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March 22, 2018

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT5048
259 Commerce Street, East Haven, CT 06512
N 41-15-22.86
W 72-52-32.80

Dear Ms. Bachman:

AT&T currently maintains six (6) antennas at the 55-foot level of the existing 58-foot Monopole at 259 Commerce Street, East Haven, CT. The tower is owned by Crown Castle and the property is owned by Stephen J. Viglione. AT&T now intends to add three (3) Quintel QS66512-6 antennas and add (3) Ericsson RRUS-32 B66 Remote Radio Units (RRU). These antennas and RRUs would be installed at the 55-foot level.

This facility was approved by the Siting Council in Petition # 634 on July 8, 2003. No conditions were attached that would be impacted by this modification.

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 the Honorable Joseph Maturo Jr., Mayor of the Town of East Haven, and the East Haven Planning & Zoning Department, as well as the property owner and the tower owner.

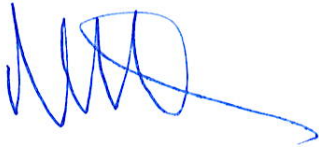
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

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

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Mayor Joseph Maturo Jr. - as Elected Official
Christopher Soto – Planning & Zoning Enforcement Officer
Crown Castle - Tower Owner (via e-mail)
Stephen J. Viglione - Property Owner

Power Density

Existing Loading on Tower

| Carrier | # of Channels | ERP/Ch (W) | Antenna Centerline Height (ft) | Power Density (mW/cm ²) | Freq. Band (MHz ^{**}) | Limit S (mW/cm ²) | %MPE |
|-----------------|---------------|------------|--------------------------------|-------------------------------------|---------------------------------|-------------------------------|--------|
| Other Carriers* | | | | | | | 26.57% |
| AT&T GSM | 1 | 156 | 55 | 0.0234 | 850 | 0.5667 | 0.41% |
| AT&T UMTS | 1 | 304 | 55 | 0.0455 | 850 | 0.5667 | 0.80% |
| AT&T UMTS | 1 | 502 | 55 | 0.0752 | 1900 | 1.0000 | 0.75% |
| AT&T LTE | 1 | 828 | 55 | 0.1292 | 737 | 0.4913 | 2.63% |
| AT&T LTE | 1 | 3258 | 55 | 0.5085 | 1900 | 1.0000 | 5.09% |
| Site Total | | | | | | | 36.25% |

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

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

Proposed Loading on Tower

| Carrier | # of Channels | ERP/Ch (W) | Antenna Centerline Height (ft) | Power Density (mW/cm ²) | Freq. Band (MHz ^{**}) | Limit S (mW/cm ²) | %MPE |
|-----------------|---------------|------------|--------------------------------|-------------------------------------|---------------------------------|-------------------------------|--------|
| Other Carriers* | | | | | | | 26.57% |
| AT&T UMTS | 1 | 304 | 55 | 0.0455 | 850 | 0.5667 | 0.80% |
| AT&T LTE | 1 | 828 | 55 | 0.1240 | 700 | 0.4667 | 2.66% |
| AT&T LTE | 2 | 3258 | 55 | 0.9760 | 1900 | 1.0000 | 9.76% |
| AT&T LTE | 1 | 1285 | 55 | 0.1925 | 2300 | 1.0000 | 1.92% |
| Site Total | | | | | | | 41.72% |

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

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

PROJECT INFORMATION

SCOPE OF WORK: TOWER – RELOCATE EXISTING ANTENNAS IN POSITION 2 TO POSITION 3. INSTALL (3) 6’ ANTENNAS TO POSITION 2, (3) WCS RRUS-32, (1) SQUID, (1) FIBER & (2) DC CABLES. REPLACE EXISTING MONOPOLE PLATFORM.

EQUIPMENT AREA – REPLACE BB WITH RBS5216. REUSE EXISTING XMU. UPGRADE SURGE TO RAYCAP DC12.

SITE ADDRESS: 259 COMMERCE STREET
EAST HAVEN, CT 06512

LATITUDE: 41° 15’ 23.01” N (NAD 83)*
LONGITUDE: 72° 52’ 32.87” W (NAD 83)*
*PER EXISTING AT&T PLANS

NAME OF APPLICANT: AT&T MOBILITY
500 ENTERPRISE DRIVE
SUITE 3A
ROCKY HILL, CT 06067

CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY

TOWER OWNER: CROWN CASTLE
TOWER NUMBER: 842862



at&t
Mobility

SITE NAME: EAST HAVEN SOUTH LTE 3C
SITE NO.: CT5048
PACE NO.: MRCTB026603 (3C)

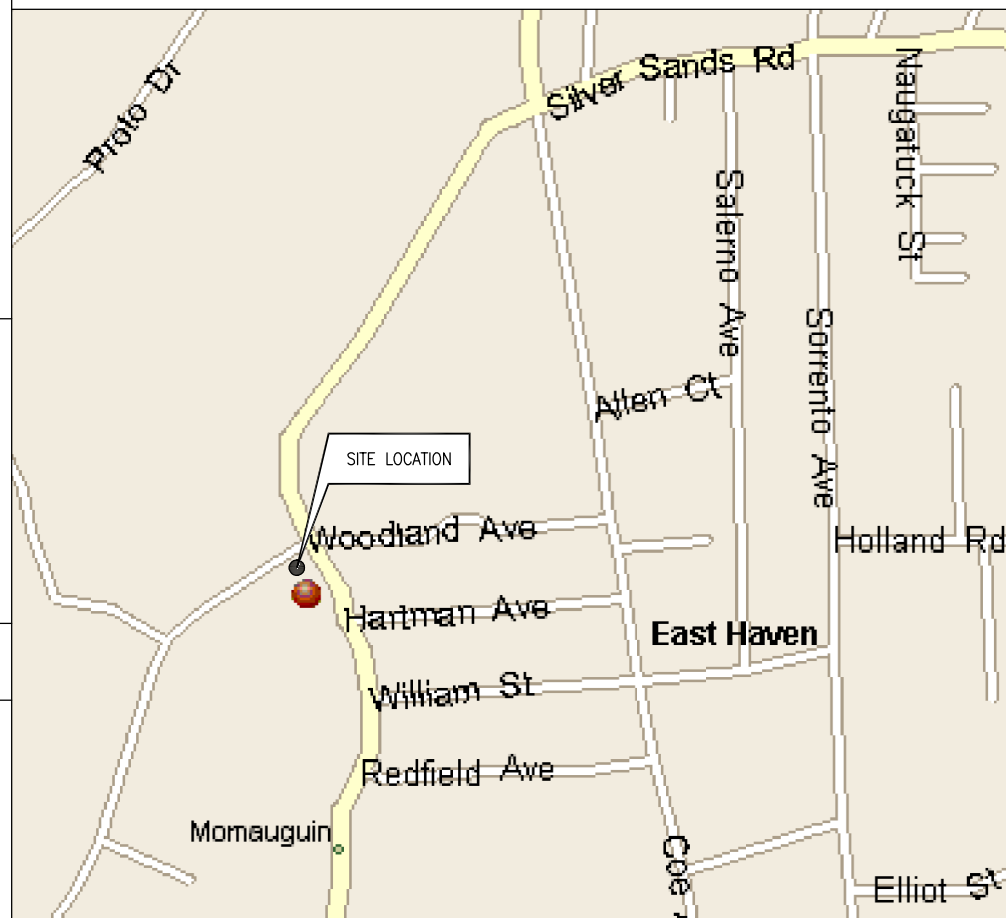
DRAWING INDEX

REV

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| T01 | TITLE SHEET | B |
| G01 | GENERAL NOTES | B |
| C01 | PROPOSED SITE & EQUIPMENT AREA PLAN | B |
| C02 | PROPOSED ELEVATION & CONSTRUCTION DETAILS | B |
| C03 | EQUIPMENT PLUMBING DIAGRAM | B |
| E01 | GROUNDING NOTES & DETAILS | B |

VICINITY MAP

DIRECTIONS: TURN RIGHT ONTO WORCESTER RD/MA-9/MA-30. MERGE ONTO I-90 W/MASSACHUSETTS TPKE W TOWARD SPRINGFIELD/WORCESTER. MERGE ONTO I-84 W/WILBUR CROSS HWY S VIA EXIT 9 TOWARD US-20. MERGE ONTO I-95 N VIA THE EXIT ON THE LEFT TOWARD NEW LONDON. TAKE THE 2ND RIGHT ONTO SILVER SANDS RD/CT-337. TAKE THE 1ST RIGHT ONTO COMMERCE ST.



APPLICABLE BUILDING CODES & STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS & DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES & DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, & LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES & STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:
INTERNATIONAL BUILDING CODE (IBC)

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE (NEC)

CONTRACTOR'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, NINTH EDITION TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER & ANTENNA SUPPORTING STRUCTURES: TIA 607, COMMERCIAL BUILDING GROUNDING & BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, & EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING & GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" & "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

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

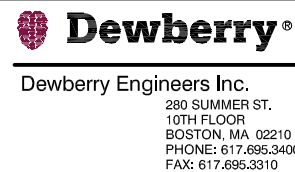
THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE & ITS SITE CONDITIONS & IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

STRUCTURAL NOTE:

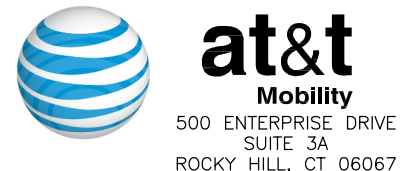
- AS REQUIRED UNDER TIA/EIA 222H – STANDARD, SAI COMMUNICATIONS SHALL PROVIDE A STRUCTURAL ANALYSIS OF THE TOWER PREPARED BY A LICENSED CONNECTICUT STRUCTURAL ENGINEER CERTIFYING THAT, THE EXISTING TOWER & ANY REQUIRED IMPROVEMENTS & REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING & PROPOSED ANTENNAS, SUPPORTS & APPURTENANCES & COMPLIES WITH THE CURRENT CONNECTICUT STATE BUILDING CODE & EIA/TIA CRITERIA. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS & REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, SUPPORTS & APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

CONTACT INFORMATION

| CONTACT | CONTACT | COMPANY | PHONE NO. |
|--------------|------------------------|--------------------|----------------|
| ENGINEERING: | BENJAMIN REVETTE, P.E. | DEWBERRY | (617) 531-0823 |
| SAC: | TIM BURKS | SAI COMMUNICATIONS | (860) 989-0001 |



EAST HAVEN SOUTH LTE 3C
SITE NO. CT5048
259 COMMERCE STREET
EAST HAVEN, CT 06512



| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|-----|----------|------------------------------|----|-----|-------|
| B | 03/14/18 | FOR CT SITING COUNCIL FILING | KB | DAS | BBR |
| A | 02/09/18 | ISSUED FOR REVIEW | KB | DAS | BBR |

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

AT&T MOBILITY
ROCKY HILL, CT 06067

TITLE SHEET

| DEWBERRY NO. | DRAWING NUMBER | REV |
|-------------------|----------------|-----|
| 50019239/50083730 | T01 | B |

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
PROJECT MANAGEMENT – SAI COMMUNICATIONS
CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – AT&T MOBILITY
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS & TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
- ALL MATERIALS FURNISHED & INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, & ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES & COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, & LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL & UTILITY COMPANY SPECIFICATIONS & LOCAL JURISDICTIONAL CODES, ORDINANCES & APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED & ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, & LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT & MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
- CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER & T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING & TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
- THE CONTRACTOR SHALL PROTECT EXISTING & PROPOSED IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING & STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL LEGALLY & PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES & OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- THE CONTRACTOR SHALL SUPERVISE & DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, & PROCEDURES & FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF & WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
- CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS & CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR 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.
- 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.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS & RECOMMENDATIONS & SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE & PPM & CONSTRUCTION DEVICES SUCH AS WELDING & FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

SITE WORK GENERAL NOTES:

- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, & OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, & WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
A) FALL PROTECTION
B) CONFINED SPACE
C) ELECTRICAL SAFETY
D) TRENCHING & EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS & PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL & OTHER REFUSE SHALL BE REMOVED FROM THE SITE & DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC & OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE AT&T SPECIFICATION FOR SITE SIGNAGE.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT & TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED & BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK & NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, & STABILIZED TO PREVENT EROSION.
- EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION & SEDIMENT CONTROL.

CONCRETE & REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 & THE DESIGN & CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" & ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 & LARGER2 IN.
#5 & SMALLER & WWF1 1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB & WALL3/4 IN.
BEAMS & COLUMNS1 1/2 IN.
- A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY & THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION & BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES & WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE 3/4"Ø CONNECTIONS & SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE & PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION & WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATIVE TO INSPECTION & WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
- AS AN ALTERNATIVE TO ITEMS 2 & 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED & REPLACED WITH A WELL-GRADED GRANULAR FILL, & COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, AT&T ANTENNA PLATFORM LOCATION & ANTENNAS TO BE REPLACED.
- COORDINATION OF WORK:
CONTRACTOR SHALL COORDINATE RF WORK & PROCEDURES WITH PROJECT MANAGEMENT.
- CABLE LADDER RACK:
CONTRACTOR SHALL FURNISH & INSTALL CABLE LADDER RACK, CABLE TRAY, & CONDUIT AS REQUIRED TO SUPPORT CABLES TO ANY NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC & ALL APPLICABLE LOCAL CODES.
- CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF & TRANSPORT CABLING TO NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY & SUPPORT METHODS & MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC & TELCORDIA.
- ALL CIRCUITS SHALL BE SEGREGATED & MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC & TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, & T1 CONDUCTOR & CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, & MATCH EXISTING INSTALLATION REQUIREMENTS.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, & BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD & CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) & INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, & EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET & DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION & RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA & MATCH EXISTING INSTALLATION REQUIREMENTS.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET & DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION & RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER & CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET & DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER & POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS & WIRENUTS BY THOMAS & BETTS (OR EQUAL). LUGS & WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY & CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, & NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS & OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT & TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE & APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, & WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, & NEC.
- CABINETS, BOXES, & WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) & INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); & RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, & PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, & RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, & DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A & NEMA OS 1; & RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, & DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; & RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE CONTRACTOR SHALL NOTIFY & OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES & DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES & STANDARDS TO SAFEGUARD AGAINST LIFE & PROPERTY.



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12 INDUSTRIAL WAY
SALEM, NH 03079

EAST HAVEN SOUTH LTE 3C
SITE NO. CT5048

259 COMMERCE STREET
EAST HAVEN, CT 06512



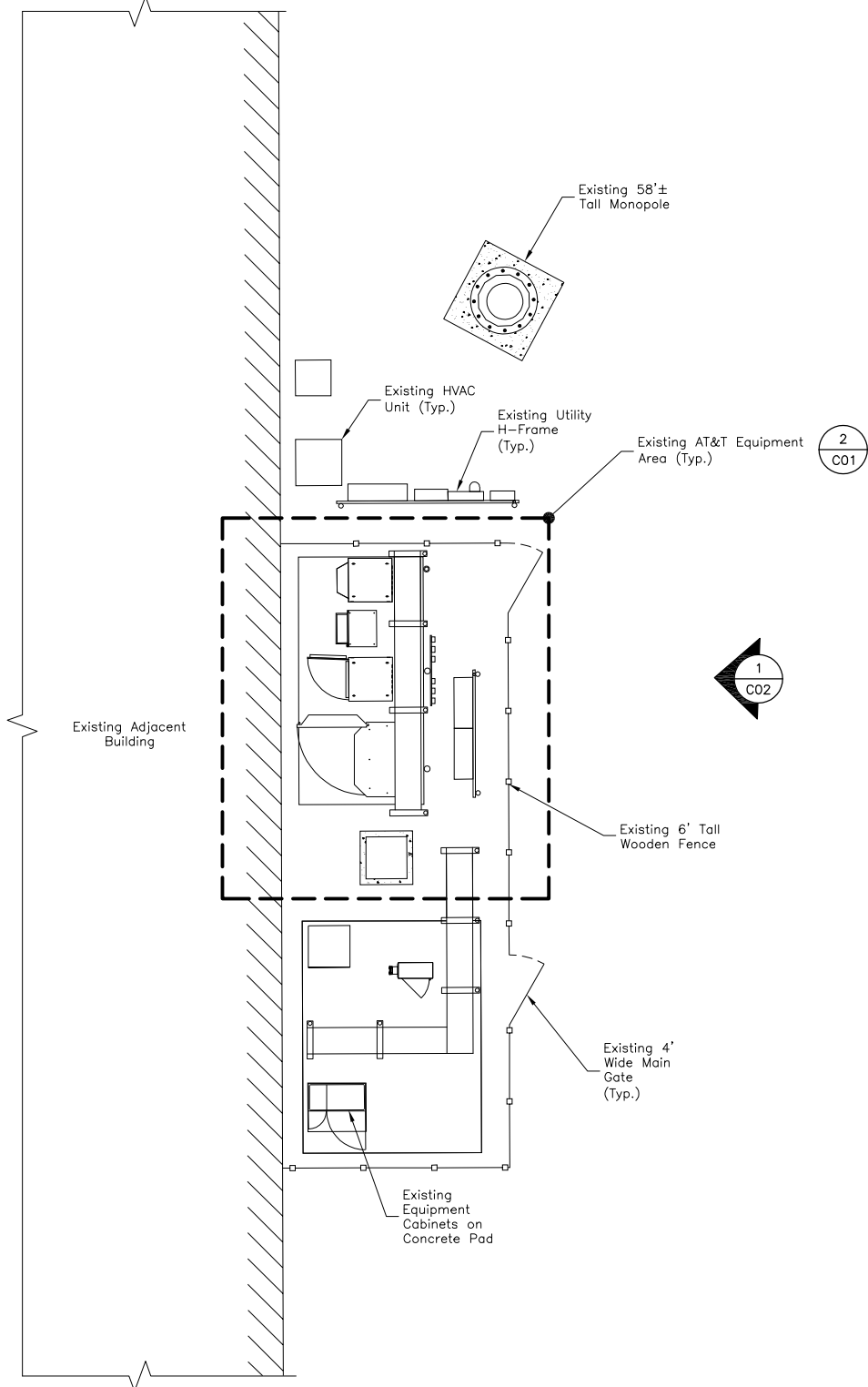
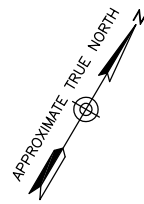
at&t
Mobility
500 ENTERPRISE DRIVE
SUITE 3A
ROCKY HILL, CT 06067

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| B | 03/14/18 | FOR CT SITING COUNCIL FILING | KB | DAS | BBR |
| A | 02/09/18 | ISSUED FOR REVIEW | KB | DAS | BBR |
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| SCALE: AS SHOWN | | DESIGNED BY: DAS | DRAWN BY: MR | | |

AT&T MOBILITY
ROCKY HILL, CT 06067

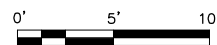
GENERAL NOTES

| | | |
|-------------------|----------------|-----|
| DEWBERRY NO. | DRAWING NUMBER | REV |
| 50019239/50083730 | G01 | B |

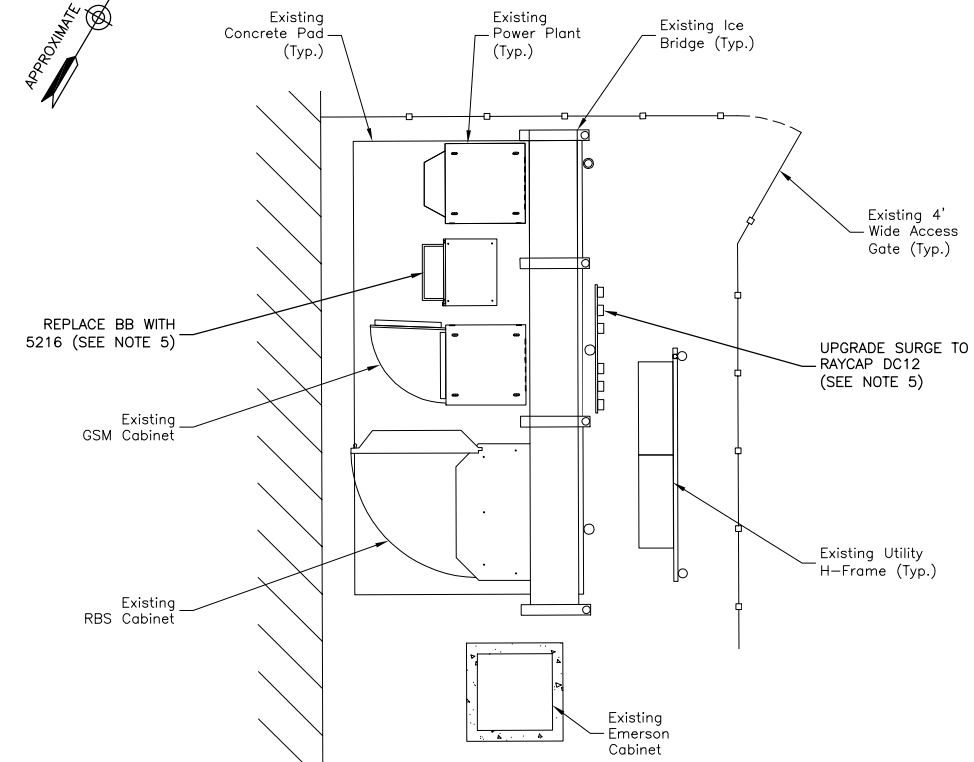
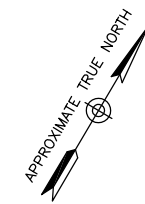


PROPOSED SITE PLAN

SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"



1



PROPOSED EQUIPMENT AREA PLAN

SCALE: 1"=6' FOR 11"x17"
1"=3' FOR 22"x34"



2

NOTES:

- NORTH ARROW SHOWN AS APPROXIMATE.
- ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS (BY OTHERS).
- DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER. TOWER RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS. SEE STRUCTURAL NOTE ON SHEET T01.
- NOT ALL INFORMATION SHOWN FOR CLARITY.
- EQUIPMENT MODIFICATION SCOPE:
TOWER - RELOCATE EXISTING ANTENNAS IN POSITION 2 TO POSITION 3. INSTALL (3) 6' ANTENNAS TO POSITION 2, (3) WCS RRU-32, (1) SQUID, (1) FIBER & (2) DC CABLES. REPLACE EXISTING MONOPOLE PLATFORM.
EQUIPMENT AREA - REPLACE BB WITH RBS5216. REUSE EXISTING XMU. UPGRADE SURGE TO RAYCAP DC12.

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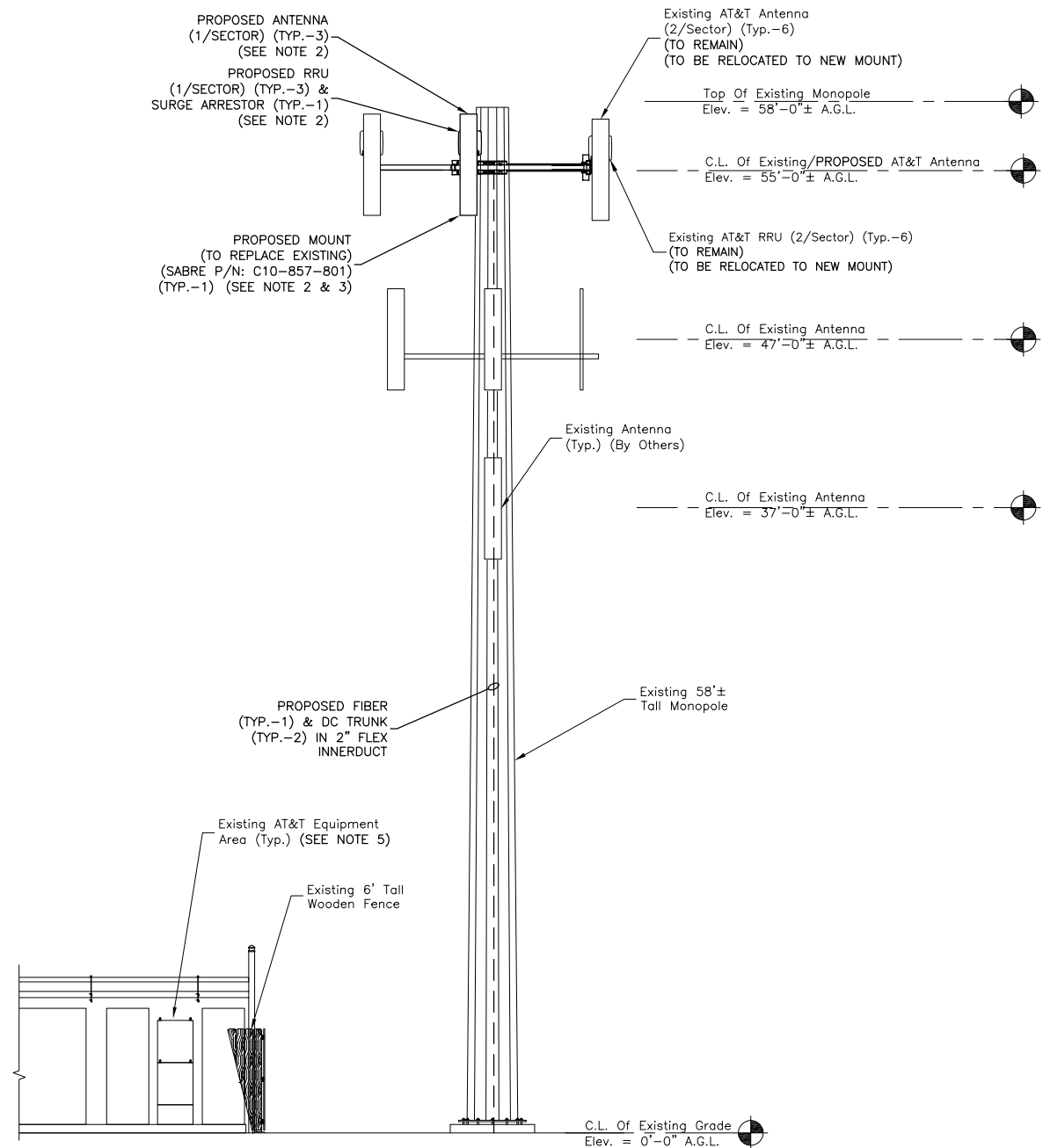
S&I
12 INDUSTRIAL WAY
SALEM, NH 03079

**EAST HAVEN SOUTH LTE 3C
SITE NO. CT5048**
259 COMMERCE STREET
EAST HAVEN, CT 06512

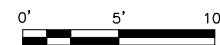
**at&t
Mobility**
500 ENTERPRISE DRIVE
SUITE 3A
ROCKY HILL, CT 06067

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

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| AT&T MOBILITY ROCKY HILL, CT 06067 | | |
| PROPOSED SITE & EQUIPMENT AREA PLAN | | |
| DEWBERRY NO. | DRAWING NUMBER | REV |
| 50019239/50083730 | C01 | B |

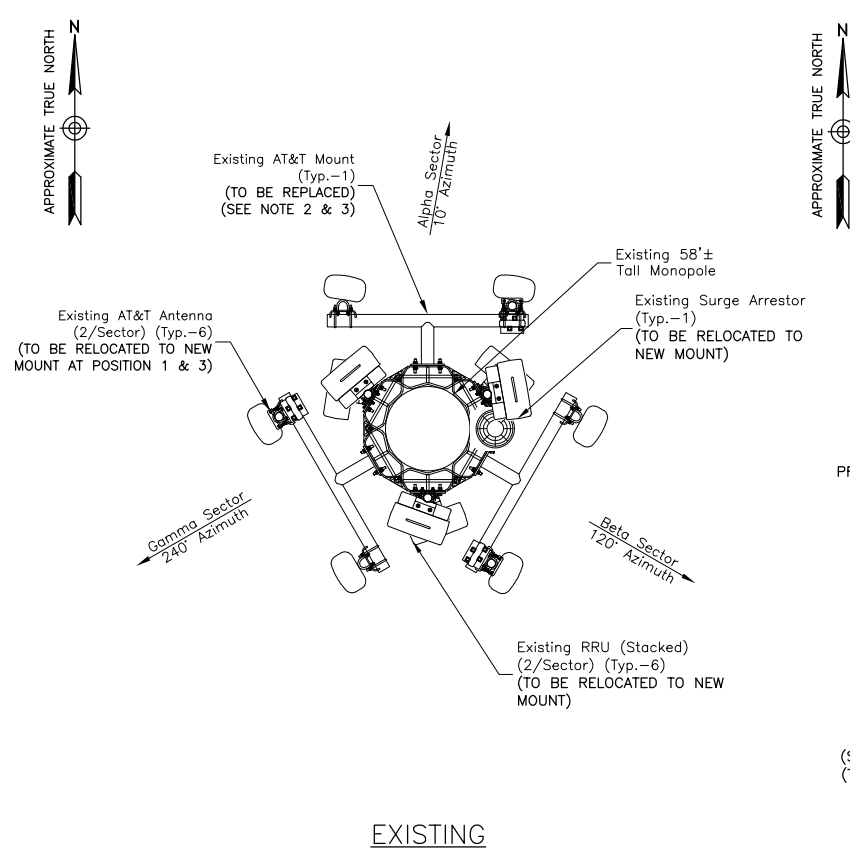


PROPOSED ELEVATION
SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"

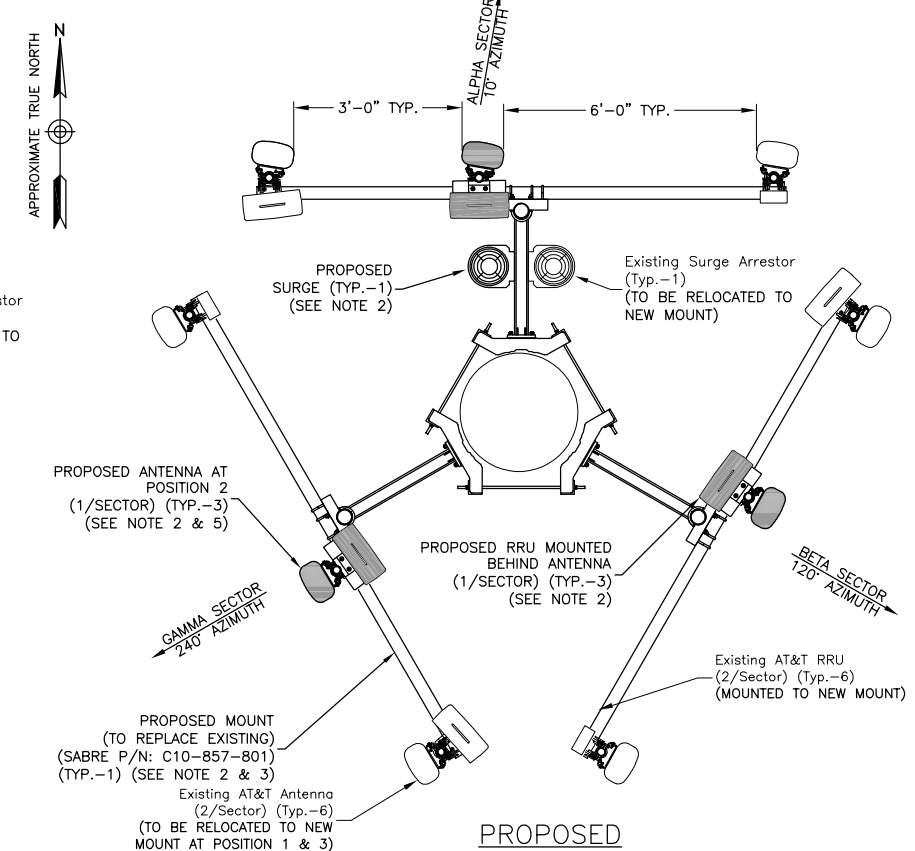


NOTES:

- NORTH ARROW SHOWN AS APPROXIMATE.
- ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER & MOUNT STRUCTURAL ANALYSIS (BY OTHERS).
- DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER OR MOUNT. TOWER & MOUNT RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS. SEE STRUCTURAL NOTE ON SHEET T01.
- NOT ALL INFORMATION SHOWN FOR CLARITY.
- EQUIPMENT MODIFICATION SCOPE:
TOWER - RELOCATE EXISTING ANTENNAS IN POSITION 2 TO POSITION 3. INSTALL (3) 6' ANTENNAS TO POSITION 2, (3) WCS RRU-32, (1) SQUID, (1) FIBER & (2) DC CABLES. REPLACE EXISTING MONOPOLE PLATFORM.
EQUIPMENT AREA - REPLACE BB WITH RBS5216. REUSE EXISTING XMU. UPGRADE SURGE TO RAYCAP DC12.



EXISTING



PROPOSED

ANTENNA ORIENTATION PLAN

SCALE: N.T.S.

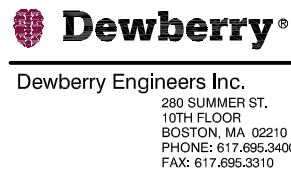
2

| FINAL EQUIPMENT CONFIGURATION | | | | | | | | | | |
|-------------------------------|----------------|--------------------|-----------------------|-------------|---------|--------------------------------|-----------------------------------|----------------------------------------|--------|---------------|
| SECTOR | BAND | ANTENNA | SIZE (INCHES) (LxWxD) | RAD. CENTER | AZIMUTH | TMA | RRU | SIZE (INCHES) (LxWxD) | FEEDER | FIBER JUMPERS |
| ALPHA | LTE 700 BC/PCS | (E) HPA-65R-BUU-H6 | 72.4x14.8x9.0 | 55'-0" | 10° | - | (E) RRU-11 B/C (E) RRU-12 1900 | 19.7 x 17.0 x 7.2 19.7 x 17.0 x 7.2 | - | - |
| | LTE WCS | (P) QS66512-6 | 72.0x12.0x9.6 | 55'-0" | 10° | (E) LGP 21401 (E) LGP 21401 | (P) RRU-32 B66 | 27.2 x 12.1 x 7.0 | - | (P) 1 |
| | UMTS 850 | (E) 800-10121 | 55.0x10.3x5.9 | 55'-0" | 10° | - | - | - | (E) 2 | - |
| BETA | LTE 700 BC/PCS | (E) HPA-65R-BUU-H6 | 72.4x14.8x9.0 | 55'-0" | 120° | - | (E) RRU-11 B/C (E) RRU-12 1900 | 19.7 x 17.0 x 7.2 19.7 x 17.0 x 7.2 | - | - |
| | LTE WCS | (P) QS66512-6 | 72.0x12.0x9.6 | 55'-0" | 120° | (E) LGP 21401 (E) LGP 21401 | (P) RRU-32 B66 | 27.2 x 12.1 x 7.0 | - | (P) 1 |
| | UMTS 850 | (E) 800-10121 | 55.0x10.3x5.9 | 55'-0" | 120° | - | - | - | (E) 2 | - |
| GAMMA | LTE 700 BC/PCS | (E) HPA-65R-BUU-H6 | 72.4x14.8x9.0 | 55'-0" | 240° | - | (E) RRU-11 B/C (E) RRU-12 1900 | 19.7 x 17.0 x 7.2 19.7 x 17.0 x 7.2 | - | - |
| | LTE WCS | (P) QS66512-6 | 72.0x12.0x9.6 | 55'-0" | 240° | (E) LGP 21401 (E) LGP 21401 | (P) RRU-32 B66 | 27.2 x 12.1 x 7.0 | - | (P) 1 |
| | UMTS 850 | (E) 800-10121 | 55.0x10.3x5.9 | 55'-0" | 240° | - | - | - | (E) 2 | - |

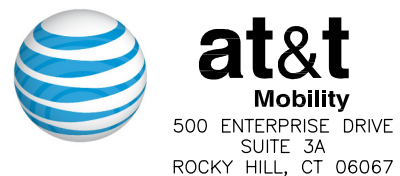
FINAL EQUIPMENT CONFIGURATION

SCALE: N.T.S.

3



**EAST HAVEN SOUTH LTE 3C
SITE NO. CT5048**
259 COMMERCE STREET
EAST HAVEN, CT 06512

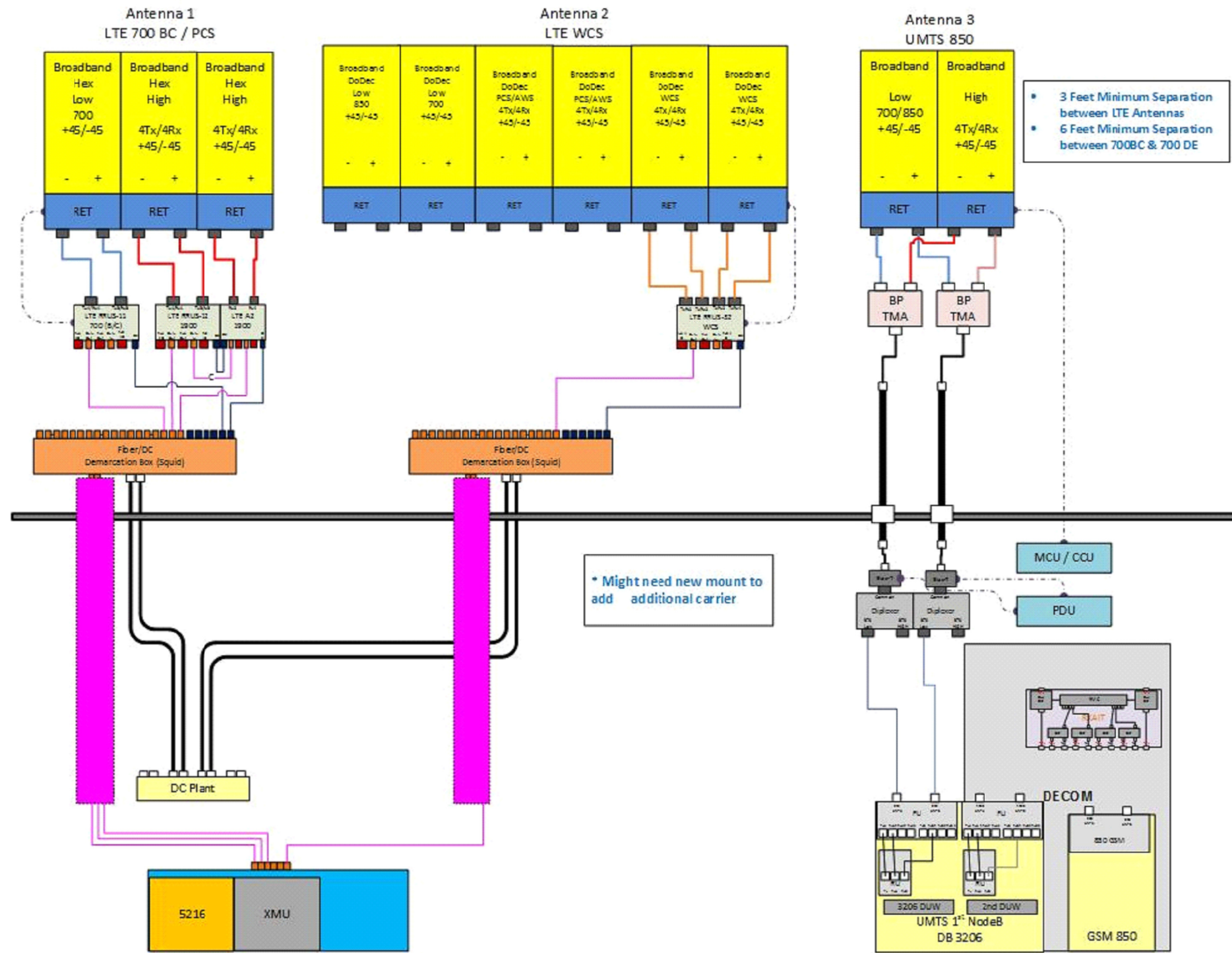


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| A | 02/09/18 | ISSUED FOR REVIEW | KB | DAS | BBR |
| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| SCALE: AS SHOWN | | DESIGNED BY: DAS | DRAWN BY: MR | | |

AT&T MOBILITY
ROCKY HILL, CT 06067

PROPOSED ELEVATION & CONSTRUCTION DETAILS

| DEWBERRY NO. | DRAWING NUMBER | REV |
|-------------------|----------------|-----|
| 50019239/50083730 | C02 | B |



EQUIPMENT PLUMBING DIAGRAM

SCALE: N.T.S.

1

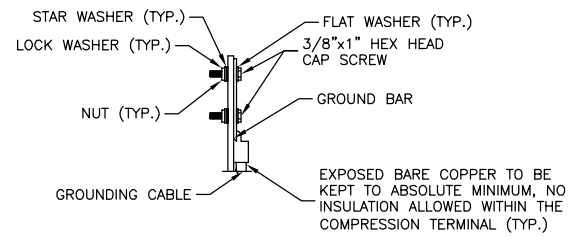
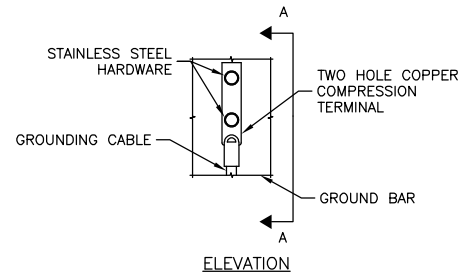
NOTES:

- EQUIPMENT PLUMBING DIAGRAM PER RFDS VERSION 1 DATED 10/23/17.
- CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION & SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

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

GROUNDING NOTES:

- THE CONTRACTOR SHALL REVIEW & INSPECT THE EXISTING FACILITY GROUNDING SYSTEM & LIGHTNING PROTECTION SYSTEM (AS DESIGNED & INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, & GENERAL COMPLIANCE WITH TELCORDIA & TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, & AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OFF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 & 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
- THE CONTRACTOR SHALL FURNISH & INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES & 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE & ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING & UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
- METAL CONDUIT & TRAY SHALL BE GROUNDED & MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE & UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 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 & INSTALLED WITH THE POWER CIRCUITS TO TRANSMISSION EQUIPMENT.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
- EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS & THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM SAI COMMUNICATIONS COMMUNICATIONS MARKET REPRESENTATIVE.
- EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
- ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
- ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT & STRUCTURAL STEEL.
- COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE & THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS & STAINLESS STEEL HARDWARE.
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION & BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL & NON-ELECTRICAL METAL BOXES, FRAMES & SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
- GROUND CONDUCTORS USED IN THE FACILITY GROUND & LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.



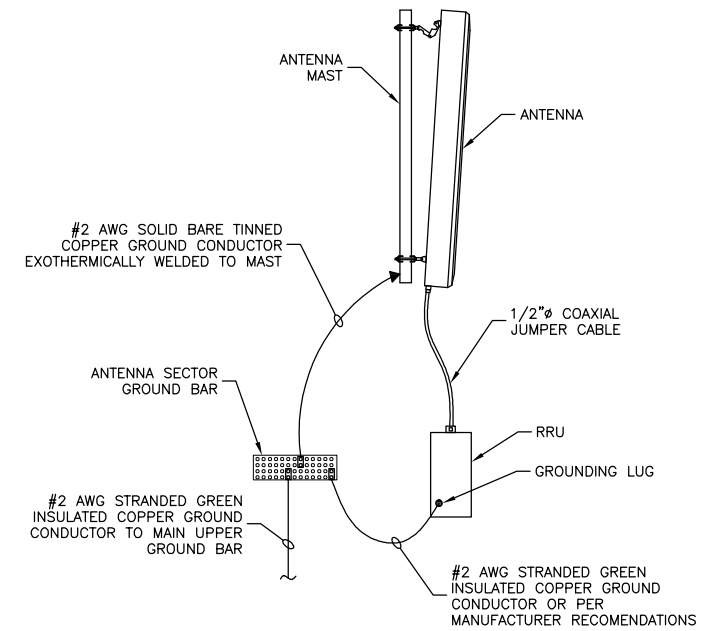
NOTES:

- DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
- OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL

SCALE: N.T.S.

1



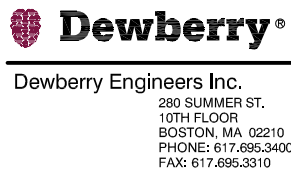
NOTES:

- VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER AT&T STANDARDS.
- BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH AT&T STANDARDS & MANUFACTURER RECOMMENDATIONS.

TYPICAL ANTENNA/RRU GROUNDING DETAIL

SCALE: N.T.S.

2



**EAST HAVEN SOUTH LTE 3C
SITE NO. CT5048**
259 COMMERCE STREET
EAST HAVEN, CT 06512



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

| | | | | | |
|-----------------|----------|------------------------------|--------------|-----|-------|
| | | | | | |
| B | 03/14/18 | FOR CT SITING COUNCIL FILING | KB | DAS | BBR |
| A | 02/09/18 | ISSUED FOR REVIEW | KB | DAS | BBR |
| NO. | DATE | REVISIONS | BY | CHK | APP'D |
| SCALE: AS SHOWN | | DESIGNED BY: DAS | DRAWN BY: MR | | |

AT&T MOBILITY
ROCKY HILL, CT 06067

GROUNDING NOTES & DETAILS

| | | |
|-------------------|----------------|-----|
| DEWBERRY NO. | DRAWING NUMBER | REV |
| 50019239/50083730 | E01 | B |

Date: February 02, 2018

Chanhdara Ratsavong
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277



Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject: Structural Analysis Report

Carrier Designation: AT&T Mobility Co-Locate
Carrier Site Number: CT5048
Carrier Site Name: EAST HAVEN SOUTH

Crown Castle Designation: Crown Castle BU Number: 842862
Crown Castle Site Name: EAST HAVEN SOUTH
Crown Castle JDE Job Number: 478170
Crown Castle Work Order Number: 1521069
Crown Castle Application Number: 421214 Rev. 1

Engineering Firm Designation: Crown Castle Project Number: 1521069

Site Data: 259 COMMERCE STREET, EAST HAVEN, New Haven County, CT
Latitude 41° 15' 22.88", Longitude -72° 52' 32.8"
58 Foot - Monopole Tower

Dear Chanhdara Ratsavong,

Crown Castle is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1251069, in accordance with application 421214, revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

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

Structural analysis prepared by: Matthew Betts, E.I.T. / ESS

Respectfully submitted by:


Maribel Dentinger, P.E.
Senior Project Engineer



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1) INTRODUCTION

This tower is a 58 ft Monopole tower designed by FWT INC. in September of 2003. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 101 mph with no ice, 50 mph with 0.75 inch ice thickness and 60 mph under service loads, exposure category C.

Table 1 - Proposed Antenna and Cable Information

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---------------------|----------------------------|--------------------|------------------------|------------------------------|----------------------|------------------------------|------|
| 54.0 | 55.0 | 3 | cci antennas | HPA-65R-BUU-H6 w/ Mount Pipe | 6 4 2 1 | 7/8 3/4 3/8 Conduit | - |
| | | 3 | ericsson | RRUS 32 | | | |
| | | 3 | ericsson | RRUS12/RRUS A2 | | | |
| | | 6 | powerwave technologies | LGP21401 | | | |
| | | 3 | quintel technology | QS66512-6 w/ Mount Pipe | | | |
| | | 1 | raycap | DC6-48-60-18-8C | | | |
| | 54.0 | 1 | Sabre | C10857011 | | | |

Table 2 - Existing Antenna and Cable Information

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---------------------|----------------------------|--------------------|------------------------|-------------------------------------|----------------------|-----------------------|------|
| 54.0 | 55.0 | 3 | ericsson | RRUS 11 | 6 | 7/8 | 1 |
| | | 3 | kathrein | 800 10121 w/ Mount Pipe | | | |
| | | 6 | kathrein | 860 10025 | | | |
| | | 1 | raycap | DC6-48-60-18-8F | | | |
| | | 3 | kmw communications | AM-X-CD-16-65-00T-RET w/ Mount Pipe | 2 | 5/8 3/8 Conduit | 2 |
| | | 6 | powerwave technologies | LGP 21403 | 1 | | |
| | 54.0 | 1 | tower mounts | T-Arm Mount [TA 702-3] | 1 | | |
| 47.0 | 47.0 | 3 | commscope | ATBT-BOTTOM-24V | 12 6 | 7/8 1-5/8 | 1 |
| | | 3 | commscope | LNx-6515DS-VTM w/ Mount Pipe | | | |
| | | 6 | ericsson | 1900 MHZ G | | | |
| | | 3 | ericsson | KRY 112 144/1 | | | |
| | | 3 | rfs celwave | APX16DWV-16DWVS-C w/ Mount Pipe | | | |
| | | 1 | tower mounts | Platform Mount [LP 303-1] | | | |

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---------------------|----------------------------|--------------------|----------------------|--------------------------------|----------------------|---------------------|------|
| 37.0 | 37.0 | 3 | rfs celwave | APXV18-206517S-C w/ Mount Pipe | 6 | 1-5/8 | 1 |

Notes:

- 1) Existing Equipment
- 2) Existing Equipment To Be Removed; Not Considered in This Analysis

Table 3 - Design Antenna and Cable Information

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) |
|---------------------|----------------------------|--------------------|----------------------|------------------------|----------------------|---------------------|
| 57 | 57 | 1 | Generic | 10' L.P Sected Mount | - | - |
| | | 9 | Generic | 6'x1'x3" Panel Antenna | | |
| 52 | 52 | 2 | Generic | 4' STD Dish | - | - |
| 47 | 47 | 1 | Generic | 10' L.P Sected Mount | - | - |
| | | 9 | Generic | 6'x1'x3" Panel Antenna | | |

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

| Document | Remarks | Reference | Source |
|------------------------------------------|------------------------|-----------|----------|
| 4-GEOTECHNICAL REPORTS | Jaworski Geotech, Inc. | 4291659 | CCISITES |
| 4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS | FWT, Inc. | 4529325 | CCISITES |
| 4-TOWER MANUFACTURER DRAWINGS | FWT, Inc. | 4291655 | CCISITES |

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

| Section No. | Elevation (ft) | Component Type | Size | Critical Element | P (K) | SF*P_allow (K) | % Capacity | Pass / Fail |
|-------------|----------------|----------------|-----------------------|------------------|---------|----------------|------------|-------------|
| L1 | 58 - 50.5 | Pole | TP19.078x17.393x0.188 | 1 | -2.014 | 833.800 | 4.2 | Pass |
| L2 | 50.5 - 0 | Pole | TP30.05x18.141x0.188 | 2 | -10.986 | 1124.340 | 79.8 | Pass |
| | | | | | | | Summary | |
| | | | | | | Pole (L2) | 79.8 | Pass |
| | | | | | | Rating = | 79.8 | Pass |

Table 6 - Tower Component Stresses vs. Capacity – LC5

| Notes | Component | Elevation (ft) | % Capacity | Pass / Fail |
|-------|----------------------------------|----------------|------------|-------------|
| 1 | Anchor Rods | 0 | 71.3 | Pass |
| 1 | Base Plate | 0 | 53.5 | Pass |
| 1 | Base Foundation | 0 | 35.8 | Pass |
| 1 | Base Foundation Soil Interaction | 0 | 51.5 | Pass |

| | |
|-----------------------------------------------------|--------------|
| Structure Rating (max from all components) = | 79.8% |
|-----------------------------------------------------|--------------|

Notes:

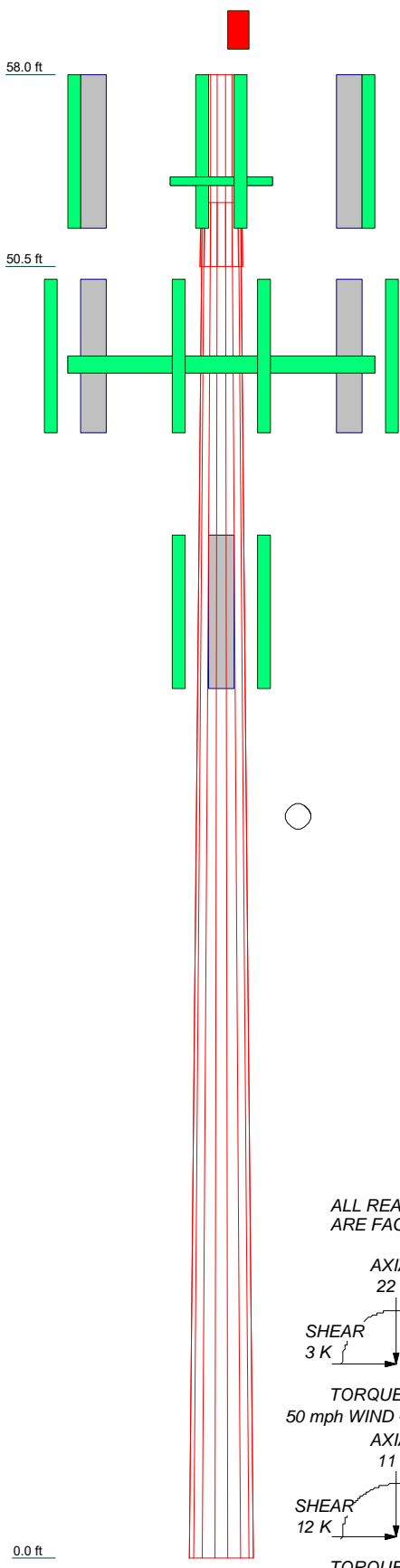
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT

| | | |
|--------------------|---------|--------|
| Section | 1 | 2 |
| Length (ft) | 7.500 | 53.000 |
| Number of Sides | 18 | 18 |
| Thickness (in) | 0.188 | 0.188 |
| Socket Length (ft) | 2.500 | 18.141 |
| Top Dia (in) | 17.393 | 30.050 |
| Bot Dia (in) | 19.078 | |
| Grade | A572-65 | |
| Weight (K) | 0.3 | 2.6 |



DESIGNED APPURTENANCE LOADING

| TYPE | ELEVATION | TYPE | ELEVATION |
|------------------------------|-----------|---------------------------------|-----------|
| (2) Obstruction Lighting | 58 | DC6-48-60-18-8F | 54 |
| HPA-65R-BUU-H6 w/ Mount Pipe | 54 | APX16DWV-16DWVS-C w/ Mount Pipe | 47 |
| HPA-65R-BUU-H6 w/ Mount Pipe | 54 | APX16DWV-16DWVS-C w/ Mount Pipe | 47 |
| HPA-65R-BUU-H6 w/ Mount Pipe | 54 | APX16DWV-16DWVS-C w/ Mount Pipe | 47 |
| QS66512-6 w/ Mount Pipe | 54 | APX16DWV-16DWVS-C w/ Mount Pipe | 47 |
| QS66512-6 w/ Mount Pipe | 54 | LNx-6515DS-VTM w/ Mount Pipe | 47 |
| RRUS 32 | 54 | LNx-6515DS-VTM w/ Mount Pipe | 47 |
| RRUS 32 | 54 | LNx-6515DS-VTM w/ Mount Pipe | 47 |
| RRUS 32 | 54 | (2) 1900 MHZ G | 47 |
| RRUS12/RRUS A2 | 54 | (2) 1900 MHZ G | 47 |
| RRUS12/RRUS A2 | 54 | (2) 1900 MHZ G | 47 |
| RRUS12/RRUS A2 | 54 | KRY 112 144/1 | 47 |
| (2) LGP21401 | 54 | KRY 112 144/1 | 47 |
| (2) LGP21401 | 54 | KRY 112 144/1 | 47 |
| (2) LGP21401 | 54 | ATBT-BOTTOM-24V | 47 |
| DC6-48-60-18-8C | 54 | ATBT-BOTTOM-24V | 47 |
| Sector Mount [SM 502-3] | 54 | ATBT-BOTTOM-24V | 47 |
| 800 10121 w/ Mount Pipe | 54 | 7"x2" Antenna Mount Pipe | 47 |
| 800 10121 w/ Mount Pipe | 54 | 7"x2" Antenna Mount Pipe | 47 |
| 800 10121 w/ Mount Pipe | 54 | 7"x2" Antenna Mount Pipe | 47 |
| (2) 860 10025 | 54 | Platform Mount [LP 303-1] | 47 |
| (2) 860 10025 | 54 | APXV18-206517S-C w/ Mount Pipe | 37 |
| (2) 860 10025 | 54 | APXV18-206517S-C w/ Mount Pipe | 37 |
| RRUS 11 | 54 | APXV18-206517S-C w/ Mount Pipe | 37 |
| RRUS 11 | 54 | | |
| RRUS 11 | 54 | | |

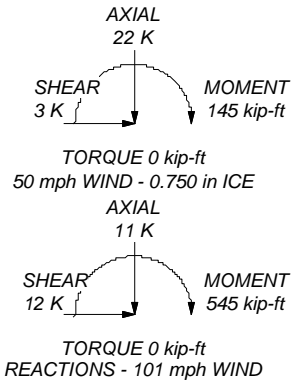
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 101 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 79.8%

ALL REACTIONS ARE FACTORED



Crown Castle
 2000 Corporate Drive
 Canonsburg, PA 15317
 Phone: (724) 416-2000
 FAX:

| | | |
|----------------------|------------------|------------|
| Job: 842862 | Project: | |
| Client: Crown Castle | Drawn by: MBetts | App'd: |
| Code: TIA-222-G | Date: 02/02/18 | Scale: NTS |
| Path: | Dwg No. E-1 | |

R:\SA Models - Letters\Work Area\MBetts\WIP\842862 WO 1521069\842862.dwg

Tower Input Data

There is a pole section.
 This tower is designed using the TIA-222-G standard.
 The following design criteria apply:

- 1) Tower is located in New Haven County, Connecticut.
- 2) Basic wind speed of 101 mph.
- 3) Structure Class II.
- 4) Exposure Category C.
- 5) Topographic Category 1.
- 6) Crest Height 0.000 ft.
- 7) Nominal ice thickness of 0.750 in.
- 8) Ice thickness is considered to increase with height.
- 9) Ice density of 56.000 pcf.
- 10) A wind speed of 50 mph is used in combination with ice.
- 11) Temperature drop of 50.000 °F.
- 12) Deflections calculated using a wind speed of 60 mph.
- 13) A non-linear (P-delta) analysis was used.
- 14) Pressures are calculated at each section.
- 15) Stress ratio used in pole design is 1.
- 16) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder | Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Tapered Pole Section Geometry

| Section | Elevation | Section Length | Splice Length | Number of Sides | Top Diameter | Bottom Diameter | Wall Thickness | Bend Radius | Pole Grade |
|---------|---------------|----------------|---------------|-----------------|--------------|-----------------|----------------|-------------|---------------------|
| | ft | ft | ft | | in | in | in | in | |
| L1 | 58.000-50.500 | 7.500 | 2.500 | 18 | 17.393 | 19.078 | 0.188 | 0.750 | A572-65 (65 ksi) |
| L2 | 50.500-0.000 | 53.000 | | 18 | 18.141 | 30.050 | 0.188 | 0.750 | A572-65 (65 ksi) |

Tapered Pole Properties

| Section | Tip Dia. in | Area in ² | I in ⁴ | r in | C in | I/C in ³ | J in ⁴ | I/Q in ² | w in | w/t |
|---------|----------------|-------------------------|----------------------|---------|---------|------------------------|----------------------|------------------------|---------|--------|
| L1 | 17.661 | 10.239 | 382.955 | 6.108 | 8.836 | 43.342 | 766.414 | 5.121 | 2.731 | 14.566 |
| | 19.372 | 11.242 | 506.846 | 6.706 | 9.692 | 52.297 | 1014.359 | 5.622 | 3.028 | 16.148 |
| L2 | 18.992 | 10.685 | 435.128 | 6.374 | 9.216 | 47.215 | 870.829 | 5.343 | 2.863 | 15.269 |
| | 30.514 | 17.772 | 2002.277 | 10.601 | 15.265 | 131.164 | 4007.188 | 8.888 | 4.959 | 26.447 |

| Tower Elevation | Gusset Area (per face) | Gusset Thickness | Gusset Grade | Adjust. Factor Ar | Adjust. Factor Ar | Weight Mult. | Double Angle Stitch Bolt Spacing Diagonals | Double Angle Stitch Bolt Spacing Horizontals | Double Angle Stitch Bolt Spacing Redundants |
|------------------|------------------------|------------------|--------------|-------------------|-------------------|--------------|--------------------------------------------|----------------------------------------------|---------------------------------------------|
| ft | ft ² | in | | | | | in | in | in |
| L1 58.000-50.500 | | | | 1 | 1 | 1 | | | |
| L2 50.500-0.000 | | | | 1 | 1 | 1 | | | |

Feed Line/Linear Appurtenances - Entered As Round Or Flat

| Description | Sector | Component Type | Placement | Total Number | Number Per Row | Start/End Position | Width or Diameter | Perimeter | Weight |
|----------------------|--------|-------------------|----------------|--------------|----------------|--------------------|-------------------|-----------|--------|
| | | | ft | | | | in | in | klf |
| 2-1/4" Rigid Conduit | B | Surface Ar (CaAa) | 54.000 - 0.000 | 1 | 1 | 0.450 0.450 | 2.250 | | 0.003 |
| *** | | | | | | | | | |

Feed Line/Linear Appurtenances - Entered As Area

| Description | Face or Leg | Allow Shield | Component Type | Placement | Total Number | | CAAA | Weight | |
|----------------------|-------------|--------------|----------------|----------------|--------------|------------------------------|-------------------------|-------------------------|--|
| | | | | ft | | | ft ² /ft | klf | |
| LDF5-50A(7/8") | C | No | Inside Pole | 54.000 - 0.000 | 12 | No Ice 1/2" Ice 1" Ice | 0.000 0.000 0.000 | 0.000 0.000 0.000 | |
| ** | | | | | | | | | |
| AVA7-50(1-5/8") | B | No | Inside Pole | 47.000 - 0.000 | 6 | No Ice 1/2" Ice 1" Ice | 0.000 0.000 0.000 | 0.001 0.001 0.001 | |
| LDF5-50A(7/8") | B | No | Inside Pole | 47.000 - 0.000 | 12 | No Ice 1/2" Ice 1" Ice | 0.000 0.000 0.000 | 0.000 0.000 0.000 | |
| ** | | | | | | | | | |
| LDF7-50A(1-5/8") | C | No | Inside Pole | 37.000 - 0.000 | 6 | No Ice 1/2" Ice 1" Ice | 0.000 0.000 0.000 | 0.001 0.001 0.001 | |
| ** | | | | | | | | | |
| LDF4P-50A(1/2") | B | No | Inside Pole | 58.000 - 0.000 | 1 | No Ice 1/2" Ice 1" Ice | 0.000 0.000 0.000 | 0.000 0.000 0.000 | |
| ** | | | | | | | | | |
| FB-L98B-034-XXX(3/8) | C | No | Inside Pole | 54.000 - 0.000 | 2 | No Ice 1/2" Ice 1" Ice | 0.000 0.000 0.000 | 0.000 0.000 0.000 | |
| WR-VG86ST-BRD(3/4) | C | No | Inside Pole | 54.000 - 0.000 | 4 | No Ice 1/2" Ice 1" Ice | 0.000 0.000 0.000 | 0.001 0.001 0.001 | |
| *** | | | | | | | | | |

Feed Line/Linear Appurtenances Section Areas

| Tower Section | Tower Elevation ft | Face | A _R ft ² | A _F ft ² | C _{AA} In Face ft ² | C _{AA} Out Face ft ² | Weight K |
|---------------|-----------------------|------|-----------------------------------|-----------------------------------|-----------------------------------------------|------------------------------------------------|-------------|
| L1 | 58.000-50.500 | A | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | | B | 0.000 | 0.000 | 0.787 | 0.000 | 0.012 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.022 |
| L2 | 50.500-0.000 | A | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | | B | 0.000 | 0.000 | 11.363 | 0.000 | 0.543 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.506 |

Feed Line/Linear Appurtenances Section Areas - With Ice

| Tower Section | Tower Elevation ft | Face or Leg | Ice Thickness in | A _R ft ² | A _F ft ² | C _{AA} In Face ft ² | C _{AA} Out Face ft ² | Weight K |
|---------------|-----------------------|-------------|---------------------|-----------------------------------|-----------------------------------|-----------------------------------------------|------------------------------------------------|-------------|
| L1 | 58.000-50.500 | A | 1.576 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | | B | | 0.000 | 0.000 | 1.891 | 0.000 | 0.037 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.022 |
| L2 | 50.500-0.000 | A | 1.456 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | | B | | 0.000 | 0.000 | 27.283 | 0.000 | 0.915 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.506 |

Feed Line Center of Pressure

| Section | Elevation ft | CP _x in | CP _z in | CP _x Ice in | CP _z Ice in |
|---------|-----------------|-----------------------|-----------------------|------------------------------|------------------------------|
| L1 | 58.000-50.500 | 0.152 | 0.068 | 0.293 | 0.130 |
| L2 | 50.500-0.000 | 0.299 | 0.133 | 0.573 | 0.255 |

Shielding Factor Ka

| Tower Section | Feed Line Record No. | Description | Feed Line Segment Elev. | K _a No Ice | K _a Ice |
|---------------|----------------------|----------------------|-------------------------|--------------------------|-----------------------|
| L1 | 5 | 2-1/4" Rigid Conduit | 50.50 - 54.00 | 1.0000 | 1.0000 |

Discrete Tower Loads

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment t ° | Placement ft | C _{AA} Front ft ² | C _{AA} Side ft ² | Weight K | |
|---------------------------------------------------|-------------|-------------|-------------------------------------------------------|------------------------------|-----------------|---------------------------------------------|--------------------------------------------|--------------------------|-------------------------|
| (2) Obstruction Lighting | B | From Leg | 0.000 0.000 1.000 | 0.000 | 58.000 | No Ice 1/2" Ice 1" Ice | 0.133 0.194 0.267 | 0.133 0.194 0.267 | 0.005 0.007 0.010 |
| **_** **_** HPA-65R-BUU-H6 w/ Mount Pipe | A | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | No Ice 1/2" Ice 1" Ice | 9.895 10.470 11.010 | 8.113 9.304 10.209 | 0.077 0.158 0.248 |
| HPA-65R-BUU-H6 w/ | B | From Leg | 4.000 | 0.000 | 54.000 | No Ice | 9.895 | 8.113 | 0.077 |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | C _{AA} Front ft ² | C _{AA} Side ft ² | Weight K | |
|---------------------------------|-------------|-------------|-------------------------------------------------------|-------------------------|-----------------|---------------------------------------------|------------------------------------------------|-------------------------|-------|
| Mount Pipe | | | 0.000 1.000 | | | 1/2" Ice 11.010 | 9.304 10.209 | 0.158 0.248 | |
| HPA-65R-BUJ-H6 w/ Mount Pipe | C | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 11.010 | 8.113 9.304 10.209 | 0.077 0.158 0.248 | |
| QS66512-6 w/ Mount Pipe | A | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 9.457 | 8.463 8.931 9.657 10.548 | 0.137 0.212 0.296 | |
| QS66512-6 w/ Mount Pipe | B | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 9.457 | 8.463 8.931 9.657 10.548 | 0.137 0.212 0.296 | |
| QS66512-6 w/ Mount Pipe | C | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 9.457 | 8.463 8.931 9.657 10.548 | 0.137 0.212 0.296 | |
| RRUS 32 | A | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 3.316 | 1.777 2.857 3.083 1.968 2.166 | 0.055 0.077 0.103 | |
| RRUS 32 | B | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 3.316 | 1.777 2.857 3.083 1.968 2.166 | 0.055 0.077 0.103 | |
| RRUS 32 | C | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 3.316 | 1.777 2.857 3.083 1.968 2.166 | 0.055 0.077 0.103 | |
| RRUS12/RRUS A2 | A | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 3.590 | 1.835 3.143 3.363 2.012 2.196 | 0.072 0.099 0.130 | |
| RRUS12/RRUS A2 | B | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 3.590 | 1.835 3.143 3.363 2.012 2.196 | 0.072 0.099 0.130 | |
| RRUS12/RRUS A2 | C | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 3.590 | 1.835 3.143 3.363 2.012 2.196 | 0.072 0.099 0.130 | |
| (2) LGP21401 | A | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 1.381 | 0.207 1.104 1.239 0.274 0.348 | 0.014 0.021 0.030 | |
| (2) LGP21401 | B | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 1.381 | 0.207 1.104 1.239 0.274 0.348 | 0.014 0.021 0.030 | |
| (2) LGP21401 | C | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 1.381 | 0.207 1.104 1.239 0.274 0.348 | 0.014 0.021 0.030 | |
| DC6-48-60-18-8C | B | From Leg | 4.000 0.000 1.000 | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 3.196 | 2.737 2.737 2.963 2.963 3.196 | 0.026 0.052 0.082 | |
| Sector Mount [SM 502-3] | C | None | | 0.000 | 54.000 | 1" Ice No Ice 1/2" Ice 61.700 | 33.020 33.020 47.360 47.360 61.700 | 1.673 2.224 2.775 | |
| ** 800 10121 w/ Mount Pipe | A | From Leg | 3.000 | 0.000 | 54.000 | No Ice | 5.388 | 4.600 | 0.066 |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment t ° | Placement ft | CAAA Front ft² | CAAA Side ft² | Weight K | |
|---------------------------------|-------------|-------------|-------------------------------------------------------|------------------------------|-----------------|----------------------|---------------------|-------------|-------|
| | | | 0.000 | | | 1/2" | 5.813 | 5.351 | 0.114 |
| | | | 1.000 | | | Ice | 6.234 | 6.046 | 0.168 |
| 800 10121 w/ Mount Pipe | B | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 5.388 | 4.600 | 0.066 |
| | | | 0.000 | | | No Ice | 5.813 | 5.351 | 0.114 |
| | | | 1.000 | | | Ice | 6.234 | 6.046 | 0.168 |
| 800 10121 w/ Mount Pipe | C | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 5.388 | 4.600 | 0.066 |
| | | | 0.000 | | | No Ice | 5.813 | 5.351 | 0.114 |
| | | | 1.000 | | | Ice | 6.234 | 6.046 | 0.168 |
| (2) 860 10025 | A | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 0.142 | 0.121 | 0.001 |
| | | | 0.000 | | | No Ice | 0.196 | 0.173 | 0.003 |
| | | | 1.000 | | | Ice | 0.259 | 0.231 | 0.005 |
| (2) 860 10025 | B | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 0.142 | 0.121 | 0.001 |
| | | | 0.000 | | | No Ice | 0.196 | 0.173 | 0.003 |
| | | | 1.000 | | | Ice | 0.259 | 0.231 | 0.005 |
| (2) 860 10025 | C | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 0.142 | 0.121 | 0.001 |
| | | | 0.000 | | | No Ice | 0.196 | 0.173 | 0.003 |
| | | | 1.000 | | | Ice | 0.259 | 0.231 | 0.005 |
| RRUS 11 | A | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 2.784 | 1.187 | 0.048 |
| | | | 0.000 | | | No Ice | 2.992 | 1.334 | 0.068 |
| | | | 1.000 | | | Ice | 3.207 | 1.490 | 0.092 |
| RRUS 11 | B | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 2.784 | 1.187 | 0.048 |
| | | | 0.000 | | | No Ice | 2.992 | 1.334 | 0.068 |
| | | | 1.000 | | | Ice | 3.207 | 1.490 | 0.092 |
| RRUS 11 | C | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 2.784 | 1.187 | 0.048 |
| | | | 0.000 | | | No Ice | 2.992 | 1.334 | 0.068 |
| | | | 1.000 | | | Ice | 3.207 | 1.490 | 0.092 |
| DC6-48-60-18-8F | A | From Leg | 3.000 | 0.000 | 54.000 | 1" Ice | 0.791 | 0.791 | 0.020 |
| | | | 0.000 | | | No Ice | 1.274 | 1.274 | 0.035 |
| | | | 1.000 | | | Ice | 1.450 | 1.450 | 0.053 |
| | | | | | | 1" Ice | | | |
| ** | | | | | | | | | |
| **_** | | | | | | | | | |
| APX16DWV-16DWVS-C w/ Mount Pipe | A | From Leg | 4.000 | 0.000 | 47.000 | 1" Ice | 6.824 | 3.494 | 0.061 |
| | | | 0.000 | | | No Ice | 7.275 | 4.263 | 0.110 |
| | | | 0.000 | | | Ice | 7.719 | 4.960 | 0.165 |
| APX16DWV-16DWVS-C w/ Mount Pipe | B | From Leg | 4.000 | 0.000 | 47.000 | 1" Ice | 6.824 | 3.494 | 0.061 |
| | | | 0.000 | | | No Ice | 7.275 | 4.263 | 0.110 |
| | | | 0.000 | | | Ice | 7.719 | 4.960 | 0.165 |
| APX16DWV-16DWVS-C w/ Mount Pipe | C | From Leg | 4.000 | 0.000 | 47.000 | 1" Ice | 6.824 | 3.494 | 0.061 |
| | | | 0.000 | | | No Ice | 7.275 | 4.263 | 0.110 |
| | | | 0.000 | | | Ice | 7.719 | 4.960 | 0.165 |
| LNX-6515DS-VTM w/ Mount Pipe | A | From Leg | 4.000 | 0.000 | 47.000 | 1" Ice | 11.683 | 9.842 | 0.083 |
| | | | 0.000 | | | No Ice | 12.404 | 11.366 | 0.173 |
| | | | 0.000 | | | Ice | 13.135 | 12.914 | 0.273 |
| LNX-6515DS-VTM w/ Mount Pipe | B | From Leg | 4.000 | 0.000 | 47.000 | 1" Ice | 11.683 | 9.842 | 0.083 |
| | | | 0.000 | | | No Ice | 12.404 | 11.366 | 0.173 |
| | | | 0.000 | | | Ice | 13.135 | 12.914 | 0.273 |
| LNX-6515DS-VTM w/ Mount Pipe | C | From Leg | 4.000 | 0.000 | 47.000 | 1" Ice | 11.683 | 9.842 | 0.083 |
| | | | 0.000 | | | No Ice | 12.404 | 11.366 | 0.173 |
| | | | 0.000 | | | Ice | 13.135 | 12.914 | 0.273 |
| | | | | | | 1" Ice | | | |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} | | Weight | |
|-----------------------------------|-------------|-------------|----------|---------|--------------------|-----------|-----------------|-----------------|--------|-------|
| | | | Horz | Lateral | | | Front | Side | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | K | |
| (2) 1900 MHZ G | A | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.233 | 0.433 | 0.018 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.298 | 0.531 | 0.024 |
| | | | 0.000 | 0.000 | | | Ice | 0.370 | 0.637 | 0.032 |
| | | | | | | | 1" Ice | | | |
| (2) 1900 MHZ G | B | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.233 | 0.433 | 0.018 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.298 | 0.531 | 0.024 |
| | | | 0.000 | 0.000 | | | Ice | 0.370 | 0.637 | 0.032 |
| | | | | | | | 1" Ice | | | |
| (2) 1900 MHZ G | C | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.233 | 0.433 | 0.018 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.298 | 0.531 | 0.024 |
| | | | 0.000 | 0.000 | | | Ice | 0.370 | 0.637 | 0.032 |
| | | | | | | | 1" Ice | | | |
| KRY 112 144/1 | A | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.350 | 0.175 | 0.011 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.426 | 0.234 | 0.014 |
| | | | 0.000 | 0.000 | | | Ice | 0.509 | 0.301 | 0.019 |
| | | | | | | | 1" Ice | | | |
| KRY 112 144/1 | B | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.350 | 0.175 | 0.011 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.426 | 0.234 | 0.014 |
| | | | 0.000 | 0.000 | | | Ice | 0.509 | 0.301 | 0.019 |
| | | | | | | | 1" Ice | | | |
| KRY 112 144/1 | C | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.350 | 0.175 | 0.011 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.426 | 0.234 | 0.014 |
| | | | 0.000 | 0.000 | | | Ice | 0.509 | 0.301 | 0.019 |
| | | | | | | | 1" Ice | | | |
| ATBT-BOTTOM-24V | A | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.104 | 0.065 | 0.003 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.148 | 0.102 | 0.004 |
| | | | 0.000 | 0.000 | | | Ice | 0.199 | 0.147 | 0.006 |
| | | | | | | | 1" Ice | | | |
| ATBT-BOTTOM-24V | B | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.104 | 0.065 | 0.003 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.148 | 0.102 | 0.004 |
| | | | 0.000 | 0.000 | | | Ice | 0.199 | 0.147 | 0.006 |
| | | | | | | | 1" Ice | | | |
| ATBT-BOTTOM-24V | C | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 0.104 | 0.065 | 0.003 |
| | | | 0.000 | 0.000 | | | 1/2" | 0.148 | 0.102 | 0.004 |
| | | | 0.000 | 0.000 | | | Ice | 0.199 | 0.147 | 0.006 |
| | | | | | | | 1" Ice | | | |
| 7'x2" Antenna Mount Pipe | A | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 1.663 | 1.663 | 0.026 |
| | | | 0.000 | 0.000 | | | 1/2" | 2.391 | 2.391 | 0.039 |
| | | | 0.000 | 0.000 | | | Ice | 2.825 | 2.825 | 0.056 |
| | | | | | | | 1" Ice | | | |
| 7'x2" Antenna Mount Pipe | B | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 1.663 | 1.663 | 0.026 |
| | | | 0.000 | 0.000 | | | 1/2" | 2.391 | 2.391 | 0.039 |
| | | | 0.000 | 0.000 | | | Ice | 2.825 | 2.825 | 0.056 |
| | | | | | | | 1" Ice | | | |
| 7'x2" Antenna Mount Pipe | C | From Leg | 4.000 | 0.000 | 0.000 | 47.000 | No Ice | 1.663 | 1.663 | 0.026 |
| | | | 0.000 | 0.000 | | | 1/2" | 2.391 | 2.391 | 0.039 |
| | | | 0.000 | 0.000 | | | Ice | 2.825 | 2.825 | 0.056 |
| | | | | | | | 1" Ice | | | |
| Platform Mount [LP 303-1] | C | None | | | 0.000 | 47.000 | No Ice | 14.660 | 14.660 | 1.250 |
| | | | | | | | 1/2" | 18.870 | 18.870 | 1.481 |
| | | | | | | | Ice | 23.080 | 23.080 | 1.713 |
| | | | | | | | 1" Ice | | | |
| *** | | | | | | | | | | |
| APXV18-206517S-C w/ Mount Pipe | A | From Leg | 1.000 | 0.000 | 0.000 | 37.000 | No Ice | 5.404 | 4.700 | 0.052 |
| | | | 0.000 | 0.000 | | | 1/2" | 5.960 | 5.860 | 0.097 |
| | | | 0.000 | 0.000 | | | Ice | 6.481 | 6.734 | 0.150 |
| | | | | | | | 1" Ice | | | |
| APXV18-206517S-C w/ Mount Pipe | B | From Leg | 1.000 | 0.000 | 0.000 | 37.000 | No Ice | 5.404 | 4.700 | 0.052 |
| | | | 0.000 | 0.000 | | | 1/2" | 5.960 | 5.860 | 0.097 |
| | | | 0.000 | 0.000 | | | Ice | 6.481 | 6.734 | 0.150 |
| | | | | | | | 1" Ice | | | |
| APXV18-206517S-C w/ Mount Pipe | C | From Leg | 1.000 | 0.000 | 0.000 | 37.000 | No Ice | 5.404 | 4.700 | 0.052 |
| | | | 0.000 | 0.000 | | | 1/2" | 5.960 | 5.860 | 0.097 |
| | | | 0.000 | 0.000 | | | Ice | 6.481 | 6.734 | 0.150 |
| | | | | | | | 1" Ice | | | |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustmen t ° | Placement ft | C _A A _A Front ft ² | C _A A _A Side ft ² | Weight K |
|-------------|-------------------|----------------|-------------------------------------------------------|--------------------------------|---------------------|-----------------------------------------------------------|----------------------------------------------------------|-----------------|
| *** | | | | | | | | |

Load Combinations

| Comb. No. | Description |
|--------------|--------------------------------------------|
| 1 | Dead Only |
| 2 | 1.2 Dead+1.6 Wind 0 deg - No Ice |
| 3 | 0.9 Dead+1.6 Wind 0 deg - No Ice |
| 4 | 1.2 Dead+1.6 Wind 30 deg - No Ice |
| 5 | 0.9 Dead+1.6 Wind 30 deg - No Ice |
| 6 | 1.2 Dead+1.6 Wind 60 deg - No Ice |
| 7 | 0.9 Dead+1.6 Wind 60 deg - No Ice |
| 8 | 1.2 Dead+1.6 Wind 90 deg - No Ice |
| 9 | 0.9 Dead+1.6 Wind 90 deg - No Ice |
| 10 | 1.2 Dead+1.6 Wind 120 deg - No Ice |
| 11 | 0.9 Dead+1.6 Wind 120 deg - No Ice |
| 12 | 1.2 Dead+1.6 Wind 150 deg - No Ice |
| 13 | 0.9 Dead+1.6 Wind 150 deg - No Ice |
| 14 | 1.2 Dead+1.6 Wind 180 deg - No Ice |
| 15 | 0.9 Dead+1.6 Wind 180 deg - No Ice |
| 16 | 1.2 Dead+1.6 Wind 210 deg - No Ice |
| 17 | 0.9 Dead+1.6 Wind 210 deg - No Ice |
| 18 | 1.2 Dead+1.6 Wind 240 deg - No Ice |
| 19 | 0.9 Dead+1.6 Wind 240 deg - No Ice |
| 20 | 1.2 Dead+1.6 Wind 270 deg - No Ice |
| 21 | 0.9 Dead+1.6 Wind 270 deg - No Ice |
| 22 | 1.2 Dead+1.6 Wind 300 deg - No Ice |
| 23 | 0.9 Dead+1.6 Wind 300 deg - No Ice |
| 24 | 1.2 Dead+1.6 Wind 330 deg - No Ice |
| 25 | 0.9 Dead+1.6 Wind 330 deg - No Ice |
| 26 | 1.2 Dead+1.0 Ice+1.0 Temp |
| 27 | 1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp |
| 28 | 1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp |
| 29 | 1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp |
| 30 | 1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp |
| 31 | 1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp |
| 32 | 1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp |
| 33 | 1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp |
| 34 | 1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp |
| 35 | 1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp |
| 36 | 1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp |
| 37 | 1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp |
| 38 | 1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp |
| 39 | Dead+Wind 0 deg - Service |
| 40 | Dead+Wind 30 deg - Service |
| 41 | Dead+Wind 60 deg - Service |
| 42 | Dead+Wind 90 deg - Service |
| 43 | Dead+Wind 120 deg - Service |
| 44 | Dead+Wind 150 deg - Service |
| 45 | Dead+Wind 180 deg - Service |
| 46 | Dead+Wind 210 deg - Service |
| 47 | Dead+Wind 240 deg - Service |
| 48 | Dead+Wind 270 deg - Service |
| 49 | Dead+Wind 300 deg - Service |
| 50 | Dead+Wind 330 deg - Service |

Maximum Member Forces

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Axial K | Major Axis Moment kip-ft | Minor Axis Moment kip-ft |
|-------------|--------------|----------------|---------------------|-----------------|---------|--------------------------|--------------------------|
| L1 | 58 - 50.5 | Pole | Max Tension | 30 | 0.000 | 0.001 | 0.000 |
| | | | Max. Compression | 26 | -9.420 | -0.569 | -0.020 |
| | | | Max. M _x | 8 | -2.014 | -12.799 | 0.007 |
| | | | Max. M _y | 2 | -2.014 | -0.065 | 12.727 |
| | | | Max. V _y | 8 | 5.806 | -10.127 | 0.016 |
| | | | Max. V _x | 14 | 5.806 | -0.120 | -9.975 |
| | | | Max. Torque | 16 | | | 0.465 |
| L2 | 50.5 - 0 | Pole | Max Tension | 1 | 0.000 | 0.000 | 0.000 |
| | | | Max. Compression | 26 | -22.400 | -1.203 | -0.285 |
| | | | Max. M _x | 8 | -10.986 | -544.527 | -0.076 |
| | | | Max. M _y | 14 | -10.986 | -0.340 | -544.262 |
| | | | Max. V _y | 8 | 11.823 | -544.527 | -0.076 |
| | | | Max. V _x | 14 | 11.823 | -0.340 | -544.262 |
| | | | Max. Torque | 16 | | | 0.465 |

Maximum Reactions

| Location | Condition | Gov. Load Comb. | Vertical K | Horizontal, X K | Horizontal, Z K |
|----------|---------------------|-----------------|------------|-----------------|-----------------|
| Pole | Max. Vert | 30 | 22.400 | -3.117 | -0.000 |
| | Max. H _x | 21 | 8.255 | 11.803 | 0.000 |
| | Max. H _z | 2 | 11.007 | -0.000 | 11.803 |
| | Max. M _x | 2 | 544.109 | -0.000 | 11.803 |
| | Max. M _z | 8 | 544.527 | -11.803 | -0.000 |
| | Max. Torsion | 16 | 0.464 | 5.901 | -10.222 |
| | Min. Vert | 23 | 8.255 | 10.222 | 5.901 |
| | Min. H _x | 8 | 11.007 | -11.803 | -0.000 |
| | Min. H _z | 14 | 11.007 | -0.000 | -11.803 |
| | Min. M _x | 14 | -544.262 | -0.000 | -11.803 |
| | Min. M _z | 20 | -543.845 | 11.803 | -0.000 |
| | Min. Torsion | 4 | -0.464 | -5.901 | 10.222 |

Tower Mast Reaction Summary

| Load Combination | Vertical K | Shear _x K | Shear _z K | Overturning Moment, M _x kip-ft | Overturning Moment, M _z kip-ft | Torque kip-ft |
|------------------------------------|------------|----------------------|----------------------|-------------------------------------------|-------------------------------------------|---------------|
| Dead Only | 9.173 | 0.000 | 0.000 | 0.062 | -0.275 | 0.000 |
| 1.2 Dead+1.6 Wind 0 deg - No Ice | 11.007 | 0.000 | -11.803 | -544.109 | -0.340 | 0.454 |
| 0.9 Dead+1.6 Wind 0 deg - No Ice | 8.255 | 0.000 | -11.803 | -540.775 | -0.253 | 0.452 |
| 1.2 Dead+1.6 Wind 30 deg - No Ice | 11.007 | 5.901 | -10.222 | -471.203 | -272.433 | 0.464 |
| 0.9 Dead+1.6 Wind 30 deg - No Ice | 8.255 | 5.901 | -10.222 | -468.317 | -270.669 | 0.462 |
| 1.2 Dead+1.6 Wind 60 deg - No Ice | 11.007 | 10.222 | -5.901 | -272.017 | -471.620 | 0.349 |
| 0.9 Dead+1.6 Wind 60 deg - No Ice | 8.255 | 10.222 | -5.901 | -270.359 | -468.627 | 0.349 |
| 1.2 Dead+1.6 Wind 90 deg - No Ice | 11.007 | 11.803 | 0.000 | 0.076 | -544.527 | 0.141 |
| 0.9 Dead+1.6 Wind 90 deg - No Ice | 8.255 | 11.803 | 0.000 | 0.057 | -541.085 | 0.142 |
| 1.2 Dead+1.6 Wind 120 deg - No Ice | 11.007 | 10.222 | 5.901 | 272.170 | -471.620 | -0.104 |
| 0.9 Dead+1.6 Wind 120 deg - No Ice | 8.255 | 10.222 | 5.901 | 270.473 | -468.627 | -0.103 |

| Load Combination | Vertical K | Shear _x K | Shear _z K | Overturning Moment, M _x kip-ft | Overturning Moment, M _z kip-ft | Torque kip-ft |
|--------------------------------------------|---------------|-------------------------|-------------------------|----------------------------------------------|----------------------------------------------|------------------|
| - No Ice | | | | | | |
| 1.2 Dead+1.6 Wind 150 deg | 11.007 | 5.901 | 10.222 | 471.356 | -272.433 | -0.322 |
| - No Ice | | | | | | |
| 0.9 Dead+1.6 Wind 150 deg | 8.255 | 5.901 | 10.222 | 468.431 | -270.669 | -0.320 |
| - No Ice | | | | | | |
| 1.2 Dead+1.6 Wind 180 deg | 11.007 | 0.000 | 11.803 | 544.262 | -0.340 | -0.454 |
| - No Ice | | | | | | |
| 0.9 Dead+1.6 Wind 180 deg | 8.255 | 0.000 | 11.803 | 540.889 | -0.253 | -0.452 |
| - No Ice | | | | | | |
| 1.2 Dead+1.6 Wind 210 deg | 11.007 | -5.901 | 10.222 | 471.355 | 271.753 | -0.464 |
| - No Ice | | | | | | |
| 0.9 Dead+1.6 Wind 210 deg | 8.255 | -5.901 | 10.222 | 468.431 | 270.163 | -0.462 |
| - No Ice | | | | | | |
| 1.2 Dead+1.6 Wind 240 deg | 11.007 | -10.222 | 5.901 | 272.169 | 470.939 | -0.349 |
| - No Ice | | | | | | |
| 0.9 Dead+1.6 Wind 240 deg | 8.255 | -10.222 | 5.901 | 270.472 | 468.121 | -0.349 |
| - No Ice | | | | | | |
| 1.2 Dead+1.6 Wind 270 deg | 11.007 | -11.803 | 0.000 | 0.076 | 543.845 | -0.141 |
| - No Ice | | | | | | |
| 0.9 Dead+1.6 Wind 270 deg | 8.255 | -11.803 | 0.000 | 0.057 | 540.578 | -0.142 |
| - No Ice | | | | | | |
| 1.2 Dead+1.6 Wind 300 deg | 11.007 | -10.222 | -5.901 | -272.017 | 470.938 | 0.104 |
| - No Ice | | | | | | |
| 0.9 Dead+1.6 Wind 300 deg | 8.255 | -10.222 | -5.901 | -270.359 | 468.120 | 0.103 |
| - No Ice | | | | | | |
| 1.2 Dead+1.6 Wind 330 deg | 11.007 | -5.901 | -10.222 | -471.202 | 271.753 | 0.322 |
| - No Ice | | | | | | |
| 0.9 Dead+1.6 Wind 330 deg | 8.255 | -5.901 | -10.222 | -468.317 | 270.163 | 0.320 |
| - No Ice | | | | | | |
| 1.2 Dead+1.0 Ice+1.0 Temp | 22.400 | 0.000 | 0.000 | 0.285 | -1.203 | -0.000 |
| 1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp | 22.400 | 0.000 | -3.117 | -143.894 | -1.227 | 0.097 |
| 1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp | 22.400 | 1.558 | -2.699 | -124.577 | -73.319 | 0.091 |
| 1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp | 22.400 | 2.699 | -1.558 | -71.802 | -126.095 | 0.061 |
| 1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp | 22.400 | 3.117 | 0.000 | 0.291 | -145.412 | 0.014 |
| 1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp | 22.400 | 2.699 | 1.558 | 72.383 | -126.095 | -0.036 |
| 1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp | 22.400 | 1.558 | 2.699 | 125.158 | -73.319 | -0.077 |
| 1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp | 22.400 | 0.000 | 3.117 | 144.475 | -1.227 | -0.097 |
| 1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp | 22.400 | -1.558 | 2.699 | 125.158 | 70.865 | -0.091 |
| 1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp | 22.400 | -2.699 | 1.558 | 72.383 | 123.640 | -0.061 |
| 1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp | 22.400 | -3.117 | 0.000 | 0.291 | 142.957 | -0.014 |
| 1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp | 22.400 | -2.699 | -1.558 | -71.802 | 123.640 | 0.036 |
| 1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp | 22.400 | -1.558 | -2.699 | -124.577 | 70.865 | 0.077 |
| Dead+Wind 0 deg - Service | 9.173 | 0.000 | -2.329 | -106.950 | -0.283 | 0.090 |
| Dead+Wind 30 deg - Service | 9.173 | 1.165 | -2.017 | -92.613 | -53.790 | 0.092 |
| Dead+Wind 60 deg - Service | 9.173 | 2.017 | -1.165 | -53.443 | -92.960 | 0.069 |
| Dead+Wind 90 deg - Service | 9.173 | 2.329 | 0.000 | 0.064 | -107.297 | 0.028 |
| Dead+Wind 120 deg - Service | 9.173 | 2.017 | 1.165 | 53.571 | -92.960 | -0.021 |
| Dead+Wind 150 deg - Service | 9.173 | 1.165 | 2.017 | 92.740 | -53.790 | -0.064 |
| Dead+Wind 180 deg - Service | 9.173 | 0.000 | 2.329 | 107.078 | -0.283 | -0.090 |
| Dead+Wind 210 deg - Service | 9.173 | -1.165 | 2.017 | 92.740 | 53.224 | -0.092 |
| Dead+Wind 240 deg - Service | 9.173 | -2.017 | 1.165 | 53.571 | 92.394 | -0.069 |
| Dead+Wind 270 deg - Service | 9.173 | -2.329 | 0.000 | 0.064 | 106.731 | -0.028 |

| Load Combination | Vertical K | Shear _x K | Shear _z K | Overturning Moment, M _x kip-ft | Overturning Moment, M _z kip-ft | Torque kip-ft |
|-------------------------------------------|---------------|-------------------------|-------------------------|----------------------------------------------|----------------------------------------------|------------------|
| Service Dead+Wind 300 deg - Service | 9.173 | -2.017 | -1.165 | -53.443 | 92.394 | 0.021 |
| Service Dead+Wind 330 deg - Service | 9.173 | -1.165 | -2.017 | -92.613 | 53.224 | 0.064 |

Solution Summary

| Load Comb. | Sum of Applied Forces | | | Sum of Reactions | | | % Error |
|------------|-----------------------|---------|---------|------------------|---------|---------|---------|
| | PX K | PY K | PZ K | PX K | PY K | PZ K | |
| 1 | 0.000 | -9.173 | 0.000 | 0.000 | 9.173 | 0.000 | 0.000% |
| 2 | 0.000 | -11.007 | -11.803 | -0.000 | 11.007 | 11.803 | 0.000% |
| 3 | 0.000 | -8.255 | -11.803 | -0.000 | 8.255 | 11.803 | 0.000% |
| 4 | 5.901 | -11.007 | -10.222 | -5.901 | 11.007 | 10.222 | 0.000% |
| 5 | 5.901 | -8.255 | -10.222 | -5.901 | 8.255 | 10.222 | 0.000% |
| 6 | 10.222 | -11.007 | -5.901 | -10.222 | 11.007 | 5.901 | 0.000% |
| 7 | 10.222 | -8.255 | -5.901 | -10.222 | 8.255 | 5.901 | 0.000% |
| 8 | 11.803 | -11.007 | 0.000 | -11.803 | 11.007 | -0.000 | 0.000% |
| 9 | 11.803 | -8.255 | 0.000 | -11.803 | 8.255 | 0.000 | 0.000% |
| 10 | 10.222 | -11.007 | 5.901 | -10.222 | 11.007 | -5.901 | 0.000% |
| 11 | 10.222 | -8.255 | 5.901 | -10.222 | 8.255 | -5.901 | 0.000% |
| 12 | 5.901 | -11.007 | 10.222 | -5.901 | 11.007 | -10.222 | 0.000% |
| 13 | 5.901 | -8.255 | 10.222 | -5.901 | 8.255 | -10.222 | 0.000% |
| 14 | 0.000 | -11.007 | 11.803 | -0.000 | 11.007 | -11.803 | 0.000% |
| 15 | 0.000 | -8.255 | 11.803 | -0.000 | 8.255 | -11.803 | 0.000% |
| 16 | -5.901 | -11.007 | 10.222 | 5.901 | 11.007 | -10.222 | 0.000% |
| 17 | -5.901 | -8.255 | 10.222 | 5.901 | 8.255 | -10.222 | 0.000% |
| 18 | -10.222 | -11.007 | 5.901 | 10.222 | 11.007 | -5.901 | 0.000% |
| 19 | -10.222 | -8.255 | 5.901 | 10.222 | 8.255 | -5.901 | 0.000% |
| 20 | -11.803 | -11.007 | 0.000 | 11.803 | 11.007 | -0.000 | 0.000% |
| 21 | -11.803 | -8.255 | 0.000 | 11.803 | 8.255 | 0.000 | 0.000% |
| 22 | -10.222 | -11.007 | -5.901 | 10.222 | 11.007 | 5.901 | 0.000% |
| 23 | -10.222 | -8.255 | -5.901 | 10.222 | 8.255 | 5.901 | 0.000% |
| 24 | -5.901 | -11.007 | -10.222 | 5.901 | 11.007 | 10.222 | 0.000% |
| 25 | -5.901 | -8.255 | -10.222 | 5.901 | 8.255 | 10.222 | 0.000% |
| 26 | 0.000 | -22.400 | 0.000 | -0.000 | 22.400 | -0.000 | 0.000% |
| 27 | 0.000 | -22.400 | -3.117 | -0.000 | 22.400 | 3.117 | 0.000% |
| 28 | 1.558 | -22.400 | -2.699 | -1.558 | 22.400 | 2.699 | 0.000% |
| 29 | 2.699 | -22.400 | -1.558 | -2.699 | 22.400 | 1.558 | 0.000% |
| 30 | 3.117 | -22.400 | 0.000 | -3.117 | 22.400 | -0.000 | 0.000% |
| 31 | 2.699 | -22.400 | 1.558 | -2.699 | 22.400 | -1.558 | 0.000% |
| 32 | 1.558 | -22.400 | 2.699 | -1.558 | 22.400 | -2.699 | 0.000% |
| 33 | 0.000 | -22.400 | 3.117 | -0.000 | 22.400 | -3.117 | 0.000% |
| 34 | -1.558 | -22.400 | 2.699 | 1.558 | 22.400 | -2.699 | 0.000% |
| 35 | -2.699 | -22.400 | 1.558 | 2.699 | 22.400 | -1.558 | 0.000% |
| 36 | -3.117 | -22.400 | 0.000 | 3.117 | 22.400 | -0.000 | 0.000% |
| 37 | -2.699 | -22.400 | -1.558 | 2.699 | 22.400 | 1.558 | 0.000% |
| 38 | -1.558 | -22.400 | -2.699 | 1.558 | 22.400 | 2.699 | 0.000% |
| 39 | 0.000 | -9.173 | -2.329 | 0.000 | 9.173 | 2.329 | 0.000% |
| 40 | 1.165 | -9.173 | -2.017 | -1.165 | 9.173 | 2.017 | 0.000% |
| 41 | 2.017 | -9.173 | -1.165 | -2.017 | 9.173 | 1.165 | 0.000% |
| 42 | 2.329 | -9.173 | 0.000 | -2.329 | 9.173 | 0.000 | 0.000% |
| 43 | 2.017 | -9.173 | 1.165 | -2.017 | 9.173 | -1.165 | 0.000% |
| 44 | 1.165 | -9.173 | 2.017 | -1.165 | 9.173 | -2.017 | 0.000% |
| 45 | 0.000 | -9.173 | 2.329 | 0.000 | 9.173 | -2.329 | 0.000% |
| 46 | -1.165 | -9.173 | 2.017 | 1.165 | 9.173 | -2.017 | 0.000% |
| 47 | -2.017 | -9.173 | 1.165 | 2.017 | 9.173 | -1.165 | 0.000% |
| 48 | -2.329 | -9.173 | 0.000 | 2.329 | 9.173 | 0.000 | 0.000% |
| 49 | -2.017 | -9.173 | -1.165 | 2.017 | 9.173 | 1.165 | 0.000% |
| 50 | -1.165 | -9.173 | -2.017 | 1.165 | 9.173 | 2.017 | 0.000% |

Non-Linear Convergence Results

| Load Combination | Converged? | Number of Cycles | Displacement Tolerance | Force Tolerance |
|------------------|------------|------------------|------------------------|-----------------|
| 1 | Yes | 4 | 0.00000001 | 0.00000001 |
| 2 | Yes | 4 | 0.00000001 | 0.00033350 |
| 3 | Yes | 4 | 0.00000001 | 0.00020332 |
| 4 | Yes | 5 | 0.00000001 | 0.00007550 |
| 5 | Yes | 5 | 0.00000001 | 0.00003293 |
| 6 | Yes | 5 | 0.00000001 | 0.00006602 |
| 7 | Yes | 5 | 0.00000001 | 0.00002854 |
| 8 | Yes | 4 | 0.00000001 | 0.00010509 |
| 9 | Yes | 4 | 0.00000001 | 0.00006426 |
| 10 | Yes | 5 | 0.00000001 | 0.00006854 |
| 11 | Yes | 5 | 0.00000001 | 0.00002970 |
| 12 | Yes | 5 | 0.00000001 | 0.00007364 |
| 13 | Yes | 5 | 0.00000001 | 0.00003205 |
| 14 | Yes | 4 | 0.00000001 | 0.00033357 |
| 15 | Yes | 4 | 0.00000001 | 0.00020336 |
| 16 | Yes | 5 | 0.00000001 | 0.00006473 |
| 17 | Yes | 5 | 0.00000001 | 0.00002799 |
| 18 | Yes | 5 | 0.00000001 | 0.00007372 |
| 19 | Yes | 5 | 0.00000001 | 0.00003214 |
| 20 | Yes | 4 | 0.00000001 | 0.00010492 |
| 21 | Yes | 4 | 0.00000001 | 0.00006418 |
| 22 | Yes | 5 | 0.00000001 | 0.00007059 |
| 23 | Yes | 5 | 0.00000001 | 0.00003069 |
| 24 | Yes | 5 | 0.00000001 | 0.00006599 |
| 25 | Yes | 5 | 0.00000001 | 0.00002857 |
| 26 | Yes | 4 | 0.00000001 | 0.00001024 |
| 27 | Yes | 4 | 0.00000001 | 0.00059934 |
| 28 | Yes | 4 | 0.00000001 | 0.00075310 |
| 29 | Yes | 4 | 0.00000001 | 0.00074075 |
| 30 | Yes | 4 | 0.00000001 | 0.00060432 |
| 31 | Yes | 4 | 0.00000001 | 0.00074541 |
| 32 | Yes | 4 | 0.00000001 | 0.00075500 |
| 33 | Yes | 4 | 0.00000001 | 0.00060204 |
| 34 | Yes | 4 | 0.00000001 | 0.00072315 |
| 35 | Yes | 4 | 0.00000001 | 0.00073270 |
| 36 | Yes | 4 | 0.00000001 | 0.00058935 |
| 37 | Yes | 4 | 0.00000001 | 0.00072700 |
| 38 | Yes | 4 | 0.00000001 | 0.00072023 |
| 39 | Yes | 4 | 0.00000001 | 0.00000001 |
| 40 | Yes | 4 | 0.00000001 | 0.00003769 |
| 41 | Yes | 4 | 0.00000001 | 0.00002280 |
| 42 | Yes | 4 | 0.00000001 | 0.00000001 |
| 43 | Yes | 4 | 0.00000001 | 0.00002458 |
| 44 | Yes | 4 | 0.00000001 | 0.00003371 |
| 45 | Yes | 4 | 0.00000001 | 0.00000001 |
| 46 | Yes | 4 | 0.00000001 | 0.00002284 |
| 47 | Yes | 4 | 0.00000001 | 0.00003399 |
| 48 | Yes | 4 | 0.00000001 | 0.00000001 |
| 49 | Yes | 4 | 0.00000001 | 0.00002776 |
| 50 | Yes | 4 | 0.00000001 | 0.00002236 |

Maximum Tower Deflections - Service Wind

| Section No. | Elevation <i>ft</i> | Horz. Deflection <i>in</i> | Gov. Load Comb. | Tilt <i>°</i> | Twist <i>°</i> |
|-------------|------------------------|-------------------------------|-----------------|------------------|-------------------|
| L1 | 58 - 50.5 | 4.713 | 42 | 0.616 | 0.002 |
| L2 | 53 - 0 | 4.068 | 42 | 0.615 | 0.002 |

Critical Deflections and Radius of Curvature - Service Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|------------------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 58.000 | (2) Obstruction Lighting | 42 | 4.713 | 0.616 | 0.002 | 5424 |
| 54.000 | HPA-65R-BUU-H6 w/ Mount Pipe | 42 | 4.194 | 0.616 | 0.002 | 5424 |
| 47.000 | APX16DWV-16DWVS-C w/ Mount Pipe | 42 | 3.367 | 0.598 | 0.002 | 5000 |
| 37.000 | APXV18-206517S-C w/ Mount Pipe | 42 | 2.386 | 0.528 | 0.001 | 6351 |

Maximum Tower Deflections - Design Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|----------------|-----------------|---------------------------|-----------------------|-----------|------------|
| L1 | 58 - 50.5 | 23.914 | 8 | 3.127 | 0.010 |
| L2 | 53 - 0 | 20.642 | 8 | 3.122 | 0.009 |

Critical Deflections and Radius of Curvature - Design Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|------------------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 58.000 | (2) Obstruction Lighting | 8 | 23.914 | 3.127 | 0.010 | 1075 |
| 54.000 | HPA-65R-BUU-H6 w/ Mount Pipe | 8 | 21.280 | 3.126 | 0.010 | 1075 |
| 47.000 | APX16DWV-16DWVS-C w/ Mount Pipe | 8 | 17.090 | 3.034 | 0.009 | 991 |
| 37.000 | APXV18-206517S-C w/ Mount Pipe | 8 | 12.114 | 2.681 | 0.007 | 1257 |

Compression Checks

Pole Design Data

| Section No. | Elevation ft | Size | L ft | L _u ft | KI/r | A in ² | P _u K | φP _n K | Ratio P _u / φP _n |
|----------------|-----------------|-----------------------|---------|----------------------|------|----------------------|---------------------|----------------------|----------------------------------------------|
| L1 | 58 - 50.5 (1) | TP19.078x17.393x0.188 | 7.500 | 0.000 | 0.0 | 11.242 | -2.014 | 833.800 | 0.002 |
| L2 | 50.5 - 0 (2) | TP30.05x18.141x0.188 | 53.000 | 0.000 | 0.0 | 17.772 | -10.986 | 1124.340 | 0.010 |

Pole Bending Design Data

| Section No. | Elevation ft | Size | M _{ux} kip-ft | φM _{nx} kip-ft | Ratio M _{ux} / φM _{nx} | M _{uy} kip-ft | φM _{ny} kip-ft | Ratio M _{uy} / φM _{ny} |
|----------------|-----------------|-----------------------|---------------------------|----------------------------|------------------------------------------------|---------------------------|----------------------------|------------------------------------------------|
| L1 | 58 - 50.5 (1) | TP19.078x17.393x0.188 | 12.799 | 323.228 | 0.040 | 0.000 | 323.228 | 0.000 |
| L2 | 50.5 - 0 (2) | TP30.05x18.141x0.188 | 544.527 | 691.510 | 0.787 | 0.000 | 691.510 | 0.000 |

Pole Shear Design Data

| Section No. | Elevation ft | Size | Actual V_u K | ϕV_n K | Ratio $\frac{V_u}{\phi V_n}$ | Actual T_u kip-ft | ϕT_n kip-ft | Ratio $\frac{T_u}{\phi T_n}$ |
|-------------|-----------------|-----------------------|----------------------|-----------------|---------------------------------|---------------------------|----------------------|---------------------------------|
| L1 | 58 - 50.5 (1) | TP19.078x17.393x0.188 | 3.093 | 416.900 | 0.007 | 0.073 | 647.246 | 0.000 |
| L2 | 50.5 - 0 (2) | TP30.05x18.141x0.188 | 11.823 | 562.171 | 0.021 | 0.141 | 1384.708 | 0.000 |

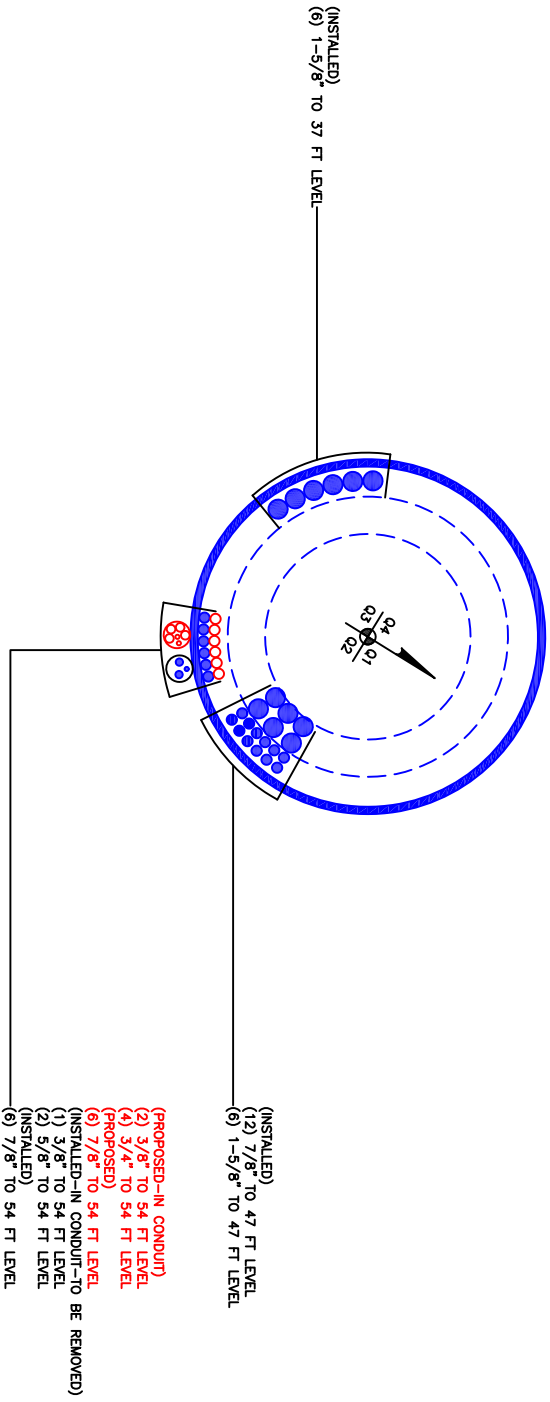
Pole Interaction Design Data

| Section No. | Elevation ft | Ratio P_u ϕP_n | Ratio M_{ux} ϕM_{nx} | Ratio M_{uy} ϕM_{ny} | Ratio V_u ϕV_n | Ratio T_u ϕT_n | Comb. Stress Ratio | Allow. Stress Ratio | Criteria |
|-------------|-----------------|------------------------------|------------------------------------|------------------------------------|------------------------------|------------------------------|--------------------------|---------------------------|----------|
| L1 | 58 - 50.5 (1) | 0.002 | 0.040 | 0.000 | 0.007 | 0.000 | 0.042 | 1.000 | 4.8.2 |
| L2 | 50.5 - 0 (2) | 0.010 | 0.787 | 0.000 | 0.021 | 0.000 | 0.798 | 1.000 | 4.8.2 |

Section Capacity Table

| Section No. | Elevation ft | Component Type | Size | Critical Element | P K | ϕP_{allow} K | % Capacity | Pass Fail | |
|-------------|-----------------|-------------------|-----------------------|---------------------|---------|-----------------------|-----------------|--------------|-------------|
| L1 | 58 - 50.5 | Pole | TP19.078x17.393x0.188 | 1 | -2.014 | 833.800 | 4.2 | Pass | |
| L2 | 50.5 - 0 | Pole | TP30.05x18.141x0.188 | 2 | -10.986 | 1124.340 | 79.8 | Pass | |
| | | | | | | | Summary | | |
| | | | | | | | Pole (L2) | 79.8 | Pass |
| | | | | | | | RATING = | 79.8 | Pass |

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, UngROUTED, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

| |
|---------------------------------|
| BU#: 842862 |
| Site Name: East Haven South |
| App #: 421214 Rev. 1 |
| Pole Manufacturer: Other |

Anchor Rod Data

| | | |
|----------------|--------|-----|
| Qty: | 4 | |
| Diam: | 2.25 | in |
| Rod Material: | A615-J | |
| Strength (Fu): | 100 | ksi |
| Yield (Fy): | 75 | ksi |
| Bolt Circle: | 37 | in |

Plate Data

| | | |
|-------------------|-------|-----|
| Diam: | 33 | in |
| Thick: | 2 | in |
| Grade: | 60 | ksi |
| Single-Rod B-eff: | 16.15 | in |

Stiffener Data (Welding at both sides)

| | | |
|-----------------|---|---------------|
| Config: | 0 | * |
| Weld Type: | | |
| Groove Depth: | | <-- Disregard |
| Groove Angle: | | <-- Disregard |
| Fillet H. Weld: | | in |
| Fillet V. Weld: | | in |
| Width: | | in |
| Height: | | in |
| Thick: | | in |
| Notch: | | in |
| Grade: | | ksi |
| Weld str.: | | ksi |

Pole Data

| | | |
|--------------------|--------|--------------|
| Diam: | 30.05 | in |
| Thick: | 0.1875 | in |
| Grade: | 65 | ksi |
| # of Sides: | 18 | "0" IF Round |
| Fu | 80 | ksi |
| Reinf. Fillet Weld | 0 | "0" if None |

Reactions

| | | |
|---------------|-----|------------------|
| Mu: | 545 | ft-kips |
| Axial, Pu: | 11 | kips |
| Shear, Vu: | 12 | kips |
| Eta Factor, η | 0.5 | TIA G (Fig. 4-4) |

If No stiffeners, Criteria: **AISC LRFD** <-Only Applicable to Unstiffened Cases

Anchor Rod Results

Max Rod ($C_u + V_u/\eta$): 185.3 Kips
 Allowable Axial, $\Phi * F_u * A_{net}$: 260.0 Kips
 Anchor Rod Stress Ratio: 71.3% **Pass**

| |
|--------------|
| Rigid |
| AISC LRFD |
| $\phi * T_n$ |

Base Plate Results

Base Plate Stress: 28.9 ksi
 Allowable Plate Stress: 54.0 ksi
 Base Plate Stress Ratio: 53.5% **Pass**

Flexural Check

| |
|--------------|
| Rigid |
| AISC LRFD |
| $\phi * F_y$ |
| Y.L. Length: |
| 21.59 |

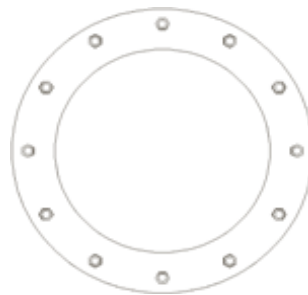
n/a

Stiffener Results

Horizontal Weld : n/a
 Vertical Weld: n/a
 Plate Flex+Shear, $f_b/F_b + (f_v/F_v)^2$: n/a
 Plate Tension+Shear, $f_t/F_t + (f_v/F_v)^2$: n/a
 Plate Comp. (AISC Bracket): n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Pier and Pad Foundation



BU #: 842862
Site Name: East Haven South
App. Number: 421214 Rev. 1

TIA-222 Revision: G
Tower Type: Monopole

Block Foundation?:

| Superstructure Analysis Reactions | | |
|-----------------------------------|-----|---------|
| Compression, P_{comp} : | 11 | kips |
| Base Shear, Vu_{comp} : | 12 | kips |
| | | |
| Moment, M_u : | 545 | ft-kips |
| Tower Height, H : | 58 | ft |
| | | |
| BP Dist. Above Fdn, bp_{dist} : | 3 | in |

| Foundation Analysis Checks | | | | |
|--------------------------------------|----------|--------|--------|-------|
| | Capacity | Demand | Rating | Check |
| <i>Lateral (Sliding) (kips)</i> | 101.67 | 12.00 | 11.8% | Pass |
| <i>Bearing Pressure (ksf)</i> | 8.09 | 2.08 | 25.7% | Pass |
| <i>Overturning (kip*ft)</i> | 1227.37 | 632.00 | 51.5% | Pass |
| <i>Pier Flexure (Comp.) (kip*ft)</i> | 1674.46 | 599.00 | 35.8% | Pass |
| | | | | |
| <i>Pier Compression (kip)</i> | 9372.94 | 26.90 | 0.3% | Pass |
| <i>Pad Flexure (kip*ft)</i> | 1145.25 | 186.85 | 16.3% | Pass |
| <i>Pad Shear - 1-way (kips)</i> | 351.97 | 46.60 | 13.2% | Pass |
| <i>Pad Shear - 2-way (ksi)</i> | 0.16 | 0.01 | 9.0% | Pass |

| Pier Properties | | |
|----------------------------------|----------|----|
| Pier Shape: | Circular | |
| Pier Diameter, d_{pier} : | 5.0 | ft |
| Ext. Above Grade, E : | 0.50 | ft |
| Pier Rebar Size, S_c : | 9 | |
| Pier Rebar Quantity, mc : | 15 | |
| Pier Tie/Spiral Size, S_t : | 4 | |
| Pier Tie/Spiral Quantity, mt : | 14 | |
| Pier Reinforcement Type: | Tie | |
| Pier Clear Cover, cc_{pier} : | 3 | in |

Soil Rating: 51.5%
Structural Rating: 35.8%

| Pad Properties | | |
|-------------------------------|------|----|
| Depth, D : | 6.5 | ft |
| Pad Width, W : | 14.0 | ft |
| Pad Thickness, T : | 2.5 | ft |
| Pad Rebar Size, S_p : | 8 | |
| Pad Rebar Quantity, mp : | 13 | |
| Pad Clear Cover, cc_{pad} : | 3 | in |

| Material Properties | | |
|-----------------------------------------|-------|-----|
| Rebar Grade, F_y : | 60000 | psi |
| Concrete Compressive Strength, F'_c : | 3000 | psi |
| Dry Concrete Density, δ_c : | 150 | pcf |

| Soil Properties | | |
|------------------------------------|--------|---------|
| Total Soil Unit Weight, γ : | 120 | pcf |
| Ultimate Net Bearing, Q_{net} : | 10.000 | ksf |
| Cohesion, C_u : | 0.000 | ksf |
| Friction Angle, ϕ : | 30 | degrees |
| SPT Blow Count, N_{blows} : | | |
| Base Friction, μ : | 0.4 | |
| Neglected Depth, N : | 3.33 | ft |
| Foundation Bearing on Rock? | No | |
| Groundwater Depth, gw : | 8 | ft |

--Toggle between Gross and Net

CCISeismic - Design Category

Per 2012/2015 IBC

Site BU: 842862
 Work Order: 1521069
 Application: 421214 Rev. 1



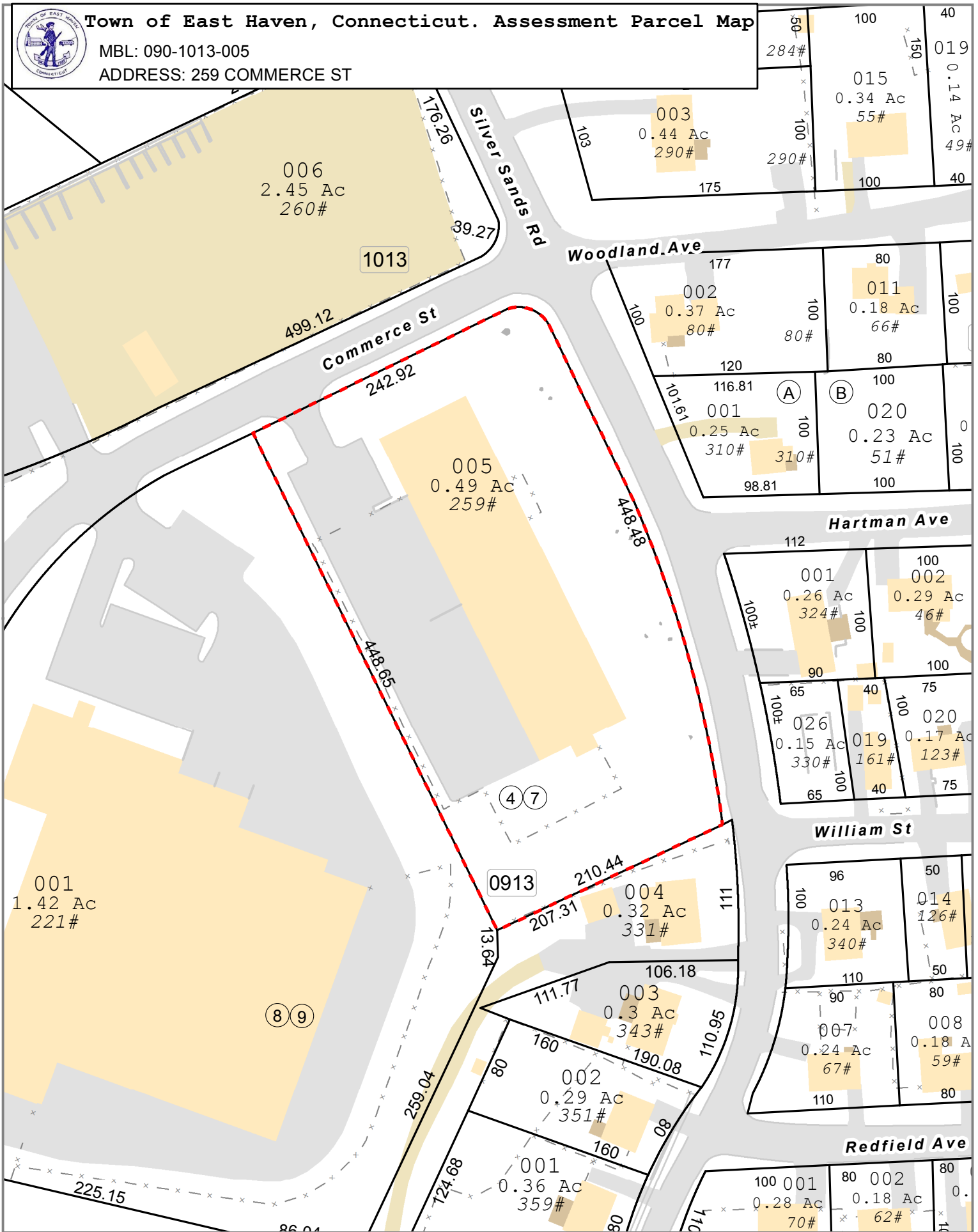
| | Degrees | Minutes | Seconds | |
|----------------------------------------------------------------|----------------|---------|---------|-----------------------------------|
| Site Latitude = | 41 | 15 | 22.88 | 41.2564 degrees |
| Site Longitude = | -72 | 52 | 32.80 | -72.8758 degrees |
| Ground Supported Structure = | Yes | | | |
| Structure Class = | II | | | (Table 2-1) |
| Site Class = | D - Stiff Soil | | | (Table 2-11) |
| Spectral response acceleration short periods, S_s = | 0.182 | | | USGS Seismic Tool |
| Spectral response acceleration 1 s period, S_1 = | 0.062 | | | |
| Importance Factor, I = | 1.0 | | | (Table 2-3) |
| Acceleration-based site coefficient, F_a = | 1.6 | | | (Table 2-12) |
| Velocity-based site coefficient, F_v = | 2.4 | | | (Table 2-13) |
| Design spectral response acceleration short period, S_{DS} = | 0.194 | | | (2.7.6) |
| Design spectral response acceleration 1 s period, S_{D1} = | 0.099 | | | (2.7.6) |
| Seismic Design Category - Short Period Response = | B | | | ASCE 7-05 Table 11.6-1 |
| Seismic Design Category - 1s Period Response = | B | | | ASCE 7-05 Table 11.6-2 |
| Worst Case Seismic Design Category = | B | | | ASCE 7-05 Tables 11.6-1 and 6-2 |



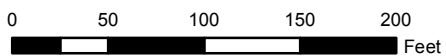
Town of East Haven, Connecticut. Assessment Parcel Map

MBL: 090-1013-005

ADDRESS: 259 COMMERCE ST



1 inch = 100 feet



Disclaimer:
 This map is for informational purposes only. All information is subject to verification by any user. The Town of East Haven and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced: 10 2017

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2016.



TOWN of EAST HAVEN ASSESSOR



Information on the Property Records for the Municipality of East Haven was last updated on 3/20/2018.

Parcel Information

| | | | | | |
|-----------------------|-----------------|----------------|--------------|----------------|------------------|
| Location: | 259 COMMERCE ST | Property Use: | Industrial | Primary Use: | Light Industrial |
| Unique ID: | V0098600 | Map Block Lot: | 090 1013 005 | Acres: | 0.49 |
| 490 Acres: | 0.00 | Zone: | LI-2 | Volume / Page: | 0322/0838 |
| Developers Map / Lot: | PT.4&7 | Census: | 1801000 | | |

Value Information

| | Appraised Value | Assessed Value |
|------|-----------------|----------------|
| Land | 114,000 | 79,800 |

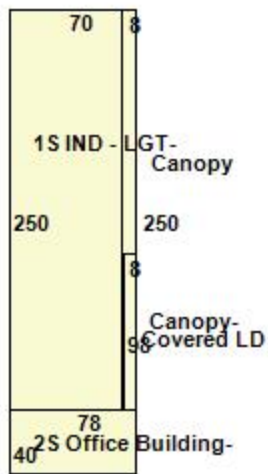
| | Appraised Value | Assessed Value |
|-----------------------|------------------------|-----------------------|
| Buildings | 587,740 | 411,420 |
| Detached Outbuildings | 54,682 | 38,280 |
| Total | 756,422 | 529,500 |

Owner's Information

Owner's Data

VIGLIONE STEPHEN J
259 COMMERCE ST
EAST HAVEN, CT 06512

Building 1



| | | | | | |
|-----------|----------------------------|----------------|------------------------|------------------|--------|
| Category: | Industrial | Use: | Light Manu | GLA: | 23,740 |
| Stories: | 1.00 | Construction: | Masonry and Wood Frame | Year Built: | 1956 |
| Heating: | FHA | Fuel: | Gas | Cooling Percent: | 20 |
| Siding: | Concrete Block/B. V. Solid | Roof Material: | | Beds/Units: | 0 |

Special Features

| | |
|----------------|------|
| Wet Sprinklers | 3160 |
|----------------|------|

Attached Components

| Type: | Year Built: | Area: |
|----------------------|-------------|-------|
| Canopy | 1984 | 2,078 |
| Covered Loading Dock | 1984 | 783 |

Building 2



| | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1S Cell Tower- Lat - 41-15-23 Long - 72-52-33 Tower Type - Monotyp Height - 60ft Self Support Antenna Owner - AT&T Mobility Personal Property | 1S Cell Tower- Lat - 41-15-22.86 Long - 72-52-32.8 Tower Type - Mounted Antenna Owner - AT&T Mobility | 1S Cell Tower- Lat - 41-15-22.86 Long - 72-52-32.8 Tower Type - Mounted Antenna Owner - T-Mobile |
| 1S Cell Tower- Lat - 41-15-22.86 Long - 72-52-32.8 Tower Type - Mounted Antenna Owner - AT&T Mobility | 1S Cell Tower- Lat - 41-15-22.86 Long - 72-52-37.8 Tower Type - Mounted Antenna Owner - Cingular | |

| | | | | | |
|-----------|------------|---------------|-----------|-------------|------|
| Category: | Cell Tower | Use: | Cell Site | GLA: | 5 |
| Stories: | 0.00 | Construction: | Metal | Year Built: | 2011 |

| | | | | | |
|----------|--|----------------|--|------------------|---|
| Heating: | | Fuel: | | Cooling Percent: | 0 |
| Siding: | | Roof Material: | | Beds/Units: | 1 |

Special Features

Attached Components

Detached Outbuildings

| Type: | Year Built: | Length: | Width: | Area: |
|-----------------------------|-------------|---------|--------|--------|
| Cell Tower Mounted roof top | 2011 | 0.00 | 0.00 | 1 |
| Cell Tower Mounted roof top | 2011 | 0.00 | 0.00 | 1 |
| Monopole Cell Towers | 2011 | 0.00 | 0.00 | 1 |
| Monopole Cell Towers | 2012 | 0.00 | 0.00 | 1 |
| Fencing | 1956 | 0.00 | 0.00 | 400 |
| Paving | 1956 | 0.00 | 0.00 | 12,000 |


Owner History - Sales

| Owner Name | Volume | Page | Sale Date | Deed Type | Valid Sale | Sale Price |
|--------------------|--------|------|------------|-----------|------------|------------|
| VIGLIONE STEPHEN J | 0322 | 0838 | 03/19/1981 | | No | \$0 |

Building Permits

| Permit Number | Permit Type | Date Opened | Date Closed | Permit Status | Reason |
|----------------------|--------------------|--------------------|--------------------|----------------------|-------------------------------------------------------|
| 67187 | Mechanical | 09/19/2016 | | Needs Visit | ATTL TO REPLACE 3 ANTENNAS |
| | | 09/04/2003 | | Closed | 448 X 226; 2003 WIRELESS COMMUNICATION SITE INSTALLED |

Information Published With Permission From The Assessor




**UNITED STATES
POSTAL SERVICE®**

Click-N-Ship®

P

usps.com 9405 8036 9930 0610 2362 40 0067 0000 0010 6512
US POSTAGE \$6.70
 Flat Rate Envoy



03/22/2018 Mailed from 06268 024P

PRIORITY MAIL 1-DAY™

Expected Delivery Date: 03/23/18


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

0024

C001

SHIP TO: MAYOR JOSEPH MATURO JR.
 TOWN OF EAST HAVEN
 250 MAIN ST
 EAST HAVEN CT 06512-3004

USPS TRACKING #



9405 8036 9930 0610 2362 40

Electronic Rate Approved #038555749



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

**USPS TRACKING # / Insurance Number:
 9405 8036 9930 0610 2362 40**

| | | | |
|-------------------------|------------|-------------------------|---------------|
| Trans. #: | 430474198 | Priority Mail® Postage: | \$6.70 |
| Print Date: | 03/21/2018 | Insurance Fee | \$0.00 |
| Ship Date: | 03/22/2018 | Total | \$6.70 |
| Expected Delivery Date: | 03/23/2018 | | |
| Insured Value: | \$50.00 | | |

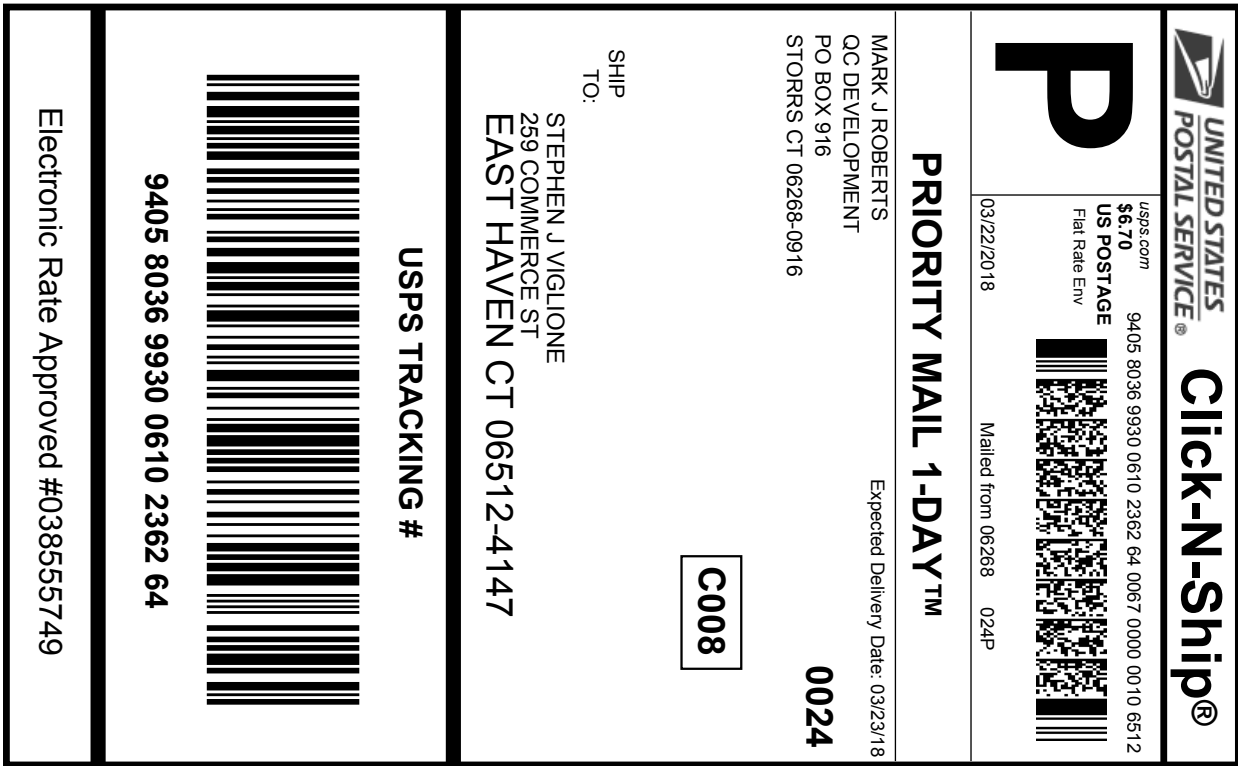
From: MARK J ROBERTS
 QC DEVELOPMENT
 PO BOX 916
 STORRS CT 06268-0916

To: MAYOR JOSEPH MATURO JR.
 TOWN OF EAST HAVEN
 250 MAIN ST
 EAST HAVEN CT 06512-3004

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



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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0610 2362 64

| | | | |
|-------------------------|------------|-------------------------|---------------|
| Trans. #: | 430474198 | Priority Mail® Postage: | \$6.70 |
| Print Date: | 03/21/2018 | Insurance Fee | \$0.00 |
| Ship Date: | 03/22/2018 | Total | \$6.70 |
| Expected Delivery Date: | 03/23/2018 | | |
| Insured Value: | \$50.00 | | |

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

To: STEPHEN J VIGLIONE
 259 COMMERCE ST
 EAST HAVEN CT 06512-4147

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



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