-10965 Antenna | 80.9 | 22.2 | 9.1 | 12.48 | 5.12 | 3.64 | 8.88 | 1.25 | 1.46 | 116 | 56 | 71 |
| 4415 B25 RRH | 17.2 | 15.4 | 7.6 | 1.84 | 0.91 | 1.12 | 2.26 | 1.20 | 1.20 | 16 | 8 | 10 |
| 4415 B25 RRH (Shielded) | 17.2 | 11.6 | 7.6 | 1.38 | 0.91 | 1.49 | 2.26 | 1.20 | 1.20 | 12 | 8 | 9 |
| B2/B66A 8843 RRH | 17.1 | 15.4 | 13.1 | 1.83 | 1.56 | 1.11 | 1.31 | 1.20 | 1.20 | 16 | 14 | 15 |
| B2/B66A 8843 RRH (Shie) | 17.1 | 11.6 | 13.1 | 1.37 | 1.56 | 1.48 | 1.31 | 1.20 | 1.20 | 12 | 14 | 14 |
| B5/B12 4449 RRH | 17.1 | 15.4 | 12.6 | 1.83 | 1.50 | 1.11 | 1.36 | 1.20 | 1.20 | 16 | 13 | 14 |
| B5/B12 4449 RRH (Shiel) | 17.1 | 11.6 | 12.6 | 1.37 | 1.50 | 1.48 | 1.36 | 1.20 | 1.20 | 12 | 13 | 13 |
| LGP21401 TMA | 16.6 | 4.9 | 11.2 | 0.57 | 1.29 | 3.38 | 1.48 | 1.24 | 1.20 | 5 | 12 | 10 |

WIND LOADS AT 30 MPH:

| | | | | | | | | | | | | |
|-------------------------|------|------|------|-------|------|------|-------|------|------|----|----|----|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 15 | 8 | 10 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 21 | 15 | 16 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 37 | 16 | 21 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 4 | 2 | 2 |
| 4415 B25 RRH (Shielded) | 15.0 | 9.9 | 5.4 | 1.03 | 0.56 | 1.52 | 2.78 | 1.20 | 1.21 | 3 | 2 | 2 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 4 | 4 | 4 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 9.9 | 10.9 | 1.02 | 1.13 | 1.51 | 1.37 | 1.20 | 1.20 | 3 | 4 | 4 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 4 | 3 | 4 |
| B5/B12 4449 RRH (Shiel) | 14.9 | 9.9 | 10.4 | 1.02 | 1.08 | 1.51 | 1.43 | 1.20 | 1.20 | 3 | 3 | 3 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 1 | 3 | 2 |

Date: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

| Appurtenances | Height | Width | Depth | Flat Area (normal) | Flat Area (side) | Ratio (normal) | Ratio (side) | Ca (normal) | Ca (side) | Force (lbs) (normal) | Force (lbs) (side) | Force (lbs) (angle) |
|--------------------------|--------|-------|-------|--------------------|------------------|----------------|--------------|-------------|-----------|----------------------|--------------------|---------------------|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 278 | 148 | 148 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 396 | 280 | 280 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 696 | 294 | 294 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 83 | 34 | 34 |
| 4415 B25 RRH (Shielded) | 15.0 | 1.5 | 5.4 | 0.16 | 0.56 | 10.00 | 2.78 | 1.50 | 1.21 | 12 | 34 | 34 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 83 | 68 | 68 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 1.5 | 10.9 | 0.16 | 1.13 | 9.93 | 1.37 | 1.50 | 1.20 | 12 | 68 | 68 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 83 | 65 | 65 |
| B5/B12 4449 RRH (Shield) | 14.9 | 0.0 | 10.4 | 0.00 | 1.08 | 0.00 | 1.43 | 1.20 | 1.20 | 0 | 65 | 65 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 18 | 54 | 54 |

WIND LOADS WITH ICE:

| | | | | | | | | | | | | |
|--------------------------|------|------|------|-------|------|------|------|------|------|-----|----|----|
| 7770 Antenna | 57.2 | 13.2 | 7.2 | 5.25 | 2.86 | 4.33 | 7.93 | 1.28 | 1.43 | 50 | 31 | 31 |
| HPA65R-BU6A Antenna | 73.3 | 13.9 | 9.8 | 7.08 | 4.99 | 5.27 | 7.47 | 1.32 | 1.42 | 70 | 53 | 53 |
| 800-10965 Antenna | 80.9 | 22.2 | 9.1 | 12.48 | 5.12 | 3.64 | 8.88 | 1.25 | 1.46 | 116 | 56 | 56 |
| 4415 B25 RRH | 17.2 | 15.4 | 7.6 | 1.84 | 0.91 | 1.12 | 2.26 | 1.20 | 1.20 | 16 | 8 | 8 |
| 4415 B25 RRH (Shielded) | 17.2 | 3.7 | 7.6 | 0.44 | 0.91 | 4.64 | 2.26 | 1.30 | 1.20 | 4 | 8 | 8 |
| B2/B66A 8843 RRH | 17.1 | 15.4 | 13.1 | 1.83 | 1.56 | 1.11 | 1.31 | 1.20 | 1.20 | 16 | 14 | 14 |
| B2/B66A 8843 RRH (Shie) | 17.1 | 3.7 | 13.1 | 0.44 | 1.56 | 4.61 | 1.31 | 1.29 | 1.20 | 4 | 14 | 14 |
| B5/B12 4449 RRH | 17.1 | 15.4 | 12.6 | 1.83 | 1.50 | 1.11 | 1.36 | 1.20 | 1.20 | 16 | 13 | 13 |
| B5/B12 4449 RRH (Shield) | 17.1 | 2.2 | 12.6 | 0.26 | 1.50 | 7.74 | 1.36 | 1.42 | 1.20 | 3 | 13 | 13 |
| LGP21401 TMA | 16.6 | 4.9 | 11.2 | 0.57 | 1.29 | 3.38 | 1.48 | 1.24 | 1.20 | 5 | 12 | 12 |

WIND LOADS AT 30 MPH:

| | | | | | | | | | | | | |
|--------------------------|------|------|------|-------|------|-------|-------|------|------|----|----|----|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 15 | 8 | 8 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 21 | 15 | 15 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 37 | 16 | 16 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 4 | 2 | 2 |
| 4415 B25 RRH (Shielded) | 15.0 | 1.5 | 5.4 | 0.16 | 0.56 | 10.00 | 2.78 | 1.50 | 1.21 | 1 | 2 | 2 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 4 | 4 | 4 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 1.5 | 10.9 | 0.16 | 1.13 | 9.93 | 1.37 | 1.50 | 1.20 | 1 | 4 | 4 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 4 | 3 | 3 |
| B5/B12 4449 RRH (Shield) | 14.9 | 0.0 | 10.4 | 0.00 | 1.08 | 0.00 | 1.43 | 1.20 | 1.20 | 0 | 3 | 3 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 1 | 3 | 3 |

Date: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 120 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

| Appurtenances | Height | Width | Depth | Flat Area (normal) | Flat Area (side) | Ratio (normal) | Ratio (side) | Ca (normal) | Ca (side) | Force (lbs) (normal) | Force (lbs) (side) | Force (lbs) (angle) |
|--------------------------|--------|-------|-------|--------------------|------------------|----------------|--------------|-------------|-----------|----------------------|--------------------|---------------------|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 278 | 148 | 180 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 396 | 280 | 309 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 696 | 294 | 394 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 83 | 34 | 47 |
| 4415 B25 RRH (Shielded) | 15.0 | 9.9 | 5.4 | 1.03 | 0.56 | 1.52 | 2.78 | 1.20 | 1.21 | 62 | 34 | 41 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 83 | 68 | 72 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 9.9 | 10.9 | 1.02 | 1.13 | 1.51 | 1.37 | 1.20 | 1.20 | 62 | 68 | 67 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 83 | 65 | 69 |
| B5/B12 4449 RRH (Shield) | 14.9 | 9.9 | 10.4 | 1.02 | 1.08 | 1.51 | 1.43 | 1.20 | 1.20 | 62 | 65 | 64 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 18 | 54 | 45 |

WIND LOADS WITH ICE:

| | | | | | | | | | | | | |
|--------------------------|------|------|------|-------|------|------|------|------|------|-----|----|----|
| 7770 Antenna | 57.2 | 13.2 | 7.2 | 5.25 | 2.86 | 4.33 | 7.93 | 1.28 | 1.43 | 50 | 31 | 35 |
| HPA65R-BU6A Antenna | 73.3 | 13.9 | 9.8 | 7.08 | 4.99 | 5.27 | 7.47 | 1.32 | 1.42 | 70 | 53 | 57 |
| 800-10965 Antenna | 80.9 | 22.2 | 9.1 | 12.48 | 5.12 | 3.64 | 8.88 | 1.25 | 1.46 | 116 | 56 | 71 |
| 4415 B25 RRH | 17.2 | 15.4 | 7.6 | 1.84 | 0.91 | 1.12 | 2.26 | 1.20 | 1.20 | 16 | 8 | 10 |
| 4415 B25 RRH (Shielded) | 17.2 | 11.6 | 7.6 | 1.38 | 0.91 | 1.49 | 2.26 | 1.20 | 1.20 | 12 | 8 | 9 |
| B2/B66A 8843 RRH | 17.1 | 15.4 | 13.1 | 1.83 | 1.56 | 1.11 | 1.31 | 1.20 | 1.20 | 16 | 14 | 15 |
| B2/B66A 8843 RRH (Shie) | 17.1 | 11.6 | 13.1 | 1.37 | 1.56 | 1.48 | 1.31 | 1.20 | 1.20 | 12 | 14 | 14 |
| B5/B12 4449 RRH | 17.1 | 15.4 | 12.6 | 1.83 | 1.50 | 1.11 | 1.36 | 1.20 | 1.20 | 16 | 13 | 14 |
| B5/B12 4449 RRH (Shield) | 17.1 | 11.6 | 12.6 | 1.37 | 1.50 | 1.48 | 1.36 | 1.20 | 1.20 | 12 | 13 | 13 |
| LGP21401 TMA | 16.6 | 4.9 | 11.2 | 0.57 | 1.29 | 3.38 | 1.48 | 1.24 | 1.20 | 5 | 12 | 10 |

WIND LOADS AT 30 MPH:

| | | | | | | | | | | | | |
|--------------------------|------|------|------|-------|------|------|-------|------|------|----|----|----|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 15 | 8 | 10 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 21 | 15 | 16 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 37 | 16 | 21 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 4 | 2 | 2 |
| 4415 B25 RRH (Shielded) | 15.0 | 9.9 | 5.4 | 1.03 | 0.56 | 1.52 | 2.78 | 1.20 | 1.21 | 3 | 2 | 2 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 4 | 4 | 4 |
| B2/B66A 8843 RRH (Shie) | 14.9 | 9.9 | 10.9 | 1.02 | 1.13 | 1.51 | 1.37 | 1.20 | 1.20 | 3 | 4 | 4 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 4 | 3 | 4 |
| B5/B12 4449 RRH (Shield) | 14.9 | 9.9 | 10.4 | 1.02 | 1.08 | 1.51 | 1.43 | 1.20 | 1.20 | 3 | 3 | 3 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 1 | 3 | 2 |

Date: 4/17/2019
 Project Name: COVENTRY CT MAIN STREET
 Project No.: CT1182
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.11 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

| Appurtenances | Height | Width | Depth | Flat Area (normal) | Flat Area (side) | Ratio (normal) | Ratio (side) | Ca (normal) | Ca (side) | Force (lbs) (normal) | Force (lbs) (side) | Force (lbs) (angle) |
|---------------------------|--------|-------|-------|--------------------|------------------|----------------|--------------|-------------|-----------|----------------------|--------------------|---------------------|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 278 | 148 | 245 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 396 | 280 | 367 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 696 | 294 | 595 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 83 | 34 | 71 |
| 4415 B25 RRH (Shielded) | 15.0 | 6.6 | 5.4 | 0.69 | 0.56 | 2.27 | 2.78 | 1.20 | 1.21 | 42 | 34 | 40 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 83 | 68 | 79 |
| B2/B66A 8843 RRH (Shield) | 14.9 | 6.6 | 10.9 | 0.68 | 1.13 | 2.26 | 1.37 | 1.20 | 1.20 | 41 | 68 | 48 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 83 | 65 | 78 |
| B5/B12 4449 RRH (Shield) | 14.9 | 6.6 | 10.4 | 0.68 | 1.08 | 2.26 | 1.43 | 1.20 | 1.20 | 41 | 65 | 47 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 18 | 54 | 27 |

WIND LOADS WITH ICE:

| | | | | | | | | | | | | |
|---------------------------|------|------|------|-------|------|------|------|------|------|-----|----|-----|
| 7770 Antenna | 57.2 | 13.2 | 7.2 | 5.25 | 2.86 | 4.33 | 7.93 | 1.28 | 1.43 | 50 | 31 | 45 |
| HPA65R-BU6A Antenna | 73.3 | 13.9 | 9.8 | 7.08 | 4.99 | 5.27 | 7.47 | 1.32 | 1.42 | 70 | 53 | 66 |
| 800-10965 Antenna | 80.9 | 22.2 | 9.1 | 12.48 | 5.12 | 3.64 | 8.88 | 1.25 | 1.46 | 116 | 56 | 101 |
| 4415 B25 RRH | 17.2 | 15.4 | 7.6 | 1.84 | 0.91 | 1.12 | 2.26 | 1.20 | 1.20 | 16 | 8 | 14 |
| 4415 B25 RRH (Shielded) | 17.2 | 7.7 | 7.6 | 0.92 | 0.91 | 2.23 | 2.26 | 1.20 | 1.20 | 8 | 8 | 8 |
| B2/B66A 8843 RRH | 17.1 | 15.4 | 13.1 | 1.83 | 1.56 | 1.11 | 1.31 | 1.20 | 1.20 | 16 | 14 | 16 |
| B2/B66A 8843 RRH (Shield) | 17.1 | 7.7 | 13.1 | 0.92 | 1.56 | 2.22 | 1.31 | 1.20 | 1.20 | 8 | 14 | 10 |
| B5/B12 4449 RRH | 17.1 | 15.4 | 12.6 | 1.83 | 1.50 | 1.11 | 1.36 | 1.20 | 1.20 | 16 | 13 | 16 |
| B5/B12 4449 RRH (Shield) | 17.1 | 7.7 | 12.6 | 0.92 | 1.50 | 2.22 | 1.36 | 1.20 | 1.20 | 8 | 13 | 9 |
| LGP21401 TMA | 16.6 | 4.9 | 11.2 | 0.57 | 1.29 | 3.38 | 1.48 | 1.24 | 1.20 | 5 | 12 | 7 |

WIND LOADS AT 30 MPH:

| | | | | | | | | | | | | |
|---------------------------|------|------|------|-------|------|------|-------|------|------|----|----|----|
| 7770 Antenna | 55.0 | 11.0 | 5.0 | 4.20 | 1.91 | 5.00 | 11.00 | 1.31 | 1.53 | 15 | 8 | 13 |
| HPA65R-BU6A Antenna | 71.1 | 11.7 | 7.6 | 5.78 | 3.75 | 6.08 | 9.36 | 1.36 | 1.48 | 21 | 15 | 20 |
| 800-10965 Antenna | 78.7 | 20.0 | 6.9 | 10.93 | 3.77 | 3.94 | 11.41 | 1.26 | 1.55 | 37 | 16 | 32 |
| 4415 B25 RRH | 15.0 | 13.2 | 5.4 | 1.38 | 0.56 | 1.14 | 2.78 | 1.20 | 1.21 | 4 | 2 | 4 |
| 4415 B25 RRH (Shielded) | 15.0 | 6.6 | 5.4 | 0.69 | 0.56 | 2.27 | 2.78 | 1.20 | 1.21 | 2 | 2 | 2 |
| B2/B66A 8843 RRH | 14.9 | 13.2 | 10.9 | 1.37 | 1.13 | 1.13 | 1.37 | 1.20 | 1.20 | 4 | 4 | 4 |
| B2/B66A 8843 RRH (Shield) | 14.9 | 6.6 | 10.9 | 0.68 | 1.13 | 2.26 | 1.37 | 1.20 | 1.20 | 2 | 4 | 3 |
| B5/B12 4449 RRH | 14.9 | 13.2 | 10.4 | 1.37 | 1.08 | 1.13 | 1.43 | 1.20 | 1.20 | 4 | 3 | 4 |
| B5/B12 4449 RRH (Shield) | 14.9 | 6.6 | 10.4 | 0.68 | 1.08 | 2.26 | 1.43 | 1.20 | 1.20 | 2 | 3 | 3 |
| LGP21401 TMA | 14.4 | 2.7 | 9.0 | 0.27 | 0.90 | 5.33 | 1.60 | 1.33 | 1.20 | 1 | 3 | 1 |

Date: 4/16/2019

Project Name: COVENTRY CT MAIN STREET

Project No.: CT1182

Designed By: LBW Checked By: MSC



HUDSON
Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.11 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: 82 lbs
Weight of object: 35.0 lbs

Combined weight of ice and object: 117 lbs

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: 198 lbs
Weight of object: 109.0 lbs

Combined weight of ice and object: 307 lbs

B2/B66A 8843 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

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

2" pipe

Per foot weight of ice:

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

HPA65R-BU6A Antenna

Weight of ice based on total radial SF area:

Height (in): 71.1
Width (in): 11.7
Depth (in): 7.6
Total weight of ice on object: 121 lbs
Weight of object: 42.0 lbs

Combined weight of ice and object: 163 lbs

4415 B25 RRH

Weight of ice based on total radial SF area:

Height (in): 16.5
Width (in): 13.4
Depth (in): 5.9
Total weight of ice on object: 29 lbs
Weight of object: 46.0 lbs

Combined weight of ice and object: 75 lbs

B5/B12 4449 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 lbs
Weight of object: 73.0 lbs

Combined weight of ice and object: 103 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: 29 lbs
Weight of object: 33 lbs

Combined weight of ice and object: 62 lbs

HSS 4x4

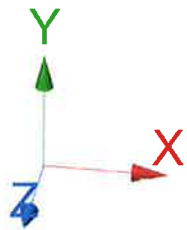
Weight of ice based on total radial SF area:

Height (in): 4
Width (in): 4
Per foot weight of ice on object: 9 plf



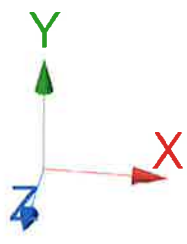
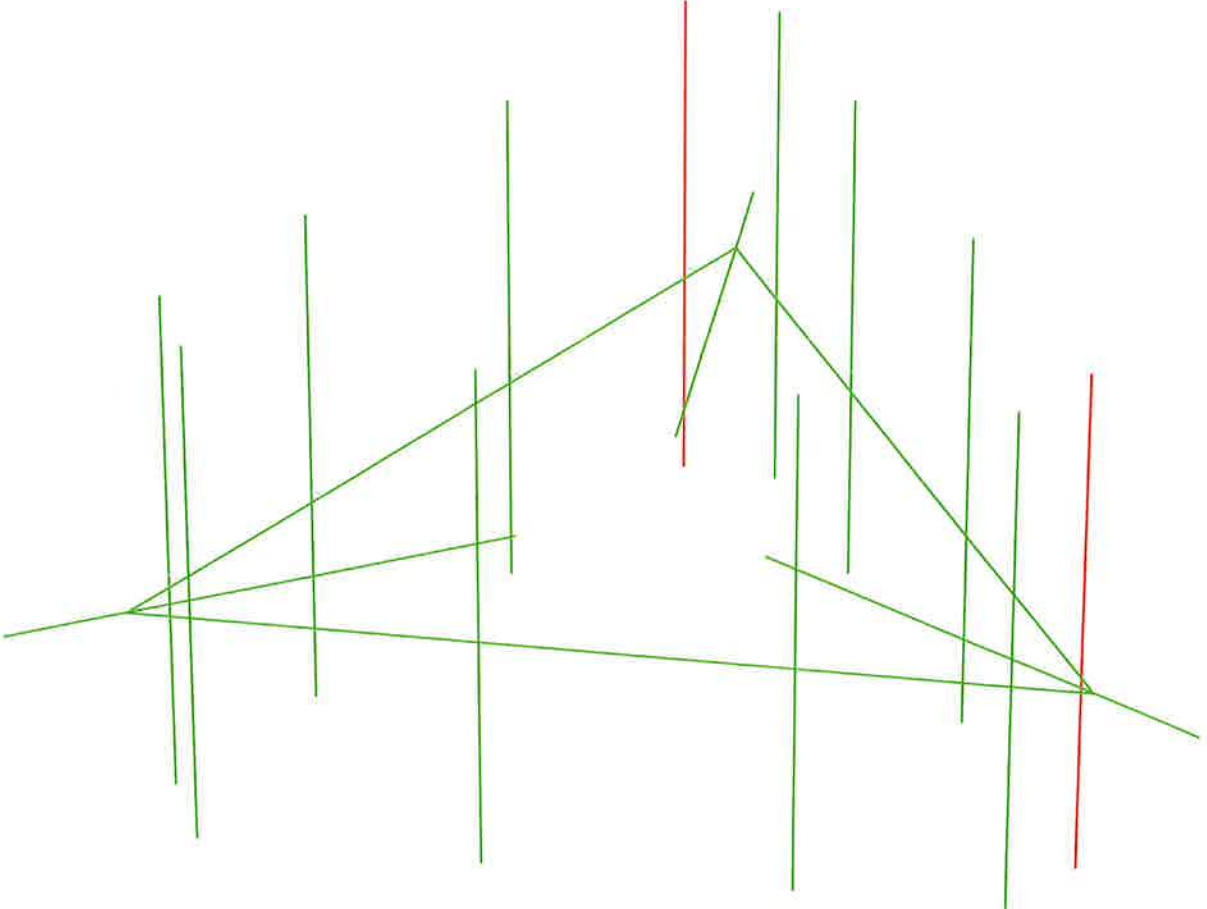
HUDSON
Design Group LLC

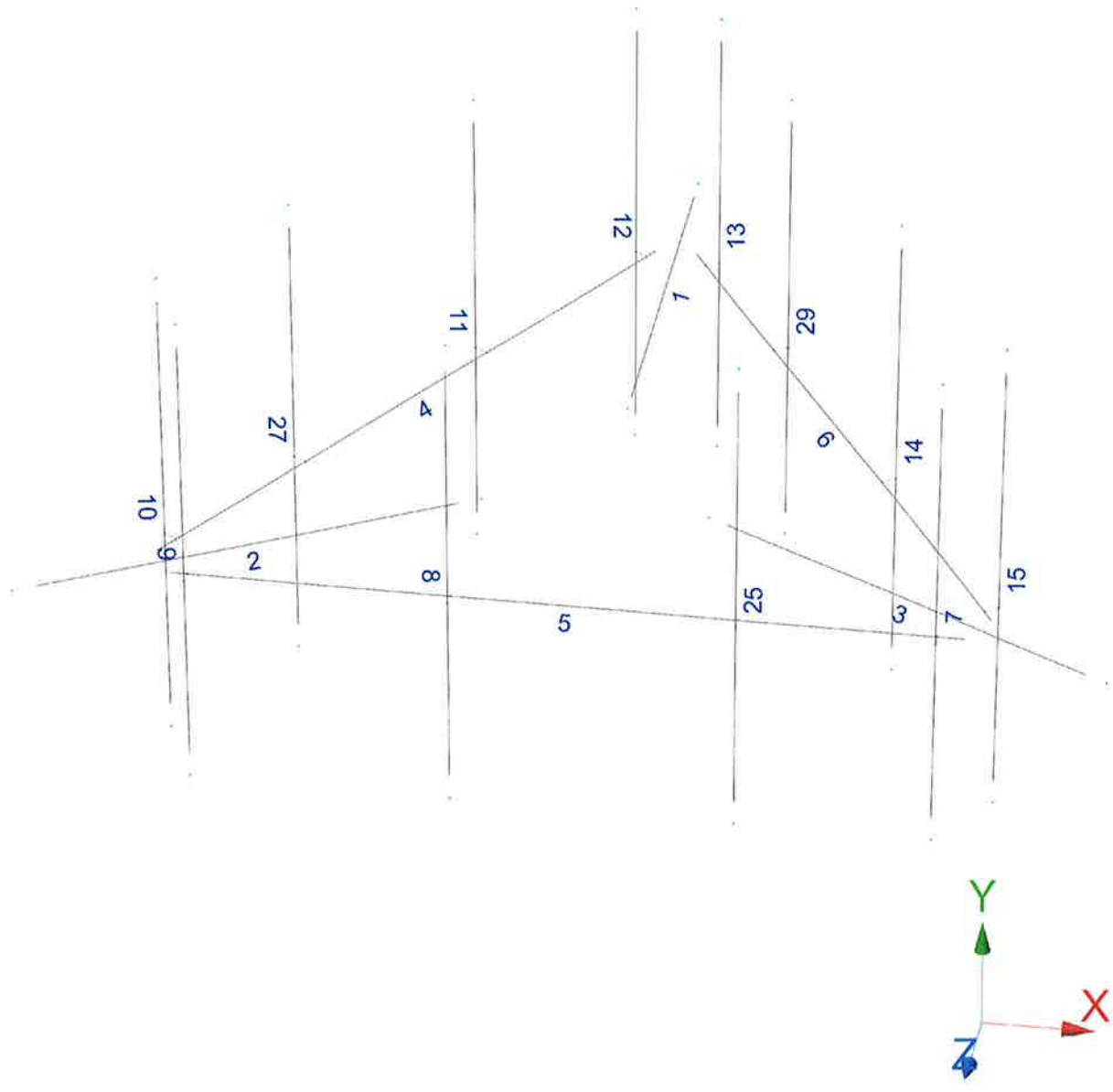
**Mount Calculations
(Existing Conditions)**



Design status

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





Current Date: 4/17/2019 12:01 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1182\LTE 2C-3C-4C-5C\CT1182 (LT 2C-3C-4C-5C).etx

Load data

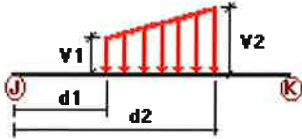
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

| Condition | Description | Comb. | Category |
|-----------|----------------------------------|-------|----------|
| DL | Dead Load | No | DL |
| W0 | Wind Load 0/60/120 deg | No | WIND |
| W30 | Wind Load 30/90/150 deg | No | WIND |
| Di | Ice Load | No | LL |
| Wi0 | Ice Wind Load 0/60/120 deg | No | WIND |
| Wi30 | Ice Wind Load 30/90/150 deg | No | WIND |
| WL0 | WL 30 mph 0/60/120 deg | No | WIND |
| WL30 | WL 30 mph 30/90/150 deg | No | WIND |
| LL1 | 250 lb Live Load Center of Mount | No | LL |
| LL2 | 250 lb Live Load End of Mount | No | LL |
| LLa1 | 250 lb Live Load Antenna 1 | No | LL |
| LLa2 | 250 lb Live Load Antenna 2 | No | LL |
| LLa3 | 250 lb Live Load Antenna 3 | No | LL |
| LLa4 | 250 lb Live Load Antenna 4 | No | LL |

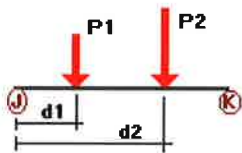
Distributed force on members



| Condition | Member | Dir1 | Val1 [Kip/ft] | Val2 [Kip/ft] | Dist1 [ft] | % | Dist2 [ft] | % |
|-----------|--------|------|------------------|------------------|---------------|----|---------------|----|
| W0 | 1 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 2 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 3 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 4 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 5 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 6 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| W30 | 1 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 2 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 3 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 4 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 5 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 6 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 7 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 8 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |

| | | | | | | | | |
|----|----|---|--------|------|------|----|------|----|
| | 9 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 10 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 11 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 12 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 13 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 14 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 15 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 25 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 27 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 29 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| Di | 1 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 2 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 3 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 4 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 5 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 6 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 7 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 8 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 9 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 10 | y | -0.005 | 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 |
| | 13 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 14 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 15 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 25 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 27 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 29 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |

Concentrated forces on members



| Condition | Member | Dir1 | Value1 [Kip] | Dist1 [ft] | % |
|-----------|--------|------|-----------------|---------------|----|
| DL | 7 | y | -0.016 | 2.00 | No |
| | | y | -0.016 | 6.00 | No |
| 8 | 8 | y | -0.038 | 3.50 | No |
| | | y | -0.021 | 1.00 | No |
| | | y | -0.024 | 6.50 | No |
| 9 | 9 | y | -0.072 | 3.50 | No |
| | | y | -0.055 | 1.00 | No |
| | | y | -0.055 | 7.00 | No |
| 10 | 10 | y | -0.073 | 3.50 | No |
| | | y | -0.016 | 2.00 | No |
| | | y | -0.016 | 6.00 | No |
| 11 | 11 | y | -0.038 | 3.50 | No |
| | | y | -0.021 | 1.00 | No |
| | | y | -0.024 | 6.50 | No |
| 12 | 12 | y | -0.072 | 3.50 | No |
| | | y | -0.055 | 1.00 | No |
| | | y | -0.055 | 7.00 | No |

| | | | | | |
|-----|----|---|--------|------|----|
| | | y | -0.073 | 3.50 | No |
| | 13 | y | -0.016 | 2.00 | No |
| | | y | -0.016 | 6.00 | No |
| | | y | -0.038 | 3.50 | No |
| | 14 | y | -0.021 | 1.00 | No |
| | | y | -0.024 | 6.50 | No |
| | | y | -0.072 | 3.50 | No |
| | 15 | y | -0.055 | 1.00 | No |
| | | y | -0.055 | 7.00 | No |
| | | y | -0.073 | 3.50 | No |
| | 25 | y | -0.021 | 1.00 | No |
| | | y | -0.021 | 6.50 | No |
| | | y | -0.046 | 3.50 | No |
| | 27 | y | -0.021 | 1.00 | No |
| | | y | -0.021 | 6.50 | No |
| | | y | -0.046 | 3.50 | No |
| | 29 | y | -0.021 | 1.00 | No |
| | | y | -0.021 | 6.50 | No |
| | | y | -0.046 | 3.50 | No |
| W0 | 7 | z | -0.139 | 2.00 | No |
| | | z | -0.139 | 6.00 | No |
| | | z | -0.036 | 3.50 | No |
| | 8 | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 6.50 | No |
| | | z | -0.012 | 3.50 | No |
| | 9 | z | -0.348 | 1.00 | No |
| | | z | -0.348 | 7.00 | No |
| | 10 | z | -0.091 | 2.00 | No |
| | | z | -0.091 | 6.00 | No |
| | | z | -0.09 | 3.50 | No |
| | 11 | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.067 | 3.50 | No |
| | 12 | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 7.00 | No |
| | | z | -0.064 | 3.50 | No |
| | 13 | z | -0.091 | 2.00 | No |
| | | z | -0.091 | 6.00 | No |
| | | z | -0.09 | 3.50 | No |
| | 14 | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.067 | 3.50 | No |
| | 15 | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 7.00 | No |
| | | z | -0.064 | 3.50 | No |
| | 25 | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 6.50 | No |
| | | z | -0.012 | 3.50 | No |
| | 27 | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.041 | 3.50 | No |
| | 29 | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.041 | 3.50 | No |
| W30 | 7 | x | -0.074 | 2.00 | No |
| | | x | -0.074 | 6.00 | No |
| | | x | -0.108 | 3.50 | No |
| | 8 | x | -0.14 | 1.00 | No |
| | | x | -0.14 | 6.50 | No |
| | | x | -0.068 | 3.50 | No |

| | | | | | |
|----|----|---|--------|------|----|
| | 9 | x | -0.147 | 1.00 | No |
| | | x | -0.147 | 7.00 | No |
| | | x | -0.065 | 3.50 | No |
| | 10 | x | -0.123 | 2.00 | No |
| | | x | -0.123 | 6.00 | No |
| | | x | -0.054 | 3.50 | No |
| | 11 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.048 | 3.50 | No |
| | 12 | x | -0.298 | 1.00 | No |
| | | x | -0.298 | 7.00 | No |
| | | x | -0.047 | 3.50 | No |
| | 13 | x | -0.123 | 2.00 | No |
| | | x | -0.123 | 6.00 | No |
| | | x | -0.054 | 3.50 | No |
| | 14 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.048 | 3.50 | No |
| | 15 | x | -0.298 | 1.00 | No |
| | | x | -0.298 | 7.00 | No |
| | | x | -0.047 | 3.50 | No |
| | 25 | x | -0.14 | 1.00 | No |
| | | x | -0.14 | 6.50 | No |
| | | x | -0.034 | 3.50 | No |
| | 27 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.04 | 3.50 | No |
| | 29 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.04 | 3.50 | No |
| Di | 7 | y | -0.041 | 2.00 | No |
| | | y | -0.041 | 6.00 | No |
| | | y | -0.034 | 3.50 | No |
| | 8 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.031 | 3.50 | No |
| | 9 | y | -0.099 | 1.00 | No |
| | | y | -0.099 | 7.00 | No |
| | | y | -0.03 | 3.50 | No |
| | 10 | y | -0.041 | 2.00 | No |
| | | y | -0.041 | 6.00 | No |
| | | y | -0.034 | 3.50 | No |
| | 11 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.031 | 3.50 | No |
| | 12 | y | -0.099 | 1.00 | No |
| | | y | -0.099 | 7.00 | No |
| | | y | -0.03 | 3.50 | No |
| | 13 | y | -0.041 | 2.00 | No |
| | | y | -0.041 | 6.00 | No |
| | | y | -0.034 | 3.50 | No |
| | 14 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.031 | 3.50 | No |
| | 15 | y | -0.099 | 1.00 | No |
| | | y | -0.099 | 7.00 | No |
| | | y | -0.03 | 3.50 | No |
| | 25 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.029 | 3.50 | No |

| | | | | | |
|------|----|---|--------|------|----|
| | 27 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.029 | 3.50 | No |
| | 29 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.029 | 3.50 | No |
| Wi0 | 7 | z | -0.026 | 2.00 | No |
| | | z | -0.026 | 6.00 | No |
| | | z | -0.012 | 3.50 | No |
| | 8 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 6.50 | No |
| | | z | -0.005 | 3.50 | No |
| | 9 | z | -0.059 | 1.00 | No |
| | | z | -0.059 | 7.00 | No |
| | | z | -0.002 | 3.50 | No |
| | 10 | z | -0.018 | 2.00 | No |
| | | z | -0.018 | 6.00 | No |
| | | z | -0.02 | 3.50 | No |
| | 11 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.014 | 3.50 | No |
| | 12 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 7.00 | No |
| | | z | -0.013 | 3.50 | No |
| | 13 | z | -0.018 | 2.00 | No |
| | | z | -0.018 | 6.00 | No |
| | | z | -0.02 | 3.50 | No |
| | 14 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.014 | 3.50 | No |
| | 15 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 7.00 | No |
| | | z | -0.013 | 3.50 | No |
| | 25 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 6.50 | No |
| | | z | -0.005 | 3.50 | No |
| | 27 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.009 | 3.50 | No |
| | 29 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.009 | 3.50 | No |
| Wi30 | 7 | x | -0.016 | 2.00 | No |
| | | x | -0.016 | 6.00 | No |
| | | x | -0.024 | 3.50 | No |
| | 8 | x | -0.027 | 1.00 | No |
| | | x | -0.027 | 6.50 | No |
| | | x | -0.014 | 3.50 | No |
| | 9 | x | -0.028 | 1.00 | No |
| | | x | -0.028 | 7.00 | No |
| | | x | -0.013 | 3.50 | No |
| | 10 | x | -0.023 | 2.00 | No |
| | | x | -0.023 | 6.00 | No |
| | | x | -0.014 | 3.50 | No |
| | 11 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.01 | 3.50 | No |
| | 12 | x | -0.051 | 1.00 | No |
| | | x | -0.051 | 7.00 | No |
| | | x | -0.009 | 3.50 | No |

| | | | | | |
|------|----|---|--------|------|----|
| | 13 | x | -0.023 | 2.00 | No |
| | | x | -0.023 | 6.00 | No |
| | | x | -0.014 | 3.50 | No |
| | 14 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.01 | 3.50 | No |
| | 15 | x | -0.051 | 1.00 | No |
| | | x | -0.051 | 7.00 | No |
| | | x | -0.009 | 3.50 | No |
| | 25 | x | -0.027 | 1.00 | No |
| | | x | -0.027 | 6.50 | No |
| | | x | -0.008 | 3.50 | No |
| | 27 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.008 | 3.50 | No |
| | 29 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.008 | 3.50 | No |
| WLO | 7 | z | -0.008 | 2.00 | No |
| | | z | -0.008 | 6.00 | No |
| | | z | -0.002 | 3.50 | No |
| | 8 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 6.50 | No |
| | | z | -0.001 | 3.50 | No |
| | 9 | z | -0.019 | 1.00 | No |
| | | z | -0.019 | 7.00 | No |
| | 10 | z | -0.005 | 2.00 | No |
| | | z | -0.005 | 6.00 | No |
| | | z | -0.004 | 3.50 | No |
| | 11 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.004 | 3.50 | No |
| | 12 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 7.00 | No |
| | | z | -0.003 | 3.50 | No |
| | 13 | z | -0.005 | 2.00 | No |
| | | z | -0.005 | 6.00 | No |
| | | z | -0.004 | 3.50 | No |
| | 14 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.004 | 3.50 | No |
| | 15 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 7.00 | No |
| | | z | -0.003 | 3.50 | No |
| | 25 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 6.50 | No |
| | | z | -0.001 | 3.50 | No |
| | 27 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.002 | 3.50 | No |
| | 29 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.002 | 3.50 | No |
| WL30 | 7 | x | -0.004 | 2.00 | No |
| | | x | -0.004 | 6.00 | No |
| | | x | -0.006 | 3.50 | No |
| | 8 | x | -0.008 | 1.00 | No |
| | | x | -0.008 | 6.50 | No |
| | | x | -0.004 | 3.50 | No |
| | 9 | x | -0.008 | 1.00 | No |

| | | | | | |
|------|----|---|--------|------|----|
| | | x | -0.008 | 7.00 | No |
| | | x | -0.003 | 3.50 | No |
| 10 | | x | -0.007 | 2.00 | No |
| | | x | -0.007 | 6.00 | No |
| | | x | -0.002 | 3.50 | No |
| 11 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.003 | 3.50 | No |
| 12 | | x | -0.016 | 1.00 | No |
| | | x | -0.016 | 7.00 | No |
| | | x | -0.003 | 3.50 | No |
| 13 | | x | -0.007 | 2.00 | No |
| | | x | -0.007 | 6.00 | No |
| | | x | -0.002 | 3.50 | No |
| 14 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.003 | 3.50 | No |
| 15 | | x | -0.016 | 1.00 | No |
| | | x | -0.016 | 7.00 | No |
| | | x | -0.003 | 3.50 | No |
| 25 | | x | -0.008 | 1.00 | No |
| | | x | -0.008 | 6.50 | No |
| | | x | -0.002 | 3.50 | No |
| 27 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.002 | 3.50 | No |
| 29 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.002 | 3.50 | No |
| LL1 | 5 | y | -0.25 | 6.78 | No |
| LL2 | 5 | y | -0.25 | 0.00 | No |
| LLa1 | 7 | y | -0.25 | 4.00 | No |
| LLa2 | 25 | y | -0.25 | 4.00 | No |
| LLa3 | 8 | y | -0.25 | 4.00 | No |
| LLa4 | 9 | y | -0.25 | 4.00 | 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 |
| W0 | Wind Load 0/60/120 deg | No | 0.00 | 0.00 | 0.00 |
| W30 | Wind Load 30/90/150 deg | No | 0.00 | 0.00 | 0.00 |
| Di | Ice Load | No | 0.00 | 0.00 | 0.00 |
| Wi0 | Ice Wind Load 0/60/120 deg | No | 0.00 | 0.00 | 0.00 |
| Wi30 | Ice Wind Load 30/90/150 deg | No | 0.00 | 0.00 | 0.00 |
| WL0 | WL 30 mph 0/60/120 deg | No | 0.00 | 0.00 | 0.00 |
| WL30 | WL 30 mph 30/90/150 deg | No | 0.00 | 0.00 | 0.00 |
| LL1 | 250 lb Live Load Center of Mount | No | 0.00 | 0.00 | 0.00 |
| LL2 | 250 lb Live Load End of Mount | No | 0.00 | 0.00 | 0.00 |
| LLa1 | 250 lb Live Load Antenna 1 | No | 0.00 | 0.00 | 0.00 |
| LLa2 | 250 lb Live Load Antenna 2 | No | 0.00 | 0.00 | 0.00 |
| LLa3 | 250 lb Live Load Antenna 3 | No | 0.00 | 0.00 | 0.00 |
| LLa4 | 250 lb Live Load Antenna 4 | No | 0.00 | 0.00 | 0.00 |

Earthquake (Dynamic analysis only)

| Condition | a/g | Ang. [Deg] | Damp. [%] |
|-----------|------|---------------|--------------|
| DL | 0.00 | 0.00 | 0.00 |
| W0 | 0.00 | 0.00 | 0.00 |
| W30 | 0.00 | 0.00 | 0.00 |
| Di | 0.00 | 0.00 | 0.00 |
| Wi0 | 0.00 | 0.00 | 0.00 |
| Wi30 | 0.00 | 0.00 | 0.00 |
| WL0 | 0.00 | 0.00 | 0.00 |
| WL30 | 0.00 | 0.00 | 0.00 |
| LL1 | 0.00 | 0.00 | 0.00 |
| LL2 | 0.00 | 0.00 | 0.00 |
| LLa1 | 0.00 | 0.00 | 0.00 |
| LLa2 | 0.00 | 0.00 | 0.00 |
| LLa3 | 0.00 | 0.00 | 0.00 |
| LLa4 | 0.00 | 0.00 | 0.00 |

Steel Code Check

Report: Summary - Group by member
Load conditions to be included in design :

LC1=1.2DL+W0
 LC2=1.2DL+W30
 LC3=1.2DL-W0
 LC4=1.2DL-W30
 LC5=0.9DL+W0
 LC6=0.9DL+W30
 LC7=0.9DL-W0
 LC8=0.9DL-W30
 LC9=1.2DL+Di+Wi0
 LC10=1.2DL+Di+Wi30
 LC11=1.2DL+Di-Wi0
 LC12=1.2DL+Di-Wi30
 LC13=1.2DL
 LC15=1.2DL+1.5LL1
 LC16=1.2DL+1.5LL2
 LC17=1.2DL+W0+1.5LLa1
 LC18=1.2DL+W30+1.5LLa1
 LC19=1.2DL-W0+1.5LLa1
 LC20=1.2DL-W30+1.5LLa1
 LC21=1.2DL+W0+1.5LLa2
 LC22=1.2DL+W30+1.5LLa2
 LC23=1.2DL-W0+1.5LLa2
 LC24=1.2DL-W30+1.5LLa2
 LC25=1.2DL+W0+1.5LLa3
 LC26=1.2DL+W30+1.5LLa3
 LC27=1.2DL-W0+1.5LLa3
 LC28=1.2DL-W30+1.5LLa3
 LC29=1.2DL+W0+1.5LLa4
 LC30=1.2DL+W30+1.5LLa4
 LC31=1.2DL-W0+1.5LLa4
 LC32=1.2DL-W30+1.5LLa4

| Description | Section | Member | Ctrl Eq. | Ratio | Status | Reference |
|-------------|------------------------|--------|---------------|-------------|-------------|-----------|
| | HSS_SQR 4X4X1_4 | 1 | LC9 at 0.00% | 0.60 | OK | Eq. H1-1b |
| | | 2 | LC11 at 0.00% | 0.60 | OK | Eq. H1-1b |
| | | 3 | LC12 at 0.00% | 0.59 | OK | Eq. H1-1b |
| | | 4 | LC2 at 98.96% | 0.32 | OK | Eq. H1-1b |
| | | 5 | LC1 at 0.00% | 0.30 | OK | Eq. H1-1b |
| | | 6 | LC4 at 1.04% | 0.32 | OK | Eq. H1-1b |
| | PIPE 2x0.154 | 7 | LC4 at 53.13% | 0.29 | OK | Eq. H1-1b |
| | | 8 | LC1 at 53.13% | 0.53 | OK | Eq. H1-1b |
| | | 9 | LC1 at 53.13% | 0.92 | OK | Eq. H1-1b |
| | | 10 | LC4 at 53.13% | 0.47 | OK | Eq. H1-1b |
| | | 11 | LC4 at 53.13% | 0.82 | OK | Eq. H1-1b |
| | | 12 | LC2 at 53.13% | 1.23 | N.G. | Eq. H1-1b |
| | | 13 | LC2 at 53.13% | 0.47 | OK | Eq. H1-1b |
| | | 14 | LC2 at 53.13% | 0.82 | OK | Eq. H1-1b |
| | | 15 | LC2 at 53.13% | 1.23 | N.G. | Eq. H1-1b |
| | | 25 | LC1 at 53.13% | 0.53 | OK | Eq. H1-1b |

| | | | | |
|-----------|---------------|------|----|-----------|
| 27 | LC2 at 53.13% | 0.81 | OK | Eq. H1-1b |
| 29 | LC2 at 53.13% | 0.81 | OK | Eq. H1-1b |

Geometry data

GLOSSARY

| | |
|------------|--|
| Cb22, Cb33 | : Moment gradient coefficients |
| Cm22, Cm33 | : Coefficients applied to bending term in interaction formula |
| d0 | : Tapered member section depth at J end of member |
| DJX | : Rigid end offset distance measured from J node in axis X |
| DJY | : Rigid end offset distance measured from J node in axis Y |
| DJZ | : Rigid end offset distance measured from J node in axis Z |
| DKX | : Rigid end offset distance measured from K node in axis X |
| DKY | : Rigid end offset distance measured from K node in axis Y |
| DKZ | : Rigid end offset distance measured from K node in axis Z |
| dL | : Tapered member section depth at K end of member |
| Ig factor | : Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members |
| K22 | : Effective length factor about axis 2 |
| K33 | : Effective length factor about axis 3 |
| L22 | : Member length for calculation of axial capacity |
| L33 | : Member length for calculation of axial capacity |
| LB pos | : Lateral unbraced length of the compression flange in the positive side of local axis 2 |
| LB neg | : Lateral unbraced length of the compression flange in the negative side of local axis 2 |
| RX | : Rotation about X |
| RY | : Rotation about Y |
| RZ | : Rotation about Z |
| TO | : 1 = Tension only member 0 = Normal member |
| TX | : Translation in X |
| TY | : Translation in Y |
| TZ | : Translation in Z |

Nodes

| Node | X [ft] | Y [ft] | Z [ft] | Rigid Floor |
|------|-----------|-----------|-----------|-------------|
| 2 | 0.00 | 0.00 | -2.0625 | 0 |
| 3 | 0.00 | 0.00 | -9.625 | 0 |
| 4 | -0.0043 | 0.00 | -7.8199 | 0 |
| 5 | 1.7862 | 0.00 | 1.0313 | 0 |
| 6 | 8.3355 | 0.00 | 4.8125 | 0 |
| 7 | 6.7744 | 0.00 | 3.9212 | 0 |
| 8 | -1.7862 | 0.00 | 1.0313 | 0 |
| 9 | -8.3355 | 0.00 | 4.8125 | 0 |
| 10 | -6.7744 | 0.00 | 3.9212 | 0 |
| 17 | 5.6649 | -3.50 | 4.1463 | 0 |
| 18 | -1.7521 | -3.50 | 4.1463 | 0 |
| 19 | -5.8351 | -3.50 | 4.1463 | 0 |
| 20 | 5.6649 | 4.50 | 4.1463 | 0 |
| 21 | -1.7521 | 4.50 | 4.1463 | 0 |
| 22 | -5.8351 | 4.50 | 4.1463 | 0 |
| 29 | -6.4232 | -3.50 | 2.8328 | 0 |
| 30 | -2.7147 | -3.50 | -3.5905 | 0 |
| 31 | -0.6732 | -3.50 | -7.1265 | 0 |
| 32 | -6.4232 | 4.50 | 2.8328 | 0 |
| 33 | -2.7147 | 4.50 | -3.5905 | 0 |
| 34 | -0.6732 | 4.50 | -7.1265 | 0 |

| | | | | |
|----|---------|-------|---------|---|
| 41 | 0.7583 | -3.50 | -6.9791 | 0 |
| 42 | 4.4668 | -3.50 | -0.5558 | 0 |
| 43 | 6.5083 | -3.50 | 2.9802 | 0 |
| 44 | 0.7583 | 4.50 | -6.9791 | 0 |
| 45 | 4.4668 | 4.50 | -0.5558 | 0 |
| 46 | 6.5083 | 4.50 | 2.9802 | 0 |
| 49 | 2.6649 | -3.50 | 4.1463 | 0 |
| 50 | 2.6649 | 4.50 | 4.1463 | 0 |
| 53 | -4.9232 | -3.50 | 0.2347 | 0 |
| 54 | -4.9232 | 4.50 | 0.2347 | 0 |
| 57 | 2.2583 | -3.50 | -4.381 | 0 |
| 58 | 2.2583 | 4.50 | -4.381 | 0 |

Restraints

| Node | TX | TY | TZ | RX | RY | RZ |
|------|----|----|----|----|----|----|
| 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 1 | 1 | 1 | 1 | 1 | 1 |

Members

| Member | NJ | NK | Description | Section | Material | d0 [in] | dL [in] | Ig factor |
|--------|----|----|-------------|-----------------|----------------------|------------|------------|-----------|
| 1 | 2 | 3 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 2 | 8 | 9 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 3 | 5 | 6 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 4 | 4 | 10 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 5 | 10 | 7 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 6 | 7 | 4 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 7 | 20 | 17 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 8 | 21 | 18 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 9 | 22 | 19 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 10 | 32 | 29 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 11 | 33 | 30 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 12 | 34 | 31 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 13 | 44 | 41 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 14 | 45 | 42 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 15 | 46 | 43 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 25 | 50 | 49 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 27 | 54 | 53 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 29 | 58 | 57 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |

Orientation of local axes

| Member | Rotation [Deg] | Axes23 | NX | NY | NZ |
|--------|-------------------|--------|-------|------|--------|
| 7 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 8 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 9 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 10 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 11 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 12 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 13 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |
| 14 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |
| 15 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |
| 25 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 27 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 29 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |



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Design Group LLC

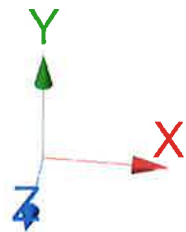
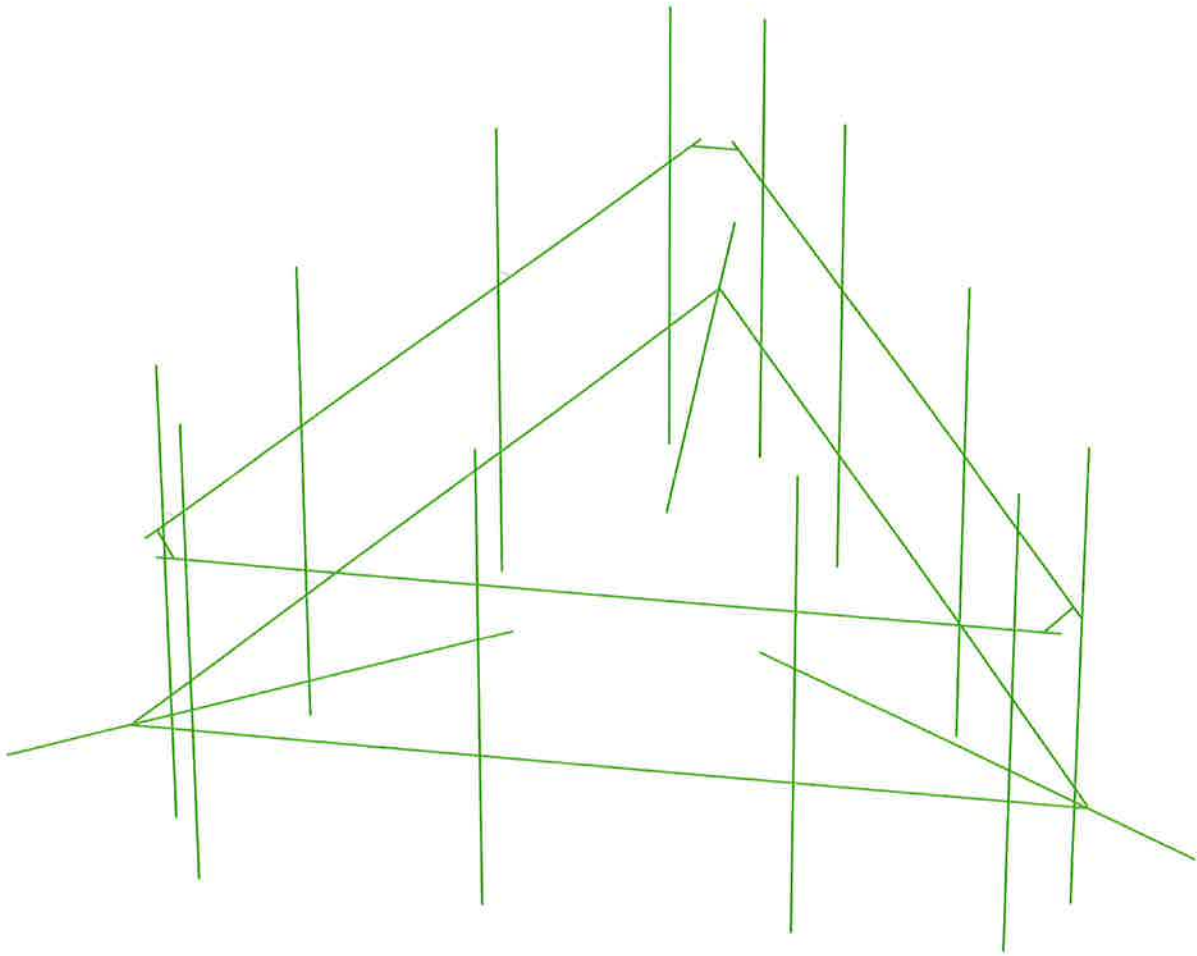
**Mount Calculations
(Modified Conditions)**

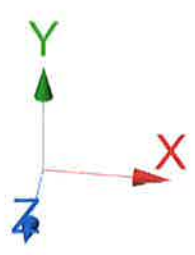
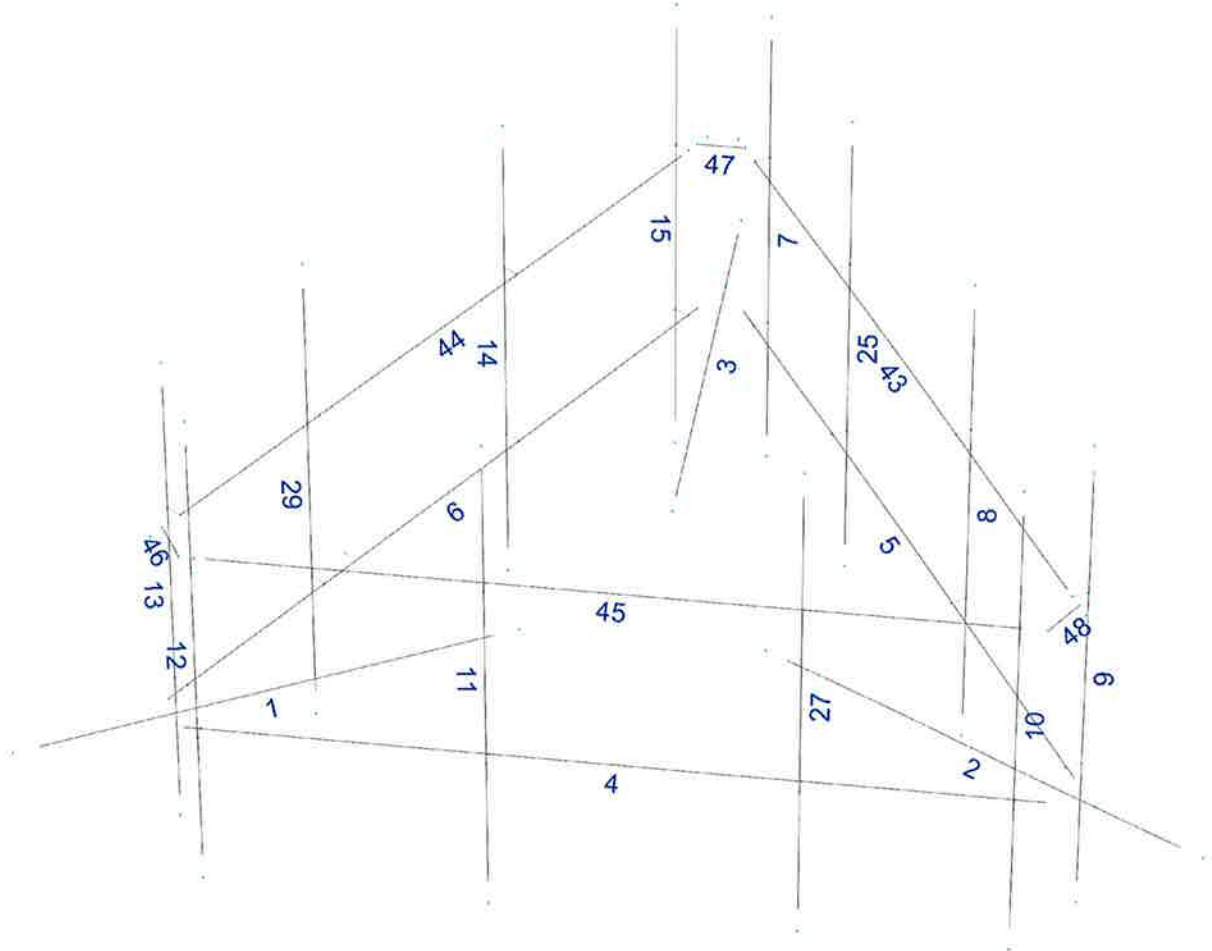
Install new 2-1/2" std. (2.88" O.D.) pipe mast behind new 800-10965 antennas secured to the existing mount (typ. of 1 per sector, total of 3).



Install new handrail kit, SitePro1 P/N HRK14 (or approved equal). Handrail kit is required per AT&T Technical Directive to stabilize existing cantilevered antennas.







Load data

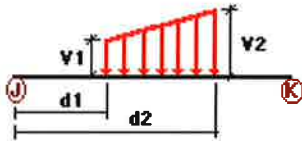
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

| Condition | Description | Comb. | Category |
|-----------|----------------------------------|-----------|----------|
| DL | Dead Load | No | DL |
| W0 | Wind Load 0/60/120 deg | No | WIND |
| W30 | Wind Load 30/90/150 deg | No | WIND |
| Di | Ice Load | No | LL |
| Wi0 | Ice Wind Load 0/60/120 deg | No | WIND |
| Wi30 | Ice Wind Load 30/90/150 deg | No | WIND |
| WL0 | WL 30 mph 0/60/120 deg | No | WIND |
| WL30 | WL 30 mph 30/90/150 deg | No | WIND |
| LL1 | 250 lb Live Load Center of Mount | No | LL |
| LL2 | 250 lb Live Load End of Mount | No | LL |
| LLa1 | 250 lb Live Load Antenna 1 | No | LL |
| LLa2 | 250 lb Live Load Antenna 2 | No | LL |
| LLa3 | 250 lb Live Load Antenna 3 | No <td LL | |
| LLa4 | 250 lb Live Load Antenna 4 | No | LL |

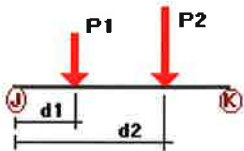
Distributed force on members



| Condition | Member | Dir1 | Val1 [Kip/ft] | Val2 [Kip/ft] | Dist1 [ft] | % | Dist2 [ft] | % |
|-----------|--------|------|------------------|------------------|---------------|----|---------------|----|
| W0 | 1 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 2 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 3 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 4 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 5 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 6 | z | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| W30 | 1 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 2 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 3 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 4 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 5 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 6 | x | -0.021 | 0.00 | 0.00 | No | 0.00 | No |
| | 7 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 8 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |

| | | | | | | | | |
|----|----|---|--------|------|------|----|------|----|
| | 9 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 10 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 11 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 12 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 13 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 14 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 15 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 25 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 27 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| | 29 | x | -0.012 | 0.00 | 0.00 | No | 0.00 | No |
| Di | 1 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 2 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 3 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 4 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 5 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 6 | y | -0.009 | 0.00 | 0.00 | No | 0.00 | No |
| | 7 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 8 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 9 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 10 | y | -0.005 | 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 |
| | 13 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 14 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 15 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 25 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 27 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |
| | 29 | y | -0.005 | 0.00 | 0.00 | No | 0.00 | No |

Concentrated forces on members



| Condition | Member | Dir1 | Value1 [Kip] | Dist1 [ft] | % |
|-----------|--------|------|-----------------|---------------|----|
| DL | 7 | y | -0.016 | 2.00 | No |
| | | y | -0.016 | 6.00 | No |
| | | y | -0.038 | 3.50 | No |
| 8 | 8 | y | -0.021 | 1.00 | No |
| | | y | -0.024 | 6.50 | No |
| | | y | -0.072 | 3.50 | No |
| 9 | 9 | y | -0.055 | 1.00 | No |
| | | y | -0.055 | 7.00 | No |
| | | y | -0.073 | 3.50 | No |
| 10 | 10 | y | -0.016 | 2.00 | No |
| | | y | -0.016 | 6.00 | No |
| | | y | -0.038 | 3.50 | No |
| 11 | 11 | y | -0.021 | 1.00 | No |
| | | y | -0.024 | 6.50 | No |
| | | y | -0.072 | 3.50 | No |
| 12 | 12 | y | -0.055 | 1.00 | No |
| | | y | -0.055 | 7.00 | No |

| | | | | | |
|-----|---|---|--------|------|----|
| | | y | -0.073 | 3.50 | No |
| 13 | | y | -0.016 | 2.00 | No |
| | | y | -0.016 | 6.00 | No |
| | | y | -0.038 | 3.50 | No |
| 14 | | y | -0.021 | 1.00 | No |
| | | y | -0.024 | 6.50 | No |
| | | y | -0.072 | 3.50 | No |
| 15 | | y | -0.055 | 1.00 | No |
| | | y | -0.055 | 7.00 | No |
| | | y | -0.073 | 3.50 | No |
| 25 | | y | -0.021 | 1.00 | No |
| | | y | -0.021 | 6.50 | No |
| | | y | -0.046 | 3.50 | No |
| 27 | | y | -0.021 | 1.00 | No |
| | | y | -0.021 | 6.50 | No |
| | | y | -0.046 | 3.50 | No |
| 29 | | y | -0.021 | 1.00 | No |
| | | y | -0.021 | 6.50 | No |
| | | y | -0.046 | 3.50 | No |
| W0 | 7 | z | -0.139 | 2.00 | No |
| | | z | -0.139 | 6.00 | No |
| | | z | -0.036 | 3.50 | No |
| 8 | | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 6.50 | No |
| | | z | -0.012 | 3.50 | No |
| 9 | | z | -0.348 | 1.00 | No |
| | | z | -0.348 | 7.00 | No |
| 10 | | z | -0.091 | 2.00 | No |
| | | z | -0.091 | 6.00 | No |
| | | z | -0.09 | 3.50 | No |
| 11 | | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.067 | 3.50 | No |
| 12 | | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 7.00 | No |
| | | z | -0.064 | 3.50 | No |
| 13 | | z | -0.091 | 2.00 | No |
| | | z | -0.091 | 6.00 | No |
| | | z | -0.09 | 3.50 | No |
| 14 | | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.067 | 3.50 | No |
| 15 | | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 7.00 | No |
| | | z | -0.064 | 3.50 | No |
| 25 | | z | -0.198 | 1.00 | No |
| | | z | -0.198 | 6.50 | No |
| | | z | -0.012 | 3.50 | No |
| 27 | | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.041 | 3.50 | No |
| 29 | | z | -0.155 | 1.00 | No |
| | | z | -0.155 | 6.50 | No |
| | | z | -0.041 | 3.50 | No |
| W30 | 7 | x | -0.074 | 2.00 | No |
| | | x | -0.074 | 6.00 | No |
| | | x | -0.108 | 3.50 | No |
| 8 | | x | -0.14 | 1.00 | No |
| | | x | -0.14 | 6.50 | No |
| | | x | -0.068 | 3.50 | No |

| | | | | | |
|----|----|---|--------|------|----|
| | 9 | x | -0.147 | 1.00 | No |
| | | x | -0.147 | 7.00 | No |
| | | x | -0.065 | 3.50 | No |
| | 10 | x | -0.123 | 2.00 | No |
| | | x | -0.123 | 6.00 | No |
| | | x | -0.054 | 3.50 | No |
| | 11 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.048 | 3.50 | No |
| | 12 | x | -0.298 | 1.00 | No |
| | | x | -0.298 | 7.00 | No |
| | | x | -0.047 | 3.50 | No |
| | 13 | x | -0.123 | 2.00 | No |
| | | x | -0.123 | 6.00 | No |
| | | x | -0.054 | 3.50 | No |
| | 14 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.048 | 3.50 | No |
| | 15 | x | -0.298 | 1.00 | No |
| | | x | -0.298 | 7.00 | No |
| | | x | -0.047 | 3.50 | No |
| | 25 | x | -0.14 | 1.00 | No |
| | | x | -0.14 | 6.50 | No |
| | | x | -0.034 | 3.50 | No |
| | 27 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.04 | 3.50 | No |
| | 29 | x | -0.184 | 1.00 | No |
| | | x | -0.184 | 6.50 | No |
| | | x | -0.04 | 3.50 | No |
| Di | 7 | y | -0.041 | 2.00 | No |
| | | y | -0.041 | 6.00 | No |
| | | y | -0.034 | 3.50 | No |
| | 8 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.031 | 3.50 | No |
| | 9 | y | -0.099 | 1.00 | No |
| | | y | -0.099 | 7.00 | No |
| | | y | -0.03 | 3.50 | No |
| | 10 | y | -0.041 | 2.00 | No |
| | | y | -0.041 | 6.00 | No |
| | | y | -0.034 | 3.50 | No |
| | 11 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.031 | 3.50 | No |
| | 12 | y | -0.099 | 1.00 | No |
| | | y | -0.099 | 7.00 | No |
| | | y | -0.03 | 3.50 | No |
| | 13 | y | -0.041 | 2.00 | No |
| | | y | -0.041 | 6.00 | No |
| | | y | -0.034 | 3.50 | No |
| | 14 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.031 | 3.50 | No |
| | 15 | y | -0.099 | 1.00 | No |
| | | y | -0.099 | 7.00 | No |
| | | y | -0.03 | 3.50 | No |
| | 25 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.029 | 3.50 | No |

| | | | | | |
|------|----|---|--------|------|----|
| | 27 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.029 | 3.50 | No |
| | 29 | y | -0.061 | 1.00 | No |
| | | y | -0.061 | 6.50 | No |
| | | y | -0.029 | 3.50 | No |
| Wi0 | 7 | z | -0.026 | 2.00 | No |
| | | z | -0.026 | 6.00 | No |
| | | z | -0.012 | 3.50 | No |
| | 8 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 6.50 | No |
| | | z | -0.005 | 3.50 | No |
| | 9 | z | -0.059 | 1.00 | No |
| | | z | -0.059 | 7.00 | No |
| | | z | -0.002 | 3.50 | No |
| | 10 | z | -0.018 | 2.00 | No |
| | | z | -0.018 | 6.00 | No |
| | | z | -0.02 | 3.50 | No |
| | 11 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.014 | 3.50 | No |
| | 12 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 7.00 | No |
| | | z | -0.013 | 3.50 | No |
| | 13 | z | -0.018 | 2.00 | No |
| | | z | -0.018 | 6.00 | No |
| | | z | -0.02 | 3.50 | No |
| | 14 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.014 | 3.50 | No |
| | 15 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 7.00 | No |
| | | z | -0.013 | 3.50 | No |
| | 25 | z | -0.036 | 1.00 | No |
| | | z | -0.036 | 6.50 | No |
| | | z | -0.005 | 3.50 | No |
| | 27 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.009 | 3.50 | No |
| | 29 | z | -0.029 | 1.00 | No |
| | | z | -0.029 | 6.50 | No |
| | | z | -0.009 | 3.50 | No |
| Wi30 | 7 | x | -0.016 | 2.00 | No |
| | | x | -0.016 | 6.00 | No |
| | | x | -0.024 | 3.50 | No |
| | 8 | x | -0.027 | 1.00 | No |
| | | x | -0.027 | 6.50 | No |
| | | x | -0.014 | 3.50 | No |
| | 9 | x | -0.028 | 1.00 | No |
| | | x | -0.028 | 7.00 | No |
| | | x | -0.013 | 3.50 | No |
| | 10 | x | -0.023 | 2.00 | No |
| | | x | -0.023 | 6.00 | No |
| | | x | -0.014 | 3.50 | No |
| | 11 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.01 | 3.50 | No |
| | 12 | x | -0.051 | 1.00 | No |
| | | x | -0.051 | 7.00 | No |
| | | x | -0.009 | 3.50 | No |

| | | | | | |
|------|----|---|--------|------|----|
| | 13 | x | -0.023 | 2.00 | No |
| | | x | -0.023 | 6.00 | No |
| | | x | -0.014 | 3.50 | No |
| | 14 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.01 | 3.50 | No |
| | 15 | x | -0.051 | 1.00 | No |
| | | x | -0.051 | 7.00 | No |
| | | x | -0.009 | 3.50 | No |
| | 25 | x | -0.027 | 1.00 | No |
| | | x | -0.027 | 6.50 | No |
| | | x | -0.008 | 3.50 | No |
| | 27 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.008 | 3.50 | No |
| | 29 | x | -0.033 | 1.00 | No |
| | | x | -0.033 | 6.50 | No |
| | | x | -0.008 | 3.50 | No |
| WLO | 7 | z | -0.008 | 2.00 | No |
| | | z | -0.008 | 6.00 | No |
| | | z | -0.002 | 3.50 | No |
| | 8 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 6.50 | No |
| | | z | -0.001 | 3.50 | No |
| | 9 | z | -0.019 | 1.00 | No |
| | | z | -0.019 | 7.00 | No |
| | 10 | z | -0.005 | 2.00 | No |
| | | z | -0.005 | 6.00 | No |
| | | z | -0.004 | 3.50 | No |
| | 11 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.004 | 3.50 | No |
| | 12 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 7.00 | No |
| | | z | -0.003 | 3.50 | No |
| | 13 | z | -0.005 | 2.00 | No |
| | | z | -0.005 | 6.00 | No |
| | | z | -0.004 | 3.50 | No |
| | 14 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.004 | 3.50 | No |
| | 15 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 7.00 | No |
| | | z | -0.003 | 3.50 | No |
| | 25 | z | -0.011 | 1.00 | No |
| | | z | -0.011 | 6.50 | No |
| | | z | -0.001 | 3.50 | No |
| | 27 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.002 | 3.50 | No |
| | 29 | z | -0.009 | 1.00 | No |
| | | z | -0.009 | 6.50 | No |
| | | z | -0.002 | 3.50 | No |
| WL30 | 7 | x | -0.004 | 2.00 | No |
| | | x | -0.004 | 6.00 | No |
| | | x | -0.006 | 3.50 | No |
| | 8 | x | -0.008 | 1.00 | No |
| | | x | -0.008 | 6.50 | No |
| | | x | -0.004 | 3.50 | No |
| | 9 | x | -0.008 | 1.00 | No |

| | | | | | |
|------|----|---|--------|------|----|
| | | x | -0.008 | 7.00 | No |
| | | x | -0.003 | 3.50 | No |
| 10 | | x | -0.007 | 2.00 | No |
| | | x | -0.007 | 6.00 | No |
| | | x | -0.002 | 3.50 | No |
| 11 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.003 | 3.50 | No |
| 12 | | x | -0.016 | 1.00 | No |
| | | x | -0.016 | 7.00 | No |
| | | x | -0.003 | 3.50 | No |
| 13 | | x | -0.007 | 2.00 | No |
| | | x | -0.007 | 6.00 | No |
| | | x | -0.002 | 3.50 | No |
| 14 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.003 | 3.50 | No |
| 15 | | x | -0.016 | 1.00 | No |
| | | x | -0.016 | 7.00 | No |
| | | x | -0.003 | 3.50 | No |
| 25 | | x | -0.008 | 1.00 | No |
| | | x | -0.008 | 6.50 | No |
| | | x | -0.002 | 3.50 | No |
| 27 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.002 | 3.50 | No |
| 29 | | x | -0.01 | 1.00 | No |
| | | x | -0.01 | 6.50 | No |
| | | x | -0.002 | 3.50 | No |
| LL1 | 5 | y | -0.25 | 6.78 | No |
| LL2 | 5 | y | -0.25 | 0.00 | No |
| LLa1 | 7 | y | -0.25 | 4.00 | No |
| LLa2 | 25 | y | -0.25 | 4.00 | No |
| LLa3 | 8 | y | -0.25 | 4.00 | No |
| LLa4 | 9 | y | -0.25 | 4.00 | 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 |
| W0 | Wind Load 0/60/120 deg | No | 0.00 | 0.00 | 0.00 |
| W30 | Wind Load 30/90/150 deg | No | 0.00 | 0.00 | 0.00 |
| Di | Ice Load | No | 0.00 | 0.00 | 0.00 |
| Wi0 | Ice Wind Load 0/60/120 deg | No | 0.00 | 0.00 | 0.00 |
| Wi30 | Ice Wind Load 30/90/150 deg | No | 0.00 | 0.00 | 0.00 |
| WL0 | WL 30 mph 0/60/120 deg | No | 0.00 | 0.00 | 0.00 |
| WL30 | WL 30 mph 30/90/150 deg | No | 0.00 | 0.00 | 0.00 |
| LL1 | 250 lb Live Load Center of Mount | No | 0.00 | 0.00 | 0.00 |
| LL2 | 250 lb Live Load End of Mount | No | 0.00 | 0.00 | 0.00 |
| LLa1 | 250 lb Live Load Antenna 1 | No | 0.00 | 0.00 | 0.00 |
| LLa2 | 250 lb Live Load Antenna 2 | No | 0.00 | 0.00 | 0.00 |
| LLa3 | 250 lb Live Load Antenna 3 | No | 0.00 | 0.00 | 0.00 |
| LLa4 | 250 lb Live Load Antenna 4 | No | 0.00 | 0.00 | 0.00 |

Earthquake (Dynamic analysis only)

| Condition | a/g | Ang. [Deg] | Damp. [%] |
|-----------|------|---------------|--------------|
| DL | 0.00 | 0.00 | 0.00 |
| W0 | 0.00 | 0.00 | 0.00 |
| W30 | 0.00 | 0.00 | 0.00 |
| Di | 0.00 | 0.00 | 0.00 |
| Wi0 | 0.00 | 0.00 | 0.00 |
| Wi30 | 0.00 | 0.00 | 0.00 |
| WL0 | 0.00 | 0.00 | 0.00 |
| WL30 | 0.00 | 0.00 | 0.00 |
| LL1 | 0.00 | 0.00 | 0.00 |
| LL2 | 0.00 | 0.00 | 0.00 |
| LLa1 | 0.00 | 0.00 | 0.00 |
| LLa2 | 0.00 | 0.00 | 0.00 |
| LLa3 | 0.00 | 0.00 | 0.00 |
| LLa4 | 0.00 | 0.00 | 0.00 |



Current Date: 4/17/2019 12:02 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1182\LTE 2C-3C-4C-5C\CT1182 (LT 2C-3C-4C-5C)(MODS).etx\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+W0
- LC10=1.2DL+Di+W30
- LC11=1.2DL+Di-W0
- LC12=1.2DL+Di-W30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W30+1.5LLa1
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W30+1.5LLa1
- LC21=1.2DL+W0+1.5LLa2
- LC22=1.2DL+W30+1.5LLa2
- LC23=1.2DL-W0+1.5LLa2
- LC24=1.2DL-W30+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W30+1.5LLa3
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W30+1.5LLa3
- LC29=1.2DL+W0+1.5LLa4
- LC30=1.2DL+W30+1.5LLa4
- LC31=1.2DL-W0+1.5LLa4
- LC32=1.2DL-W30+1.5LLa4

| Description | Section | Member | Ctrl Eq. | Ratio | Status | Reference |
|-------------|--------------------------|--------|----------------|-------------|-----------|-----------|
| | HSS_SQR 4X4X1_4 | 1 | LC2 at 0.00% | 0.66 | OK | Eq. H1-1b |
| | | 2 | LC4 at 0.00% | 0.66 | OK | Eq. H1-1b |
| | | 3 | LC1 at 0.00% | 0.66 | OK | Eq. H1-1b |
| | | 4 | LC4 at 100.00% | 0.32 | OK | Eq. H3-6 |
| | | 5 | LC4 at 0.00% | 0.36 | OK | Eq. H1-1b |
| | | 6 | LC2 at 100.00% | 0.37 | OK | Eq. H1-1b |
| | L 2-1_2X2-1_2X1_4 | 46 | LC1 at 100.00% | 0.57 | OK | Eq. H3-8 |
| | | 47 | LC4 at 100.00% | 0.81 | OK | Eq. H3-8 |
| | | 48 | LC3 at 100.00% | 0.57 | OK | Eq. H3-8 |
| | PIPE 2-1_2x0.203 | 9 | LC2 at 66.67% | 0.38 | OK | Eq. H1-1b |
| | | 12 | LC4 at 66.67% | 0.46 | OK | Eq. H1-1b |
| | | 15 | LC3 at 66.67% | 0.46 | OK | Eq. H1-1b |
| | PIPE 2x0.154 | 7 | LC3 at 66.67% | 0.38 | OK | Eq. H1-1b |
| | | 8 | LC2 at 66.67% | 0.70 | OK | Eq. H1-1b |

| | | | | |
|-----------|---------------|-------------|-----------|-----------|
| 10 | LC2 at 66.67% | 0.38 | OK | Eq. H1-1b |
| 11 | LC2 at 66.67% | 0.65 | OK | Eq. H1-1b |
| 13 | LC4 at 66.67% | 0.45 | OK | Eq. H1-1b |
| 14 | LC4 at 66.67% | 0.74 | OK | Eq. H1-1b |
| 25 | LC2 at 66.67% | 0.67 | OK | Eq. H1-1b |
| 27 | LC4 at 66.67% | 0.65 | OK | Eq. H1-1b |
| 29 | LC4 at 66.67% | 0.60 | OK | Eq. H1-1b |
| 43 | LC2 at 4.46% | 0.39 | OK | Eq. H1-1b |
| 44 | LC6 at 3.57% | 0.58 | OK | Eq. H3-6 |
| 45 | LC4 at 4.46% | 0.63 | OK | Eq. H1-1b |

Geometry data

GLOSSARY

| | |
|------------|--|
| Cb22, Cb33 | : Moment gradient coefficients |
| Cm22, Cm33 | : Coefficients applied to bending term in interaction formula |
| d0 | : Tapered member section depth at J end of member |
| DJX | : Rigid end offset distance measured from J node in axis X |
| DJY | : Rigid end offset distance measured from J node in axis Y |
| DJZ | : Rigid end offset distance measured from J node in axis Z |
| DKX | : Rigid end offset distance measured from K node in axis X |
| DKY | : Rigid end offset distance measured from K node in axis Y |
| DKZ | : Rigid end offset distance measured from K node in axis Z |
| dL | : Tapered member section depth at K end of member |
| Ig factor | : Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members |
| K22 | : Effective length factor about axis 2 |
| K33 | : Effective length factor about axis 3 |
| L22 | : Member length for calculation of axial capacity |
| L33 | : Member length for calculation of axial capacity |
| LB pos | : Lateral unbraced length of the compression flange in the positive side of local axis 2 |
| LB neg | : Lateral unbraced length of the compression flange in the negative side of local axis 2 |
| RX | : Rotation about X |
| RY | : Rotation about Y |
| RZ | : Rotation about Z |
| TO | : 1 = Tension only member 0 = Normal member |
| TX | : Translation in X |
| TY | : Translation in Y |
| TZ | : Translation in Z |

Nodes

| Node | X [ft] | Y [ft] | Z [ft] | Rigid Floor |
|------|-----------|-----------|-----------|-------------|
| 2 | -1.7862 | 0.00 | 1.0313 | 0 |
| 3 | -8.3355 | 0.00 | 4.8125 | 0 |
| 4 | -6.77 | 0.00 | 3.9137 | 0 |
| 5 | 0.00 | 0.00 | -2.0625 | 0 |
| 6 | 0.00 | 0.00 | -9.625 | 0 |
| 7 | 0.0087 | 0.00 | -7.8274 | 0 |
| 8 | 1.7862 | 0.00 | 1.0313 | 0 |
| 9 | 8.3355 | 0.00 | 4.8125 | 0 |
| 10 | 6.783 | 0.00 | 3.9062 | 0 |
| 17 | 0.7583 | -2.50 | -6.9791 | 0 |
| 18 | 4.4668 | -2.50 | -0.5558 | 0 |
| 19 | 6.5083 | -2.50 | 2.9802 | 0 |
| 20 | 0.7583 | 5.50 | -6.9791 | 0 |
| 21 | 4.4668 | 5.50 | -0.5558 | 0 |
| 22 | 6.5083 | 5.50 | 2.9802 | 0 |
| 29 | 5.6649 | -2.50 | 4.1463 | 0 |
| 30 | -1.7521 | -2.50 | 4.1463 | 0 |
| 31 | -5.8351 | -2.50 | 4.1463 | 0 |
| 32 | 5.8649 | 5.50 | 4.1463 | 0 |
| 33 | -1.7521 | 5.50 | 4.1463 | 0 |
| 34 | -5.8351 | 5.50 | 4.1463 | 0 |

| | | | | |
|----|---------|-------|---------|---|
| 41 | -6.4232 | -2.50 | 2.8328 | 0 |
| 42 | -2.7147 | -2.50 | -3.5905 | 0 |
| 43 | -0.6732 | -2.50 | -7.1265 | 0 |
| 44 | -6.4232 | 5.50 | 2.8328 | 0 |
| 45 | -2.7147 | 5.50 | -3.5905 | 0 |
| 46 | -0.6732 | 5.50 | -7.1265 | 0 |
| 49 | 2.2583 | -2.50 | -4.381 | 0 |
| 50 | 2.2583 | 5.50 | -4.381 | 0 |
| 53 | 2.6649 | -2.50 | 4.1463 | 0 |
| 54 | 2.6649 | 5.50 | 4.1463 | 0 |
| 57 | -4.9232 | -2.50 | 0.2347 | 0 |
| 58 | -4.9232 | 5.50 | 0.2347 | 0 |
| 83 | 6.5328 | 3.00 | 3.5029 | 0 |
| 84 | 0.2328 | 3.00 | -7.409 | 0 |
| 85 | -6.30 | 3.00 | 3.9062 | 0 |
| 86 | 6.30 | 3.00 | 3.9062 | 0 |
| 87 | -0.2328 | 3.00 | -7.409 | 0 |
| 88 | -6.5328 | 3.00 | 3.5029 | 0 |
| 89 | -0.3578 | 3.00 | -7.1925 | 0 |
| 90 | -6.4078 | 3.00 | 3.2864 | 0 |
| 91 | 6.4078 | 3.00 | 3.2864 | 0 |
| 93 | -6.05 | 3.00 | 3.9062 | 0 |
| 94 | 6.05 | 3.00 | 3.9062 | 0 |

Restraints

| Node | TX | TY | TZ | RX | RY | RZ |
|------|----|----|----|----|----|----|
| 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 5 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 1 | 1 | 1 | 1 | 1 | 1 |

Members

| Member | NJ | NK | Description | Section | Material | d0 [in] | dL [in] | Ig factor |
|--------|----|----|-------------|------------------|----------------------|------------|------------|-----------|
| 1 | 2 | 3 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 2 | 8 | 9 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 3 | 5 | 6 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 4 | 4 | 10 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 5 | 10 | 7 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 6 | 7 | 4 | | HSS_SQR 4X4X1_4 | A500 GrB rectangular | 0.00 | 0.00 | 0.00 |
| 7 | 20 | 17 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 8 | 21 | 18 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 9 | 22 | 19 | | PIPE 2-1_2x0.203 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 10 | 32 | 29 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 11 | 33 | 30 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 12 | 34 | 31 | | PIPE 2-1_2x0.203 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 13 | 44 | 41 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 14 | 45 | 42 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 15 | 46 | 43 | | PIPE 2-1_2x0.203 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 25 | 50 | 49 | | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |

| | | | | | | | |
|----|----|----|-------------------|---------|------|------|------|
| 27 | 54 | 53 | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 29 | 58 | 57 | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 43 | 83 | 84 | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 44 | 87 | 88 | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 45 | 85 | 86 | PIPE 2x0.154 | A53 GrB | 0.00 | 0.00 | 0.00 |
| 46 | 93 | 90 | L 2-1_2X2-1_2X1_4 | A36 | 0.00 | 0.00 | 0.00 |
| 47 | 89 | 92 | L 2-1_2X2-1_2X1_4 | A36 | 0.00 | 0.00 | 0.00 |
| 48 | 91 | 94 | L 2-1_2X2-1_2X1_4 | A36 | 0.00 | 0.00 | 0.00 |

Orientation of local axes

| Member | Rotation [Deg] | Axes23 | NX | NY | NZ |
|--------|-------------------|--------|-------|------|--------|
| 7 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |
| 8 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |
| 9 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |
| 10 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 11 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 12 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 13 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 14 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 15 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 25 | 0.00 | 2 | 0.50 | 0.00 | 0.866 |
| 27 | 0.00 | 2 | -1.00 | 0.00 | 0.00 |
| 29 | 0.00 | 2 | 0.50 | 0.00 | -0.866 |
| 46 | 90.00 | 0 | 0.00 | 0.00 | 0.00 |
| 47 | 90.00 | 0 | 0.00 | 0.00 | 0.00 |
| 48 | 90.00 | 0 | 0.00 | 0.00 | 0.00 |

STRUCTURAL ANALYSIS REPORT

For

CT1182

COVENTRY CT MAIN ST.

138 MAIN STREET
COVENTRY, CT 06238

Antennas Mounted to the Monopole



Prepared for:



Dated: May 17, 2019

Prepared by:



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



Gi Kai Wang 5/17/2019



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 101' monopole supporting the existing and proposed AT&T's antennas located at elevation 90' above the ground level.

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

Structural design calculations of the existing monopole prepared by Engineered Endeavors Inc., dated January 6, 2009, were available and obtained for our use. This office conducted an on-site visual survey and tower mapping on August 28, 2012 to record dimensional properties of the existing tower and its appurtenances.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole, base plate, anchor bolts and foundation **are in conformance** with the ANSI/TIA-222-G Standard for the loading considered under the criteria listed in this report. The monopole structure is rated at 51.6% - (Pole Section L3 from El.0' to El.46.17' Controlling).



APPURTENANCES CONFIGURATION:

| Tenant | Appurtenances | Elev. | Mount |
|-----------------|---------------------------------|-------|---|
| VERIZON | (6) SC-E 6016 Antennas | 100' | Low Profile Platform |
| VERIZON | (6) HBXX-6517DS Antennas | 100' | Low Profile Platform |
| VERIZON | (3) LNX-6514DS Antennas | 100' | Low Profile Platform |
| VERIZON | (3) RRH2X60 AWS | 100' | Low Profile Platform |
| VERIZON | (3) RRH2X60 PCS | 100' | Low Profile Platform |
| VERIZON | (2) DB-T1-6Z-8AB-0Z | 100' | Low Profile Platform |
| AT&T | (3) 7770 Antennas | 90' | Low Profile Platform w/Handrail |
| AT&T | (6) LGP 21401 TMA | 90' | Low Profile Platform w/Handrail |
| AT&T | (6) HPA65R-BU6A Antennas | 90' | Low Profile Platform w/Handrail |
| AT&T | (3) 800 10965 Antennas | 90' | Low Profile Platform w/Handrail |
| AT&T | (3) B25 4415 | 90' | Low Profile Platform w/Handrail |
| AT&T | (3) B2/B66A 8843 | 90' | Low Profile Platform w/Handrail |
| AT&T | (3) B5/B12 4449 | 90' | Low Profile Platform w/Handrail |
| AT&T | (1) DC6-48-60-18-8F | 90' | Ring Mount |
| AT&T | (2) DC6-48-60-18-8F | 90' | Ring Mount |
| | 8' Omni | 87' | 12' T-Frame |
| | Grid Dish | 80.5' | Ring Mount |
| | 20' Dipole | 70.2' | T - Frame |

**Proposed AT&T Appurtenances shown in Bold.*

AT&T EXISTING/PROPOSED COAX CABLES:

| Tenant | Coax Cables | Elev. | Mount |
|-----------------|----------------------------|-------|-----------------|
| AT&T | (12) 1 5/8" Cables | 90' | Inside Monopole |
| AT&T | (1) Fiber Cable | 90' | Inside Monopole |
| AT&T | (2) DC Power Cables | 90' | Inside Monopole |
| AT&T | (1) Fiber Cable | 90' | Inside Monopole |
| AT&T | (4) DC Power Cables | 90' | Inside Monopole |

**Proposed AT&T Coax Cables shown in Bold.*



ANALYSIS RESULTS SUMMARY:

| Component | Max. Stress Ratio | Elev. of Component (ft) | Pass/Fail | Comments |
|-----------------|-------------------|-------------------------|-----------|-------------|
| Pole Section-L1 | 6.9 % | 91.25 – 101.25 | PASS | |
| Pole Section-L2 | 40.3 % | 46.17 – 91.25 | PASS | |
| Pole Section-L3 | 51.6 % | 0 – 46.17 | PASS | Controlling |
| Base Plate | 44.8 % | 0 | PASS | |

FOUNDATION ANALYSIS RESULTS SUMMARY:

| | Original Design Reactions | Proposed Reactions | Pass/Fail | Comments |
|--------|---------------------------|--------------------|-----------|----------|
| AXIAL | 41.2 k | 32.0 k | PASS | |
| SHEAR | 42.5 k | 31.6 k | PASS | |
| MOMENT | 4160 ft-k | 2464 ft-k | PASS | |



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Design Group LLC

DESIGN CRITERIA:

1. EIA/TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures
2. 2018 Connecticut State Building Code
 - City/Town: Coventry
 - County: Tolland
 - Wind Load: 105 mph
 - Structural Class: II
 - Exposure Category: C
 - Topographic Category: 1
 - Ice Thickness: 1.0 inch
3. Approximate height above grade to proposed antennas: 90'

ASSUMPTIONS:

1. The material strength of the monopole, base plate, anchor bolts and foundation are as indicated in the structural design calculations prepared by Engineered Endeavors Inc., dated January 6, 2009.
2. The monopole and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.
5. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas and RRHs be mounted on the existing steel platform supported by the monopole; the proposed surge arrestors be mounted on the pipe mast.

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



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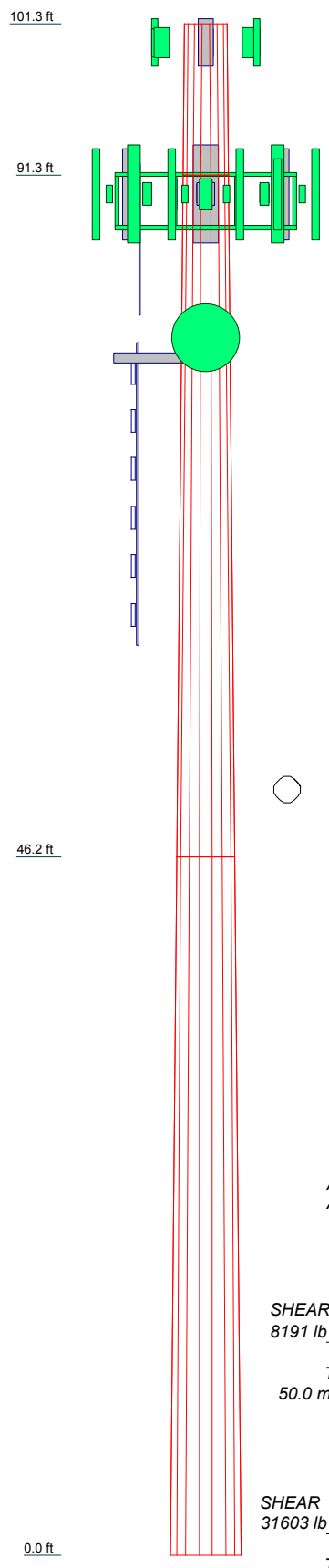
Photo 1: Photo illustrating the monopole with Appurtenances shown.



HUDSON
Design Group LLC

CALCULATIONS

| | | | | |
|-----------------|---------|---------|---------|---------|
| Section | 1 | 2 | 3 | 16504.7 |
| Length (ft) | 10.00 | 45.08 | 46.17 | |
| Number of Sides | 18 | 18 | 18 | |
| Thickness (in) | 0.2500 | 0.3125 | 0.3750 | |
| Top Dia (in) | 33.0800 | 35.2900 | 46.3200 | |
| Bot Dia (in) | 35.2900 | 46.3200 | 55.2600 | |
| Grade | | A572-65 | | |
| Weight (lb) | 916.3 | 6161.0 | 9427.4 | |



DESIGNED APPURTENANCE LOADING

| TYPE | ELEVATION | TYPE | ELEVATION |
|--|-----------|--|-----------|
| (2) SC-E 6016 w/mount pipe | 100 | (2) Powerwave TMA LGP21401 | 90 |
| (2) SC-E 6016 w/mount pipe | 100 | DC6-48-60-18-8F | 90 |
| (2) SC-E 6016 w/mount pipe | 100 | Ring Mount | 90 |
| (2) HBXX-6517DS-VTM w/ Mount Pipe | 100 | (2) HPA65R-BU6A w/mount pipe | 90 |
| (2) HBXX-6517DS-VTM w/ Mount Pipe | 100 | (2) HPA65R-BU6A w/mount pipe | 90 |
| (2) HBXX-6517DS-VTM w/ Mount Pipe | 100 | (2) HPA65R-BU6A w/mount pipe | 90 |
| Andrew LNX-6514DS-VTM w/mount pipe | 100 | 800 10965 w/ Mount Pipe | 90 |
| Andrew LNX-6514DS-VTM w/mount pipe | 100 | 800 10965 w/ Mount Pipe | 90 |
| Andrew LNX-6514DS-VTM w/mount pipe | 100 | 800 10965 w/ Mount Pipe | 90 |
| RRH2X60 AWS | 100 | B25 4415 | 90 |
| RRH2X60 AWS | 100 | B25 4415 | 90 |
| RRH2X60 AWS | 100 | B2/B66A 8843 | 90 |
| RRH2x60 PCS | 100 | B2/B66A 8843 | 90 |
| RRH2x60 PCS | 100 | B5/B12 4449 | 90 |
| RRH2x60 PCS | 100 | B5/B12 4449 | 90 |
| RFS DB-T1-6Z-8AB-0Z | 100 | B5/B12 4449 | 90 |
| RFS DB-T1-6Z-8AB-0Z | 100 | B5/B12 4449 | 90 |
| 12' Low Profile Platform (VERIZON) | 98.5 | DC6-48-60-18-8F | 90 |
| Powerwave 7770 w/mount pipe (ATI - existing) | 90 | DC6-48-60-18-8F | 90 |
| Powerwave 7770 w/mount pipe | 90 | PIROD 13' Platform w/handrail (ATI - proposed) | 89.5 |
| Powerwave 7770 w/mount pipe | 90 | Omni 1"x8' | 87 |
| (2) Powerwave TMA LGP21401 | 90 | Kathrein PR-950 | 80.5 |
| (2) Powerwave TMA LGP21401 | 90 | Ring Mount | 79.5 |
| | | PIROD 12' Lightweight T-Frame | 79.5 |
| | | 20' Dipole | 70.2 |

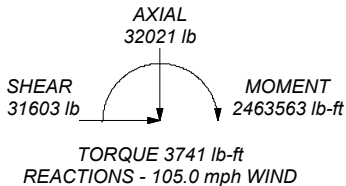
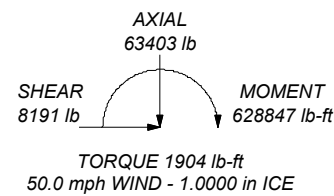
MATERIAL STRENGTH

| GRADE | Fy | Fu | GRADE | Fy | Fu |
|---------|--------|--------|-------|----|----|
| A572-65 | 65 ksi | 80 ksi | | | |

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 105.0 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50.0 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.0 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 51.6%

ALL REACTIONS ARE FACTORED



| | | | |
|--------------------------------|--|---------------------------------|----------------|
| Hudson Design Group LLC | | Job: CT1182 | |
| 45 Beechwood Drive | | Project: 101 ft Monopole | |
| North Andover, MA 01845 | | Client: AT&T | Drawn by: kw |
| Phone: (978) 557-5553 | | Code: TIA-222-G | Date: 05/17/19 |
| FAX: (978) 336-5586 | | Path: | Scale: NTS |
| | | Dwg No. E-1 | |

| | | | | |
|--|----------------|-----------------|--------------------|-------------------|
| tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586 | Job | CT1182 | Page | 1 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Tower is located in Tolland County, Connecticut.

Basic wind speed of 105.0 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56.0 pcf.

A wind speed of 50.0 mph is used in combination with ice.

Temperature drop of 50.0 °F.

Deflections calculated using a wind speed of 60.0 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

Tapered Pole Section Geometry

| Section | Elevation ft | Section Length ft | Splice Length ft | Number of Sides | Top Diameter in | Bottom Diameter in | Wall Thickness in | Bend Radius in | Pole Grade |
|---------|-----------------|-------------------------|------------------------|-----------------------|-----------------------|--------------------------|-------------------------|----------------------|---------------------|
| L1 | 101.25-91.25 | 10.00 | 0.00 | 18 | 33.0800 | 35.2900 | 0.2500 | 1.0000 | A572-65 (65 ksi) |
| L2 | 91.25-46.17 | 45.08 | 0.00 | 18 | 35.2900 | 46.3200 | 0.3125 | 1.2500 | A572-65 (65 ksi) |
| L3 | 46.17-0.00 | 46.17 | | 18 | 46.3200 | 55.2600 | 0.3750 | 1.5000 | A572-65 (65 ksi) |

Feed Line/Linear Appurtenances - Entered As Area

| Description | Face or Leg | Allow Shield | Exclude From Torque Calculation | Component Type | Placement ft | Total Number | | C _A A _A ft ² /ft | Weight plf |
|-------------------|-------------------|-----------------|--|-------------------|-----------------|-----------------|----------|--|---------------|
| 1 5/8 | A | No | No | Inside Pole | 100.00 - 6.00 | 18 | No Ice | 0.00 | 1.04 |
| | | | | | | | 1/2" Ice | 0.00 | 1.04 |
| | | | | | | | 1" Ice | 0.00 | 1.04 |
| 1 5/8 Fiber Cable | A | No | No | Inside Pole | 100.00 - 6.00 | 2 | No Ice | 0.00 | 1.04 |
| | | | | | | | 1/2" Ice | 0.00 | 1.04 |
| | | | | | | | 1" Ice | 0.00 | 1.04 |
| 7/8 | A | No | No | Inside Pole | 80.00 - 6.00 | 1 | No Ice | 0.00 | 0.54 |
| | | | | | | | 1/2" Ice | 0.00 | 0.54 |
| | | | | | | | 1" Ice | 0.00 | 0.54 |

| | | | | |
|--|----------------|-----------------|--------------------|-------------------|
| tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586 | Job | CT1182 | Page | 2 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

| Description | Face or Leg | Allow Shield | Exclude From Torque Calculation | Component Type | Placement ft | Total Number | | C _{AA} ft ² /ft | Weight plf |
|---------------------------------|-------------|--------------|---------------------------------|----------------|--------------|--------------|----------|-------------------------------------|------------|
| 1/2 | A | No | No | Inside Pole | 80.00 - 6.00 | 1 | No Ice | 0.00 | 0.25 |
| | | | | | | | 1/2" Ice | 0.00 | 0.25 |
| | | | | | | | 1" Ice | 0.00 | 0.25 |
| 3/8 | A | No | No | Inside Pole | 80.00 - 6.00 | 1 | No Ice | 0.00 | 0.25 |
| | | | | | | | 1/2" Ice | 0.00 | 0.25 |
| | | | | | | | 1" Ice | 0.00 | 0.25 |
| ***** | | | | | | | | | |
| 1 5/8 (AT&T - existing) | A | No | No | Inside Pole | 90.00 - 6.00 | 12 | No Ice | 0.00 | 1.04 |
| | | | | | | | 1/2" Ice | 0.00 | 1.04 |
| | | | | | | | 1" Ice | 0.00 | 1.04 |
| FB-L98B-002 | A | No | No | Inside Pole | 90.00 - 6.00 | 1 | No Ice | 0.00 | 0.25 |
| | | | | | | | 1/2" Ice | 0.00 | 0.25 |
| | | | | | | | 1" Ice | 0.00 | 0.25 |
| WR-VG122ST-BRD A | A | No | No | Inside Pole | 90.00 - 6.00 | 2 | No Ice | 0.00 | 0.25 |
| | | | | | | | 1/2" Ice | 0.00 | 0.25 |
| | | | | | | | 1" Ice | 0.00 | 0.25 |
| ***** | | | | | | | | | |
| 2" Conduit (AT&T - proposed) | A | No | No | Inside Pole | 90.00 - 6.00 | 1 | No Ice | 0.00 | 2.80 |
| | | | | | | | 1/2" Ice | 0.00 | 2.80 |
| | | | | | | | 1" Ice | 0.00 | 2.80 |

Discrete Tower Loads

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert | Azimuth Adjustment ° | Placement ft | | C _{AA} Front ft ² | C _{AA} Side ft ² | Weight lb |
|---------------------------------------|-------------|-------------|----------------------------|----------------------|--------------|----------|---------------------------------------|--------------------------------------|-----------|
| 12' Low Profile Platform (VERIZON) | A | None | | 0.0000 | 98.50 | No Ice | 14.00 | 14.00 | 1200.00 |
| | | | | | | 1/2" Ice | 15.00 | 15.00 | 1587.51 |
| | | | | | | 1" Ice | 16.01 | 16.01 | 1984.78 |
| (2) SC-E 6016 w/mount pipe | A | From Leg | 2.50 0.00 0.00 | 0.0000 | 100.00 | No Ice | 8.16 | 9.87 | 77.11 |
| | | | | | | 1/2" Ice | 8.89 | 11.34 | 156.59 |
| | | | | | | 1" Ice | 9.59 | 12.64 | 246.35 |
| (2) SC-E 6016 w/mount pipe | B | From Leg | 2.50 0.00 0.00 | 0.0000 | 100.00 | No Ice | 8.16 | 9.87 | 77.11 |
| | | | | | | 1/2" Ice | 8.89 | 11.34 | 156.59 |
| | | | | | | 1" Ice | 9.59 | 12.64 | 246.35 |
| (2) SC-E 6016 w/mount pipe | C | From Leg | 2.50 0.00 0.00 | 0.0000 | 100.00 | No Ice | 8.16 | 9.87 | 77.11 |
| | | | | | | 1/2" Ice | 8.89 | 11.34 | 156.59 |
| | | | | | | 1" Ice | 9.59 | 12.64 | 246.35 |
| (2) HBXX-6517DS-VTM w/ Mount Pipe | A | From Leg | 2.50 0.00 0.00 | 0.0000 | 100.00 | No Ice | 8.92 | 6.91 | 66.35 |
| | | | | | | 1/2" Ice | 9.56 | 8.10 | 135.34 |
| | | | | | | 1" Ice | 10.19 | 9.01 | 212.45 |
| (2) HBXX-6517DS-VTM w/ Mount Pipe | B | From Leg | 2.50 0.00 0.00 | 0.0000 | 100.00 | No Ice | 8.92 | 6.91 | 66.35 |
| | | | | | | 1/2" Ice | 9.56 | 8.10 | 135.34 |
| | | | | | | 1" Ice | 10.19 | 9.01 | 212.45 |
| (2) HBXX-6517DS-VTM w/ Mount Pipe | C | From Leg | 2.50 0.00 0.00 | 0.0000 | 100.00 | No Ice | 8.92 | 6.91 | 66.35 |
| | | | | | | 1/2" Ice | 9.56 | 8.10 | 135.34 |
| | | | | | | 1" Ice | 10.19 | 9.01 | 212.45 |
| Andrew LNX-6514DS-VTM w/mount pipe | A | From Leg | 2.50 0.00 0.00 | 0.0000 | 100.00 | No Ice | 8.63 | 7.07 | 63.95 |
| | | | | | | 1/2" Ice | 9.29 | 8.25 | 132.95 |
| | | | | | | 1" Ice | 9.90 | 9.15 | 209.97 |
| Andrew LNX-6514DS-VTM w/mount pipe | B | From Leg | 2.50 0.00 | 0.0000 | 100.00 | No Ice | 8.63 | 7.07 | 63.95 |
| | | | | | | 1/2" Ice | 9.29 | 8.25 | 132.95 |

| | | | | |
|--|----------------|-----------------|--------------------|-------------------|
| tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586 | Job | CT1182 | Page | 3 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight |
|---|-------------|-------------|----------|------|--------------------|-----------|-----------------------|----------------------|---------|
| | | | Horz | Vert | | | | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | lb |
| | | | 0.00 | | | | | | |
| Andrew LNX-6514DS-VTM w/mount pipe | C | From Leg | 2.50 | | 0.0000 | 100.00 | 1" Ice 9.90 | 9.15 | 209.97 |
| | | | 0.00 | | | | No Ice 8.63 | 7.07 | 63.95 |
| | | | 0.00 | | | | 1/2" Ice 9.29 | 8.25 | 132.95 |
| | | | 0.00 | | | | 1" Ice 9.90 | 9.15 | 209.97 |
| RRH2X60 AWS | A | From Leg | 2.50 | | 0.0000 | 100.00 | No Ice 3.50 | 2.10 | 55.00 |
| | | | 0.00 | | | | 1/2" Ice 3.76 | 2.34 | 79.31 |
| | | | 0.00 | | | | 1" Ice 4.03 | 2.58 | 107.31 |
| RRH2X60 AWS | B | From Leg | 2.50 | | 0.0000 | 100.00 | No Ice 3.50 | 2.10 | 55.00 |
| | | | 0.00 | | | | 1/2" Ice 3.76 | 2.34 | 79.31 |
| | | | 0.00 | | | | 1" Ice 4.03 | 2.58 | 107.31 |
| RRH2X60 AWS | C | From Leg | 2.50 | | 0.0000 | 100.00 | No Ice 3.50 | 2.10 | 55.00 |
| | | | 0.00 | | | | 1/2" Ice 3.76 | 2.34 | 79.31 |
| | | | 0.00 | | | | 1" Ice 4.03 | 2.58 | 107.31 |
| RRH2x60 PCS | A | From Leg | 2.50 | | 0.0000 | 100.00 | No Ice 2.15 | 1.35 | 55.00 |
| | | | 0.00 | | | | 1/2" Ice 2.34 | 1.50 | 72.75 |
| | | | 0.00 | | | | 1" Ice 2.54 | 1.67 | 93.35 |
| RRH2x60 PCS | B | From Leg | 2.50 | | 0.0000 | 100.00 | No Ice 2.15 | 1.35 | 55.00 |
| | | | 0.00 | | | | 1/2" Ice 2.34 | 1.50 | 72.75 |
| | | | 0.00 | | | | 1" Ice 2.54 | 1.67 | 93.35 |
| RRH2x60 PCS | C | From Leg | 2.50 | | 0.0000 | 100.00 | No Ice 2.15 | 1.35 | 55.00 |
| | | | 0.00 | | | | 1/2" Ice 2.34 | 1.50 | 72.75 |
| | | | 0.00 | | | | 1" Ice 2.54 | 1.67 | 93.35 |
| RFS DB-T1-6Z-8AB-0Z | B | From Leg | 2.00 | | 0.0000 | 100.00 | No Ice 4.80 | 2.00 | 44.00 |
| | | | 0.00 | | | | 1/2" Ice 5.07 | 2.19 | 80.13 |
| | | | 0.00 | | | | 1" Ice 5.35 | 2.39 | 120.22 |
| RFS DB-T1-6Z-8AB-0Z | C | From Leg | 2.00 | | 0.0000 | 100.00 | No Ice 4.80 | 2.00 | 44.00 |
| | | | 0.00 | | | | 1/2" Ice 5.07 | 2.19 | 80.13 |
| | | | 0.00 | | | | 1" Ice 5.35 | 2.39 | 120.22 |
| ***** | | | | | | | | | |
| Powerwave 7770 w/mount pipe (AT&T - existing) | A | From Leg | 4.00 | | 0.0000 | 90.00 | No Ice 5.65 | 4.10 | 57.25 |
| | | | 0.00 | | | | 1/2" Ice 6.03 | 4.75 | 103.17 |
| | | | 0.00 | | | | 1" Ice 6.42 | 5.42 | 155.38 |
| Powerwave 7770 w/mount pipe | B | From Leg | 4.00 | | 0.0000 | 90.00 | No Ice 5.65 | 4.10 | 57.25 |
| | | | 0.00 | | | | 1/2" Ice 6.03 | 4.75 | 103.17 |
| | | | 0.00 | | | | 1" Ice 6.42 | 5.42 | 155.38 |
| Powerwave 7770 w/mount pipe | C | From Leg | 4.00 | | 0.0000 | 90.00 | No Ice 5.65 | 4.10 | 57.25 |
| | | | 0.00 | | | | 1/2" Ice 6.03 | 4.75 | 103.17 |
| | | | 0.00 | | | | 1" Ice 6.42 | 5.42 | 155.38 |
| (2) Powerwave TMA LGP21401 | A | From Leg | 3.00 | | 0.0000 | 90.00 | No Ice 1.05 | 0.38 | 14.10 |
| | | | 0.00 | | | | 1/2" Ice 1.18 | 0.47 | 21.29 |
| | | | 0.00 | | | | 1" Ice 1.32 | 0.57 | 30.37 |
| (2) Powerwave TMA LGP21401 | B | From Leg | 3.00 | | 0.0000 | 90.00 | No Ice 1.05 | 0.38 | 14.10 |
| | | | 0.00 | | | | 1/2" Ice 1.18 | 0.47 | 21.29 |
| | | | 0.00 | | | | 1" Ice 1.32 | 0.57 | 30.37 |
| (2) Powerwave TMA LGP21401 | C | From Leg | 3.00 | | 0.0000 | 90.00 | No Ice 1.05 | 0.38 | 14.10 |
| | | | 0.00 | | | | 1/2" Ice 1.18 | 0.47 | 21.29 |
| | | | 0.00 | | | | 1" Ice 1.32 | 0.57 | 30.37 |
| DC6-48-60-18-8F | C | From Face | 1.00 | | 0.0000 | 90.00 | No Ice 0.79 | 0.79 | 20.00 |
| | | | 0.00 | | | | 1/2" Ice 1.27 | 1.27 | 35.12 |
| | | | 0.00 | | | | 1" Ice 1.45 | 1.45 | 52.57 |
| Ring Mount | A | None | | | 0.0000 | 90.00 | No Ice 1.40 | 1.40 | 90.00 |
| | | | | | | | 1/2" Ice 2.40 | 2.40 | 130.00 |
| | | | | | | | 1" Ice 3.40 | 3.40 | 170.00 |
| ***** | | | | | | | | | |
| PiROD 13' Platform w/handrail (AT&T - proposed) | A | None | | | 0.0000 | 89.50 | No Ice 31.30 | 31.30 | 1822.00 |
| | | | | | | | 1/2" Ice 40.20 | 40.20 | 2452.00 |
| | | | | | | | 1" Ice 49.10 | 49.10 | 3082.00 |

| | | | | |
|--|----------------|-----------------|--------------------|-------------------|
| tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586 | Job | CT1182 | Page | 4 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight |
|-------------------------------|-------------|-------------|----------|--------|--------------------|-----------|-----------------------|----------------------|--------|
| | | | Horz | Vert | | | | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | lb |
| (2) HPA65R-BU6A w/mount pipe | A | From Leg | 4.00 | 0.0000 | 90.00 | No Ice | 8.16 | 7.56 | 87.43 |
| | | | 0.00 | | | 1/2" Ice | 8.70 | 8.59 | 159.54 |
| | | | 0.00 | | | 1" Ice | 9.22 | 9.47 | 240.51 |
| (2) HPA65R-BU6A w/mount pipe | B | From Leg | 4.00 | 0.0000 | 90.00 | No Ice | 8.16 | 7.56 | 87.43 |
| | | | 0.00 | | | 1/2" Ice | 8.70 | 8.59 | 159.54 |
| | | | 0.00 | | | 1" Ice | 9.22 | 9.47 | 240.51 |
| (2) HPA65R-BU6A w/mount pipe | C | From Leg | 4.00 | 0.0000 | 90.00 | No Ice | 8.16 | 7.56 | 87.43 |
| | | | 0.00 | | | 1/2" Ice | 8.70 | 8.59 | 159.54 |
| | | | 0.00 | | | 1" Ice | 9.22 | 9.47 | 240.51 |
| 800 10965 w/ Mount Pipe | A | From Leg | 4.00 | 0.0000 | 90.00 | No Ice | 13.92 | 7.50 | 134.55 |
| | | | 0.00 | | | 1/2" Ice | 14.50 | 8.71 | 229.58 |
| | | | 0.00 | | | 1" Ice | 15.07 | 9.65 | 333.52 |
| 800 10965 w/ Mount Pipe | B | From Leg | 4.00 | 0.0000 | 90.00 | No Ice | 13.92 | 7.50 | 134.55 |
| | | | 0.00 | | | 1/2" Ice | 14.50 | 8.71 | 229.58 |
| | | | 0.00 | | | 1" Ice | 15.07 | 9.65 | 333.52 |
| 800 10965 w/ Mount Pipe | C | From Leg | 4.00 | 0.0000 | 90.00 | No Ice | 13.92 | 7.50 | 134.55 |
| | | | 0.00 | | | 1/2" Ice | 14.50 | 8.71 | 229.58 |
| | | | 0.00 | | | 1" Ice | 15.07 | 9.65 | 333.52 |
| B25 4415 | A | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.65 | 0.93 | 60.00 |
| | | | 0.00 | | | 1/2" Ice | 1.81 | 1.05 | 74.37 |
| | | | 0.00 | | | 1" Ice | 1.98 | 1.19 | 91.23 |
| B25 4415 | B | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.65 | 0.93 | 60.00 |
| | | | 0.00 | | | 1/2" Ice | 1.81 | 1.05 | 74.37 |
| | | | 0.00 | | | 1" Ice | 1.98 | 1.19 | 91.23 |
| B25 4415 | C | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.65 | 0.93 | 60.00 |
| | | | 0.00 | | | 1/2" Ice | 1.81 | 1.05 | 74.37 |
| | | | 0.00 | | | 1" Ice | 1.98 | 1.19 | 91.23 |
| B2/B66A 8843 | A | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.65 | 0.93 | 40.00 |
| | | | 0.00 | | | 1/2" Ice | 1.81 | 1.05 | 54.37 |
| | | | 0.00 | | | 1" Ice | 1.98 | 1.19 | 71.23 |
| B2/B66A 8843 | B | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.65 | 0.93 | 40.00 |
| | | | 0.00 | | | 1/2" Ice | 1.81 | 1.05 | 54.37 |
| | | | 0.00 | | | 1" Ice | 1.98 | 1.19 | 71.23 |
| B2/B66A 8843 | C | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.65 | 0.93 | 40.00 |
| | | | 0.00 | | | 1/2" Ice | 1.81 | 1.05 | 54.37 |
| | | | 0.00 | | | 1" Ice | 1.98 | 1.19 | 71.23 |
| B5/B12 4449 | A | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.97 | 1.40 | 71.00 |
| | | | 0.00 | | | 1/2" Ice | 2.15 | 1.56 | 89.48 |
| | | | 0.00 | | | 1" Ice | 2.33 | 1.72 | 110.77 |
| B5/B12 4449 | B | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.97 | 1.40 | 71.00 |
| | | | 0.00 | | | 1/2" Ice | 2.15 | 1.56 | 89.48 |
| | | | 0.00 | | | 1" Ice | 2.33 | 1.72 | 110.77 |
| B5/B12 4449 | C | From Leg | 3.00 | 0.0000 | 90.00 | No Ice | 1.97 | 1.40 | 71.00 |
| | | | 0.00 | | | 1/2" Ice | 2.15 | 1.56 | 89.48 |
| | | | 0.00 | | | 1" Ice | 2.33 | 1.72 | 110.77 |
| DC6-48-60-18-8F | A | From Face | 1.00 | 0.0000 | 90.00 | No Ice | 0.79 | 0.79 | 20.00 |
| | | | 0.00 | | | 1/2" Ice | 1.27 | 1.27 | 35.12 |
| | | | 0.00 | | | 1" Ice | 1.45 | 1.45 | 52.57 |
| DC6-48-60-18-8F | B | From Face | 1.00 | 0.0000 | 90.00 | No Ice | 0.79 | 0.79 | 20.00 |
| | | | 0.00 | | | 1/2" Ice | 1.27 | 1.27 | 35.12 |
| | | | 0.00 | | | 1" Ice | 1.45 | 1.45 | 52.57 |
| ***** | | | | | | | | | |
| Ring Mount | A | None | | 0.0000 | 79.50 | No Ice | 1.40 | 1.40 | 90.00 |
| | | | | | | 1/2" Ice | 2.40 | 2.40 | 130.00 |
| | | | | | | 1" Ice | 3.40 | 3.40 | 170.00 |
| PiROD 12' Lightweight T-Frame | A | From Face | 2.00 | 0.0000 | 79.50 | No Ice | 10.20 | 10.20 | 253.00 |
| | | | 0.00 | | | 1/2" Ice | 16.20 | 16.20 | 355.00 |

| | | | | |
|--|----------------|-----------------|--------------------|-------------------|
| tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586 | Job | CT1182 | Page | 5 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight | |
|-------------|-------------|-------------|----------|--------------|--------------------|-----------|-----------------------|----------------------|--------|--------|
| | | | Horz | Lateral Vert | | | | | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | lb | |
| Omni 1"x8' | A | From Face | 0.00 | | 0.0000 | 87.00 | 1" Ice | 22.20 | 22.20 | 457.00 |
| | | | 3.50 | | | | No Ice | 0.80 | 0.80 | 20.00 |
| | | | 0.00 | | | | 1/2" Ice | 1.62 | 1.62 | 27.43 |
| | | | 0.00 | | | | 1" Ice | 2.45 | 2.45 | 40.01 |
| 20' Dipole | A | From Face | 3.50 | | 0.0000 | 70.20 | No Ice | 6.75 | 6.75 | 60.00 |
| | | | 0.00 | | | | 1/2" Ice | 10.04 | 10.04 | 115.61 |
| | | | 0.00 | | | | 1" Ice | 12.10 | 12.10 | 184.01 |
| | | | 0.00 | | | | | | | |

Dishes

| Description | Face or Leg | Dish Type | Offset Type | Offsets: | | Azimuth Adjustment | 3 dB Beam Width | Elevation | Outside Diameter | Aperture Area | Weight | |
|-----------------|-------------|-----------|-------------|----------|--------------|--------------------|-----------------|-----------|------------------|---------------|--------|--------|
| | | | | Horz | Lateral Vert | | | | | | | |
| | | | ft | ft | ° | ° | ft | ft | ft ² | lb | | |
| Kathrein PR-950 | C | Grid | From Face | 2.00 | | 0.0000 | | 80.50 | 4.50 | No Ice | 6.00 | 38.00 |
| | | | | 0.00 | | | | | | 1/2" Ice | 9.00 | 98.00 |
| | | | | 0.00 | | | | | | 1" Ice | 12.00 | 158.00 |

Maximum Reactions

| Location | Condition | Gov. Load Comb. | Vertical lb | Horizontal, X lb | Horizontal, Z lb |
|----------|---------------------|-----------------|-------------|------------------|------------------|
| Pole | Max. Vert | 38 | 63402.83 | 3984.29 | 7126.66 |
| | Max. H _x | 20 | 32021.49 | 31600.14 | -17.39 |
| | Max. H _z | 2 | 32021.49 | 0.00 | 31533.21 |
| | Max. M _x | 2 | 2453850.30 | 0.00 | 31533.21 |
| | Max. M _z | 8 | 2460768.37 | -31600.14 | -17.39 |
| | Max. Torsion | 5 | 3706.19 | -15837.52 | 27307.70 |
| | Min. Vert | 13 | 24016.12 | -15828.15 | -27313.05 |
| | Min. H _x | 8 | 32021.49 | -31600.14 | -17.39 |
| | Min. H _z | 14 | 32021.49 | 0.00 | -31553.27 |
| | Min. M _x | 14 | -2454567.56 | 0.00 | -31553.27 |
| | Min. M _z | 20 | -2463562.79 | 31600.14 | -17.39 |
| | Min. Torsion | 17 | -3740.81 | 15828.15 | -27313.05 |

Tower Mast Reaction Summary

| Load Combination | Vertical lb | Shear _x lb | Shear _z lb | Overturning Moment, M _x lb-ft | Overturning Moment, M _z lb-ft | Torque lb-ft |
|----------------------------------|-------------|-----------------------|-----------------------|--|--|--------------|
| Dead Only | 26684.58 | 0.00 | 0.00 | -374.66 | 1142.89 | 0.00 |
| 1.2 Dead+1.6 Wind 0 deg - No Ice | 32021.49 | -0.00 | -31533.21 | -2453850.30 | 1395.22 | -3678.81 |
| 0.9 Dead+1.6 Wind 0 deg - No | 24016.12 | -0.00 | -31533.21 | -2446175.63 | 1041.18 | -3679.34 |

| | | | | |
|---|----------------|-----------------|--------------------|-------------------|
| <p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586</p> | Job | CT1182 | Page | 6 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

| <i>Load Combination</i> | <i>Vertical</i> <i>lb</i> | <i>Shear_x</i> <i>lb</i> | <i>Shear_z</i> <i>lb</i> | <i>Overturning Moment, M_x</i> <i>lb-ft</i> | <i>Overturning Moment, M_z</i> <i>lb-ft</i> | <i>Torque</i> <i>lb-ft</i> |
|--|------------------------------|---------------------------------------|---------------------------------------|--|--|-------------------------------|
| Ice | | | | | | |
| 1.2 Dead+1.6 Wind 30 deg - No Ice | 32021.49 | 15837.52 | -27307.70 | -2125084.98 | -1232738.44 | -3705.73 |
| 0.9 Dead+1.6 Wind 30 deg - No Ice | 24016.12 | 15837.52 | -27307.70 | -2118423.45 | -1229287.50 | -3706.19 |
| 1.2 Dead+1.6 Wind 60 deg - No Ice | 32021.49 | 27391.01 | -15755.24 | -1226224.63 | -2132895.93 | -2904.76 |
| 0.9 Dead+1.6 Wind 60 deg - No Ice | 24016.12 | 27391.01 | -15755.24 | -1222332.35 | -2126669.49 | -2905.03 |
| 1.2 Dead+1.6 Wind 90 deg - No Ice | 32021.49 | 31600.14 | 17.39 | 958.75 | -2460768.37 | -1357.66 |
| 0.9 Dead+1.6 Wind 90 deg - No Ice | 24016.12 | 31600.14 | 17.39 | 1070.49 | -2453530.90 | -1357.67 |
| 1.2 Dead+1.6 Wind 120 deg - No Ice | 32021.49 | 27389.67 | 15765.94 | 1226181.17 | -2132786.33 | 767.63 |
| 0.9 Dead+1.6 Wind 120 deg - No Ice | 24016.12 | 27389.67 | 15765.94 | 1222518.31 | -2126560.36 | 767.88 |
| 1.2 Dead+1.6 Wind 150 deg - No Ice | 32021.49 | 15828.15 | 27313.05 | 2124605.24 | -1231975.66 | 2631.52 |
| 0.9 Dead+1.6 Wind 150 deg - No Ice | 24016.12 | 15828.15 | 27313.05 | 2118174.60 | -1228527.08 | 2631.97 |
| 1.2 Dead+1.6 Wind 180 deg - No Ice | 32021.49 | -0.00 | 31553.27 | 2454567.56 | 1395.22 | 3678.81 |
| 0.9 Dead+1.6 Wind 180 deg - No Ice | 24016.12 | -0.00 | 31553.27 | 2447120.31 | 1041.18 | 3679.34 |
| 1.2 Dead+1.6 Wind 210 deg - No Ice | 32021.49 | -15828.15 | 27313.05 | 2124606.99 | 1234767.09 | 3740.35 |
| 0.9 Dead+1.6 Wind 210 deg - No Ice | 24016.12 | -15828.15 | 27313.05 | 2118175.91 | 1230610.19 | 3740.81 |
| 1.2 Dead+1.6 Wind 240 deg - No Ice | 32021.49 | -27389.67 | 15765.94 | 1226182.92 | 2135579.75 | 2911.13 |
| 0.9 Dead+1.6 Wind 240 deg - No Ice | 24016.12 | -27389.67 | 15765.94 | 1222519.62 | 2128644.95 | 2911.41 |
| 1.2 Dead+1.6 Wind 270 deg - No Ice | 32021.49 | -31600.14 | 17.39 | 958.75 | 2463562.79 | 1357.65 |
| 0.9 Dead+1.6 Wind 270 deg - No Ice | 24016.12 | -31600.14 | 17.39 | 1070.49 | 2455616.24 | 1357.66 |
| 1.2 Dead+1.6 Wind 300 deg - No Ice | 32021.49 | -27391.01 | -15755.24 | -1226226.38 | 2135689.35 | -774.01 |
| 0.9 Dead+1.6 Wind 300 deg - No Ice | 24016.12 | -27391.01 | -15755.24 | -1222333.66 | 2128754.08 | -774.27 |
| 1.2 Dead+1.6 Wind 330 deg - No Ice | 32021.49 | -15837.52 | -27307.70 | -2125086.73 | 1235529.88 | -2666.12 |
| 0.9 Dead+1.6 Wind 330 deg - No Ice | 24016.12 | -15837.52 | -27307.70 | -2118424.76 | 1231370.61 | -2666.58 |
| 1.2 Dead+1.0 Ice+1.0 Temp | 63402.83 | -0.00 | -0.00 | -727.13 | 4738.06 | 0.01 |
| 1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp | 63402.83 | -0.00 | -8191.36 | -628626.92 | 4858.12 | -1643.93 |
| 1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp | 63402.83 | 3984.29 | -7126.66 | -547220.60 | -300118.51 | -1903.94 |
| 1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp | 63402.83 | 6946.80 | -4230.66 | -325880.59 | -527176.06 | -1499.49 |
| 1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp | 63402.83 | 8031.39 | 1.81 | -595.12 | -610303.80 | -585.22 |
| 1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp | 63402.83 | 6980.02 | 4046.46 | 309112.66 | -529930.76 | 423.80 |
| 1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp | 63402.83 | 4049.51 | 7005.87 | 535711.75 | -305527.88 | 1282.11 |
| 1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp | 63402.83 | -0.00 | 8114.66 | 620774.43 | 4858.14 | 1643.98 |
| 1.2 Dead+1.0 Wind 210 | 63402.83 | -4049.51 | 7005.87 | 535712.39 | 315244.54 | 1565.37 |

| | | | | |
|--|----------------|-----------------|--------------------|-------------------|
| tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586 | Job | CT1182 | Page | 7 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

| Load Combination | Vertical lb | Shear _x lb | Shear _z lb | Overturning Moment, M _x lb-ft | Overturning Moment, M _z lb-ft | Torque lb-ft |
|-----------------------------|----------------|--------------------------|--------------------------|---|---|-----------------|
| deg+1.0 Ice+1.0 Temp | | | | | | |
| 1.2 Dead+1.0 Wind 240 | 63402.83 | -6980.02 | 4046.46 | 309113.31 | 539648.15 | 1220.20 |
| deg+1.0 Ice+1.0 Temp | | | | | | |
| 1.2 Dead+1.0 Wind 270 | 63402.83 | -8031.39 | 1.81 | -595.11 | 620021.56 | 585.23 |
| deg+1.0 Ice+1.0 Temp | | | | | | |
| 1.2 Dead+1.0 Wind 300 | 63402.83 | -6946.80 | -4230.66 | -325881.20 | 536893.42 | -144.31 |
| deg+1.0 Ice+1.0 Temp | | | | | | |
| 1.2 Dead+1.0 Wind 330 | 63402.83 | -3984.29 | -7126.66 | -547221.22 | 309835.13 | -943.40 |
| deg+1.0 Ice+1.0 Temp | | | | | | |
| Dead+Wind 0 deg - Service | 26684.58 | -0.00 | -5757.94 | -447548.86 | 1161.98 | -672.77 |
| Dead+Wind 30 deg - Service | 26684.58 | 2891.92 | -4986.37 | -387626.84 | -223777.62 | -677.63 |
| Dead+Wind 60 deg - Service | 26684.58 | 5001.58 | -2876.90 | -223796.02 | -387845.47 | -531.13 |
| Dead+Wind 90 deg - Service | 26684.58 | 5770.17 | 3.17 | -122.66 | -447605.49 | -248.26 |
| Dead+Wind 120 deg - Service | 26684.58 | 5001.34 | 2878.85 | 223193.37 | -387825.60 | 140.35 |
| Dead+Wind 150 deg - Service | 26684.58 | 2890.21 | 4987.34 | 386944.77 | -223638.65 | 481.21 |
| Dead+Wind 180 deg - Service | 26684.58 | -0.00 | 5761.61 | 447085.14 | 1161.98 | 672.77 |
| Dead+Wind 210 deg - Service | 26684.58 | -2890.21 | 4987.34 | 386944.82 | 225962.63 | 684.06 |
| Dead+Wind 240 deg - Service | 26684.58 | -5001.34 | 2878.85 | 223193.42 | 390149.64 | 532.42 |
| Dead+Wind 270 deg - Service | 26684.58 | -5770.17 | 3.17 | -122.66 | 449929.55 | 248.26 |
| Dead+Wind 300 deg - Service | 26684.58 | -5001.58 | -2876.90 | -223796.06 | 390169.51 | -141.64 |
| Dead+Wind 330 deg - Service | 26684.58 | -2891.92 | -4986.37 | -387626.89 | 226101.60 | -487.64 |

Maximum Tower Deflections - Service Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|-------------|-----------------|------------------------|-----------------|-----------|------------|
| L1 | 101.25 - 91.25 | 4.7411 | 48 | 0.3690 | 0.0014 |
| L2 | 91.25 - 46.17 | 3.9711 | 48 | 0.3642 | 0.0014 |
| L3 | 46.17 - 0 | 1.0900 | 48 | 0.2168 | 0.0006 |

Critical Deflections and Radius of Curvature - Service Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|-------------------------------|-----------------|------------------|-----------|------------|---------------------------|
| 100.00 | (2) SC-E 6016 w/mount pipe | 48 | 4.6444 | 0.3687 | 0.0014 | 126660 |
| 98.50 | 12' Low Profile Platform | 48 | 4.5285 | 0.3683 | 0.0014 | 126660 |
| 90.00 | Powerwave 7770 w/mount pipe | 48 | 3.8758 | 0.3629 | 0.0014 | 54176 |
| 89.50 | PiROD 13' Platform w/handrail | 48 | 3.8378 | 0.3623 | 0.0014 | 51516 |
| 87.00 | Omni 1"x8' | 48 | 3.6486 | 0.3588 | 0.0014 | 41077 |
| 80.50 | Kathrein PR-950 | 48 | 3.1662 | 0.3458 | 0.0013 | 26721 |
| 79.50 | Ring Mount | 48 | 3.0935 | 0.3434 | 0.0013 | 25357 |
| 70.20 | 20' Dipole | 48 | 2.4432 | 0.3157 | 0.0011 | 17196 |

Section Capacity Table

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | φP _{allow} lb | % Capacity | Pass Fail |
|-------------|-----------------|----------------|------|------------------|---------|---------------------------|------------|-----------|
|-------------|-----------------|----------------|------|------------------|---------|---------------------------|------------|-----------|

| | | | | |
|--|----------------|-----------------|--------------------|-------------------|
| tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586 | Job | CT1182 | Page | 8 of 8 |
| | Project | 101 ft Monopole | Date | 13:59:25 05/17/19 |
| | Client | AT&T | Designed by | kw |

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | ϕP_{allow} lb | % Capacity | Pass Fail | |
|-------------|----------------|----------------|----------------------|------------------|-----------|---------------------|-----------------|-------------|-------------|
| L1 | 101.25 - 91.25 | Pole | TP35.29x33.08x0.25 | 1 | -4146.88 | 1858010.00 | 6.9 | Pass | |
| L2 | 91.25 - 46.17 | Pole | TP46.32x35.29x0.3125 | 2 | -18328.00 | 2989400.00 | 40.3 | Pass | |
| L3 | 46.17 - 0 | Pole | TP55.26x46.32x0.375 | 3 | -32003.50 | 4289990.00 | 51.6 | Pass | |
| | | | | | | | Summary | | |
| | | | | | | | Pole (L3) | 51.6 | Pass |
| | | | | | | | Base Plate | 44.8 | Pass |
| | | | | | | | RATING = | 51.6 | Pass |

Aidan Griffin

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1712 Main Street
Building Department
COVENTRY, CT 062383615
US
UPS Service: UPS 2ND DAY AIR
Number of Packages: 1
Scheduled Delivery: 06/03/2019
Shipment Type: Letter



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Ship To: Pelletier Builders, Inc.
138 Main Street
COVENTRY, CT 062383318
US
UPS Service: UPS 2ND DAY AIR
Number of Packages: 1
Scheduled Delivery: 06/03/2019
Shipment Type: Letter



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Ship To: Joan A. Lewis
Town of Coventry
1712 Main Street
Town Council Chair
COVENTRY, CT 062383615
US
UPS Service: UPS 2ND DAY AIR
Number of Packages: 1
Scheduled Delivery: 06/03/2019
Shipment Type: Letter



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Ship To: Town of Coventry
1712 Main Street
Zoning/Land Use Department
COVENTRY, CT 062383615
US
UPS Service: UPS 2ND DAY AIR
Number of Packages: 1
Scheduled Delivery: 06/03/2019
Shipment Type: Letter



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