UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
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   Hand the package to any UPS driver in your area.

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WEST BRIDGEWATER ,MA 02379

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Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, November 6, 2019 10:43 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030309290836

Your package has been delivered.

Delivery Date: Wednesday, 11/06/2019
Delivery Time: 10:39 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030309290836
Ship To:	Hon. Mayor Marcia A. Leclerc Town of East Hartford 740 MAIN ST ROOM MAYOR EAST HARTFORD, CT 06108 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE TCHELIDZE
Reference Number 1:	CT1002 - CSC to Mayor

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1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

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Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, November 6, 2019 10:49 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030307459846

Your package has been delivered.

Delivery Date: Wednesday, 11/06/2019
Delivery Time: 10:43 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030307459846
Ship To:	Bruce Cohen, Bldg Div Sup Town of East Hartford 740 MAIN ST ROOM BUILDING EAST HARTFORD, CT 06108 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE WATSON
Reference Number 1:	CT1002 - CSC to Bldg

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1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

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Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, November 6, 2019 10:49 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030319430853

Your package has been delivered.

Delivery Date: Wednesday, 11/06/2019
Delivery Time: 10:42 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030319430853
Ship To:	John Ryan, Chair Plan & Zon Com East Hartford Development Dept. 740 MAIN ST ROOM DEVELOPM EAST HARTFORD, CT 06108 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE DANIELS
Reference Number 1:	CT1002 - CSC to P&Z

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1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

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   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
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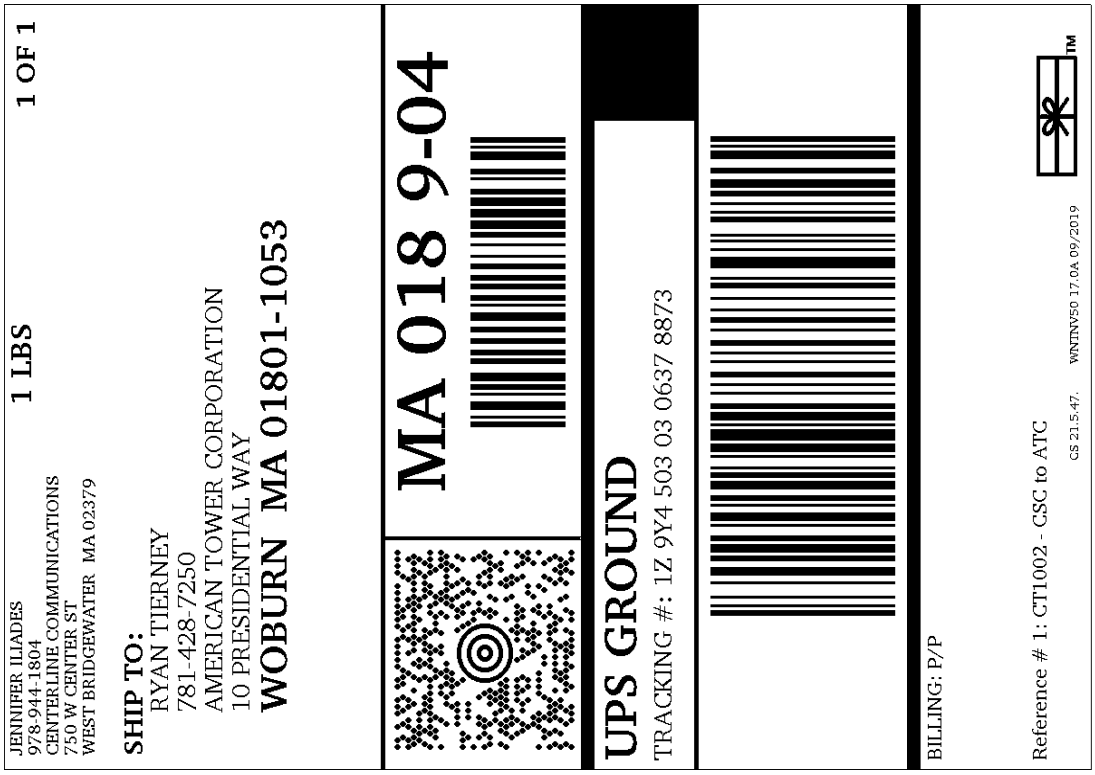

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, November 6, 2019 12:09 PM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030306378873

Your package has been delivered.

Delivery Date: Wednesday, 11/06/2019
Delivery Time: 12:01 PM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030306378873
Ship To:	Ryan Tierney American Tower Corporation 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	RECEIVER LONG
Reference Number 1:	CT1002 - CSC to ATC

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UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

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   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

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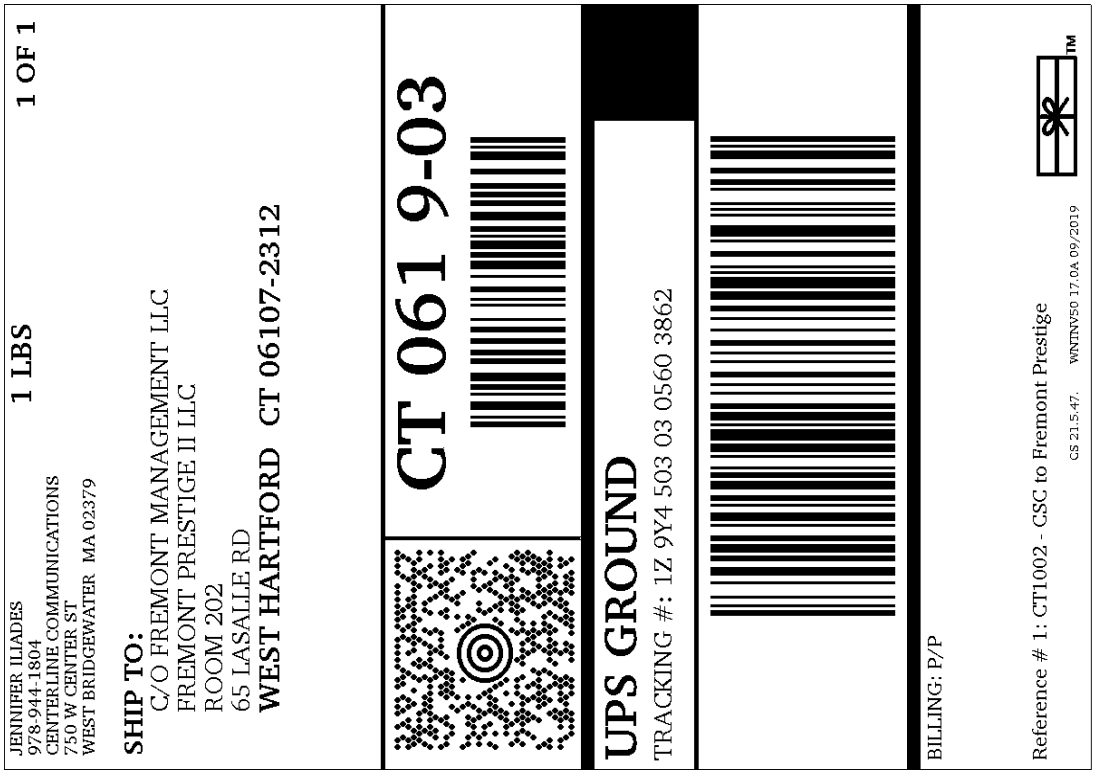

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, November 6, 2019 9:58 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030305603862

Your package has been delivered.

Delivery Date: Wednesday, 11/06/2019
Delivery Time: 09:54 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030305603862
Ship To:	c/o Fremont Management LLC Fremont Prestige II LLC 65 LASALLE RD ROOM 202 WEST HARTFORD, CT 06107 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE TEPPER
Reference Number 1:	CT1002 - CSC to Fremont Prestige

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November 5, 2019

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

Regarding: Notice of Exempt Modification – AT&T Site CT1002
Address: 310 Prestige Park Road, East Hartford CT

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing 150' monopole tower at the above-referenced address, latitude 41.788300, longitude -72.600600. Said monopole tower is managed by American Tower Asset Sub II, LLC.

AT&T desires to modify its existing telecommunications facility by adding (3) antennas, swapping (3) antennas, adding (3) remote radio heads, swapping (6) remote radio heads, adding (1) surge Arrestor and (3) Diplexers as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group LLC, last revised May 29, 2019. Please also see the enclosed Modifications Drawings prepared by American Tower Corporation dated April 17, 2019. The centerline height of the existing antennas is and will remain at 154 feet. Please note, this is a resubmission of our original notice dated June 7, 2019 addressing the concerns of the enclosed denial letter dated June 21, 2019.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: Marcia A. Leclerc, Mayor of East Hartford; Bruce Cohen, Building Division Supervisor of East Hartford; John Ryan, Chair of the Planning and Zoning Commission of East Hartford; American Tower Asset Sub II, LLC as manager of the above referenced tower; and Fremont Prestige II LLC, as property owner at the above referenced address.

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

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

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

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

4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*

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

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated September 26, 2019 and prepared by American Tower Corporation enclosed herewith.*

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

Sincerely,

Jennifer Iliades
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
jiliades@clinellc.com

Enclosures:
Exhibit 1 – Construction Drawings and Modification Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis and Mount Modification Drawings
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Original Tower Approval

cc:
Marcia A. Leclerc, Mayor
Bruce Cohen, Building Division Supervisor
John Ryan, Chair of the Planning and Zoning Commission
American Tower Asset Sub II, LLC as manager of tower
Fremont Prestige II LLC, as property owner

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

June 21, 2019

Jennifer Illiades
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379

RE: **EM-CING-043-190620 –** New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 310 Prestige Park Road, East Hartford, Connecticut.

Dear Ms. Illiades:

The Connecticut Siting Council (Council) hereby denies your request to modify the above-referenced existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The requested modification, as proposed, would load the tower to a maximum of 103% of its capacity, which is above the 100% limit established by the Council under guidance from the Connecticut State Building Inspector.

In accordance with the Council's November 6, 2017 memorandum to telecommunications carriers and their representatives (attached), the Council will accept filings with tower overstresses "if the filing is accompanied by a formal opinion from the Connecticut State Building Inspector specifically regarding the structure in question stating that such overstress of the specific structure is allowable." The above-referenced exempt modification filing is not accompanied by a formal opinion from the Connecticut State Building Inspector.

Thus, the proposed modification is not in compliance with the exemption criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies.

Sincerely,

Melanie Bachman
Executive Director

MAB/IN/emr

c: The Honorable Marcia A. Leclerc, Mayor, Town of East Hartford
Jeffrey Cormier, Town Planner, Town of East Hartford

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:
- NEW AT&T ANTENNAS: (800–10965) (TYP. OF 2 PER SECTOR, TOTAL OF 6) (TO REPLACE EXISTING (3) ANTENNAS).
- NEW AT&T RRUS: B14 4478 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: B2/B66A 8843 (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: B5/B12/ 4449 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW LOW BAND COMBINERS (DBCT108F1V92–1) (TYP OF 1 PER SECTOR TOTAL OF 3
- NEW SURGE ARRESTOR: DC6–48–60–8C–EV (TOTAL OF 1) WITH (2) DC POWER, (1) ALARM CABLE.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- INSTALL (1) DC 12, INSTALL (12) TELCO FLEX RUNS BETWEEN PROPOSED AND EXISTING DC12 AND EXISTING BREAKER PANEL.
- SWAP (2) DUS FOR (2) 5216.
- ADD 2ND XMU.
- ADD IDLe.
- ADD (1) 6630.
- NEW LOW BAND COMBINERS (DBCT108F1V92–1) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

ITEMS TO REMAIN:
- (6) ANTENNAS, (3) RRUS, (2) SURGE ARRESTOR, (12) COAX CABLES, (4) DC POWER & (2) FIBER.

SITE ADDRESS:	2 PRESTIGE PARK ROAD EAST HARTFORD, CT 06108
LATITUDE:	41.788325 N, 41° 47' 17.97" N
LONGITUDE:	72.600543 W, 72° 36' 01.95" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	150'–0"±
RAD CENTER:	153'–0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

at&t

SITE NUMBER: CT1002

SITE NAME: EAST HARTFORD

FA CODE: 10034965

PACE ID: MRCTB033585, MRCTB33677, MRCTB033739, MRCTB033619, MRCTB033629

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

DRAWING INDEX

ATC SITE NAME: E H F R PRESTIGE PARK
ATC SITE #: 302473

VICINITY MAP

DIRECTIONS TO SITE:

TAKE THE RAMP TO I–90/MASSPIKE/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 90 W/MASSACHUSETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I–90 W/MASSACHUSETTS TURNPIKE. FOLLOW I–90 W/MASSACHUSETTS TURNPIKE AND I–84 TO US–44 W/MIDDLE TURNPIKE W IN MANCHESTER. TAKE EXIT 60–62 FROM I–84. MERGE ONTO I–90 W/MASSACHUSETTS TURNPIKE. USE THE RIGHT 2 LANES TO TAKE EXIT 9 FOR I–84 TOWARD US–20/HARTFORD/NEW YORK CITY. CONTINUE ONTO I–84. ENTERING CONNECTICUT. TAKE EXIT 60–62 FOR US–44/MIDDLE TURNPIKE W. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I–84 W/HARTFORD. KEEP RIGHT TO CONTINUE ON EXIT 60, FOLLOW SIGNS FOR US–44/BURNSIDE AVE/MIDDLE TURNPIKE W. CONTINUE ON US–44 W. DRIVE TO PRESTIGE PARK RD IN EAST HARTFORD. TURN RIGHT ONTO US–44 W/MIDDLE TURNPIKE W. CONTINUE TO FOLLOW US–44 W. TURN RIGHT ONTO SCHOOL ST. TURN RIGHT ONTO PRESTIGE PARK RD. 2 PRESTIGE PARK RD EAST HARTFORD, CT 06108

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL BEFORE YOU DIG

CALL TOLL FREE 1–800–922–4455

OR CALL 811

UNDERGROUND SERVICE ALERT

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

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

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD
ATC SITE #: 302473

2 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	05/29/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

STATE OF CONNECTICUT DEREK J. CREASER No. 28551 LICENSED PROFESSIONAL ENGINEER

AT&T

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

SITE NUMBER	DRAWING NUMBER	REV
CT1002	T–1	1

GROUNDING NOTES

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

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

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

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

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

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

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

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

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

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

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

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

GENERAL NOTES

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

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

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

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

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

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

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

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

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

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

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

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

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

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

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

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

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

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

ABBREVIATIONS

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

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

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

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD
ATC SITE #: 302473

2 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	05/29/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

STATE OF CONNECTICUT
DEREK J. CREASEY
No. 28355
LICENSED PROFESSIONAL ENGINEER

AT&T

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

SITE NUMBER	DRAWING NUMBER	REV
CT1002	GN-1	1

NOTE:

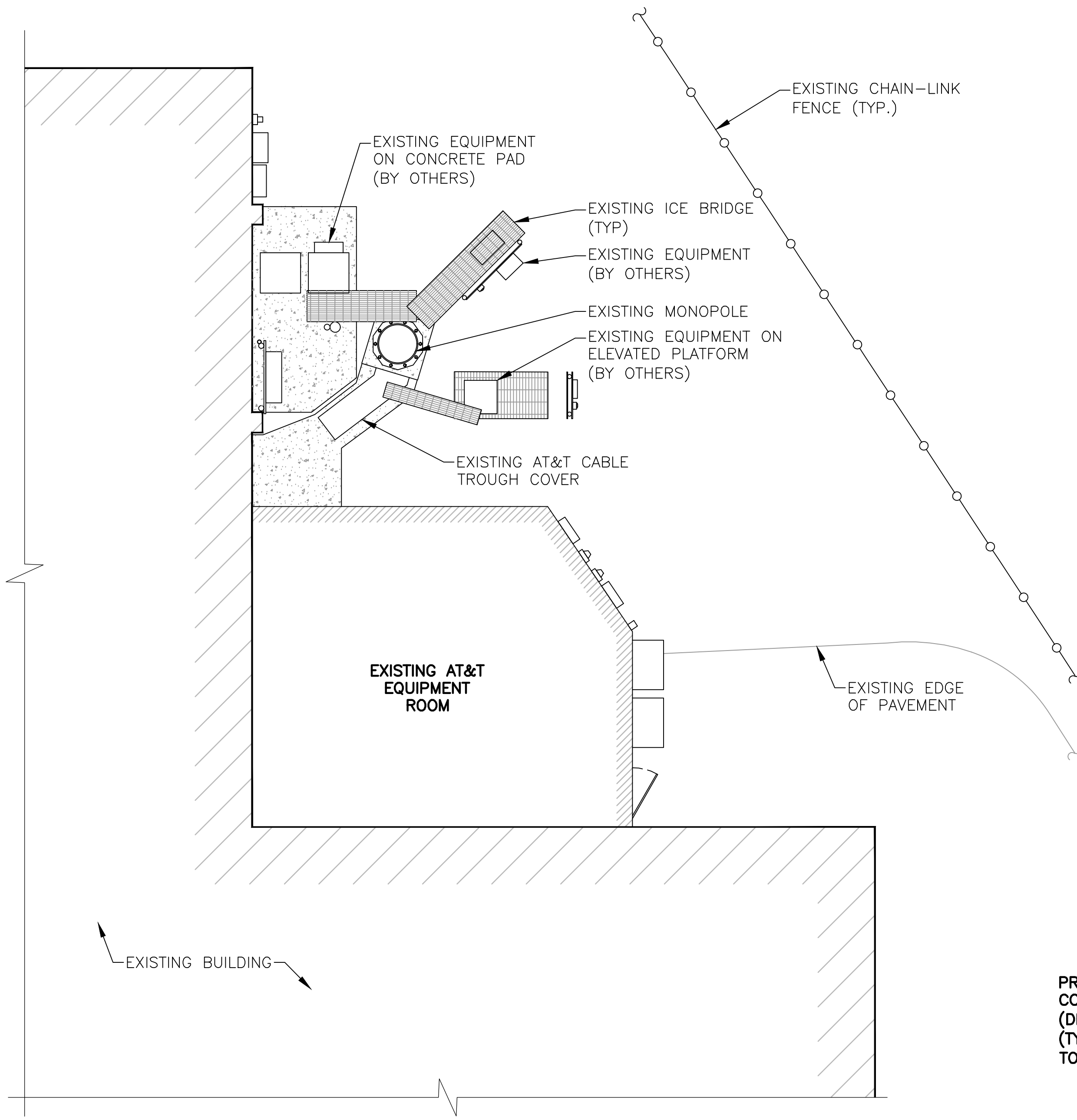
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 30, 2019

NOTE:

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

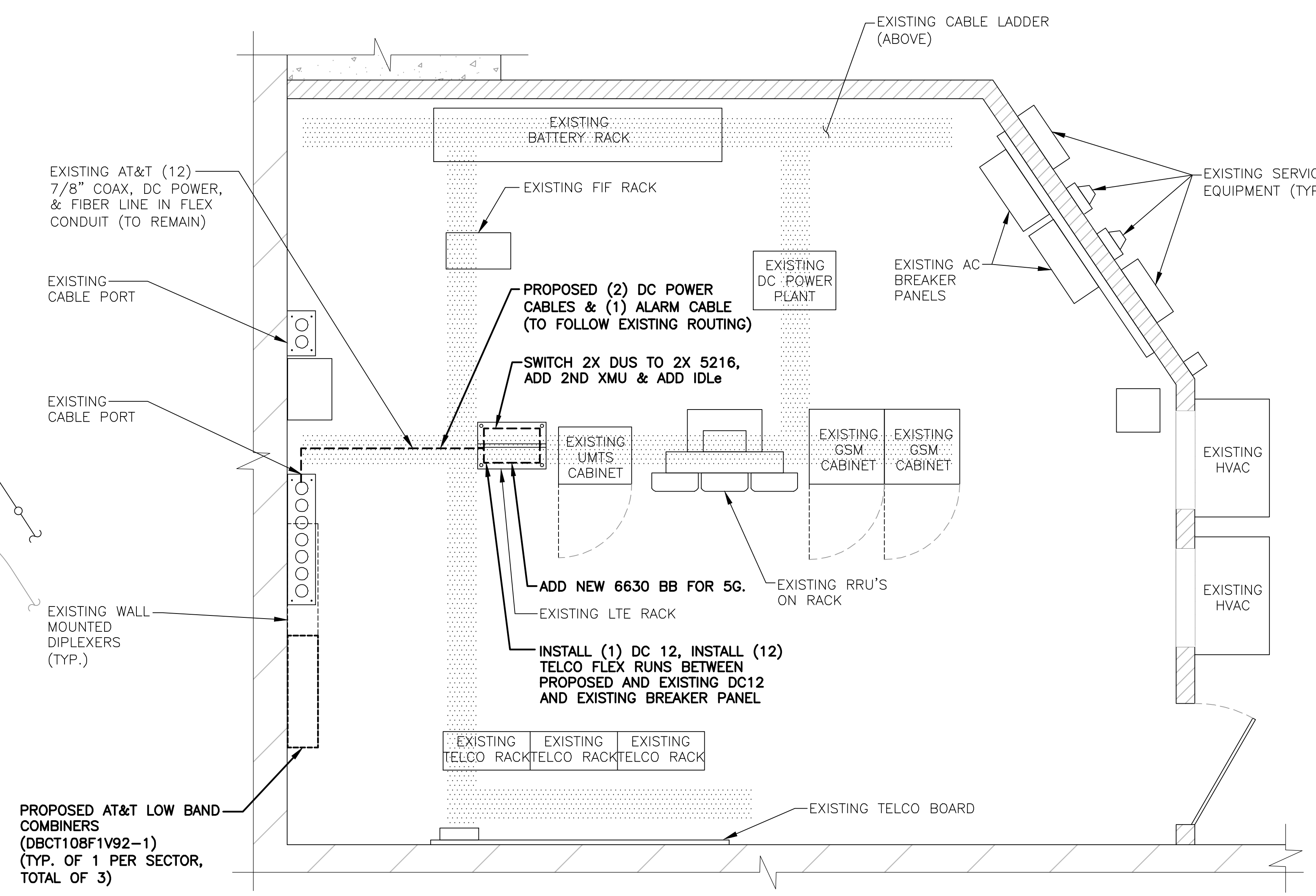
NOTE:

REFER TO **STRUCTURAL ANALYSIS** BY: AMERICAN TOWER CORPORATION, DATED: APRIL 29, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



14°37'
MAGNETIC NORTH
TRUE NORTH

COMPOUND PLAN (1 / A–1)
22x34 SCALE: 3/16"=1'–0"
11x17 SCALE: 3/32"=1'–0"
0 2'–8" 5'–4" 10'–8" 16'–0"



14°37'
MAGNETIC NORTH
TRUE NORTH

EQUIPMENT PLAN (2 / A–1)
22x34 SCALE: 1/2"=1'–0"
11x17 SCALE: 1/4"=1'–0"
0 1'–0" 2'–0" 4'–0" 6'–0"

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

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

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD
ATC SITE #: 302473
2 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
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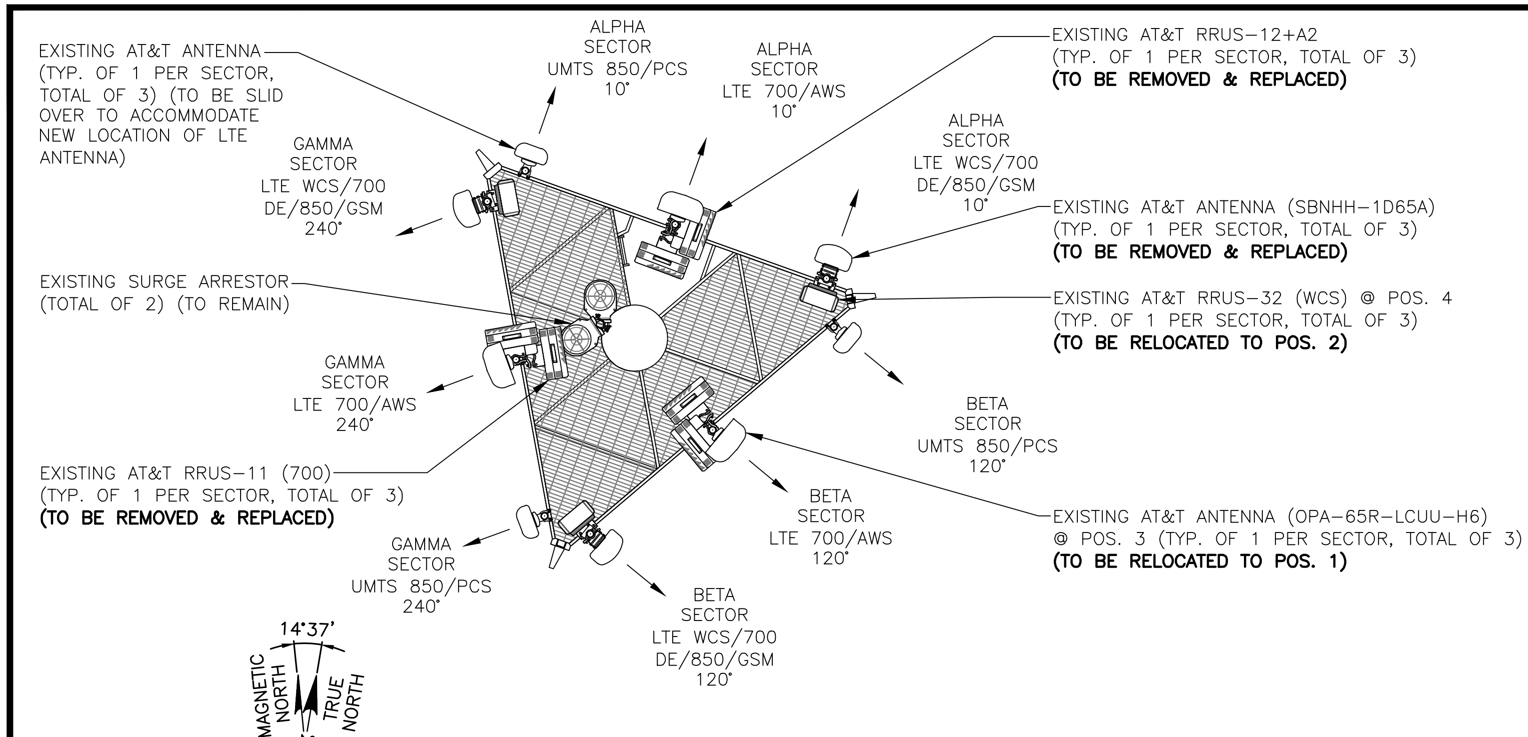
A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

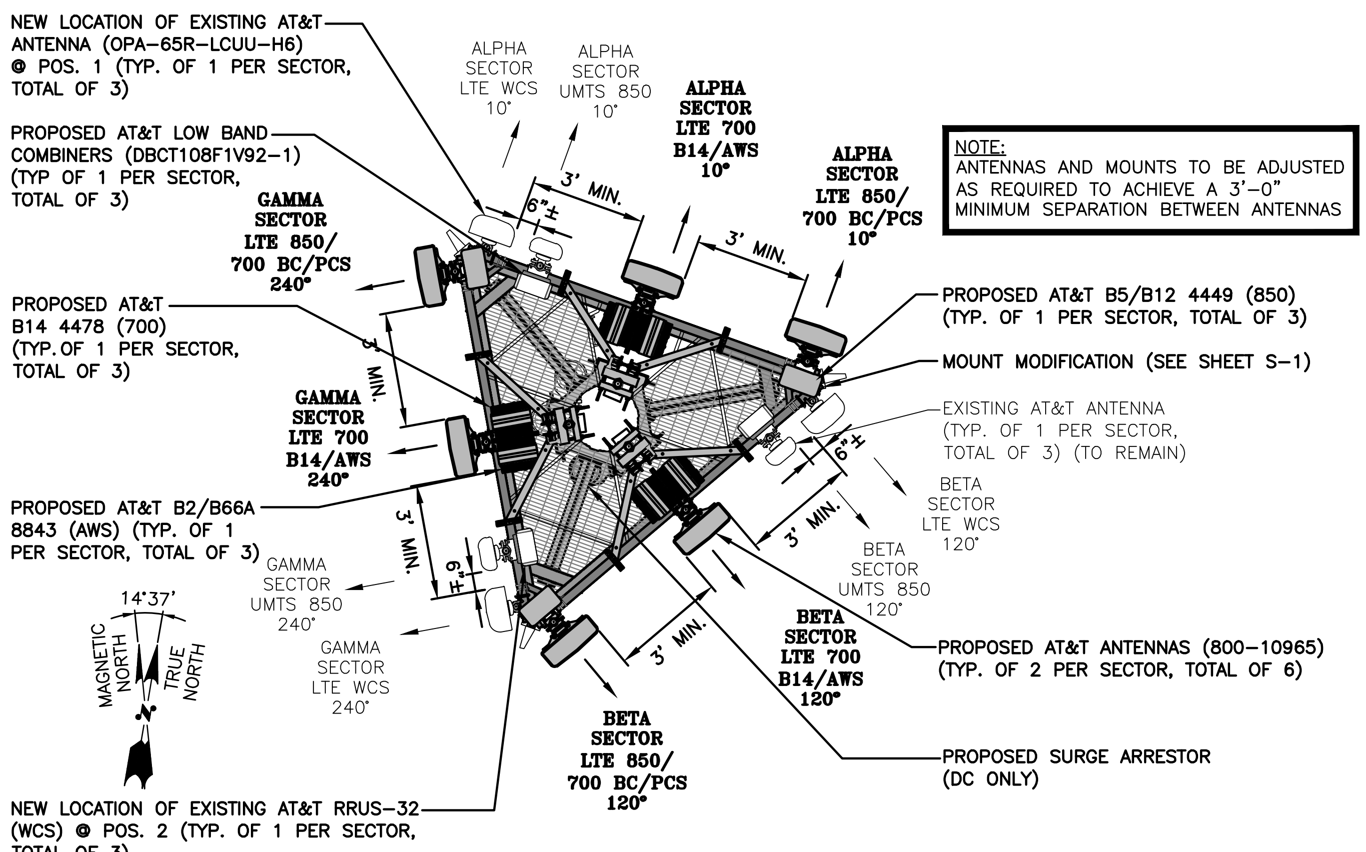
STATE OF CONNECTICUT DEREK J. CREASER LICENSED PROFESSIONAL ENGINEER

AT&T
COMPOUND & EQUIPMENT PLANS
(LTE 4C/5C/6C/4TX4RX)

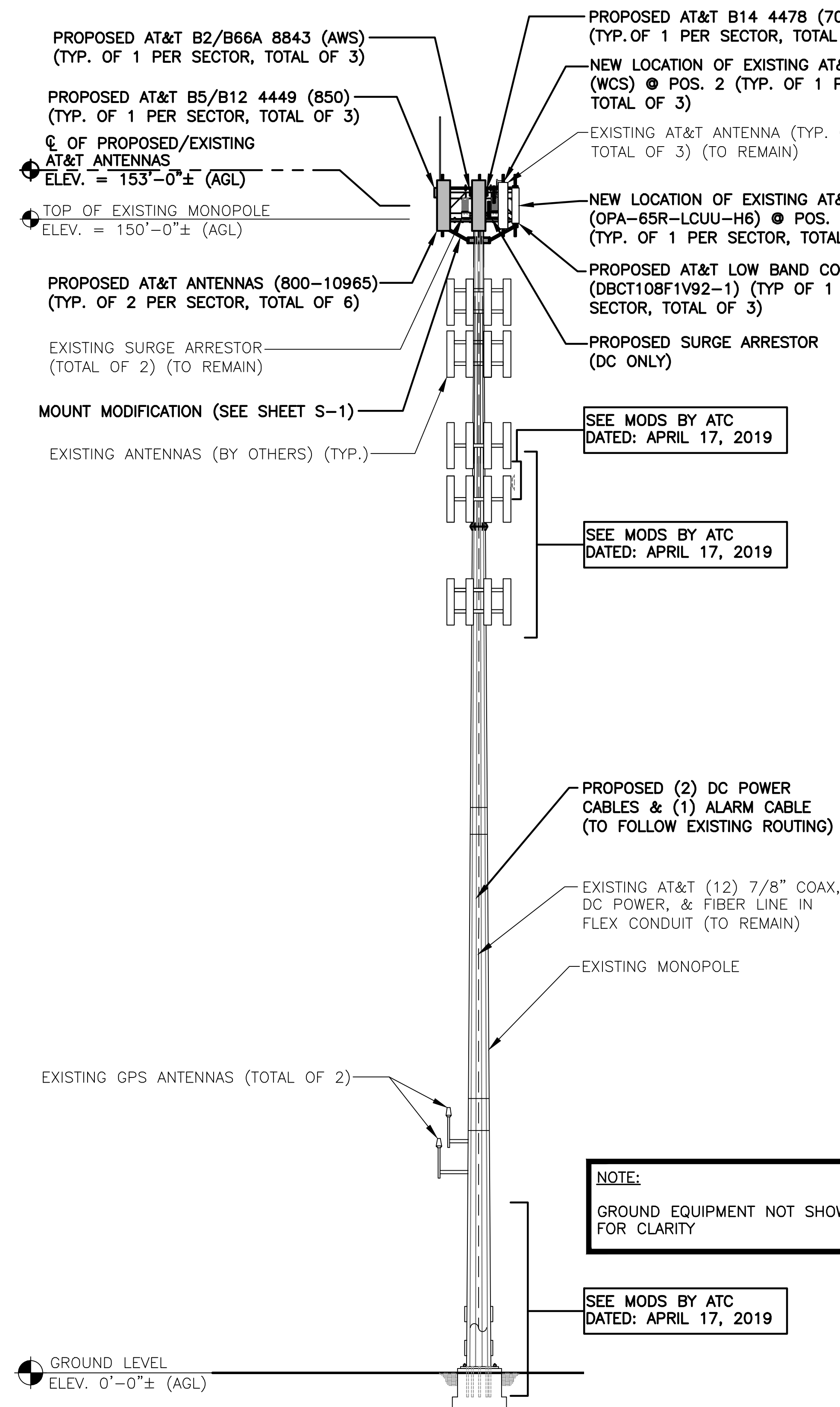
SITE NUMBER	DRAWING NUMBER	REV
CT1002	A–1	1



EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



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



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

NOTE:
REFER TO **STRUCTURAL ANALYSIS** BY: AMERICAN TOWER CORPORATION, DATED: APRIL 29, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 30, 2019

NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION (3 / A-2)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"
0 5'-4" 10'-8" 21'-4" 32'-0"

HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
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CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET., SUITE #301 WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT1002
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EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

STATE OF CONNECTICUT DEREK J. CREASER LICENSED PROFESSIONAL ENGINEER

AT&T
ANTENNA LAYOUTS & ELEVATION (LTE 4C/5C/6C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT1002	A-2	1

NOTE:

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

NOTE:

REFER TO **STRUCTURAL ANALYSIS** BY: AMERICAN TOWER CORPORATION, DATED: APRIL 29, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

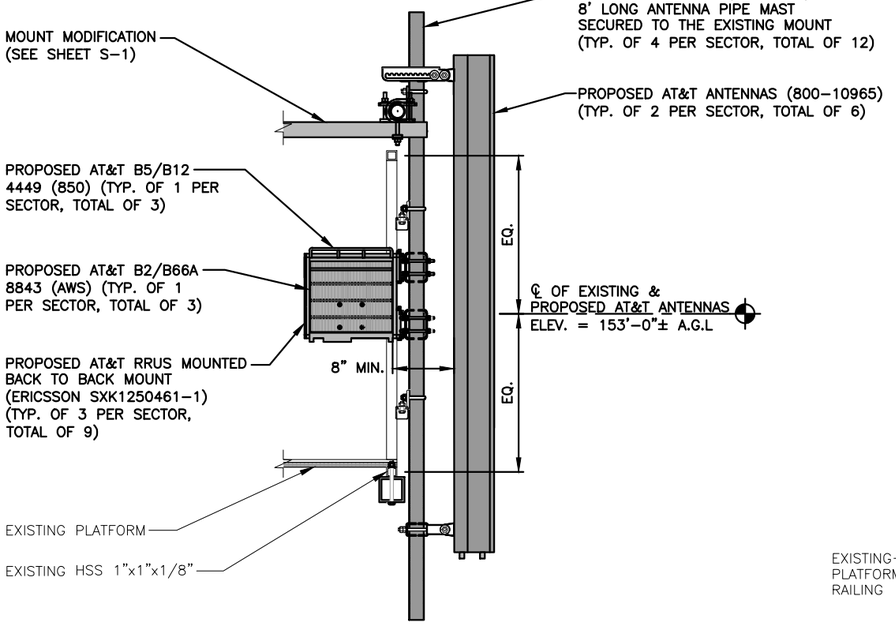
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 30, 2019

ANTENNA SCHEDULE

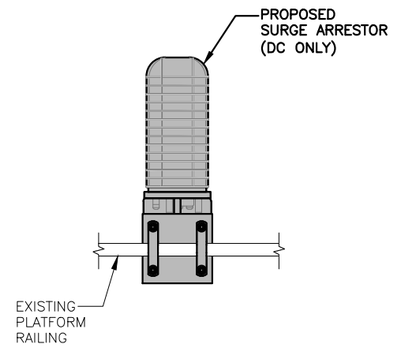
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
C1	EXISTING	LTE WCS	OPA-65R-LCUU-H6	72X14.8X7.4	±153'	10°	(E)(2) LGP21401	–	–	(2) 7/8" COAX	(E)(1) RAYCAP DC6-48-60-18-8F
A2	EXISTING	UMTS 850	7770	55X11X5	±153'	10°	(P)(1)(G) DBCT108F1V92-1(P)(1) DBCT108F1V92-1	(E)(1) RRUS-32 (WCS)	–	(2) 7/8" COAX	
A3	**PROPOSED**	**LTE 700 B14/AWS**	**800-10965**	**78.7X20X6.9**	**±153'**	**10°**	–	**(P)(1) B14 4478 (700) (P)(1) B2/B66A 8843 (AWS)**	**18.1X13.4X8.31 4.9X13.2X10.9**	–	
A4	**PROPOSED**	**LTE 850/700 BC/PCS**	**800-10965**	**78.7X20X6.9**	**±153'**	**10°**	–	**(P)(1) B5/B12 4449 (850)**	**14.9X13.2X10.4**	–	
A1	EXISTING	LTE WCS	OPA-65R-LCUU-H6	72X14.8X7.4	±153'	120°	(E)(2) LGP21401	–	–	(2) 7/8" COAX	(E)(1) RAYCAP DC6-48-60-18-8F
B2	EXISTING	UMTS 850	7770	55X11X5	±153'	120°	(P)(1)(G) DBCT108F1V92-1 (P)(1) DBCT108F1V92-1	(E)(1) RRUS-32 (WCS)	–	(2) 7/8" COAX	
B3	**PROPOSED**	**LTE 700 B14/AWS**	**800-10965**	**78.7X20X6.9**	**±153'**	**120°**	–	**(P)(1) B14 4478 (700) (P)(1) B2/B66A 8843 (AWS)**	**18.1X13.4X8.31 4.9X13.2X10.9**	–	
B4	**PROPOSED**	**LTE 850/700 BC/PCS**	**800-10965**	**78.7X20X6.9**	**±153'**	**120°**	–	**(P)(1) B5/B12 4449 (850)**	**14.9X13.2X10.4**	–	
B1	EXISTING	LTE WCS	OPA-65R-LCUU-H6	72X14.8X7.4	±153'	240°	(E)(2) LGP21401	–	–	(2) 7/8" COAX	**(P)(1) RAYCAP DC6-48-60-8C-EV**
C2	EXISTING	UMTS 850	7770	55X11X5	±153'	240°	(P)(1)(G) DBCT108F1V92-1 (P)(1) DBCT108F1V92-1	(E)(1) RRUS-32 (WCS)	–	(2) 7/8" COAX	
C3	**PROPOSED**	**LTE 700 B14/AWS**	**800-10965**	**78.7X20X6.9**	**±153'**	**240°**	–	**(P)(1) B14 4478 (700) (P)(1) B2/B66A 8843 (AWS)**	**18.1X13.4X8.31 4.9X13.2X10.9**	–	
C4	**PROPOSED**	**LTE 850/700 BC/PCS**	**800-10965**	**78.7X20X6.9**	**±153'**	**240°**	–	**(P)(1) B5/B12 4449 (850)**	**14.9X13.2X10.4**	–	

FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S



LTE ANTENNA, & RRH MOUNTING DETAIL (2 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"



SURGE ARRESTOR MOUNTING DETAIL (3 / A-3)
SCALE: N.T.S

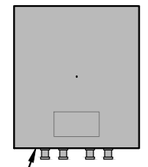
RRU CHART

QUANTITY	MODEL	L	W	D
3(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)	B14 4478	18.1"	13.4"	8.3"
3(P)	B2/B66A 8843	14.9"	13.2"	10.9"
3(P)	B5/B12 4449	14.9"	13.2"	10.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

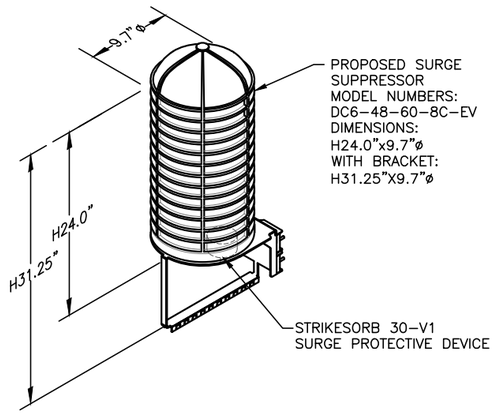
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (4 / A-3)
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (5 / A-3)
SCALE: N.T.S

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

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

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD
ATC SITE #: 302473

2 PRESTIGE PARK ROAD
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HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
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A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28355 · LICENSED PROFESSIONAL ENGINEER

AT&T

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

SITE NUMBER	DRAWING NUMBER	REV
CT1002	A-3	1

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

SPECIAL INSPECTION CHECKLIST

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

NOTES:

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

NOTES:

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

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

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

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD
ATC SITE #: 302473

2 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

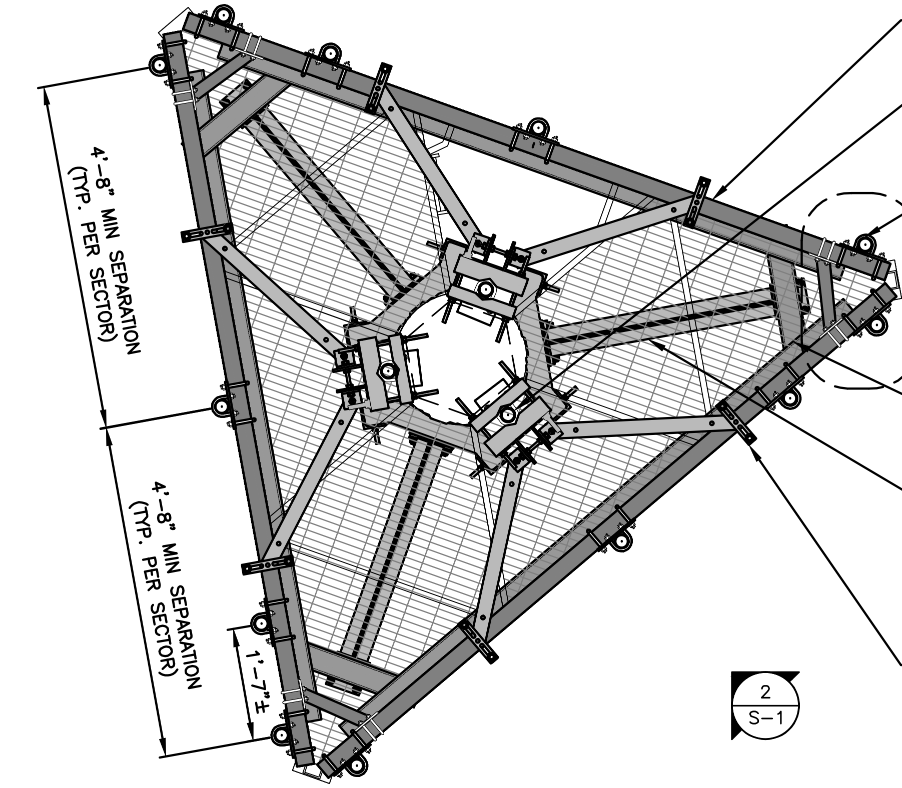
NO.	DATE	REVISIONS	BY	CHK	APP'D
1	05/29/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

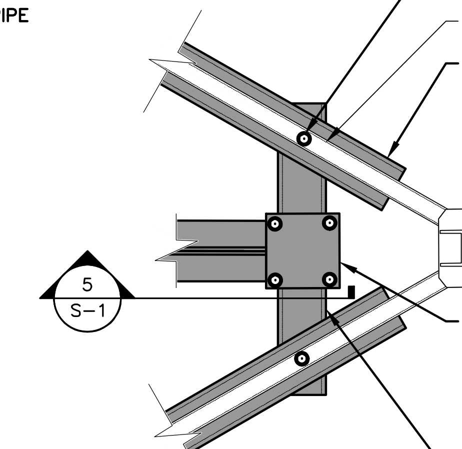
STATE OF CONNECTICUT — DEREK J. CREASER — LICENSED PROFESSIONAL ENGINEER

AT&T
STRUCTURAL NOTES
(LTE 4C/5C/6C/4TX4RX)

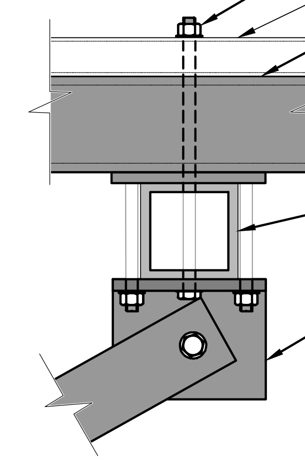
SITE NUMBER	DRAWING NUMBER	REV
CT1002	SN–1	1



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



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

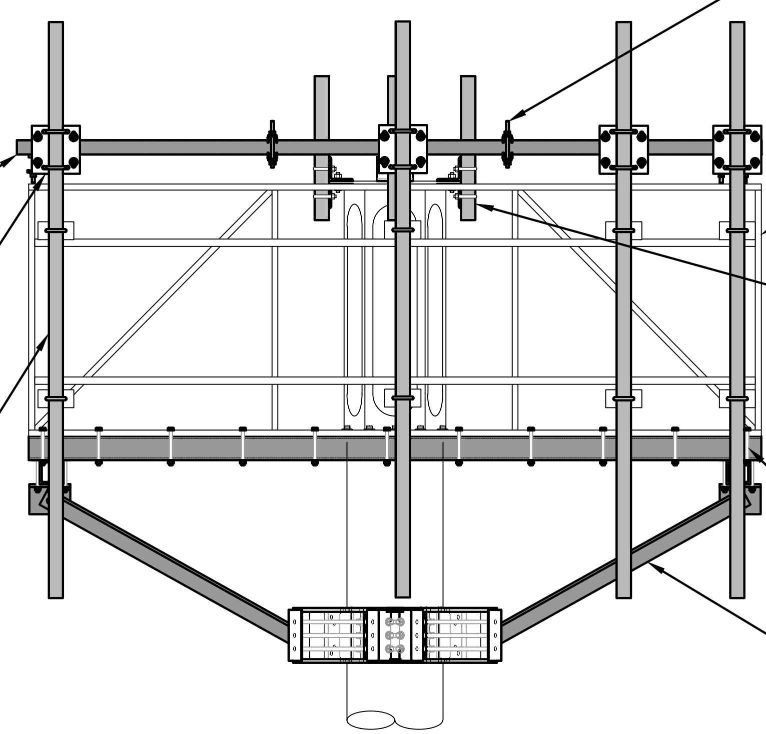


CONNECTION DETAIL ELEVATION (5 / S-1)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"
0 0'-2" 0'-4" 0'-8" 1'-0"

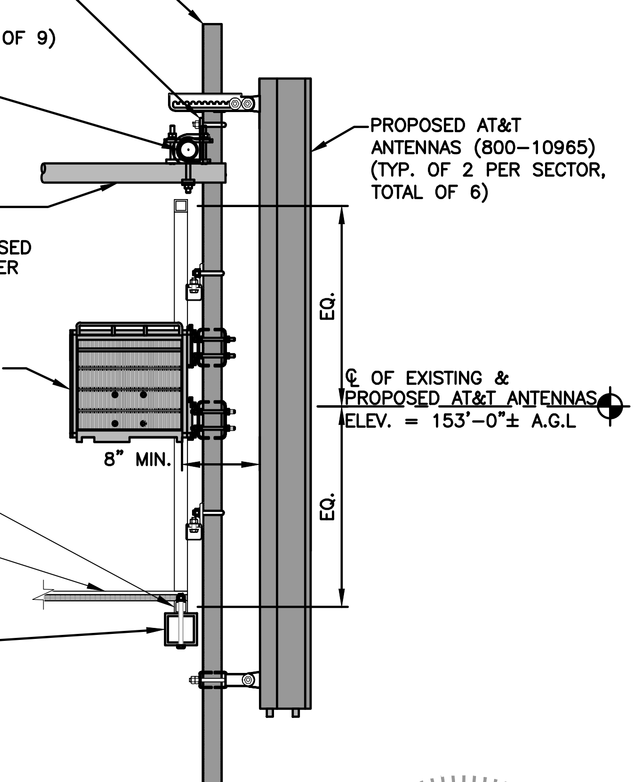
NOTE:
REFER TO **STRUCTURAL ANALYSIS** BY: AMERICAN TOWER CORPORATION, DATED: APRIL 29, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 30, 2019

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



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



PROPOSED MOUNT MODIFICATION DETAIL (3 / S-1)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"

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

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HARTFORD COUNTY

at&t
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FRAMINGHAM, MA 01701

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A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

STATE OF CONNECTICUT · DANIEL J. CREASER · LICENSED PROFESSIONAL ENGINEER

AT&T
MOUNT MODIFICATIONS DESIGN
(LTE 4C/5C/6C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT1002	S-1	1

NOTE:

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

NOTE:

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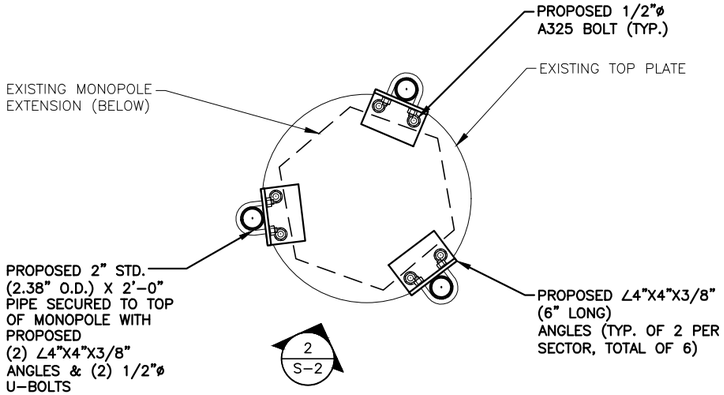
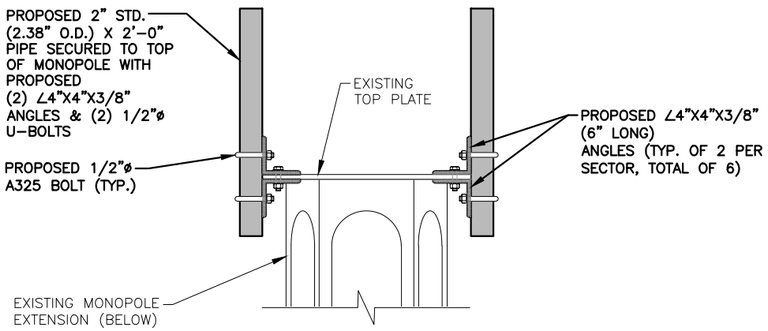


PROPOSED STABILIZER SUPPORT FRAME 1 / S-2

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

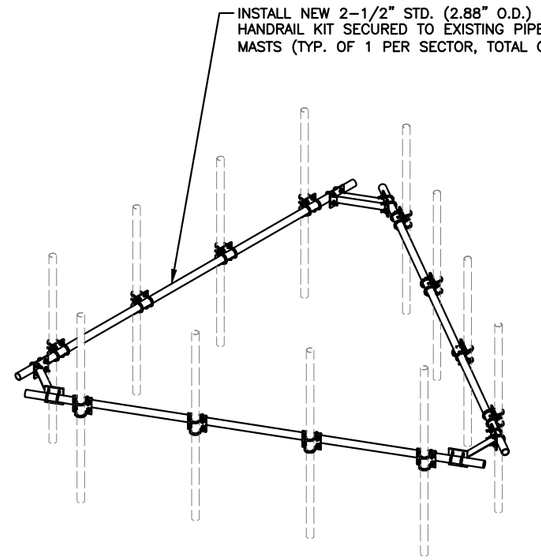
0 0'-4" 0'-8" 1'-4" 2'-0"



PROPOSED STABILIZER SUPPORT ELEVATION 2 / S-2

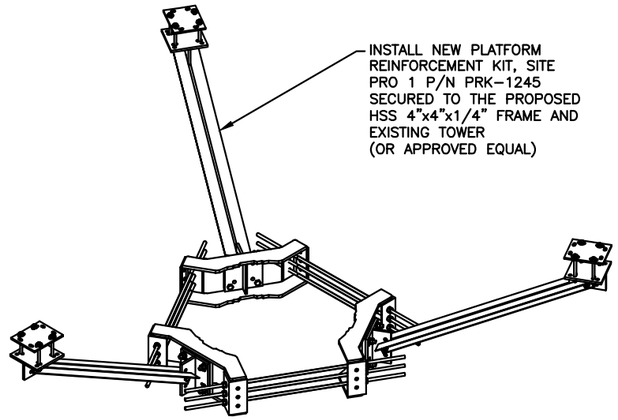
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"

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



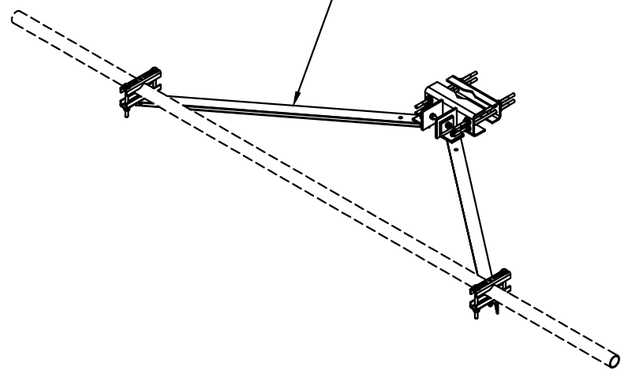
PROPOSED HANDRAIL KIT 3 / S-2

SCALE: N.T.S



PROPOSED PLATFORM REINFORCEMENT MOUNT DETAIL 5 / S-2

SCALE: N.T.S



PROPOSED REINFORCEMENT HANDRAIL KIT 4 / S-2

SCALE: N.T.S

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

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SITE NUMBER: CT1002
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ATC SITE #: 302473

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EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

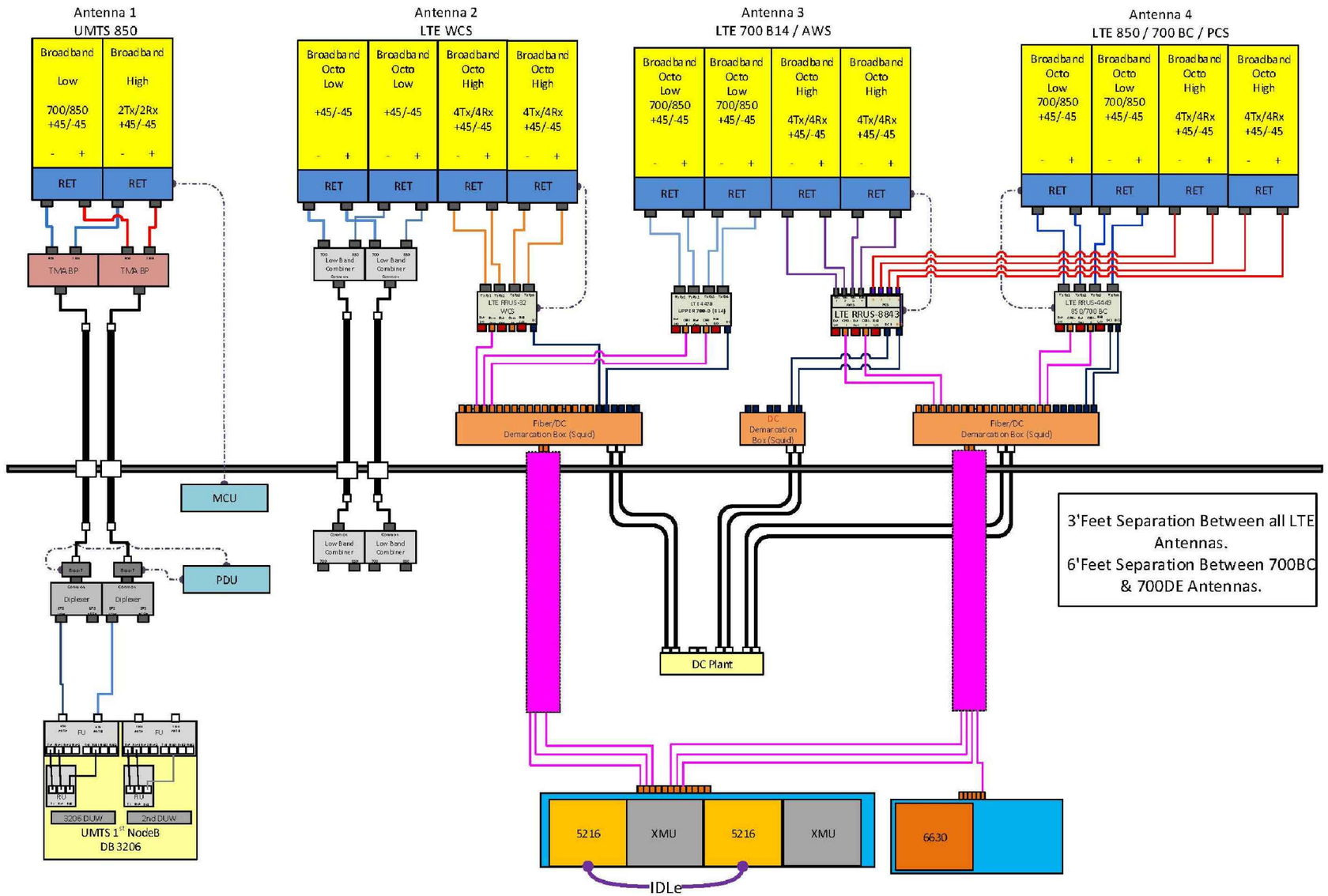
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: GA

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28055 · LICENSED PROFESSIONAL ENGINEER

AT&T

MOUNT MODIFICATIONS DESIGN
(LTE 4C/5C/6C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT1002	S-2	1



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

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

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

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

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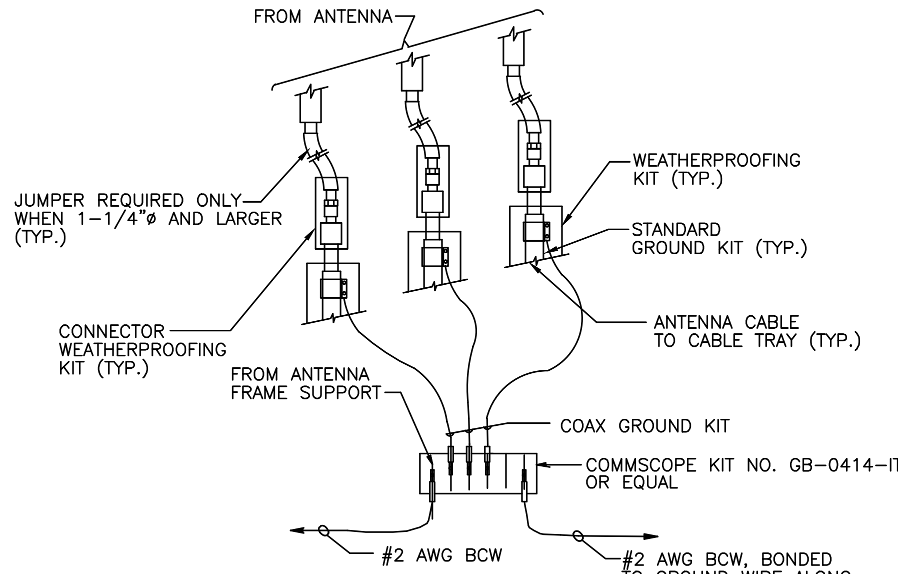
RF PLUMBING DIAGRAM
(LTE 4C/5C/6C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT1002	RF–1	1

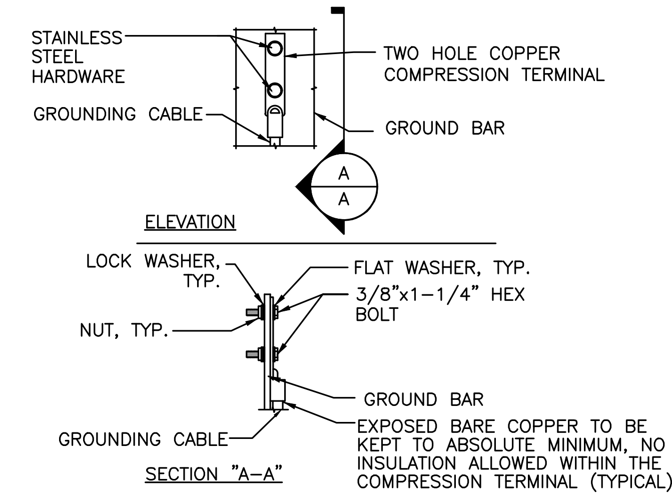


NOTE:

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

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

SCALE: N.T.S

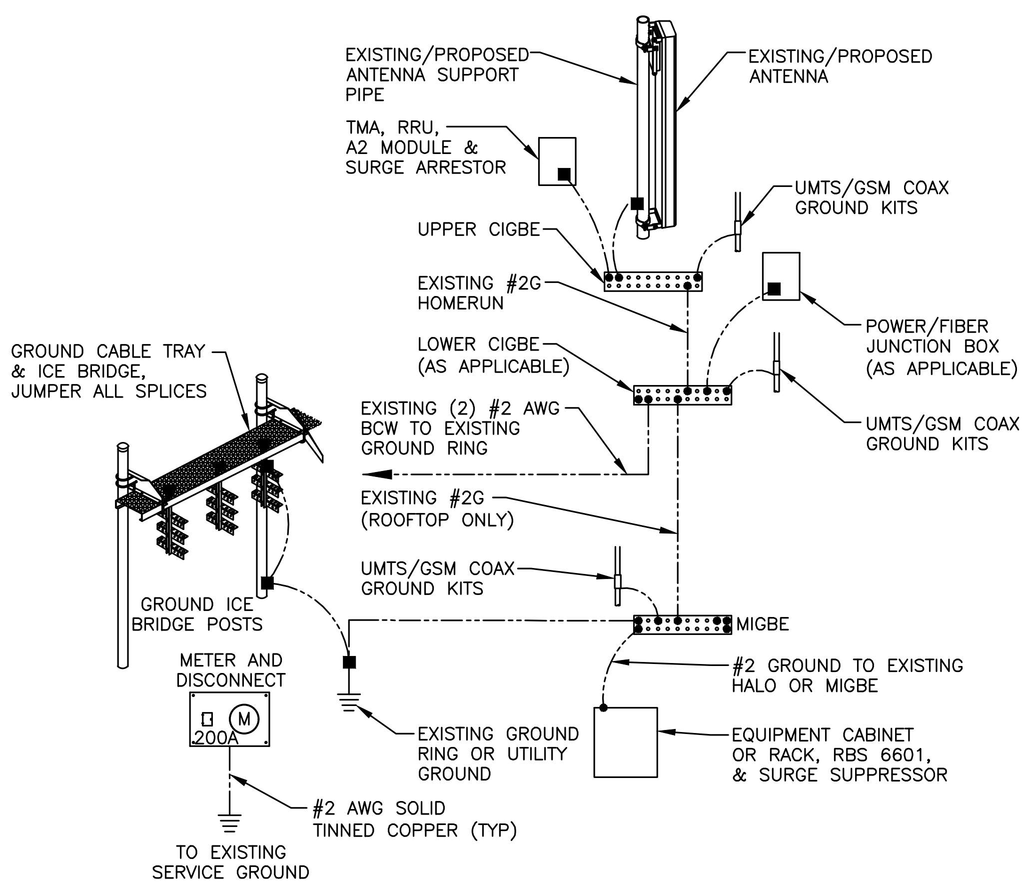


NOTE:

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

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

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S

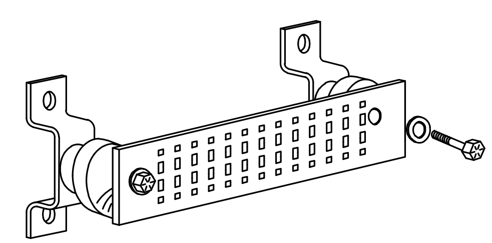
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (4 / G-1)

SCALE: N.T.S

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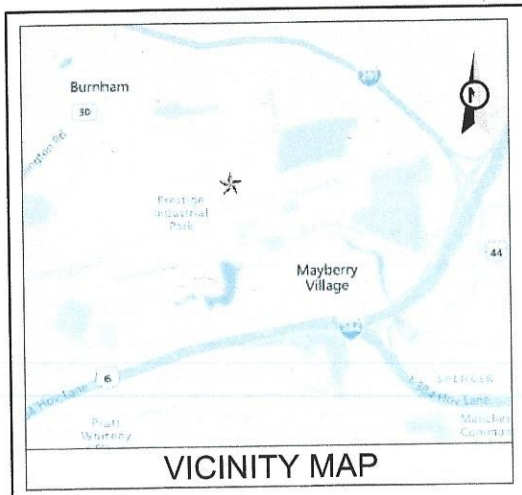
STATE OF CONNECTICUT – DEREK J. CREASER – LICENSED PROFESSIONAL ENGINEER

AT&T
GROUNDING DETAILS
(LTE 4C/5C/6C/4TX4RX)

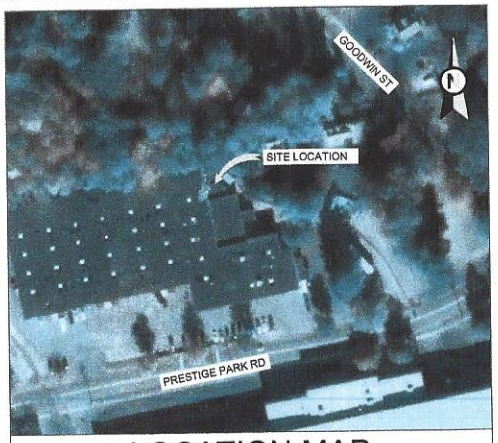
SITE NUMBER	DRAWING NUMBER	REV
CT1002	G-1	1



VICINITY MAP

AMERICAN TOWER®

SITE NAME: E H F R - PRESTIGE PARK
SITE NUMBER: 302473
ATC PROJECT NUMBER: OAA745293_C6_06
SITE ADDRESS: 310 PRESTIGE PARK RD.
EAST HARTFORD, CT
06108



LOCATION MAP

150 FT MONOPOLE MODIFICATIONS

PROJECT TEAM

TOWER OWNER
AMERICAN TOWER
10 PRESIDENTAL WAY
WOBURN, MA 01801

ENGINEERED BY
ATC TOWER SERVICES
3500 REGENCY PARKWAY, SUITE 100
CARY, NC 27518

CARRIER INFORMATION
CARRIER: AT&T MOBILITY
CARRIER SITE NAME: EAST HARTFORD
CARRIER SITE NUMBER: CT1002/ FA#10034965

811 Know what's below. Call before you dig.

PROJECT DESCRIPTION

THE MODIFICATIONS PRESENTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER OAA745293_C3_03 DATED 01/30/19. SATISFACTORY COMPLETION OF THE WORK INDICATED ON THESE DRAWINGS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED.

COMPLIANCE CODE

ALL WORK SHALL BE PREFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. ANSI/TIA/EIA: STRUCTURAL STANDARDS (222-G EDITION)
2. INTERNATIONAL BUILDING CODE (2015 IBC)
3. CONNECTICUT STATE BUILDING CODE (2018)

PROJECT LOCATION

GEOGRAPHIC COORDINATES
LATITUDE: 41.78833333
LONGITUDE: -72.60055556

SHEET	SHEET TITLE	REV.
B-1	BILL OF MATERIALS	0
IGN	IBC GENERAL NOTES	0
SIC	SPECIAL INSPECTION CHECKLIST	0
C-101	SITE PLAN	0
A-1	MODIFICATION PROFILE	0
A-2	FOUNDATON DETAILS	0
A-3	REINFORCEMENT INSTALLATION DETAILS	0
A-3A	REINFORCEMENT INSTALLATION DETAILS (CONT'D)	0
#20SB	#20 STEP BOLT BRACKET INSTALLATION DETAILS	0
A-4	PLATE WELDMENT INSTALLATION DETAILS	0
A-4A	PLATE WELDMENT INSTALLATION DETAILS (CONT'D)	0
A-4B	PLATE WELDMENT INSTALLATION DETAILS (CONT'D)	0
FPSB	FLAT PLATE STEP BOLT BRACKET FABRICATION & INSTALLATION DETAILS	0
F-1	PLATE FABRICATION DETAILS	0
F-2	TERMINATION WELDMENT FABRICATION DETAILS	0
F-3	PLATE WELDMENT FABRICATION DETAILS	0
F-4	PLATE WELDMENT FABRICATION DETAILS	0

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CWB	04/01/19

ATC SITE NUMBER:
302473

ATC SITE NAME:
E H F R - PRESTIGE PARK
CONNECTICUT

SITE ADDRESS:
310 PRESTIGE PARK RD.
EAST HARTFORD, CT 06108

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Apr 17 2019 4:52 PM CO

DRAWN BY:	CWB
APPROVED BY:	CDW/KCI
DATE DRAWN:	04/01/19
ATC JOB NO:	OAA745293_C6_06

COVER

SHEET NUMBER:	REVISION:
COVER	0

BILL OF MATERIALS

QUANTITY REQUIRED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTION	LENGTH	SHEET LIST	PART WEIGHT	WEIGHT (lb)	NOTES
			DYWIDAG REINFORCEMENT MATERIAL & HARDWARE					
4	4	DYD-20-ATR-30	#20 ALL THREAD ROD 30'	30'-0"	A-3	501.0	2004	GALVANIZED
22	22	BR-20C	L 6" X 3 1/2" X 3/8"	1'-0"	A-3	12.3	271	CONCENTRIC
8	8	TB-20C-12	L 6" X 3 1/2" X 3/8"	3'-6 3/4"	A-3	43.8	350	CONCENTRIC
150	158	UB-580-3125	U-BOLT ASSEMBLIES FOR #20 ROD	----	----	----	----	GALVANIZED
100	105	NG-0625-0875-A490	NEXGEN2 BLIND BOLT ASSEMB., M20 W/ SPRING SLEEVE, A490	----	----	----	----	ALLFASTENERS - 2NG2060
10	15	#20SB	STEP BOLT WELDMENT	0'-7 1/4"	#20SB	2.5	38	
			PLATE REINFORCEMENT MATERIAL & HARDWARE					
1	1	302473-1	PL 1 1/4" X 4"	16'-4"	A-4, A-4A, F-1	291.8	292	
1	1	302473-2	TERMINATION WELDMENT	8'-8 3/16"	A-4, A-4A, F-2	183.6	184	
3	3	302473-3	PLATE WELDMENT	20'-0"	A-4, A-4A, F-3	375.5	1127	
3	3	302473-4	PLATE WELDMENT	10'-0"	A-4, A-4A, F-4	239.3	718	
3	3	302473-5	PL 1" X 2 1/2"	2'-1 1/2"	A-4, A-4A, F-1	19.0	57	
12	13	UB-580-3125	U-BOLT ASSEMBLIES FOR #20 ROD	----	----	----	----	GALVANIZED
99	104	NG-1438-1875-A490	NEXGEN2 BLIND BOLT ASSEMB., M20 W/ SPRING SLEEVE, A490	----	----	----	----	ALLFASTENERS - 2NG2048
3	4	NG-2250-2688-A490	NEXGEN2 BLIND BOLT ASSEMB., M20 W/ SPRING SLEEVE, A490	----	----	----	----	ALLFASTENERS - 2NG2068
24	29	FPSB	FLAT PLATE STEP BOLT WELDMENT	0'-7 1/4"	FPSB	2.0	58	
			FLANGE BOLTS					
12	13	BK-1000-375-A490-MAG	BOLT, 1"Ø A490 W/ HHN-LKW-FW, MAGNI 565 COATING	3 3/4"	----	----	----	ALLFASTENERS - 2STB01334A490M-A
					TOTAL WEIGHT (lb)		5,099	PAGE 1 OF 1

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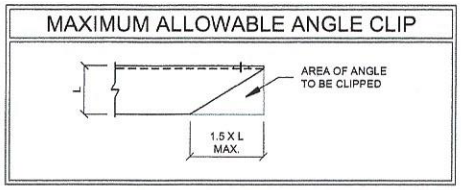
SHEET NUMBER: B-1
REVISION: 0

GENERAL

1. ALL WORK TO BE COMPLETED PER APPLICABLE LOCAL, STATE, FEDERAL CODES AND ORDINANCES AND COMPLY WITH ATC MASTER SPECIFICATIONS FOR WIRELESS TOWER SITES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND ABIDING BY ALL REQUIRED PERMITS.
2. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
4. ANY SUBSTITUTIONS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
5. ANY MANUFACTURED DESIGN ELEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER ANSI/TIA-322 AND ANSI/ASSE A10.48, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
8. CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

STRUCTURAL STEEL

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
2. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
3. ALL U-BOLTS SHALL BE ASTM A36 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.
4. FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
5. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES & GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
6. ALL STRUCTURAL STEEL EMBEDDED IN THE CONCRETE SHALL BE APPLIED WITH (2) BRUSHED COATS OF POLYGUARD CA-14 MASTIC OR EQUIVALENT. REFER TO THE MANUFACTURER SPECIFICATIONS FOR SURFACE PREPARATION AND APPLICATION. APPLICATION OF POLYGUARD 400 WRAP IS NOT ESSENTIAL.
7. CONTRACTOR SHALL PERFORM WORK ON ONLY ONE (1) TOWER FACE AND REPLACE/REINFORCE ONE (1) BOLT/MEMBER AT A TIME.
8. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.



PAINT

1. AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 70/7460-1L.

WELDING

1. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
2. ALL WELDS SHALL BE INSPECTED VISUALLY. IF DIRECTED BY ENGINEER OF RECORD, 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
3. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
4. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
5. ALL WELDING ON LATTICE TOWERS SHALL BE DONE WITH E70XX ELECTRODES. ALL WELDING ON POLE STRUCTURES SHALL BE DONE WITH E60XX ELECTRODES UNLESS NOTED OTHERWISE.
6. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

BOLT TIGHTENING PROCEDURE

1. STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC SPECIFICATIONS.
2. FLANGE BOLTS SHALL BE INSTALLED AND TIGHTENED USING DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS. DTI SQUIRTER WASHERS ARE TO BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.
3. IN LIEU OF USING DTI SQUIRTER WASHERS, FLANGE BOLTS MAY BE TIGHTENED USING AISC / RCSC "TURN-OF-THE-NUT" METHOD, PENDING APPROVAL BY THE ENGINEER OF RECORD (EOR). TIGHTEN FLANGE BOLTS USING THE CHART BELOW:

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS

1/2"	BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
5/8"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
3/4"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
7/8"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS UP TO AND INCLUDING 5.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS UP TO AND INCLUDING 6.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIAMETERS BUT NOT EXCEEDING EIGHT DIAMETERS

1/2"	BOLTS 2.25 TO 4.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
5/8"	BOLTS 2.75 TO 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
3/4"	BOLTS 3.25 TO 6.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
7/8"	BOLTS 3.75 TO 7.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1"	BOLTS 4.25 TO 8.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS 4.75 TO 9.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS 5.25 TO 10.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS 5.75 TO 11.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS 6.25 TO 12.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT

4. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS", LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:

   FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.

   8.2.1 TURN-OF-NUT PRETENSIONING
   BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

5. ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

   ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO THE THREADS. BOLTS SHALL BE PLACED IN ALL HOLES WITH WASHERS POSITIONED AS REQUIRED AND NUTS THREADED TO COMPLETE THE ASSEMBLY. COMPACTING THE JOINT TO THE SNUG-TIGHT CONDITION SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT. THE SNUG-TIGHTENED CONDITION IS THE TIGHTNESS THAT IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

APPLICABLE CODES AND STANDARDS

1. ANSI/TIA: STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, 222-G EDITION.
2. 2018 CONNECTICUT STATE BUILDING CODE.
3. 2015 INTERNATIONAL BUILDING CODE.
4. ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-02.
5. CRSI:CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
6. AISC:AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
7. AWS:AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

SPECIAL INSPECTION

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH IBC 2015, SECTION 1704 AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:

   a) STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELD ONLY)
   b) HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 EXTENSION FLANGE BOLTS TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD)

2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER IN ACCORDANCE WITH IBC 2015, SECTION 1704, UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM SUCH WORK WITHOUT THE SPECIAL INSPECTIONS.

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IBC GENERAL NOTES

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MODIFICATION INSPECTION NOTES

THE SPECIAL INSPECTION (SI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.

TO ENSURE THAT THE REQUIREMENTS OF THE SI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR AND THE INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED FROM AMERICAN TOWER CORPORATION (ATC). IT IS EXPECTED THAT EACH PARTY WILL PROACTIVELY REACH OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR AMERICAN TOWER POINT OF CONTACT.

SPECIAL INSPECTOR

THE SPECIAL INSPECTOR IS REQUIRED TO CONTACT THE GENERAL CONTRACTOR AS SOON AS RECEIVING A PO FROM ATC. UPON RECEIVING A PO FROM ATC THE SPECIAL INSPECTOR AT A MINIMUM MUST:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE GENERAL CONTRACTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- ANY CONCERNS WITH THE SCOPE OF WORK OR PROJECT COMMITMENT MUST BE RELAYED TO THE ATC POINT OF CONTACT IMMEDIATELY.

THE SPECIAL INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR INSPECTION AND TEST REPORTS, REVIEWING THESE DOCUMENTS FOR ADHERENCE TO CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE SI REPORT TO AMERICAN TOWER CORPORATION.

GENERAL CONTRACTOR

THE GENERAL CONTRACTOR IS REQUIRED TO CONTACT THE SI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE SI TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GENERAL CONTRACTOR SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SI CHECKLIST.

SPECIAL INSPECTION CHECKLIST

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY	SI REVIEW REQUIRED			INSPECTION FREQUENCY	
				PRE CX	DURING CX	POST CX	PERIODIC	CONTINUOUS
SPECIAL INSPECTION FIELD WORK & REPORT	DOCUMENTATION AND SITE VISIT CONDUCTED BY AN ATC APPROVED SPECIAL INSPECTOR AS REQUIRED BY ATC AND OTHER AUTHORITIES HAVING JURISDICTION. INSPECTION PARAMETERS TO FOLLOW ATC'S STANDARD SPECIFICATION FOR WIRELESS TOWER SITES.	✔	SI			✔		
ENGINEERING ASSEMBLY DRAWINGS	GC SHALL SUBMIT DRAWINGS TO SI FOR INCLUSION IN SI REPORT	✔	GC	✔				
FABRICATED MATERIAL VERIFICATION & INSPECTION	MTR AND OR MILL CERTIFICATIONS FOR SUPPLIED MATERIALS GC SHALL SUPPLY SI WITH REPORTS TO BE INCLUDED IN SI REPORT WHEN REQUIRED BY ATC	✔	SI	✔				
CERTIFIED WELD INSPECTION	INSPECTION AND REPORT OF STRUCTURAL WELDING PERFORMED DURING PROJECT COMPLETED BY A CWI AND INCLUDED WITHIN SI REPORT	✔	GC / TA	✔	✔	✔	✔	
FOUNDATION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF FOUNDATION EXCAVATION, REBAR PLACEMENT, CASING/SHORING/FORMING PLACEMENT, AND ANCHOR TEMPLATE AND ANCHOR PLACEMENT - TO BE SI APPROVED PRIOR TO CONCRETE POUR AND DOCUMENTED IN THE SI REPORT		SI					
ANCHOR, ROCK ANCHOR OR HELICAL PULL-OUT TEST	PULL TESTING OF INSTALLED ANCHORS TO BE COMPLETED AND DOCUMENTED IN SI REPORT		GC / TA					
CONCRETE INSPECTION & VERIFICATION	CONCRETE MIX DESIGN, SLUMP TEST, COMPRESSIVE TESTING, AND SAMPLE GATHERING TECHNIQUES ARE TO BE PROVIDED FOR INCLUSION IN THE SI REPORT. SI SHALL VERIFY CONCRETE PLACEMENT AS REQUIRED BY THE DESIGN DOCUMENTS (INSPECTION FREQUENCY IS MARKED CONTINUOUS)		GC / TA					
DYWIDAG PLACEMENT/ANCHOR BOLT EMBEDMENT - EPOXY/GROUT INSTALL	ANCHOR/BAR EMBEDMENT, HOLE SIZE, EPOXY/GROUT TYPE, INSTALLATION TEMPERATURE AND INSTALLATION SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT	✔	GC / SI		✔			✔
BASE PLATE GROUT INSPECTION & VERIFICATION	BASE PLATE GROUTING TYPE AND PLACEMENT SHALL BE CONFIRMED BY THE SI AND INCLUDED IN THE SI REPORT		GC / SI					
EARTHWORK INSPECTION & VERIFICATION	EXCAVATION, FILL, SLOPE, GRADE AND OTHER EARTHWORK REQUIREMENTS PER PLANS SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT		GC / TA					
COMPACTION VERIFICATION	CONTRACTOR SHALL PROVIDE AN INDEPENDENT THIRD PARTY CERTIFIED INSPECTION WHICH PROVIDES TEST RESULTS FOR COMPACTION TEST OF SOILS IN PLACE TO ASTM STANDARDS.		GC / TA					
GROUND TESTING & VERIFICATION	GC SHALL PROVIDE DOCUMENTATION SHOWING THAT THE GROUNDING SYSTEM SHALL HAVE A MEASURED RESISTANCE TO THE GROUND OF NOT MORE THAN THE RECOMMENDED 10 OHMS. PER THE ATC CONSTRUCTION SPECIFICATION UNDER SECTION 2.15 THIS DOCUMENTATION MUST BE AN INDEPENDENT CERTIFICATION.		GC					
STEEL CONSTRUCTION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF STEEL CONSTRUCTION TO BE PERFORMED BY THE SI. INSPECTION TO INCLUDE VERIFICATION OF NEW CONSTRUCTION OR MODIFICATION OF EXISTING CONSTRUCTION PER ENGINEERED PLANS. DETAILED VERIFICATION SHALL BE INCLUDED IN SI REPORT.	✔	SI			✔	✔	
ON-SITE COLD GALVANIZING VERIFICATION	SI SHALL VERIFY WITH GC ALL COLD GALVANIZATION TYPE AND APPLICATION AND INCLUDE SUMMARY IN SI REPORT	✔	GC			✔	✔	
GUY WIRE TENSIONING & TOWER ALIGNMENT REPORT	GC SHALL PROVIDE SI EVIDENCE OF PROPER GUY TENSIONING AND TOWER PLUMB PER PLANS. SI SHALL VERIFY AND INCLUDE PLUMB AND TENSION REPORTING IN SI REPORT.		GC					
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	GC SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO SI FOR APPROVAL/REVIEW AND INCLUSION IN SI REPORT	✔	GC			✔		
SI AS-BUILT DRAWINGS WITH INSPECTION RED-LINES (AS REQUIRED)	SI SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS WITHIN SI REPORT	✔	SI			✔		
TIA INSPECTION	SI SHALL COMPLETE TIA INSPECTION AND PROVIDE SEPARATE TIA INSPECTION DOCUMENTATION TO ATC CM		SI					
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF SPECIAL INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOW UP TO BE INCLUDED WITHIN THE SI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN SI REPORT.	✔	GC / SI			✔		

NOTE: SPECIAL INSPECTIONS ARE INTENDED TO BE A COLLABORATIVE EFFORT BETWEEN GC AND SI. WHENEVER POSSIBLE GC IS TO PROVIDE SI WITH PHOTOGRAPHIC OR OTHER ACCEPTABLE EVIDENCE OF PROPER INSTALLATION IF PERIODIC INSPECTION FREQUENCY IS ACCEPTABLE. THE GC AND SI SHALL WORK TO COMPILE EVIDENCE OF PROPER CONSTRUCTION AND LIMIT THE NUMBER OF SI SITE VISITS REQUIRED.

TABLE KEY:
SI - ATC APPROVED SPECIAL INSPECTOR
GC - GENERAL CONTRACTOR
TA - 3RD PARTY TESTING AGENCY
CX - CONSTRUCTION
CM - CONSTRUCTION MANAGER
ATC - AMERICAN TOWER CORPORATION

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SPECIAL INSPECTION CHECKLIST

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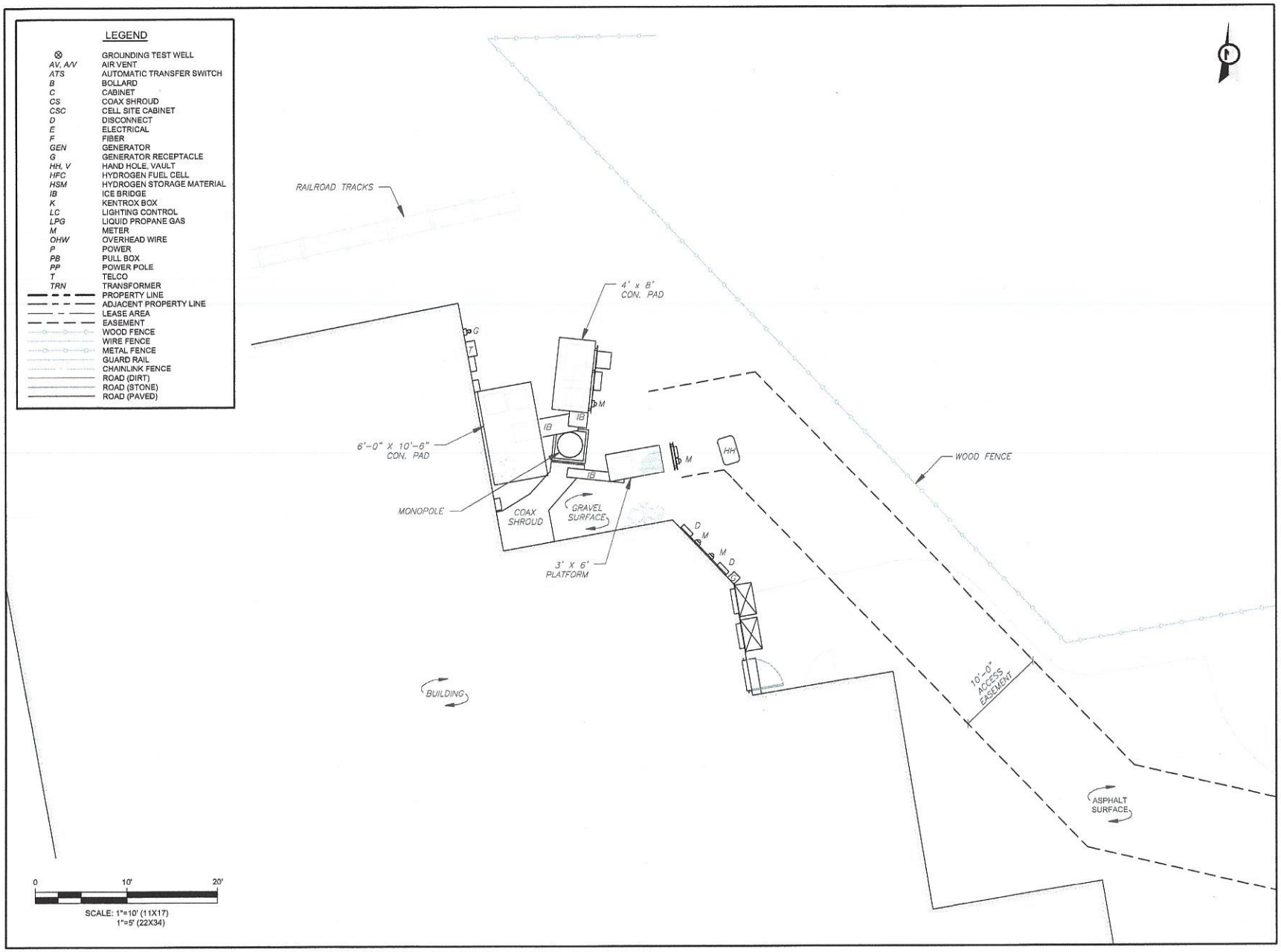

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ATC SITE NUMBER:
302473

ATC SITE NAME:
E H F R - PRESTIGE PARK
CONNECTICUT

SITE ADDRESS:
310 PRESTIGE PARK RD.
EAST HARTFORD, CT 06108

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32598
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
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DATE DRAWN:	04/01/19
ATC JOB NO:	OAA745293_C6_06

SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

AT&T MOBILITY
EL: 153.0' [PROPOSED]

EL: 150.0'
[TOP OF STRUCTURE]

SECTION 4

EL: 110.0'

SECTION 3

EL: 73.6'

SECTION 2

EL: 35.7'

SECTION 1

EL: 0.0'
[BOTTOM OF STRUCTURE]

MOUNT MAY REQUIRE SUPPORT AND RE-MOUNTING DURING INSTALLATION. SEE NOTE BELOW.

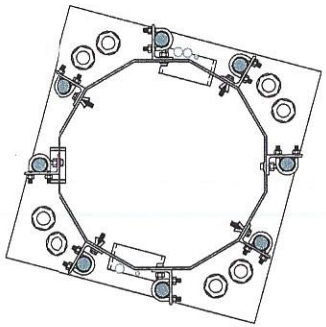
INSTALL (4) PLATE REINFORCEMENTS [PL 1 1/4" X 4"] FROM EL: 90.0' TO 110.0'. AND INSTALL (3) PLATE REINFORCEMENTS [PL 1 1/4" X 5"] FROM EL: 110.0' TO 120.0' SEE SHEETS A-4 THRU A-4B FOR INSTALLATION DETAILS & UPGRADE 1"Ø FLANGE BOLTS WITH NEW 1"Ø X 3 3/4" A490 BOLTS [BK-1000-375-A490-MAG] SEE FLANGE BOLT INSTALLATION DETAIL.

INSTALL (4) DYWIDAG #20 ALL THREAD RODS FROM EL: -7.5' TO 22.5'. SEE SHEETS A-2 TO A-3A FOR INSTALLATION DETAILS.

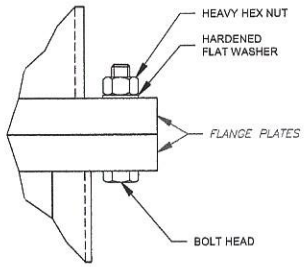
TOWER ELEVATION VIEW

ADDITIONAL TOWER INFORMATION:

1. PRE-MOD MAPPING WAS COMPLETED FOR THIS PROJECT.



COAX DISTRIBUTION
EXTERIOR ONLY



FLANGE BOLT INSTALLATION
TYPICAL DETAIL

ALL FLANGE BOLTS SHALL BE TIGHTENED BY USNG AISC/RCSC "TURN-OF-THE-NUT" METHODOLOGY. SEE SHEET IGN FOR DETAILS.

NOTES:
1. PROPOSED AT&T MOBILITY COAX TO BE INSTALLED INSIDE MONOPOLE.
2. CONTACT AMERICAN TOWER FIELD OPERATIONS WHEN EXISTING EQUIPMENT INTERFERES WITH INSTALLATION OF MODIFICATIONS. ONCE APPROVED, EXISTING EQUIPMENT MAY BE TEMPORARILY MOVED DURING INSTALLATION & REINSTALLED TO THE ORIGINAL HEIGHT & LOCATION BY CONTRACTOR POST COMPLETION OF MODIFICATIONS.

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SUITE 100
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COA: PEC.0001553

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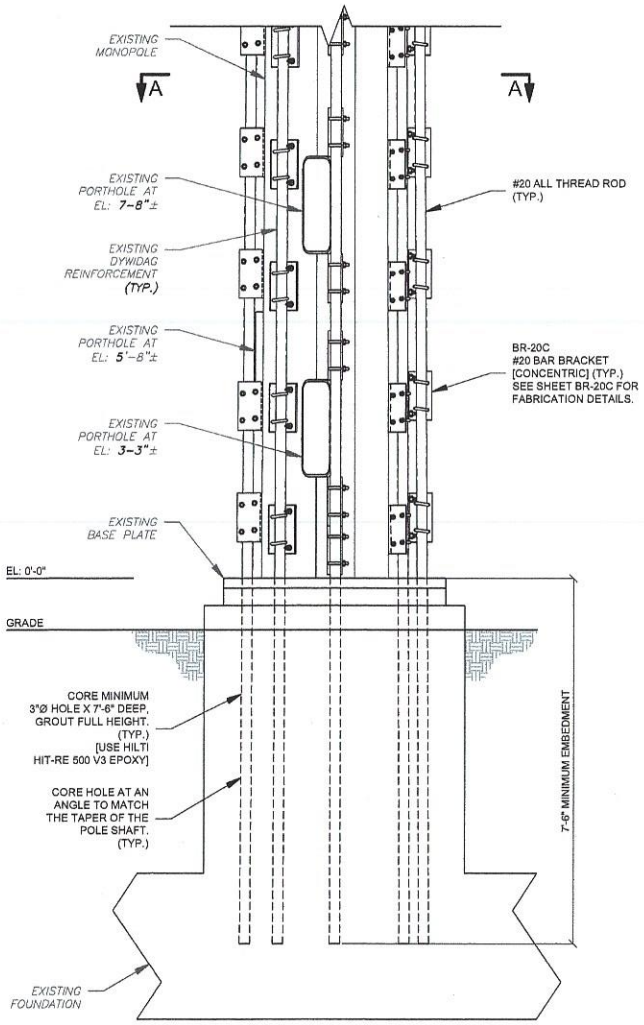
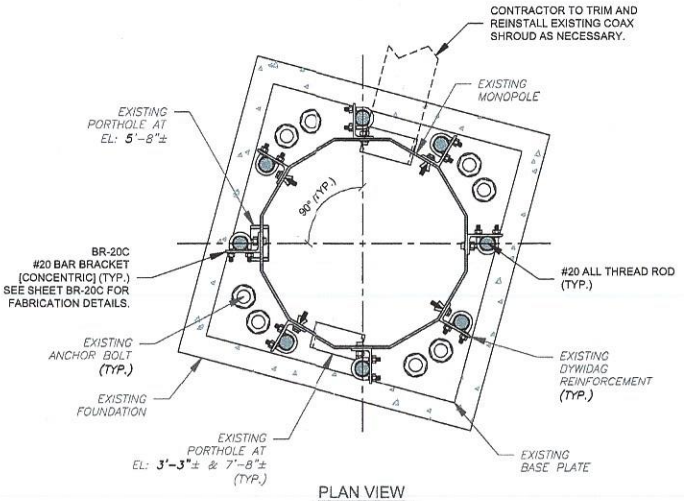
MODIFICATION PROFILE

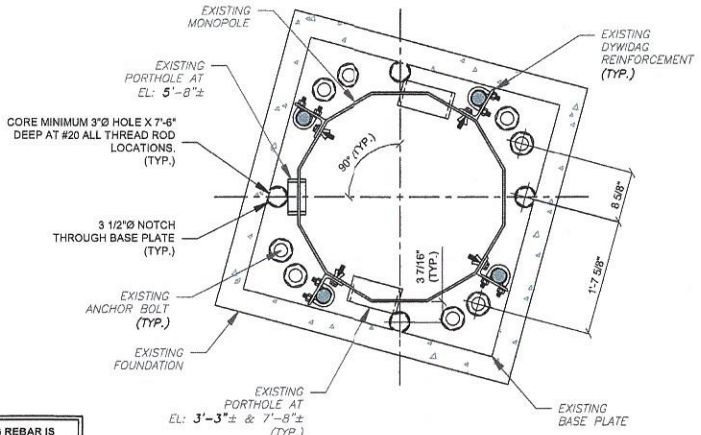
SHEET NUMBER:	REVISION:
A-1	0



ELEVATION VIEW
FOUNDATION DETAIL



PLAN VIEW
SECTION "A-A"



PLAN VIEW
HOLE DRILL DETAIL

NOTE:
CONTRACTOR TO CONTACT ENGINEER OF RECORD IF EXISTING REBAR IS ENCOUNTERED DURING CORING.

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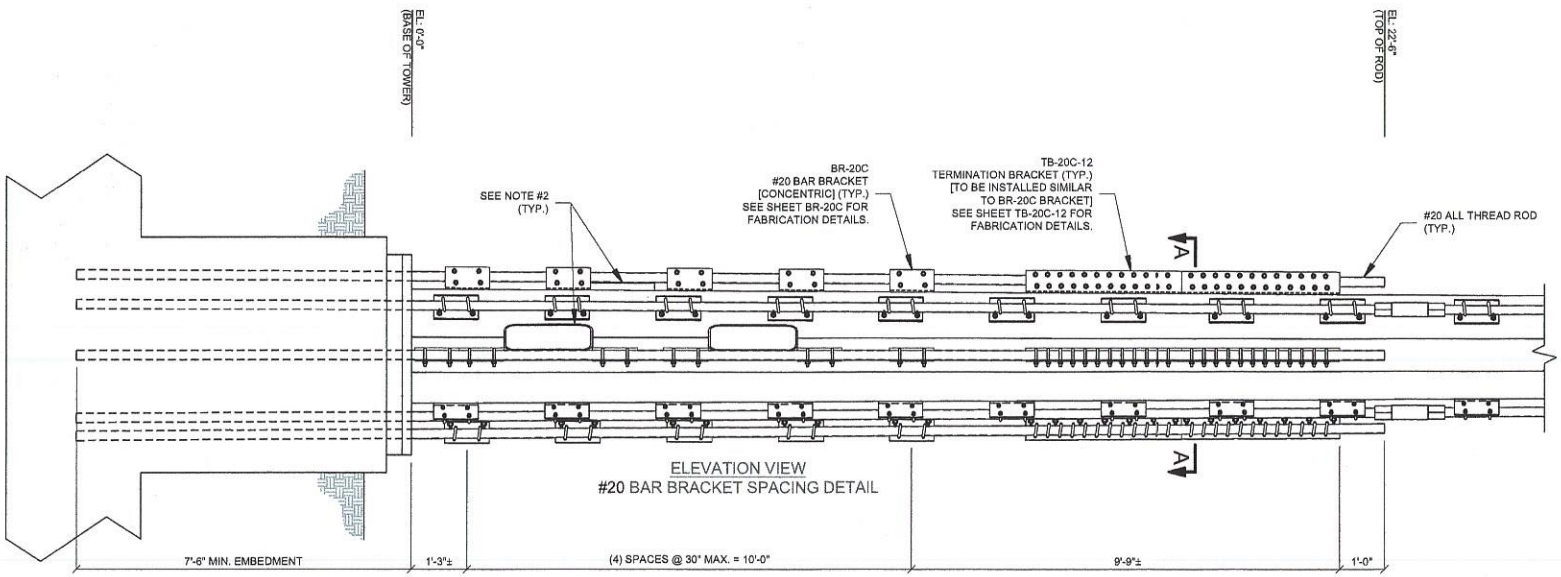
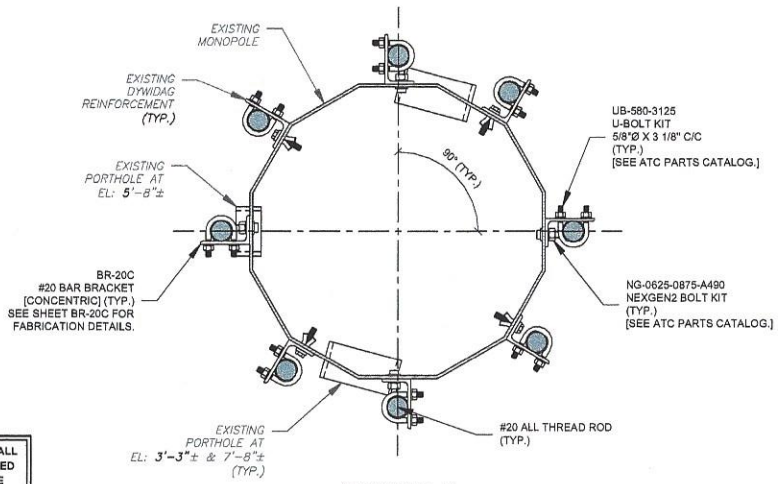
ATC JOB NO:	OAA745293_C6_06

FOUNDATION DETAILS

SHEET NUMBER:	REVISION:
A-2	0



ELEVATION VIEW
#20 BAR BRACKET SPACING DETAIL



SECTION "A-A"
TYPICAL DETAIL

NOTES:
1. REPLACE ANY EXISTING STEP BOLTS THAT INTERFERE WITH THE NEW #20 ALL THREAD ROD REINFORCEMENTS. THE NEW STEP BOLTS SHALL BE ATTACHED TO THE #20 ALL THREAD RODS IN THE SAME APPROXIMATE LOCATION. SEE SHEET #20SB FOR INSTALLATION DETAILS.
2. PLACE A BRACKET (BR-20C) DIRECTLY ABOVE AND BELOW ANY EXISTING PORTHOLE AS REQUIRED.
3. SEE SHEET A-3A FOR #20 ALL THREAD ROD BRACKET INSTALLATION DETAILS.

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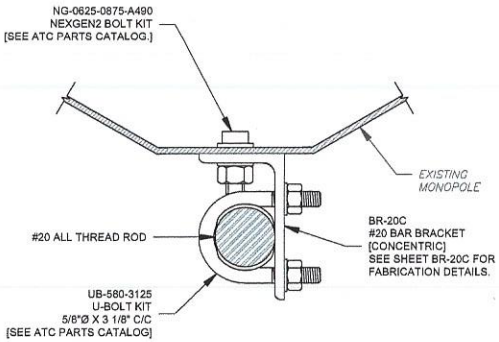
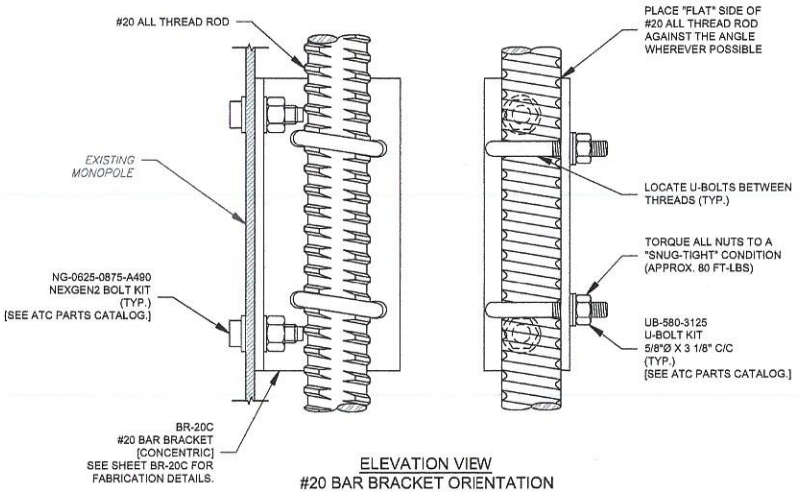
REINFORCEMENT
INSTALLATION DETAILS

SHEET NUMBER:	REVISION:
A-3	0



PLAN VIEW
#20 BAR BRACKET ORIENTATION
[CONCENTRIC]



ELEVATION VIEW
#20 BAR BRACKET ORIENTATION
[CONCENTRIC]

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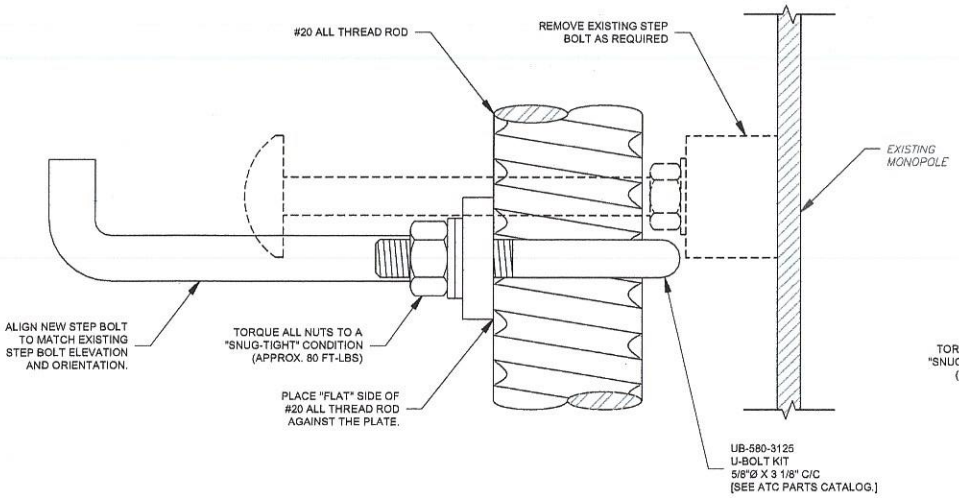
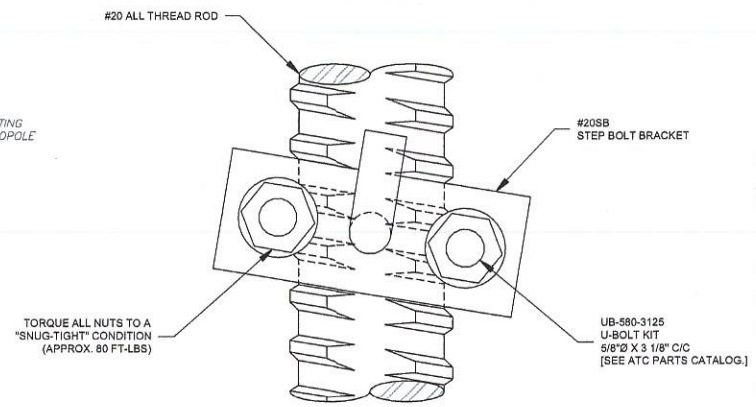
REINFORCEMENT
INSTALLATION DETAILS
(CONT'D)

SHEET NUMBER:	REVISION:
A-3A	0



#20SB INSTALLATION DETAILS
SIDE VIEW



#20SB INSTALLATION DETAILS
FRONT VIEW

NOTE:
STEP PEG SPACING IS NOT TO EXCEED 15" MAX. STAGGERED OR 30" MAX. ON ANY SINGLE SIDE OF THE DYWIDAG BAR.

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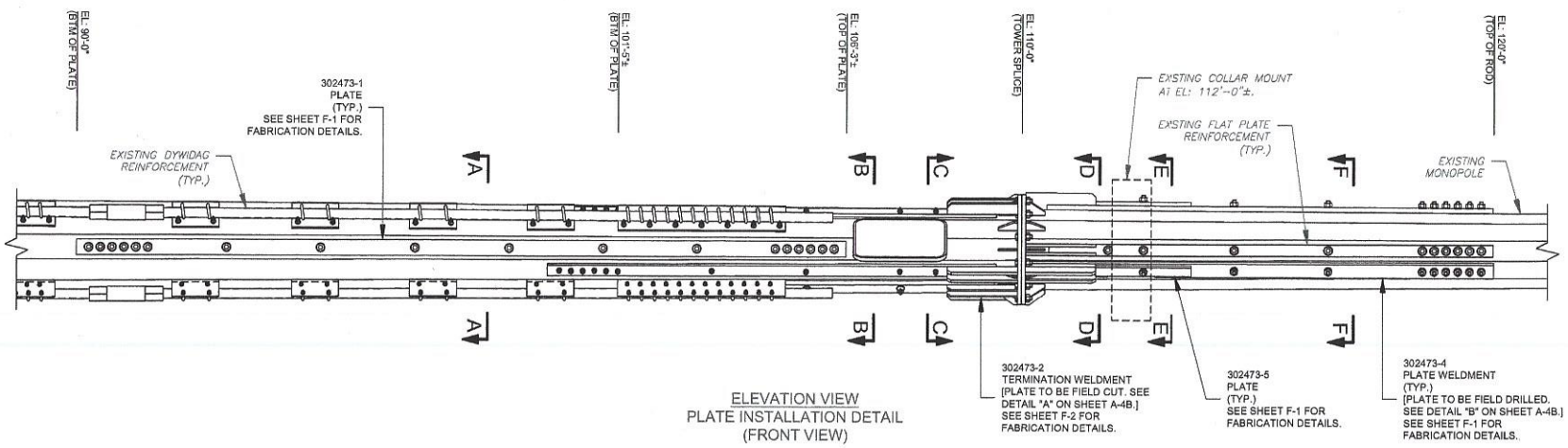
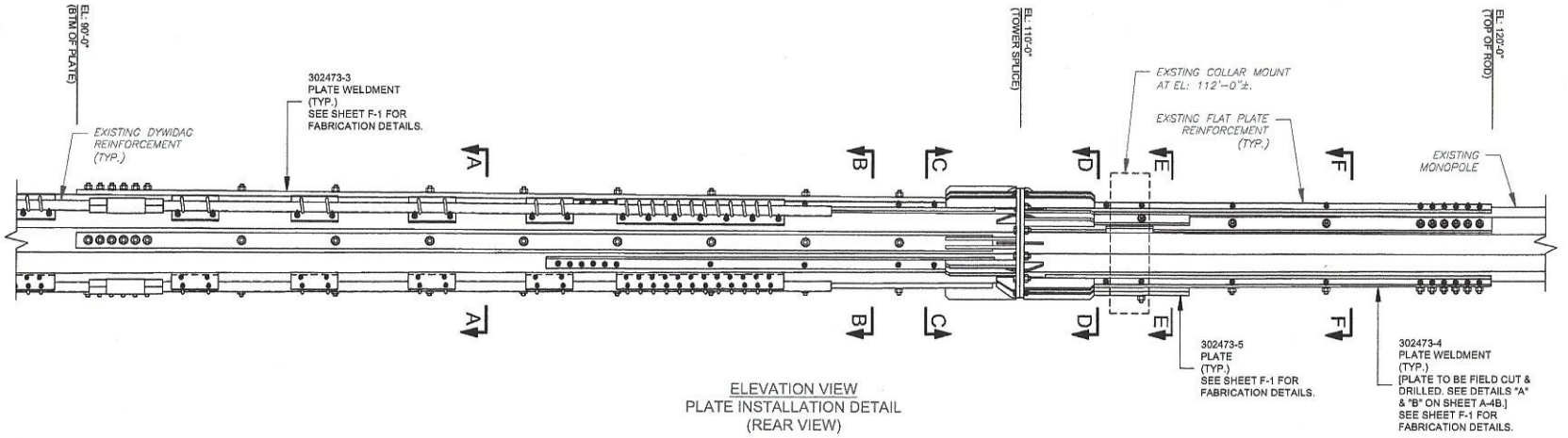
ATC JOB NO:	OAA745283_C6_06

#20 STEP BOLT BRACKET
INSTALLATION DETAILS

SHEET NUMBER:	REVISION:
#20SB	0



ELEVATION VIEW
PLATE INSTALLATION DETAIL
(FRONT VIEW)



ELEVATION VIEW
PLATE INSTALLATION DETAIL
(REAR VIEW)

NOTES:
1. SEE SHEET A-4A FOR SECTIONS "A-A" THRU "G-G" AND TYPICAL WELD DETAILS.
2. REPLACE ANY EXISTING STEP BOLTS THAT INTERFERE WITH THE NEW PLATE WELDMENT INSTALLATIONS. THE NEW STEP BOLTS SHALL BE ATTACHED TO THE PLATE WELDMENTS IN THE SAME APPROXIMATE LOCATION. SEE SHEET FBSB FOR INSTALLATION DETAILS.
3. NG-2250-2688-A490 NEXGEN2 BOLT KITS ARE SUPPLIED AS REQUIRED FOR BAR BRACKET CONNECTIONS THAT FALL WITHIN MOUNT BYPASS PLATE [302473-5] LOCATIONS.

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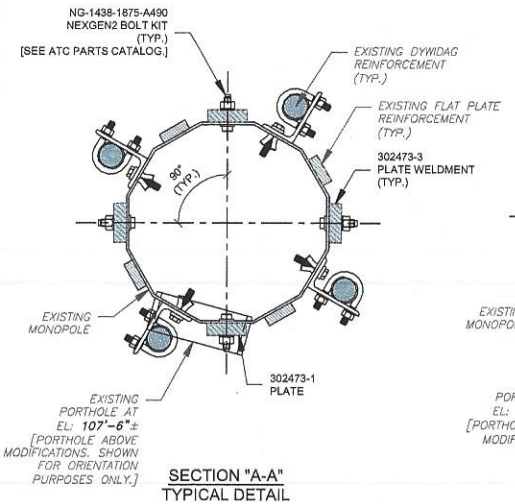
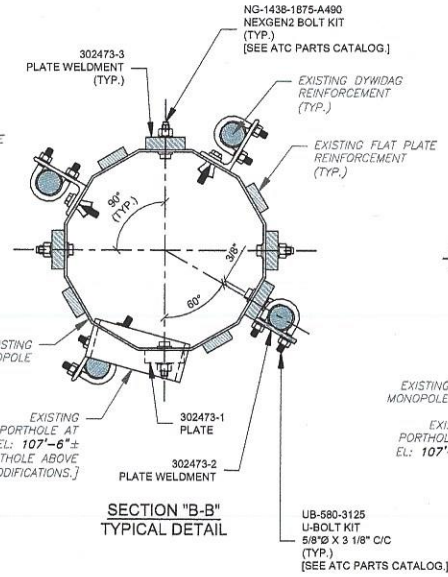
PLATE WELDMENT
INSTALLATION DETAILS

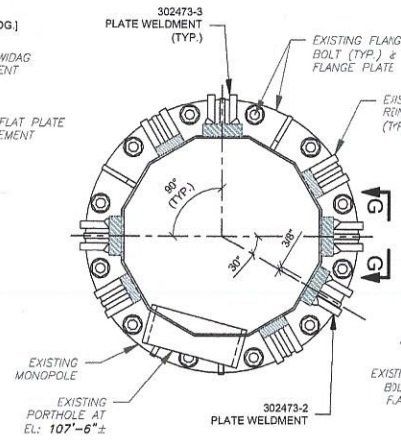
SHEET NUMBER:	REVISION:
A-4	0



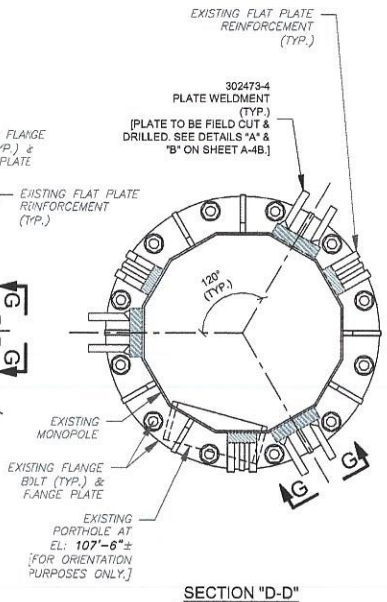
SECTION "A-A"
TYPICAL DETAIL



SECTION "B-B"
TYPICAL DETAIL

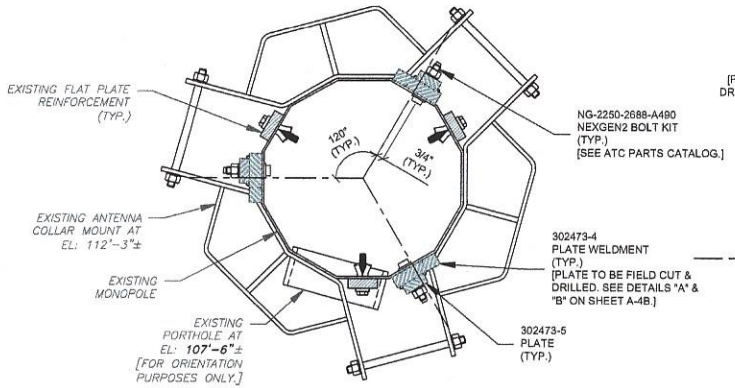


SECTION "C-C"
TYPICAL DETAIL

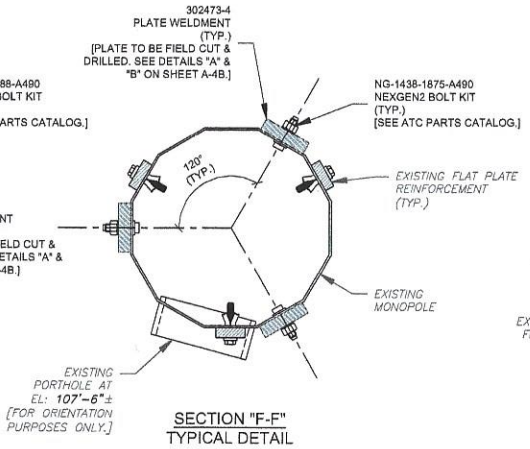


SECTION "D-D"
TYPICAL DETAIL

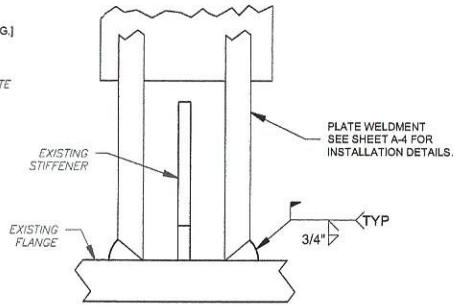
SEE SHEET A-4 FOR ADDITIONAL INSTALLATION DETAILS.



SECTION "E-E"
TYPICAL DETAIL



SECTION "F-F"
TYPICAL DETAIL



SECTION "G-G"
TYPICAL WELD DETAIL

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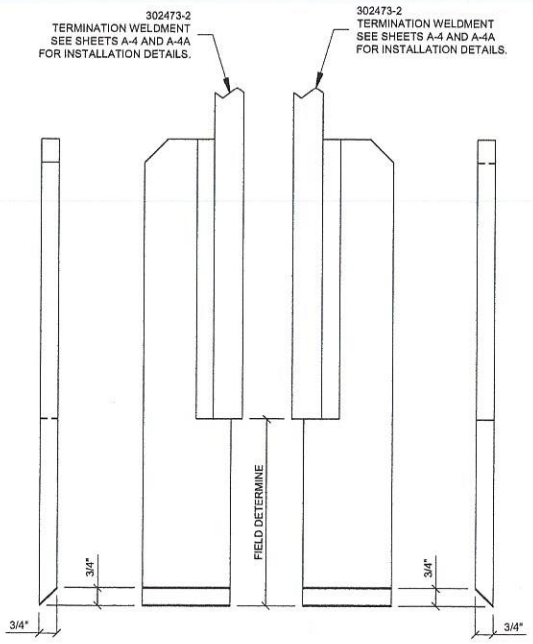
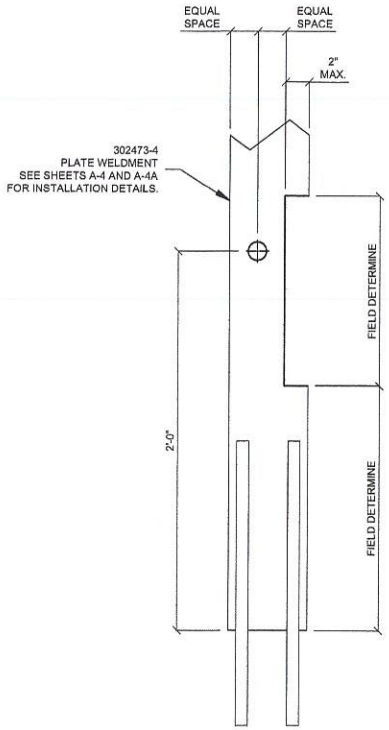
PLATE WELDMENT
INSTALLATION DETAILS
(CONT'D)

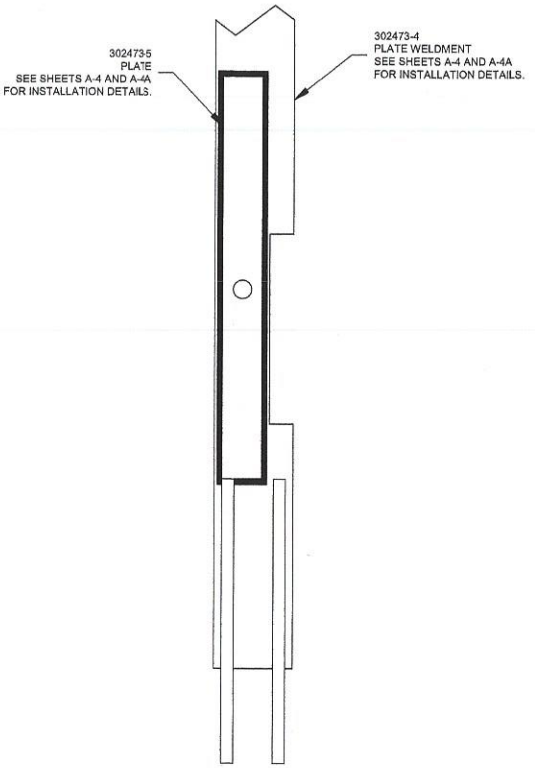
SHEET NUMBER:	REVISION:
A-4A	0



DETAIL "A"
FIELD CUT



DETAIL "B"
TYPICAL FIELD CUT & DRILL DETAIL
STEP 1



DETAIL "B"
TYPICAL FIELD WELD DETAIL
STEP 2

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PLATE WELDMENT
INSTALLATION DETAILS
(CONT'D)

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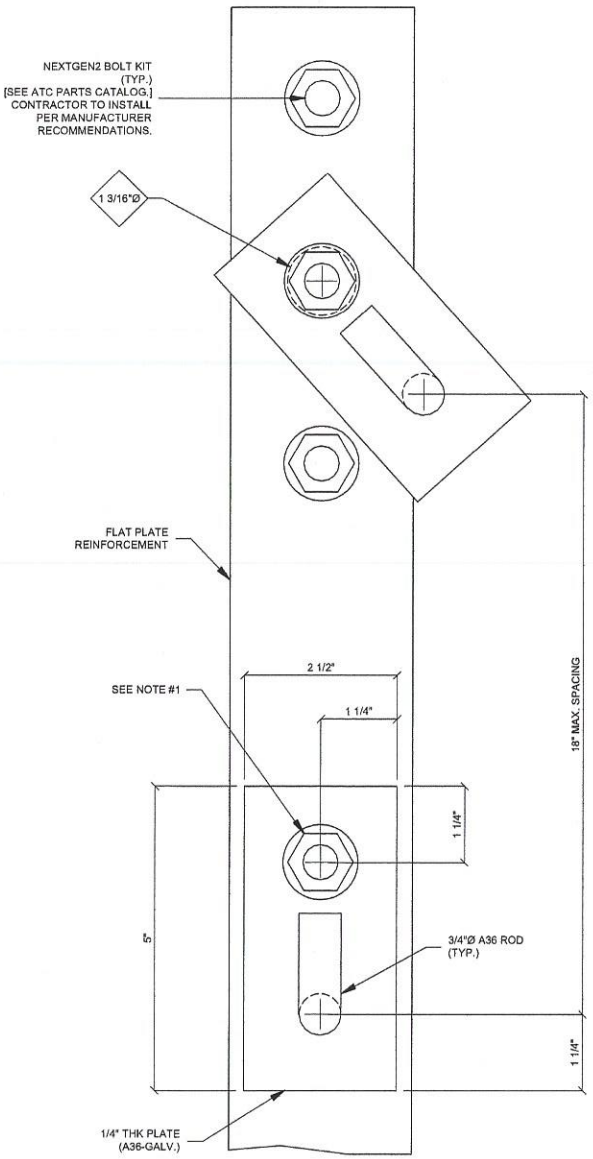
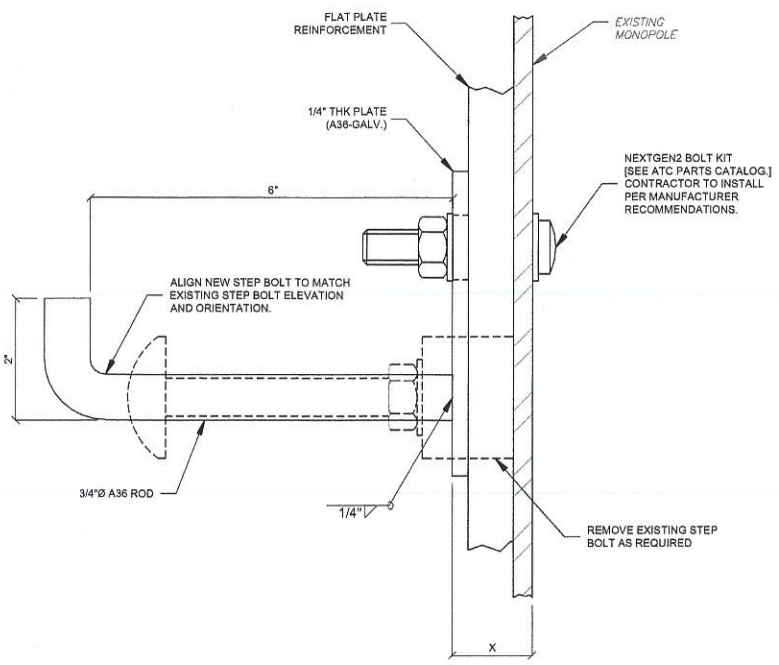


FRONT VIEW



SIDE VIEW

NEXGEN2 BLIND BOLTS (A490)		
ATC KIT NUMBER	ALLFASTENER	RANGE (IN)
NG-0625-0875-A490	2NG2060	0.625-0.875
NG-0938-1438-A490	2NG2036	0.9375-1.4375
NG-1438-1875-A490	2NG2048	1.4375-1.875
NG-1875-2250-A490	2NG2057	1.875-2.25
NG-2250-2688-A490	2NG2068	2.25-2.6875
NG-2688-3750-A490	2NG2096	2.6875-3.75
NG-3750-5000-A490	2NG2127	3.75-5
NG-5000-8313-A490	2NG2212	5-8.3125

NOTES:
1. BLIND BOLT LENGTHS TO BE VERIFIED PRIOR TO FLAT PLATE AND STEP BOLT INSTALLATION. USE NEXGEN2 BLIND BOLT CHART.
2. STEP PEG SPACING IS NOT TO EXCEED 15" MAX. STAGGERED OR 30" MAX. ON ANY SINGLE SIDE OF THE FLAT PLATE.

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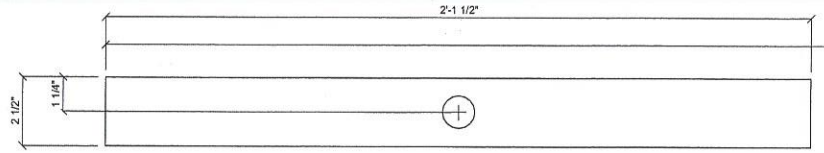
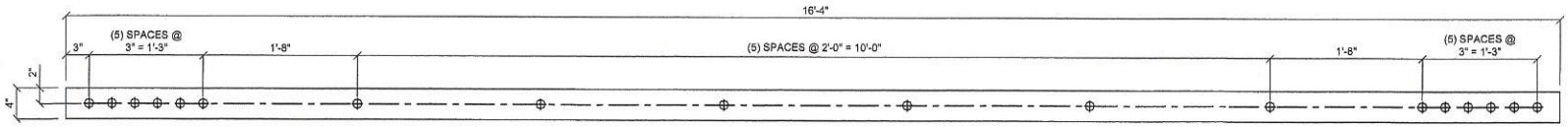
FLAT PLATE STEP BOLT BRACKET FABRICATION & INSTALLATION DETAILS

SHEET NUMBER:	REVISION:
FPSB	0



302473-5
PLATE



302473-1
PLATE

302473-5	PL 1" X 2 1/2"	2'-1 1/2"		18.1#	19.0#
302473-1	PL 1 1/4" X 4"	16'-4"		277.9#	291.8#
PART NO.	**DESCRIPTION**	**LENGTH**	**NOTES**	**BLK WT**	**GALV WT**
MATERIAL: A572 GR. 65		**FINISH:** GALVANIZED		**HOLES:** 1 3/16"Ø	

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COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CWB	04/01/19

ATC SITE NUMBER:
302473

ATC SITE NAME:
E H F R - PRESTIGE PARK
CONNECTICUT

SITE ADDRESS:
310 PRESTIGE PARK RD.
EAST HARTFORD, CT 06108

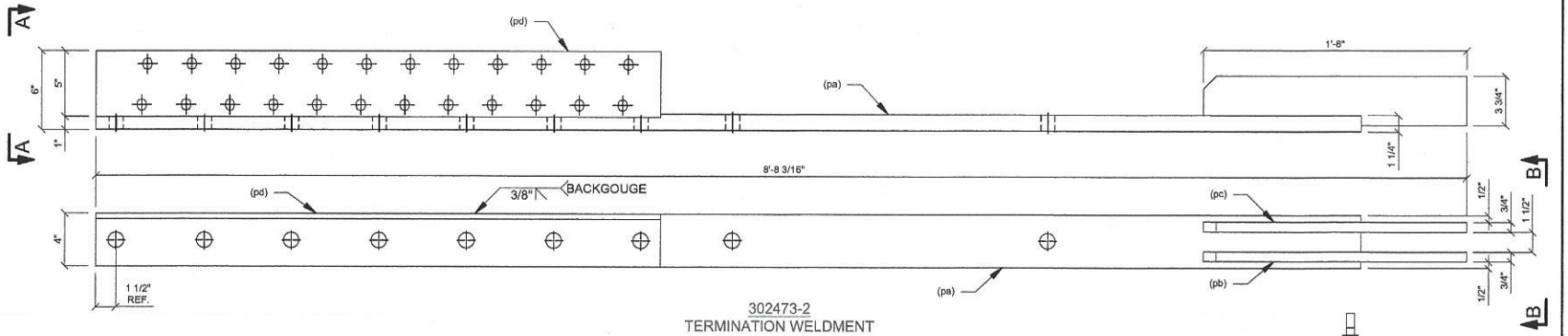
STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32598
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Apr 17 2019 4:53 PM CO

DRAWN BY:	CWB
APPROVED BY:	CDW/KCI
DATE DRAWN:	04/01/19
ATC JOB NO:	OAA745293_C6_06

PLATE
FABRICATION DETAILS

SHEET NUMBER:	REVISION:
F-1	0



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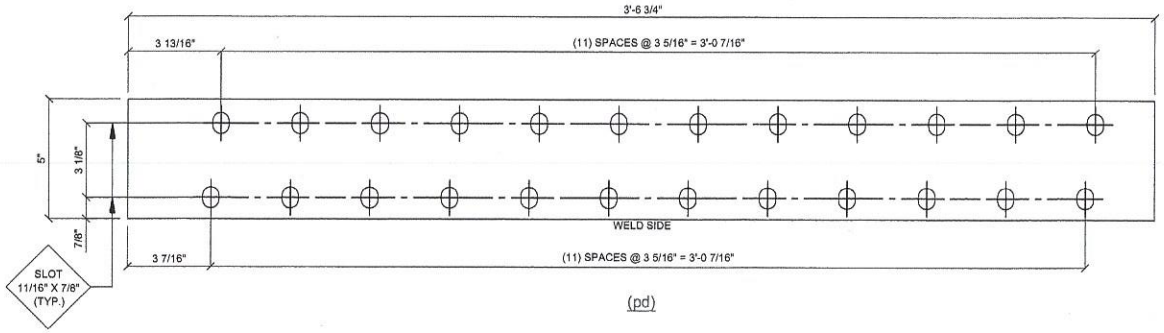
TERMINATION WELDMENT



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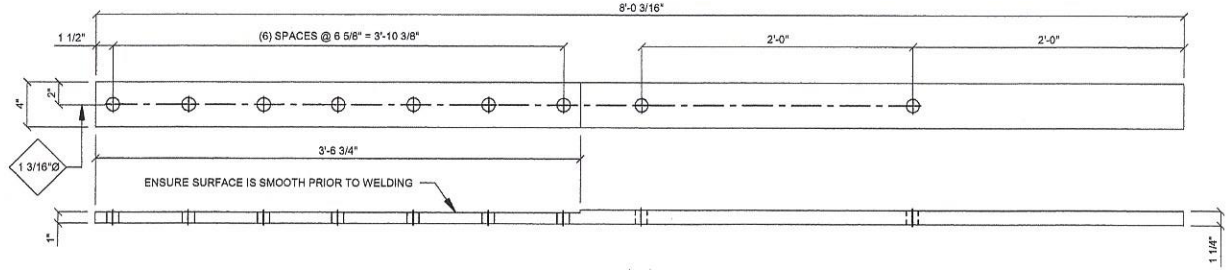

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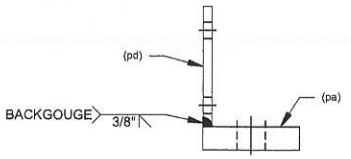
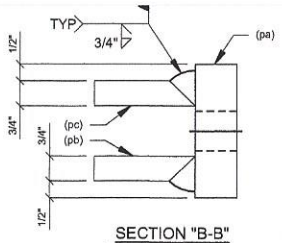


SECTION "A-A"
TYPICAL DETAIL



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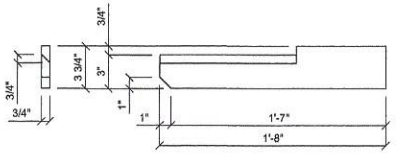
TYPICAL DETAIL



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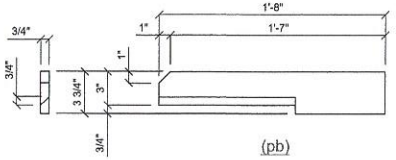

(pb)

(pd)	1	PL 3/8" X 5"	3'-6 3/4"		22.7#
(pc)	1	PL 3/4" X 3 3/4"	1'-8"	SHAPE	13.9#
(pb)	1	PL 3/4" X 3 3/4"	1'-8"	SHAPE	13.9#
(pa)	1	PL 1 1/4" X 4"	8'-0 3/16"	SHAPE	124.3#
302473-2	1	TERMINATION WELDMENT	8'-8 3/16"		174.9#
PART NO.	**QTY**	**DESCRIPTION**	**LENGTH**	**NOTES**	**BLK WT**
MATERIAL: A572 GR. 65		**FINISH:** GALVANIZED	**HOLES:** AS NOTED	**GALV WT:**	183.6#

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STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
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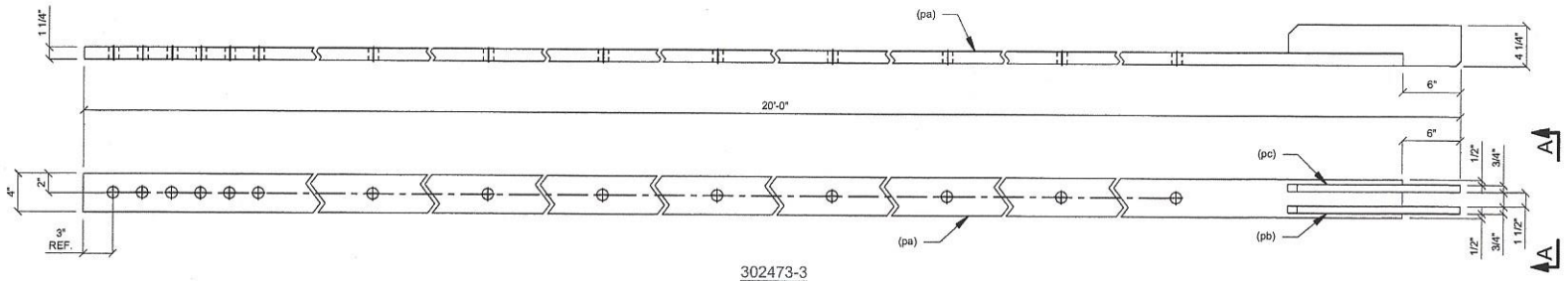
Authorized by "EOR"
Apr 17 2019 4:53 PM CO

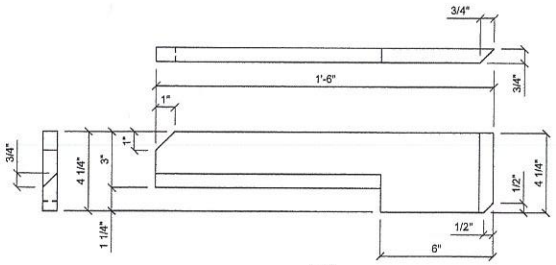
DRAWN BY:	CWB
APPROVED BY:	CDW/KCI
DATE DRAWN:	04/01/19
ATC JOB NO:	OAA745293_C6_06

TERMINATION WELDMENT
FABRICATION DETAILS

SHEET NUMBER:	REVISION:
F-2	0



302473-3
PLATE WELDMENT



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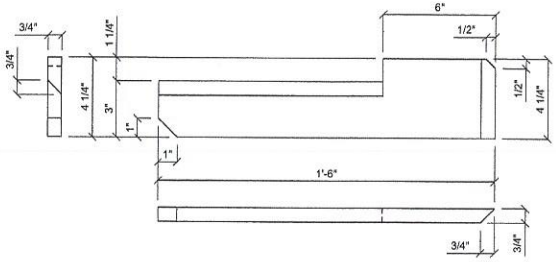

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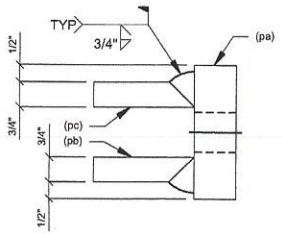
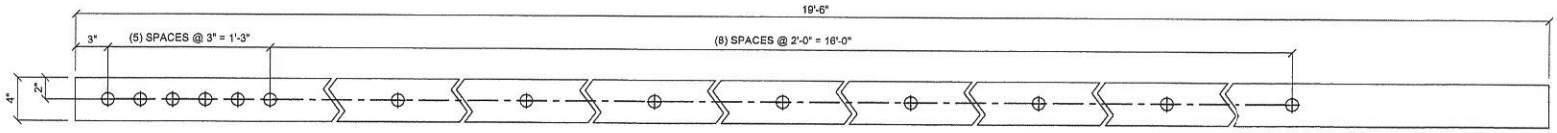


SECTION "A-A"
TYPICAL DETAIL



(pa)

(pc)	1	PL 3/4" X 4 1/4"	1'-6"	SHAPE	12.9#
(pb)	1	PL 3/4" X 4 1/4"	1'-6"	SHAPE	12.9#
(pa)	1	PL 1 1/4" X 4"	19'-6"		331.8#
302473-3	1	PLATE WELDMENT	20'-0"		357.7#
PART NO.	**QTY**	**DESCRIPTION**	**LENGTH**	**NOTES**	**BLK WT**
MATERIAL: A572 GR. 65		**FINISH:** GALVANIZED	**HOLES:** 1 3/16"Ø	**GALV WT:**	375.5#

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DRAWN BY:	CWB
APPROVED BY:	CDW/KCI
DATE DRAWN:	04/01/19
ATC JOB NO:	OAA745283_C6_06

PLATE WELDMENT
FABRICATION DETAILS

SHEET NUMBER:	REVISION:
F-3	0

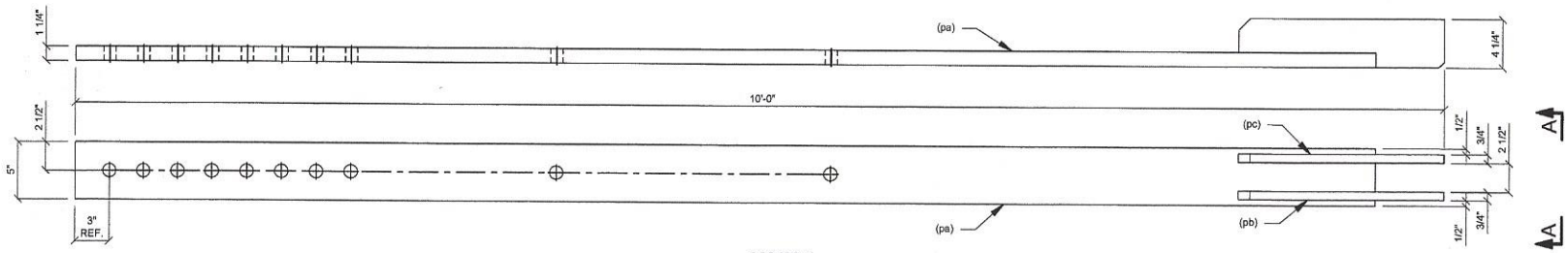

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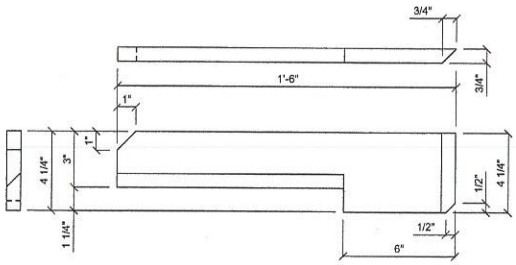
PLATE WELDMENT



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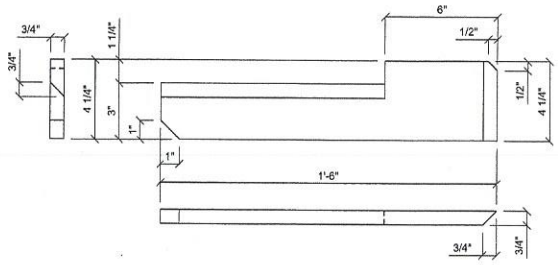

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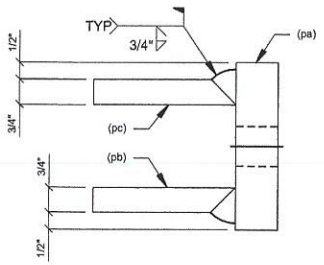
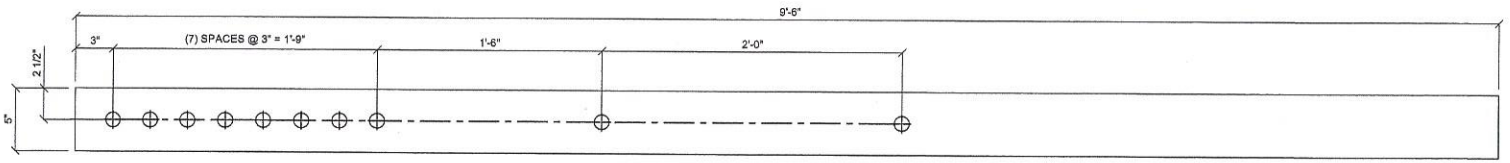


SECTION "A-A"
TYPICAL DETAIL



(pa)

(pc)	1	PL 3/4" X 3 3/4"	1'-6"	SHAPE	12.9#
(pb)	1	PL 3/4" X 3 3/4"	1'-6"	SHAPE	12.9#
(pa)	1	PL 1 1/4" X 5"	9'-6"		202.0#
302473-4	1	TERMINATION WELDMENT	10'-0"		227.9#
PART NO.	**QTY**	**DESCRIPTION**	**LENGTH**	**NOTES**	**BLK WT**
MATERIAL: A572 GR. 65		**FINISH:** GALVANIZED	**HOLES:** 1 3/16"Ø	**GALV WT:**	239.3#

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REV.	DESCRIPTION	BY	DATE
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SITE ADDRESS:
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EAST HARTFORD, CT 06108

Authorized by "EOR"
Apr 17 2019 4:55 PM CO

DRAWN BY:	CWB
APPROVED BY:	CDW/KCI
DATE DRAWN:	04/01/19
ATC JOB NO:	OAA745293_C6_06

PLATE WELDMENT
FABRICATION DETAILS

SHEET NUMBER:	REVISION:
F-4	0

EXHIBIT 2

Town of East Hartford Property Summary Report

284-310 PRESTIGE PARK RD

MAP LOT:	49-14	**CAMA PID:**	11576
LOCATION:	284-310 PRESTIGE PARK RD		
OWNER NAME:	FREMONT PRESTIGE I I L L C / C/O FREMONT MANAGEMENT L L C		

11576 03/29/2016

OWNER OF RECORD
FREMONT PRESTIGE I I L L C
C/O FREMONT MANAGEMENT L L C
65 LA SALLE RD SUITE 202
WEST HARTFORD, CT 06107

LIVING AREA:	56744	**ZONING:**	I3	**ACREAGE:**	3.99

SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
FREMONT PRESTIGE I I L L C C/O FREMONT MANAGEMENT L L	2714/ 23	14-Mar-2006	$0.00
FREMONT PRESTIGE PARK LLC C/O FREMONT MANAGEMENT	1932/ 157	31-Oct-2000	$1,389,000.00
TOLLAND ENTERPRISES	1087/ 147	01-Sep-1987	$0.00
BECKENSTEIN LOUIS & HENRY	418/ 490	01-Jan-1900	$0.00

CURRENT PARCEL ASSESSMENT

TOTAL:	$1,430,830.00	**IMPROVEMENTS:**	$1,247,470.00	**LAND:**	$183,360.00

ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2018	$1,430,830.00	$1,247,470.00	$183,360.00
2017	$1,430,830.00	$1,247,470.00	$183,360.00
2016	$1,430,830.00	$1,247,470.00	$183,360.00
2015	$1,336,330.00	$1,152,970.00	$183,360.00
2014	$1,336,330.00	$1,152,970.00	$183,360.00

Town of East Hartford Property Summary Report

284-310 PRESTIGE PARK RD

MAP LOT:	49-14	**CAMA PID:**	11576
LOCATION:	284-310 PRESTIGE PARK RD		
OWNER NAME:	FREMONT PRESTIGE I I L L C / C/O FREMONT MANAGEMENT L L C		

BUILDING # 1

YEAR BUILT	1968	**EXT WALL 1**	Brick
STYLE	Storage Facility	**INT WALLS 1**	Painted Block
MODEL	Ind/Comm	**HEAT FUEL**	Other
STORIES	1.0	**HEAT TYPE**	Other
OCCUPANCY	Light Storage	**AC TYPE**	Partial
ROOF	Flat	**BEDROOMS**	
ROOF COVER	Typical	**FULL BATHS**	0
FLOOR COVER 1	Mixed	**HALF BATHS**	
% BSMT	null	**TOTAL ROOMS**	0
% FIN BSMT	null	**% REC RM**	null
% SEMI FIN	null	**% ATTIC FINISH**	null
BSMT GARAGE	null	**FIREPLACES**	null

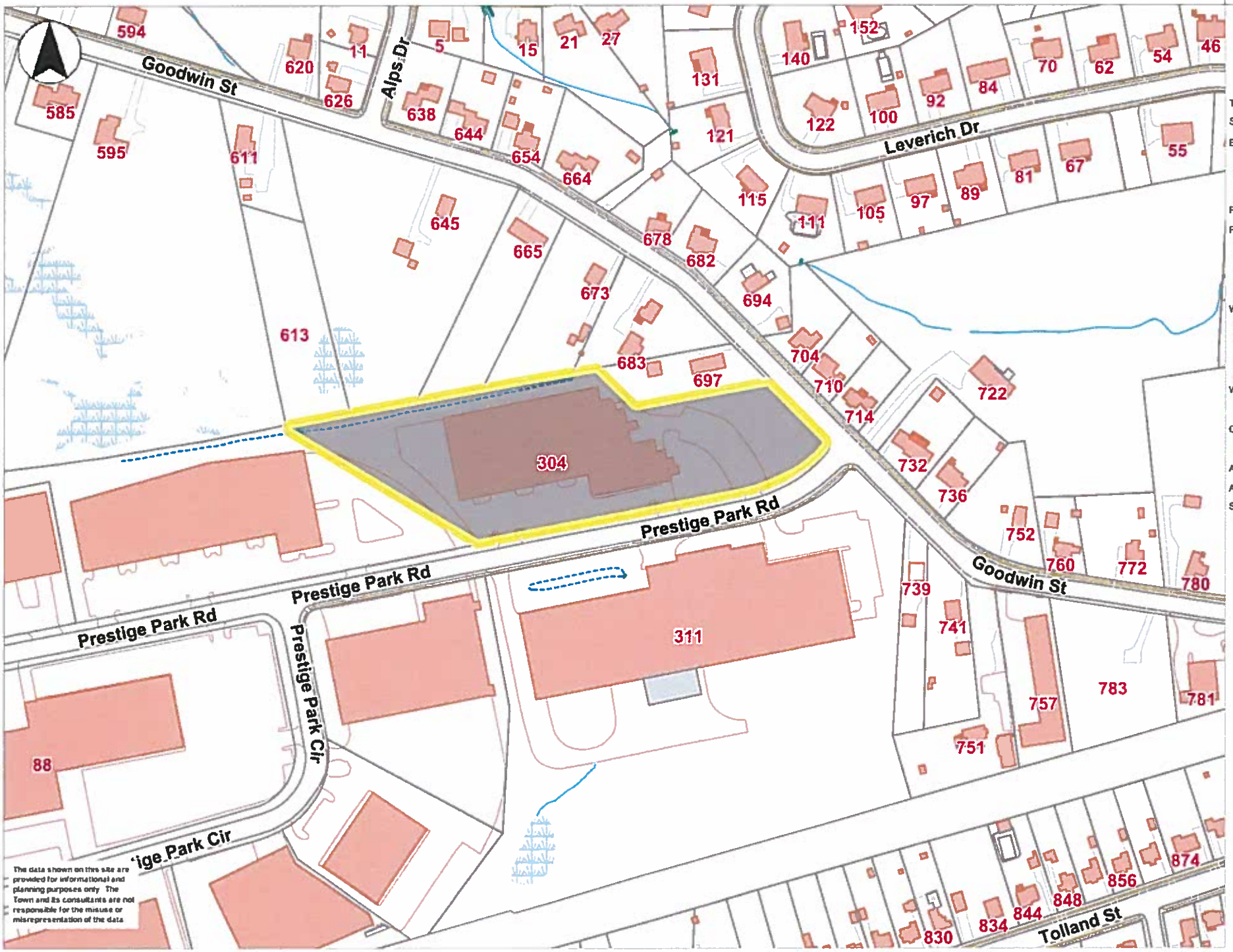
11576 03/29/2016

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
Sprinklers-Wet	SPR1	56744 S.F.
Load Dock	LDK	1 UNITS
W/Partitions	MEZ3	5674 S.F.

OUTBUILDINGS

DESCRIPTION	CODE	UNITS
Paving	PAV1	1x47000 (47000 SF)
Rail Road Siding	RRS	1x300 (300 L.F.)



Printed on 06/07/2019 at 04:03 PM

East Hartford MapsOnline

EXHIBIT 3

AMERICAN TOWER®
CORPORATION

Post - Modification Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**E H F R - Prestige Park, CT**
ATC Asset Number	:	**302473**
Engineering Number	:	**OAA745293_C4_07**
Proposed Carrier	:	**AT&T MOBILITY**
Carrier Site Name	:	**East Hartford**
Carrier Site Number	:	**CT1002- FA#10034965**
Site Location	:	**310 Prestige Park Rd.** **East Hartford, CT 06108-1206** **41.788300,-72.600600**
County	:	**Hartford**
Date	:	**September 26, 2019**
Max Usage	:	**100%**
Result	:	**Pass**

Prepared By:
Kingsley C. Igboanugo
Structural Engineer III

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Sep 26 2019 5:06 PM CO

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	SpectraSite Drawing #D1, dated June 12, 2002
Foundation Drawing	Southern New England Telephone Job #38904, dated April 20, 1983
Geotechnical Report	GeoTechnologies Project #1-02-1122-EA, dated September 6, 2002
Modifications	SpectraSite Site#CT-0009, dated March 19, 2003 ATC Project #51574133, dated January 17, 2013 ATC Project #63706335, dated October 19, 2015 ATC Project #OAA696438_C6_05, dated July 11, 2017 ATC Project #OAA745293_C6_06, dated April 1, 2019 (Pending)

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, V_{ASD}) / 125 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report. If the pending modifications cited in the supporting documents table are not completed, the results of this analysis are no longer valid, and AT&T mobility should contact America Tower's Site Manager for further direction on how to proceed.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
153.0	6	Powerwave Allgon LGP21401	Platform with Handrails	(4) 0.78" (19.7mm) 8 AWG 6 (1) 3/8" (0.38"-9.5mm) RET Control Cable (12) 7/8" Coax	AT&T Mobility
	6	Powerwave Allgon 7020.00 Dual Band RET			
	2	Raycap DC6-48-60-18-8F			
	3	CCI OPA-65R-LCUU-H6			
	3	Powerwave Allgon 7770.00 (27 lbs)			
	3	Ericsson RRUS-32 (77 lbs)			
138.0	3	Alcatel-Lucent 800 MHz RRH w/ Notch Filter	T-Arm	(3) 1 1/4" Hybriflex Cable	Sprint Nextel
	3	RFS IBC1900HG-2A			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	RFS APXVTM14-C-I20			
	2	RFS APXV9ERR18-C-A20			
	1	RFS APXVSPP18-C-A20			
	3	RFS IBC1900BB-1			
	3	Alcatel-Lucent 4X40W RRH			
128.0	3	Ericsson Radio 4449 B12,B71	T-Arm	(3) 1 5/8" (1.63"-41.3mm) Fiber	Metro PCS Inc
	3	Ericsson AIR 21			
	3	Ericsson AIR32 B66Aa/B2a			
	3	RFS APXVAARR24_43-U-NA20			
119.0	1	Generic 12" x 12" Junction Box	Collar	(1) 2" conduit (3) 1/2" Coax (6) 5/16" (0.31"-7.9mm) Coax	Clearwire Corporation
118.0	3	NextNet BTS-2500			
	2	DragonWave A-ANT-23G-2-C			
	3	Argus LLPX310R			
	1	DragonWave A-ANT-23G-1-C			
	3	DragonWave Horizon Compact			
98.0	3	Alcatel-Lucent RRH2X60-1900A-4R	Sector Frame	(2) 1.58" (40.1mm) Hybrid	Verizon Wireless
	3	Alcatel-Lucent RRH2x60 700			
	3	Alcatel-Lucent RRH2X60-AWS Band 4			
	2	RFS DB-T1-6Z-8AB-0Z			
	12	Andrew SBNHH-1D65B			
35.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax	AT&T Mobility
34.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax	Sprint Nextel

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
153.0	3	Ericsson RRUS 12 w/ RRUS A2	-	-	AT&T Mobility
	3	Powerwave Allgon 7770.00 (27 lbs)			
	3	Ericsson RRUS 11 (Band 12) (55 lb)			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
153.0	1	Raycap DC6-48-60-18-8F	Platform with Handrails	(2) 0.78" (19.7mm) 8 AWG 6 (2) 0.39" (10mm) Fiber Trunk	AT&T Mobility
	3	Ericsson Radio 8843 - B2 + B66A			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 4478 B14			
	3	Kaelus DBCT108F1V92-1			
	6	Kathrein Scala 80010965			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	76%	Pass
Shaft	99%	Pass
Base Plate	52%	Pass
Flanges	99%	Pass
Reinforcement	100%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,290.6	97%
Axial (Kips)	49.2	26%
Shear (Kips)	31.3	45%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
150.0	Kaelus DBCT108F1V92-1	AT&T MOBILITY	2.716	2.064
	Raycap DC6-48-60-18-8F			
	Ericsson Radio 8843 - B2 + B66A			
	Ericsson RRUS 4449 B5, B12			
	Ericsson RRUS 4478 B14			
	Kathrein Scala 80010965			
118.0	DragonWave A-ANT-23G-1-C	CLEARWIRE CORPORATION	1.675	1.528
	DragonWave A-ANT-23G-2-C			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

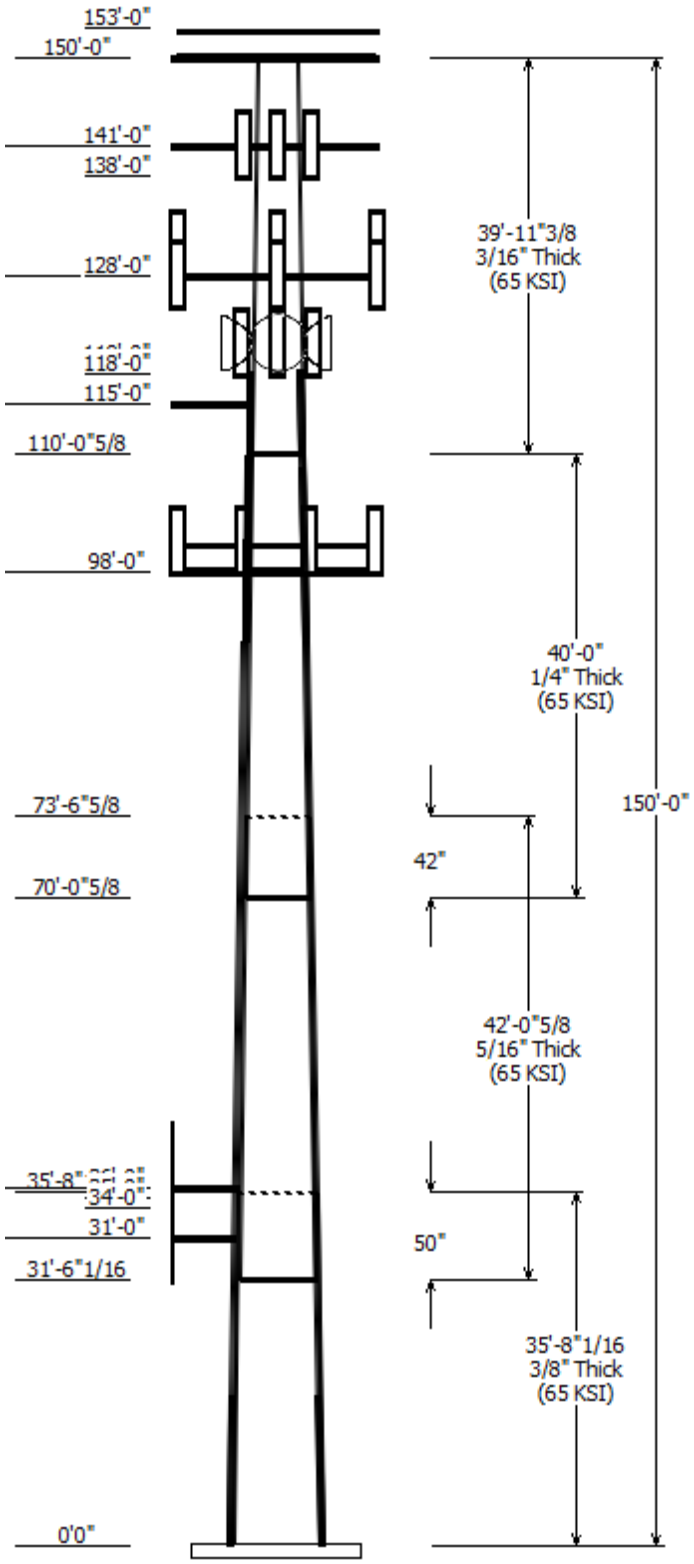
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

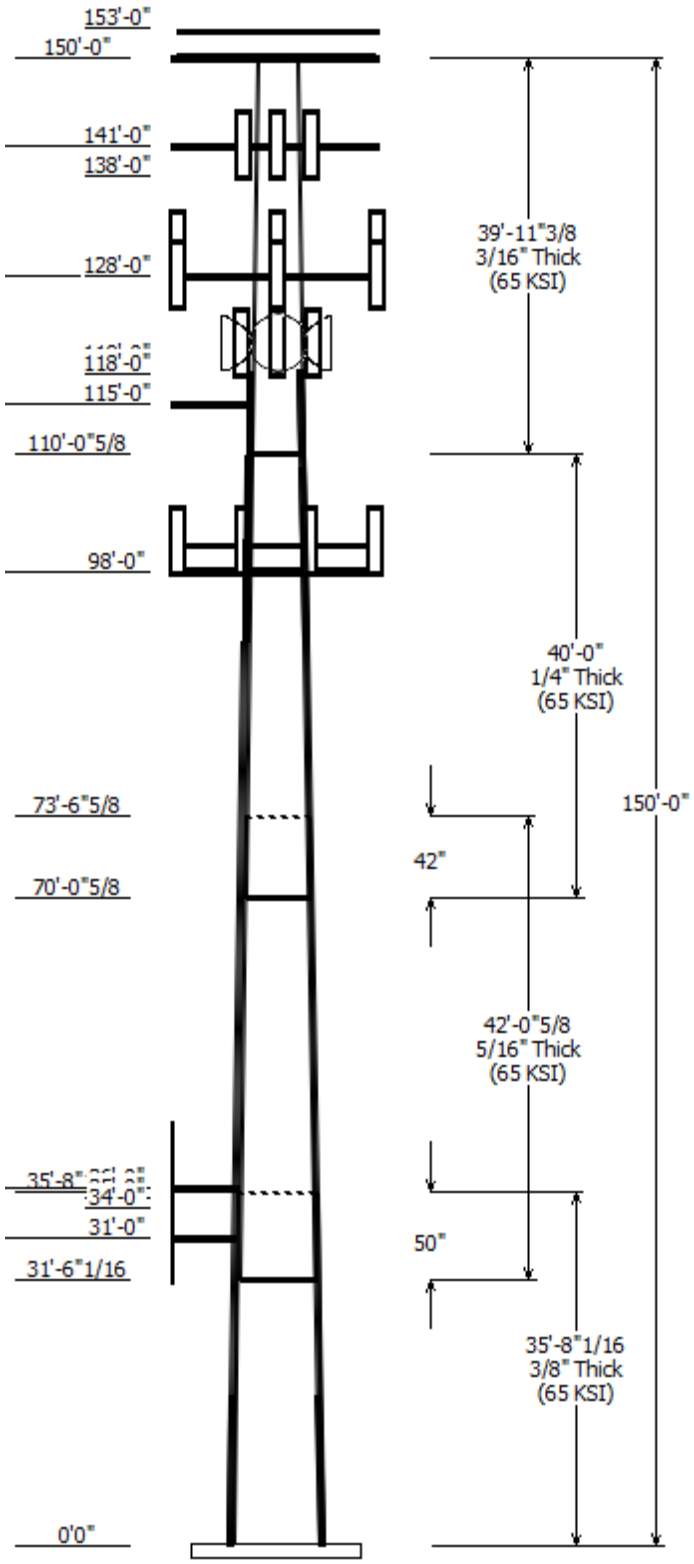
Client :	AT&T MOBILITY		
Pole :	302473	Code:	ANSI/TIA-222-G
Location :	E H F R - Prestige Park, CT		
Description :	150' ITT Meyer Type "B" Monopole	Struct Class :	II
Shape :	12 Sides	Exposure :	B
Height :	150.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.156567 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	35.670	31.77	37.36	0.375		0.000	12 Sides	65
2	42.050	26.46	33.05	0.313	Slip Joint	50.000	12 Sides	65
3	40.000	21.25	27.51	0.250	Slip Joint	42.000	12 Sides	65
4	39.947	15.00	21.25	0.188	Butt Joint	0.000	12 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
153.000	153.000	6	Kathrein Scala 80010965
153.000	156.000	3	CCI OPA-65R-LCUU-H6
153.000	156.000	3	Powerwave Allgon 7770.00 (27
153.000	156.000	3	Ericsson RRUS-32 (77 lbs)
153.000	153.000	3	Ericsson RRUS 4478 B14
153.000	153.000	3	Ericsson RRUS 4449 B5, B12
153.000	153.000	3	Ericsson Radio 8843 - B2 + B66
153.000	156.000	1	Raycap DC6-48-60-18-8F
153.000	156.000	2	Raycap DC6-48-60-18-8F
153.000	156.000	6	Powerwave Allgon LGP21401
153.000	153.000	3	Kaelus DBCT108F1V92-1
153.000	153.000	6	Powerwave Allgon 7020.00
150.000	153.000	3	Generic Round Side Arm
150.000	150.000	1	Round Platform w/ Handrails
141.000	141.000	3	Round T-Arm
138.000	142.000	2	RFS APXV9ERR18-C-A20
138.000	142.000	1	RFS APXVSPP18-C-A20
138.000	142.000	3	RFS APXVTM14-C-I20
138.000	142.000	3	Alcatel-Lucent TD-RRH8x20-25
138.000	142.000	3	Alcatel-Lucent 800 MHz RRH
138.000	142.000	3	Alcatel-Lucent 4X40W RRH
138.000	142.000	3	RFS IBC1900BB-1
138.000	142.000	3	RFS IBC1900HG-2A
128.000	128.000	3	Round T-Arm
128.000	128.000	3	RFS APXVAARR24_43-U-NA20
128.000	129.000	3	Ericsson AIR32 B66Aa/B2a
128.000	128.000	3	Ericsson AIR 21
128.000	128.000	3	Ericsson Radio 4449 B12,B71
119.000	119.000	1	Generic 12" x 12" Junction Box
118.000	120.000	2	DragonWave A-ANT-23G-2-C
118.000	120.000	3	Argus LLPX310R
118.000	120.000	3	NextNet BTS-2500
118.000	120.000	1	DragonWave A-ANT-23G-1-C
118.000	120.000	3	DragonWave Horizon Compact
115.000	115.000	1	Side Arm
98.000	98.000	3	Generic Flat Light Sector Fram
98.000	101.000	12	Andrew SBNHH-1D65B
98.000	101.000	2	RFS DB-T1-6Z-8AB-0Z
98.000	101.000	3	Alcatel-Lucent RRH2X60-AWS
98.000	98.000	3	Alcatel-Lucent RRH2x60 700
98.000	101.000	3	Alcatel-Lucent RRH2X60-1900A-
36.000	36.000	1	Stand-off
35.000	32.000	1	Generic GPS
34.000	37.000	1	Generic GPS



31.000	31.000	1	Stand-off

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
110.0	120.0	Flat Plate 5 x 1.25	Yes
110.0	120.0	Flat Plate 5 x 1.25	Yes
110.0	120.0	Flat Plate 5 x 1.25	Yes
110.0	120.0	Reinforcing Plate	Yes
110.0	120.0	Reinforcing Plate	Yes
110.0	120.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
100.0	110.0	Reinforcing Plate	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
90.000	110.0	Flat Plate 4 x 1.25	Yes
0.000	118.0	1/2" Coax	No
0.000	118.0	5/16" (0.31"-	No
0.000	119.0	2" conduit	No
0.000	22.500	#20 Dywidag Bars	Yes
0.000	22.500	#20 Dywidag Bars	Yes
0.000	22.500	#20 Dywidag Bars	Yes
0.000	22.500	#20 Dywidag Bars	Yes
0.000	34.000	1/2" Coax	Yes
0.000	35.000	1/2" Coax	Yes
0.000	98.000	1.58" (40.1mm)	Yes
0.000	106.0	#20 Dywidag Bars	Yes
0.000	106.0	#20 Dywidag Bars	Yes
0.000	106.0	#20 Dywidag Bars	Yes
0.000	106.0	#20 Dywidag Bars	Yes
0.000	128.0	1 5/8" (1.63"-	No
0.000	138.0	1 1/4" Hybriflex	No
0.000	142.0	5/8" Hybriflex	No
0.000	153.0	0.39" (10mm)	No
0.000	153.0	0.78" (19.7mm) 8	No
0.000	153.0	0.78" (19.7mm) 8	No
0.000	153.0	3/8" (0.38"-	No
0.000	153.0	7/8" Coax	No
0.000	156.0	1 5/8" Coax	No
0.000	156.0	3" conduit	No

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

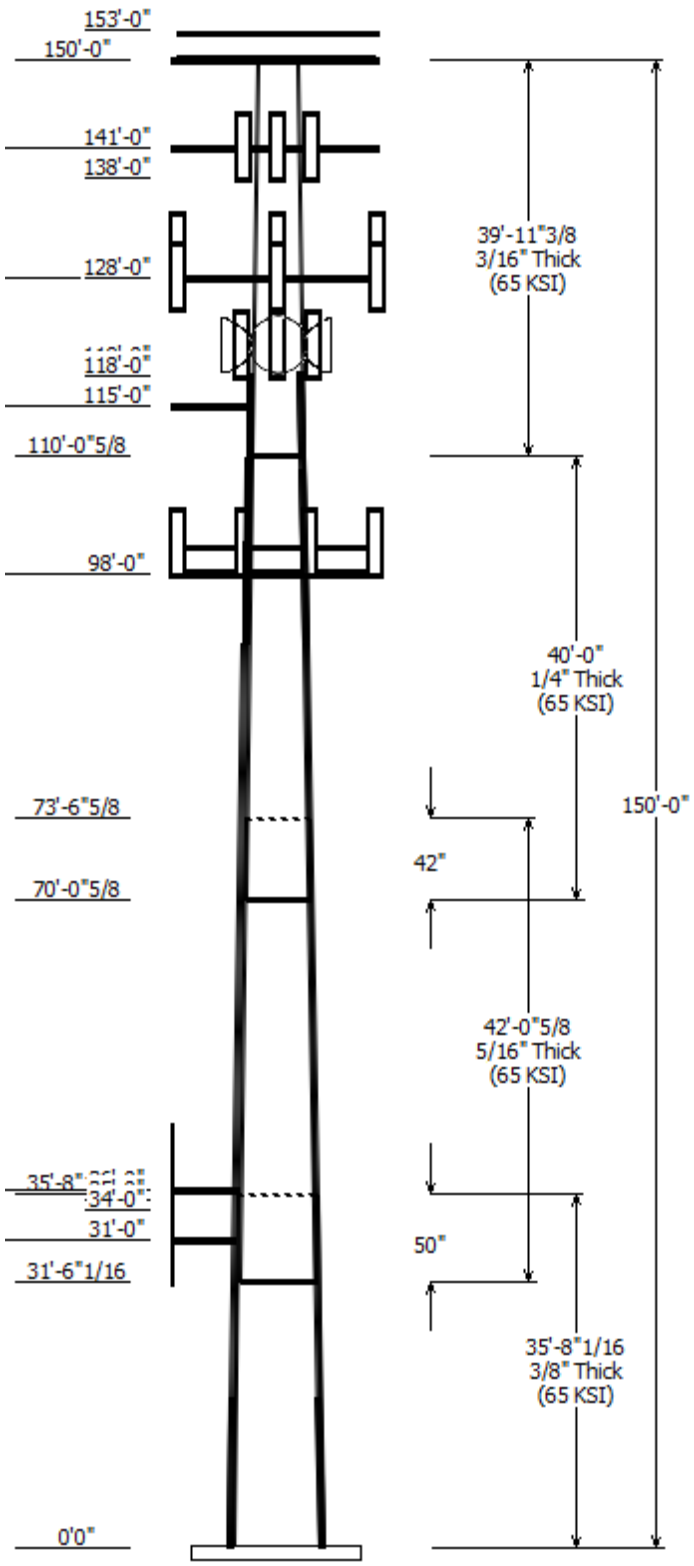
Reactions

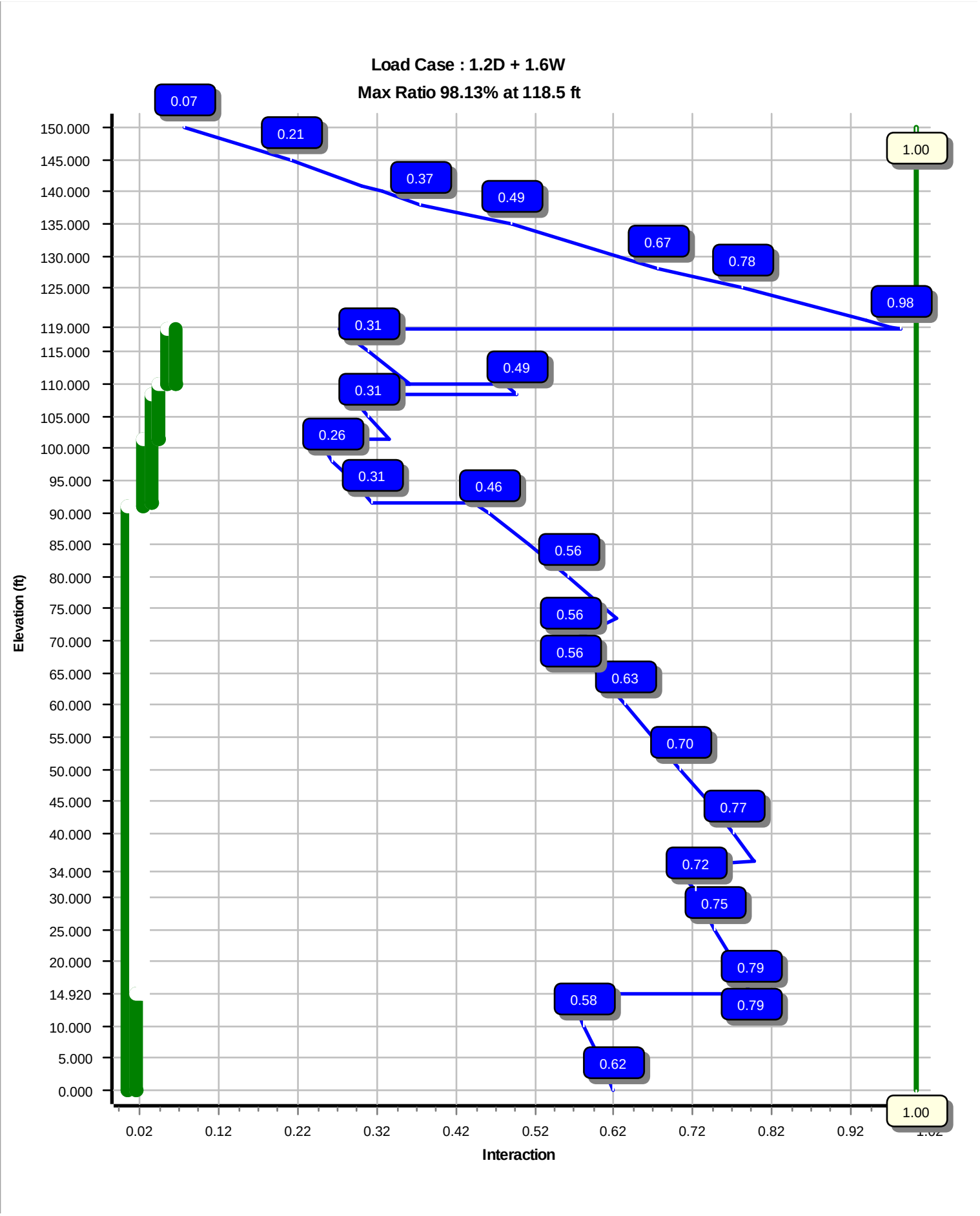
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3275.18	31.19	49.20
0.9D + 1.6W	3210.07	31.16	36.89
1.2D + 1.0Di + 1.0Wi	1024.06	9.59	81.79

(1.2 + 0.2Sds) * DL + E ELFM	207.85	1.61	48.83
(1.2 + 0.2Sds) * DL + E EMAM	313.51	2.39	48.83
(0.9 - 0.2Sds) * DL + E ELFM	202.50	1.61	33.98
(0.9 - 0.2Sds) * DL + E EMAM	304.40	2.38	33.98
1.0D + 1.0W	696.34	6.70	41.06

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	118.00	20.075	1.530
1.0D + 1.0W	118.00	20.075	1.530




Load Case : 1.2D + 1.6W
Max Ratio 98.13% at 118.5 ft
0.07
0.21
0.37
0.49
0.67
0.78
0.98
1.00
0.31
0.49
0.31
0.26
0.31
0.46
0.56
0.56
0.56
0.63
0.70
0.77
0.72
0.75
0.79
0.58
0.79
0.62
1.00
150.000
145.000
140.000
135.000
130.000
125.000
119.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
34.000
30.000
25.000
20.000
14.920
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:15:57 PM

Customer: METRO PCS INC

Analysis Parameters

Location :	Hartford County, CT	Height (ft) :	150
Code :	ANSI/TIA-222-G	Base Diameter (in) :	37.36
Shape :	12 Sides	Top Diameter (in) :	15.00
Pole Type :	Taper	Taper (in/ft) :	0.157
Pole Manfacturer :	ITT Meyer	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method: Equivalent Modal Analysis & Equivalent Lateral Force Methods

Site Class: D - Stiff Soil

Period Based on Rayleigh Method (sec): 3.08

T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.180	S_1:	0.060	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.192	S_{d1}:	0.096		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:15:57 PM

Customer: METRO PCS INC

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	35.670	0.3750	65		0.00	5,011	37.36	0.00	44.66	7797.4	24.02	99.63	31.77	35.67	37.92	4771.7	20.02	84.73	0.156567
2-12	42.050	0.3125	65	Slip	50.00	4,240	33.05	31.50	32.94	4507.5	25.66	105.77	26.46	73.55	26.32	2298.4	20.02	84.70	0.156567
3-12	40.000	0.2500	65	Slip	42.00	2,645	27.51	70.05	21.95	2083.0	26.81	110.07	21.25	110.05	16.91	952.2	20.10	85.02	0.156567
4-12	39.947	0.1875	65	Butt	0.00	1,472	21.25	110.05	12.72	720.5	27.69	113.36	15.00	150.00	8.94	250.5	18.76	80.00	0.156567
				Shaft Weight		13,368													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
153.00	Powerwave Allgon 7020.00 Dual	6	0.75	0.000	2.20	0.340	0.33	15.83	0.888	0.33
153.00	Kaelus DBCT108F1V92-1	3	0.75	0.000	13.90	0.630	0.33	47.47	1.354	0.33
153.00	Powerwave Allgon LGP21401	6	0.75	3.000	14.10	1.100	0.33	47.38	2.049	0.33
153.00	Raycap DC6-48-60-18-8F	2	0.75	3.000	20.00	1.260	0.50	90.23	2.138	0.50
153.00	Raycap DC6-48-60-18-8F	1	0.75	3.000	20.00	1.260	0.50	90.23	2.138	0.50
153.00	Ericsson Radio 8843 - B2 + B66A	3	0.75	0.000	71.90	1.650	0.33	154.08	2.780	0.33
153.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.970	0.33	156.96	3.215	0.33
153.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.40	2.020	0.33	141.26	3.278	0.33
153.00	Ericsson RRUS-32 (77 lbs)	3	0.75	3.000	77.00	3.310	0.33	206.72	5.020	0.33
153.00	Powerwave Allgon 7770.00 (27	3	0.75	3.000	27.00	5.510	0.65	178.61	8.346	0.65
153.00	CCI OPA-65R-LCUU-H6	3	0.75	3.000	73.00	9.660	0.66	344.47	13.358	0.66
153.00	Kathrein Scala 80010965	6	0.75	0.000	97.60	13.810	0.62	453.20	17.878	0.62
150.00	Generic Round Side Arm	3	1.00	3.000	150.00	5.200	0.67	247.57	8.824	0.67
150.00	Round Platform w/ Handrails	1	1.00	0.000	2,000.00	27.200	1.00	3,728.35	59.804	1.00
141.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	527.41	20.643	0.67
138.00	RFS IBC1900HG-2A	3	0.80	4.000	22.00	0.970	0.50	57.72	1.849	0.50
138.00	RFS IBC1900BB-1	3	0.80	4.000	22.00	0.970	0.50	57.72	1.849	0.50
138.00	Alcatel-Lucent 4X40W RRH	3	0.80	4.000	59.50	2.320	0.50	166.10	3.749	0.50
138.00	Alcatel-Lucent 800 MHz RRH w/	3	0.80	4.000	61.80	2.500	0.50	181.46	3.881	0.50
138.00	Alcatel-Lucent TD-RRH8x20-25	3	0.80	4.000	70.00	4.050	0.50	195.08	5.809	0.50
138.00	RFS APXVTM14-C-I20	3	0.80	4.000	52.90	6.340	0.66	235.13	9.222	0.66
138.00	RFS APXVSPP18-C-A20	1	0.80	4.000	57.00	8.020	0.69	285.31	11.710	0.69
138.00	RFS APXV9ERR18-C-A20	2	0.80	4.000	62.00	8.020	0.78	301.70	11.710	0.78
128.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.640	0.50	147.54	2.749	0.50
128.00	Ericsson AIR 21	3	0.80	0.000	91.00	6.050	0.70	281.69	8.890	0.70
128.00	Ericsson AIR32 B66Aa/B2a	3	0.80	1.000	132.20	6.510	0.71	341.84	9.387	0.71
128.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	524.52	20.529	0.67
128.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.240	0.63	643.56	25.111	0.63
119.00	Generic 12" x 12" Junction Box	1	1.00	0.000	10.00	1.200	0.50	64.37	2.147	0.50
118.00	DragonWave Horizon Compact	3	0.80	2.000	10.60	0.720	0.50	39.89	1.460	0.50
118.00	DragonWave A-ANT-23G-1-C	1	1.00	2.000	15.00	1.610	1.00	61.03	2.596	1.00
118.00	NextNet BTS-2500	3	0.80	2.000	35.00	1.820	0.50	95.42	3.016	0.50
118.00	Argus LLPX310R	3	0.80	2.000	28.60	4.290	0.63	146.00	6.443	0.63
118.00	DragonWave A-ANT-23G-2-C	2	1.00	2.000	12.30	4.690	0.50	139.53	6.350	0.50
115.00	Side Arm	1	1.00	0.000	560.00	8.500	1.00	1,167.76	17.725	1.00
98.00	Alcatel-Lucent RRH2X60-1900A-	3	0.80	3.000	46.00	1.870	0.33	118.39	3.066	0.33
98.00	Alcatel-Lucent RRH2x60 700	3	0.80	0.000	56.70	2.150	0.33	143.71	3.431	0.33
98.00	Alcatel-Lucent RRH2X60-AWS	3	0.80	3.000	55.00	3.350	0.33	158.16	5.200	0.33
98.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	3.000	44.00	4.800	0.50	204.90	6.617	0.50
98.00	Andrew SBNHH-1D65B	12	0.80	3.000	50.70	8.170	0.69	275.03	11.786	0.69
98.00	Generic Flat Light Sector Frame	3	0.75	0.000	400.00	17.900	0.67	784.75	37.190	0.67
36.00	Stand-off	1	1.00	0.000	50.00	2.000	1.00	90.33	3.613	1.00
35.00	Generic GPS	1	1.00	-3.000	10.00	0.900	0.90	43.75	1.638	0.90
34.00	Generic GPS	1	1.00	3.000	10.00	0.900	0.90	43.57	1.634	0.90
31.00	Stand-off	1	1.00	0.000	50.00	2.000	1.00	89.69	3.587	1.00

Totals Num Loadings:45 129 11,515.60 32,505.53

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	156.00	3	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	156.00	2	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	1	3/8" (0.38"- 9.5mm)	0.38	0.23	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	12	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	142.00	1	5/8" Hybriflex	0.84	0.70	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	138.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	128.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	METRO PCS INC
110.00	120.00	1	Flat Plate 5 x 1.25	1.25	0.00	Y	1	0.00	0.00	90	0.00	Y	--
110.00	120.00	1	Flat Plate 5 x 1.25	1.25	0.00	Y	1	0.00	0.00	210	0.00	Y	--
110.00	120.00	1	Flat Plate 5 x 1.25	1.25	0.00	Y	1	0.00	0.00	330	0.00	Y	--
110.00	120.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	0	0.00	Y	--
110.00	120.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	120	0.00	Y	--
110.00	120.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	240	0.00	Y	--
0.00	119.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
0.00	118.00	3	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
0.00	118.00	6	5/16" (0.31"-7.9mm)	0.31	0.05	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	60	0.00	Y	--
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	150	0.00	Y	--
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	240	0.00	Y	--
90.00	110.00	1	Flat Plate 4 x 1.25	1.25	0.00	Y	1	0.00	0.00	330	0.00	Y	--
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	30	0.00	Y	--
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	120	0.00	Y	--
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	210	0.00	Y	--
100.00	110.00	1	Reinforcing Plate 3 x 1	1.00	0.00	Y	1	0.00	0.00	300	0.00	Y	--
0.00	106.00	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	0	0.00	Y	--
0.00	106.00	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	90	0.00	Y	--
0.00	106.00	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	180	0.00	Y	--
0.00	106.00	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	270	0.00	Y	--
0.00	98.00	2	1.58" (40.1mm) Hybrid	1.58	1.61	N	2	0.50	0.50	10	0.00	Y	VERIZON WIRELESS
0.00	35.00	1	1/2" Coax	0.63	0.15	N	1	0.00	0.00	20	0.00	Y	AT&T MOBILITY
0.00	34.00	1	1/2" Coax	0.63	0.15	N	1	0.00	0.00	190	0.00	Y	SPRINT NEXTEL
0.00	22.50	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	45	0.00	Y	--
0.00	22.50	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	135	0.00	Y	--
0.00	22.50	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	225	0.00	Y	--
0.00	22.50	1	#20 Dywidag Bars	4.00	0.00	N	1	0.00	0.00	315	0.00	Y	--

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections			Connectors	Continuation?
						Description	Spacing (in)	Len (in)		
0.00	91.10	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No
0.00	14.92	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No
91.10	101.5	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes
91.50	108.5	4	PL PL 4 x 1.25	43	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No
101.5	110.0	4	PL PL 3" x 1"	49	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No
110.0	118.5	3	PL PL 3" x 1"	49	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No
110.0	118.5	3	PL PL 5" x 1.25"	34	0.00	AJAX M20 Class	24.0	3.00	AJAX M20 Class	No

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	37.360	44.659	7,797.4	24.02	99.63	78.5	403.2	0.0	0.0	39.28	9,908	0.0
5.00		0.3750	36.577	43.714	7,312.7	23.46	97.54	79.1	386.2	0.0	751.8	39.28	9,554	668.0
10.00		0.3750	35.794	42.769	6,848.5	22.90	95.45	79.7	369.6	0.0	735.7	39.28	9,207	668.0
14.92	Reinf. Top	0.3750	35.024	41.839	6,411.3	22.35	93.40	80.3	353.6	0.0	708.2	39.28	8,871	657.3
15.00		0.3750	35.012	41.824	6,404.4	22.34	93.36	80.4	353.4	0.0	11.4	19.64	4,433	5.3
20.00		0.3750	34.229	40.878	5,979.9	21.78	91.28	81.0	337.5	0.0	703.5	19.64	4,265	334.0
25.00		0.3750	33.446	39.933	5,574.5	21.22	89.19	81.6	322.0	0.0	687.5	19.64	4,101	334.0
30.00		0.3750	32.663	38.988	5,188.0	20.66	87.10	81.9	306.8	0.0	671.4	19.64	3,940	334.0
31.00		0.3750	32.506	38.799	5,112.9	20.55	86.68	81.9	303.9	0.0	132.3	19.64	3,908	66.8
31.50	Bot - Section 2	0.3750	32.428	38.704	5,075.3	20.49	86.47	81.9	302.4	0.0	66.4	19.64	3,892	33.6
34.00		0.3750	32.037	38.232	4,891.9	20.21	85.43	81.9	295.0	0.0	605.0	19.64	3,940	166.8
35.00		0.3750	31.880	38.042	4,819.7	20.10	85.01	81.9	292.1	0.0	240.3	19.64	3,908	66.8
35.67	Top - Section 1	0.3125	32.400	32.288	4,243.4	25.10	103.68	77.3	253.0	0.0	160.3	19.64	3,887	44.8
36.00		0.3125	32.349	32.236	4,222.9	25.06	103.52	77.4	252.2	0.0	36.2	19.64	3,876	22.0
40.00		0.3125	31.722	31.606	3,980.1	24.52	101.51	78.0	242.4	0.0	434.5	19.64	3,751	267.2
45.00		0.3125	30.940	30.818	3,689.8	23.85	99.01	78.7	230.4	0.0	531.0	19.64	3,597	334.0
50.00		0.3125	30.157	30.031	3,414.1	23.18	96.50	79.4	218.7	0.0	517.6	19.64	3,447	334.0
55.00		0.3125	29.374	29.243	3,152.4	22.51	94.00	80.2	207.3	0.0	504.2	19.64	3,299	334.0
60.00		0.3125	28.591	28.455	2,904.4	21.84	91.49	80.9	196.2	0.0	490.8	19.64	3,155	334.0
65.00		0.3125	27.808	27.668	2,669.8	21.16	88.99	81.6	185.5	0.0	477.4	19.64	3,014	334.0
70.00		0.3125	27.025	26.880	2,448.2	20.49	86.48	81.9	175.0	0.0	464.0	19.64	2,877	334.0
70.05	Bot - Section 3	0.3125	27.017	26.871	2,445.9	20.49	86.45	81.9	174.9	0.0	4.9	19.64	2,875	3.6
73.55	Top - Section 2	0.2500	26.969	21.509	1,959.9	26.23	107.88	76.1	140.4	0.0	575.5	19.64	2,867	233.8
75.00		0.2500	26.743	21.326	1,910.5	25.98	106.97	76.4	138.0	0.0	105.4	19.64	2,828	96.6
80.00		0.2500	25.960	20.696	1,746.1	25.14	103.84	77.3	129.9	0.0	357.5	19.64	2,695	334.0
85.00		0.2500	25.177	20.066	1,591.4	24.30	100.71	78.2	122.1	0.0	346.8	19.64	2,565	334.0
90.00		0.2500	24.394	19.436	1,446.1	23.47	97.58	79.1	114.5	0.0	336.0	19.64	2,438	334.0
91.10	Reinf. Top Reinf	0.2500	24.222	19.297	1,415.4	23.28	96.89	79.3	112.9	0.0	72.5	19.64	2,438	334.0
91.50	Reinf Bottom	0.2500	24.159	19.247	1,404.3	23.21	96.64	79.4	112.3	0.0	26.2	19.64	2,400	26.7
95.00		0.2500	23.611	18.806	1,310.0	22.63	94.44	80.0	107.2	0.0	226.6	39.64	3,874	471.9
98.00		0.2500	23.141	18.428	1,232.5	22.12	92.57	80.6	102.9	0.0	190.0	39.64	3,744	404.5
100.0		0.2500	22.828	18.176	1,182.7	21.79	91.31	81.0	100.1	0.0	124.6	39.64	3,658	269.7
101.5	Reinf. Top Reinf	0.2500	22.593	17.987	1,146.1	21.54	90.37	81.2	98.0	0.0	92.3	39.64	3,630	235.7
105.0		0.2500	22.046	17.545	1,063.9	20.95	88.18	81.9	93.2	0.0	211.6	32.00	2,173	381.1
108.5	Reinf. Top	0.2500	21.498	17.104	985.6	20.36	85.99	81.9	88.6	0.0	206.3	32.00	2,072	381.1
110.0	Reinf. Top Reinf	0.2500	21.263	16.915	953.3	20.11	85.05	81.9	86.6	0.0	86.8	12.00	748.4	61.3
110.0	Top - Section 3	0.2500	21.254	16.908	952.2	20.10	85.02	81.9	86.5	0.0	3.1	27.75	1,768	5.0
110.0	Bot - Section 4	0.1875	21.254	12.719	720.5	27.69	113.36	74.5	65.5	0.0		27.75	1,768	
115.0		0.1875	20.480	12.251	643.9	26.59	109.23	75.7	60.7	0.0	210.2	27.75	1,650	467.6
118.0		0.1875	20.010	11.968	600.2	25.92	106.72	76.4	57.9	0.0	123.6	27.75	1,580	283.6
118.5	Reinf. Top Reinf.	0.1875	19.932	11.921	593.2	25.80	106.30	76.6	57.5	0.0	20.3	27.75	1,569	47.3
119.0		0.1875	19.854	11.873	586.1	25.69	105.89	76.7	57.0	0.0	20.2			
120.0		0.1875	19.697	11.779	572.2	25.47	105.05	76.9	56.1	0.0	40.2			
125.0		0.1875	18.914	11.306	506.1	24.35	100.88	78.2	51.7	0.0	196.4			
128.0		0.1875	18.444	11.023	469.0	23.68	98.37	78.9	49.1	0.0	114.0			
130.0		0.1875	18.131	10.834	445.2	23.23	96.70	79.4	47.4	0.0	74.4			
135.0		0.1875	17.349	10.361	389.5	22.11	92.53	80.6	43.4	0.0	180.3			
138.0		0.1875	16.879	10.077	358.4	21.44	90.02	81.3	41.0	0.0	104.3			
140.0		0.1875	16.566	9.888	338.6	20.99	88.35	81.8	39.5	0.0	67.9			
141.0		0.1875	16.409	9.794	328.9	20.77	87.52	81.9	38.7	0.0	33.5			
145.0		0.1875	15.783	9.416	292.3	19.88	84.18	81.9	35.8	0.0	130.7			
150.0		0.1875	15.000	8.943	250.5	18.76	80.00	81.9	32.3	0.0	156.2			
											13,368.2			10,378.

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:15:57 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.6W 97 mph with No Ice 28 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		268.6	0.0					0.0	0.0	268.6	0.0	0.0	0.0
5.00		531.6	902.1					112.3	1,053.1	643.9	1,955.3	0.0	0.0
10.00		516.1	882.8					112.3	1,053.1	628.4	1,936.0	0.0	0.0
14.92	Reinf. Top	257.3	849.9					110.5	1,036.3	367.8	1,886.1	0.0	0.0
15.00		255.6	13.7					1.8	10.4	257.4	24.1	0.0	0.0
20.00		497.4	844.2					112.3	652.3	609.7	1,496.6	0.0	0.0
25.00		486.1	824.9					112.3	652.3	598.4	1,477.3	0.0	0.0
30.00		287.8	805.6					112.3	652.3	400.1	1,458.0	0.0	0.0
31.00	Appurtenance(s)	71.7	158.8	56.7	0.0	0.0	60.0	22.6	130.5	151.0	349.3	0.0	0.0
31.50	Bot - Section 2	146.4	79.6					11.4	65.7	157.8	145.3	0.0	0.0
34.00	Appurtenance(s)	171.7	726.0	24.2	0.0	72.5	12.0	57.5	325.7	253.4	1,063.7	0.0	0.0
35.00	Appurtenance(s)	82.5	288.3	23.2	0.0	-69.6	12.0	23.4	130.3	129.0	430.6	0.0	0.0
35.67	Top - Section 1	49.5	192.4					15.8	87.2	65.3	279.6	0.0	0.0
36.00	Appurtenance(s)	215.8	43.5	59.2	0.0	0.0	60.0	7.8	42.9	282.8	146.4	0.0	0.0
40.00		451.1	521.4					96.2	520.4	547.3	1,041.8	0.0	0.0
45.00		505.0	637.3					124.2	650.5	629.2	1,287.8	0.0	0.0
50.00		507.3	621.2					128.2	650.5	635.5	1,271.7	0.0	0.0
55.00		507.8	605.1					131.9	650.5	639.7	1,255.6	0.0	0.0
60.00		506.8	589.0					135.4	650.5	642.1	1,239.5	0.0	0.0
65.00		504.3	572.9					138.6	650.5	642.9	1,223.4	0.0	0.0
70.00		254.0	556.8					141.7	650.5	395.8	1,207.4	0.0	0.0
70.05	Bot - Section 3	180.6	5.9					1.5	6.9	182.2	12.8	0.0	0.0
73.55	Top - Section 2	251.2	690.6					101.0	455.4	352.1	1,146.0	0.0	0.0
75.00		324.6	126.5					42.1	188.2	366.7	314.7	0.0	0.0
80.00		499.6	429.0					147.4	650.5	647.0	1,079.5	0.0	0.0
85.00		493.0	416.1					150.1	650.5	643.1	1,066.6	0.0	0.0
90.00		298.1	403.2					152.6	650.5	450.7	1,053.8	0.0	0.0
91.10	Reinf. Top Reinf	72.7	87.0					33.9	455.7	106.6	542.7	0.0	0.0
91.50	Reinf Bottom	187.5	31.5					12.4	52.0	199.8	83.5	0.0	0.0
95.00		310.6	271.9					108.8	741.1	419.3	1,013.0	0.0	0.0
98.00	Appurtenance(s)	236.5	228.1	3,598.6	0.0	7,404.2	2,843.4	94.2	635.3	3,929.2	3,706.7	0.0	0.0
100.00		164.1	149.5					63.2	415.8	227.3	565.2	0.0	0.0
101.50	Reinf. Top Reinf	231.8	110.7					47.5	351.9	279.3	462.7	0.0	0.0
105.00		321.0	253.9					111.2	618.6	432.3	872.5	0.0	0.0
108.50	Reinf. Top	215.5	247.6					111.8	618.6	327.3	866.2	0.0	0.0
110.00	Reinf. Top Reinf	58.2	104.2					0.0	142.6	58.2	246.8	0.0	0.0
110.05	Top - Section 3	184.5	3.7					0.0	8.5	184.5	12.2	0.0	0.0
115.00	Appurtenance(s)	291.0	252.2	350.6	0.0	0.0	672.0	0.0	789.1	641.6	1,713.3	0.0	0.0
118.00	Appurtenance(s)	126.4	148.3	661.2	0.0	1,322.3	314.6	0.0	478.5	787.6	941.5	0.0	0.0
118.50	Reinf. Top Reinf.	35.8	24.4					0.0	79.3	35.8	103.7	0.0	0.0
119.00	Appurtenance(s)	53.4	24.3	25.0	0.0	0.0	12.0	0.0	22.6	78.4	58.9	0.0	0.0
120.00		210.5	48.3					0.0	40.8	210.5	89.1	0.0	0.0
125.00		277.4	235.7					0.0	204.0	277.4	439.7	0.0	0.0
128.00	Appurtenance(s)	169.7	136.8	2,912.4	0.0	472.9	2,430.4	0.0	122.4	3,082.1	2,689.5	0.0	0.0
130.00		231.6	89.2					0.0	70.0	231.6	159.3	0.0	0.0
135.00		260.3	216.4					0.0	175.0	260.3	391.4	0.0	0.0
138.00	Appurtenance(s)	158.8	125.2	1,640.8	0.0	6,563.2	1,254.7	0.0	105.0	1,799.6	1,484.9	0.0	0.0
140.00		93.9	81.5					0.0	62.8	93.9	144.3	0.0	0.0

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:05 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.6W 97 mph with No Ice 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

141.00	Appurtenance(s)	153.0	40.2	639.4	0.0	0.0	900.0	0.0	31.4	792.4	971.6	0.0	0.0
145.00		269.0	156.9					0.0	123.1	269.0	280.0	0.0	0.0
150.00	Appurtenance(s)	147.0	187.4	1,678.3	0.0	1,403.4	2,940.0	0.0	152.8	1,825.3	3,280.2	0.0	0.0
								Totals:		28,136.9	46,967.6	0.00	0.00

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:05 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.6W 97 mph with No Ice 28 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.20	-31.19	0.00	-3,275.18	0.00	3,275.18	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.616
5.00	-47.11	-30.76	0.00	-3,119.22	0.00	3,119.22	3,113.28	1,556.64	4,641.42	2,292.22	0.14	-0.26	0.598
10.00	-45.05	-30.31	0.00	-2,965.44	0.00	2,965.44	3,069.45	1,534.72	4,476.09	2,210.57	0.55	-0.51	0.580
14.92	-43.10	-30.02	0.00	-2,816.30	0.00	2,816.30	3,025.30	1,512.65	4,314.76	2,130.90	1.21	-0.77	0.562
14.92	-43.10	-30.02	0.00	-2,816.30	0.00	2,816.30	3,025.30	1,512.65	4,314.76	2,130.90	1.21	-0.77	0.791
15.00	-42.98	-29.90	0.00	-2,813.89	0.00	2,813.89	3,024.57	1,512.28	4,312.14	2,129.61	1.22	-0.77	0.791
20.00	-41.31	-29.53	0.00	-2,664.39	0.00	2,664.39	2,978.65	1,489.33	4,149.68	2,049.37	2.22	-1.13	0.769
25.00	-39.67	-29.14	0.00	-2,516.76	0.00	2,516.76	2,931.70	1,465.85	3,988.78	1,969.91	3.60	-1.49	0.746
30.00	-38.11	-28.84	0.00	-2,371.04	0.00	2,371.04	2,873.79	1,436.89	3,816.40	1,884.77	5.35	-1.85	0.724
31.00	-37.74	-28.72	0.00	-2,342.20	0.00	2,342.20	2,859.85	1,429.93	3,779.26	1,866.44	5.74	-1.92	0.720
31.50	-37.55	-28.63	0.00	-2,327.75	0.00	2,327.75	2,852.84	1,426.42	3,760.64	1,857.24	5.95	-1.96	0.718
34.00	-36.43	-28.42	0.00	-2,256.20	0.00	2,256.20	2,818.05	1,409.02	3,668.95	1,811.96	7.02	-2.14	0.699
35.00	-35.97	-28.31	0.00	-2,227.78	0.00	2,227.78	2,804.11	1,402.06	3,632.54	1,793.98	7.48	-2.21	0.695
35.67	-35.68	-28.26	0.00	-2,208.82	0.00	2,208.82	2,247.39	1,123.70	2,971.54	1,467.53	7.79	-2.26	0.796
36.00	-35.46	-28.07	0.00	-2,199.49	0.00	2,199.49	2,245.17	1,122.59	2,963.78	1,463.70	7.95	-2.28	0.794
40.00	-34.28	-27.68	0.00	-2,087.22	0.00	2,087.22	2,217.94	1,108.97	2,870.05	1,417.41	9.99	-2.59	0.768
45.00	-32.85	-27.20	0.00	-1,948.82	0.00	1,948.82	2,182.97	1,091.48	2,753.70	1,359.95	12.90	-2.96	0.735
50.00	-31.45	-26.70	0.00	-1,812.81	0.00	1,812.81	2,146.96	1,073.48	2,638.35	1,302.98	16.19	-3.32	0.702
55.00	-30.07	-26.17	0.00	-1,679.33	0.00	1,679.33	2,109.91	1,054.96	2,524.10	1,246.56	19.87	-3.69	0.667
60.00	-28.72	-25.62	0.00	-1,548.47	0.00	1,548.47	2,071.82	1,035.91	2,411.06	1,190.73	23.92	-4.04	0.632
65.00	-27.40	-25.06	0.00	-1,420.35	0.00	1,420.35	2,032.70	1,016.35	2,299.33	1,135.55	28.33	-4.39	0.596
70.00	-26.15	-24.65	0.00	-1,295.06	0.00	1,295.06	1,981.31	990.65	2,176.68	1,074.98	33.11	-4.73	0.562
70.05	-26.11	-24.52	0.00	-1,293.75	0.00	1,293.75	1,980.69	990.35	2,175.31	1,074.30	33.16	-4.73	0.562
73.55	-24.92	-24.14	0.00	-1,207.94	0.00	1,207.94	1,473.36	736.68	1,622.77	801.43	36.72	-4.97	0.622
75.00	-24.55	-23.84	0.00	-1,173.01	0.00	1,173.01	1,465.95	732.98	1,600.80	790.57	38.24	-5.06	0.608
80.00	-23.40	-23.23	0.00	-1,053.81	0.00	1,053.81	1,439.68	719.84	1,525.22	753.25	43.72	-5.40	0.559
85.00	-22.28	-22.61	0.00	-937.65	0.00	937.65	1,412.37	706.19	1,450.29	716.24	49.53	-5.72	0.510
90.00	-21.21	-22.12	0.00	-824.60	0.00	824.60	1,384.02	692.01	1,376.10	679.61	55.67	-6.02	0.460
91.10	-20.67	-21.97	0.00	-800.27	0.00	800.27	1,377.65	688.82	1,359.89	671.60	57.07	-6.08	0.446
91.10	-20.67	-21.97	0.00	-800.27	0.00	800.27	1,377.65	688.82	1,359.89	671.60	57.07	-6.08	0.449
91.50	-20.56	-21.81	0.00	-791.48	0.00	791.48	1,375.32	687.66	1,354.01	668.69	57.58	-6.11	0.445
95.00	-19.54	-21.33	0.00	-715.16	0.00	715.16	1,354.64	677.32	1,302.77	643.39	62.12	-6.30	0.286
98.00	-16.27	-17.04	0.00	-643.76	0.00	643.76	1,336.51	668.25	1,259.21	621.88	66.11	-6.42	0.261
100.00	-15.71	-16.77	0.00	-609.68	0.00	609.68	1,324.21	662.11	1,230.38	607.64	68.81	-6.49	0.249
101.50	-15.26	-16.46	0.00	-584.52	0.00	584.52	1,314.88	657.44	1,208.86	597.01	70.85	-6.54	0.239
101.50	-15.26	-16.46	0.00	-584.52	0.00	584.52	1,314.88	657.44	1,208.86	597.01	70.85	-6.54	0.333
105.00	-14.41	-15.97	0.00	-526.90	0.00	526.90	1,293.27	646.64	1,159.51	572.64	75.68	-6.66	0.307
108.50	-13.56	-15.57	0.00	-471.02	0.00	471.02	1,260.75	630.38	1,101.62	544.05	80.61	-6.81	0.283
108.50	-13.56	-15.57	0.00	-471.02	0.00	471.02	1,260.75	630.38	1,101.62	544.05	80.61	-6.81	0.495
110.00	-13.31	-15.49	0.00	-447.67	0.00	447.67	1,246.82	623.41	1,077.26	532.02	82.76	-6.87	0.478
110.00	-13.31	-15.49	0.00	-447.67	0.00	447.67	1,246.82	623.41	1,077.26	532.02	82.76	-6.87	0.299
110.05	-13.29	-15.33	0.00	-446.84	0.00	446.84	1,246.32	623.16	1,076.40	531.59	82.83	-6.88	0.299
110.05	-13.29	-15.33	0.00	-446.84	0.00	446.84	852.93	426.46	741.03	365.97	82.83	-6.88	0.360

Load Case: 1.2D + 1.6W 97 mph with No Ice 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

115.00	-11.62	-14.52	0.00	-371.02	0.00	371.02	834.88	417.44	698.45	344.94	90.06	-7.09	0.307
118.00	-10.77	-13.63	0.00	-326.15	0.00	326.15	823.44	411.72	672.79	332.27	94.54	-7.22	0.275
118.50	-10.67	-13.59	0.00	-319.34	0.00	319.34	821.50	410.75	668.53	330.16	95.30	-7.24	0.270
118.50	-10.67	-13.59	0.00	-319.34	0.00	319.34	821.50	410.75	668.53	330.16	95.30	-7.24	0.981
119.00	-10.60	-13.52	0.00	-312.54	0.00	312.54	819.55	409.77	664.27	328.06	96.06	-7.26	0.967
120.00	-10.44	-13.37	0.00	-299.03	0.00	299.03	815.61	407.80	655.76	323.86	97.59	-7.41	0.937
125.00	-9.93	-13.13	0.00	-232.16	0.00	232.16	795.30	397.65	613.53	303.00	105.69	-8.07	0.780
128.00	-7.66	-9.73	0.00	-192.30	0.00	192.30	782.61	391.31	588.45	290.61	110.86	-8.43	0.672
130.00	-7.48	-9.52	0.00	-172.84	0.00	172.84	773.95	386.97	571.85	282.42	114.43	-8.65	0.622
135.00	-7.07	-9.25	0.00	-125.23	0.00	125.23	751.56	375.78	530.84	262.16	123.71	-9.13	0.488
138.00	-5.87	-7.25	0.00	-90.92	0.00	90.92	737.63	368.82	506.58	250.18	129.50	-9.37	0.372
140.00	-5.73	-7.15	0.00	-76.41	0.00	76.41	728.14	364.07	490.58	242.28	133.44	-9.50	0.324
141.00	-4.89	-6.22	0.00	-69.26	0.00	69.26	721.90	360.95	481.67	237.88	135.43	-9.56	0.298
145.00	-4.64	-5.92	0.00	-44.40	0.00	44.40	694.03	347.02	445.00	219.77	143.49	-9.76	0.209
150.00	0.00	-5.04	0.00	-14.81	0.00	14.81	659.19	329.60	401.19	198.13	153.75	-9.90	0.075

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		268.6	0.0					0.0	0.0	268.6	0.0	0.0	0.0
5.00		531.6	676.6					112.3	789.8	643.9	1,466.4	0.0	0.0
10.00		516.1	662.1					112.3	789.8	628.4	1,452.0	0.0	0.0
14.92	Reinf. Top	257.3	637.4					110.5	777.2	367.8	1,414.6	0.0	0.0
15.00		255.6	10.2					1.8	7.8	257.4	18.1	0.0	0.0
20.00		497.4	633.2					112.3	489.2	609.7	1,122.4	0.0	0.0
25.00		486.1	618.7					112.3	489.2	598.4	1,107.9	0.0	0.0
30.00		287.8	604.2					112.3	489.2	400.1	1,093.5	0.0	0.0
31.00	Appurtenance(s)	71.7	119.1	56.7	0.0	0.0	45.0	22.6	97.8	151.0	262.0	0.0	0.0
31.50	Bot - Section 2	146.4	59.7					11.4	49.2	157.8	109.0	0.0	0.0
34.00	Appurtenance(s)	171.7	544.5	24.2	0.0	72.5	9.0	57.5	244.3	253.4	797.8	0.0	0.0
35.00	Appurtenance(s)	82.5	216.2	23.2	0.0	-69.6	9.0	23.4	97.7	129.0	323.0	0.0	0.0
35.67	Top - Section 1	49.5	144.3					15.8	65.4	65.3	209.7	0.0	0.0
36.00	Appurtenance(s)	215.8	32.6	59.2	0.0	0.0	45.0	7.8	32.2	282.8	109.8	0.0	0.0
40.00		451.1	391.0					96.2	390.3	547.3	781.3	0.0	0.0
45.00		505.0	477.9					124.2	487.9	629.2	965.8	0.0	0.0
50.00		507.3	465.9					128.2	487.9	635.5	953.8	0.0	0.0
55.00		507.8	453.8					131.9	487.9	639.7	941.7	0.0	0.0
60.00		506.8	441.8					135.4	487.9	642.1	929.6	0.0	0.0
65.00		504.3	429.7					138.6	487.9	642.9	917.6	0.0	0.0
70.00		254.0	417.6					141.7	487.9	395.8	905.5	0.0	0.0
70.05	Bot - Section 3	180.6	4.4					1.5	5.2	182.2	9.6	0.0	0.0
73.55	Top - Section 2	251.2	518.0					101.0	341.5	352.1	859.5	0.0	0.0
75.00		324.6	94.9					42.1	141.2	366.7	236.1	0.0	0.0
80.00		499.6	321.7					147.4	487.9	647.0	809.6	0.0	0.0
85.00		493.0	312.1					150.1	487.9	643.1	800.0	0.0	0.0
90.00		298.1	302.4					152.6	487.9	450.7	790.3	0.0	0.0
91.10	Reinf. Top Reinf	72.7	65.2					33.9	341.8	106.6	407.0	0.0	0.0
91.50	Reinf Bottom	187.5	23.6					12.4	39.0	199.8	62.6	0.0	0.0
95.00		310.6	203.9					108.8	555.8	419.3	759.8	0.0	0.0
98.00	Appurtenance(s)	236.5	171.0	3,598.6	0.0	7,404.2	2,132.5	94.2	476.4	3,929.2	2,780.0	0.0	0.0
100.00		164.1	112.1					63.2	311.8	227.3	423.9	0.0	0.0
101.50	Reinf. Top Reinf	231.8	83.1					47.5	263.9	279.3	347.0	0.0	0.0
105.00		321.0	190.4					111.2	463.9	432.3	654.4	0.0	0.0
108.50	Reinf. Top	215.5	185.7					111.8	463.9	327.3	649.6	0.0	0.0
110.00	Reinf. Top Reinf	58.2	78.1					0.0	107.0	58.2	185.1	0.0	0.0
110.05	Top - Section 3	184.5	2.8					0.0	6.4	184.5	9.1	0.0	0.0
115.00	Appurtenance(s)	291.0	189.1	350.6	0.0	0.0	504.0	0.0	591.8	641.6	1,284.9	0.0	0.0
118.00	Appurtenance(s)	126.4	111.3	661.2	0.0	1,322.3	236.0	0.0	358.9	787.6	706.1	0.0	0.0
118.50	Reinf. Top Reinf.	35.8	18.3					0.0	59.5	35.8	77.8	0.0	0.0
119.00	Appurtenance(s)	53.4	18.2	25.0	0.0	0.0	9.0	0.0	16.9	78.4	44.2	0.0	0.0
120.00		210.5	36.2					0.0	30.6	210.5	66.8	0.0	0.0
125.00		277.4	176.7					0.0	153.0	277.4	329.7	0.0	0.0
128.00	Appurtenance(s)	169.7	102.6	2,912.4	0.0	472.9	1,822.8	0.0	91.8	3,082.1	2,017.1	0.0	0.0
130.00		231.6	66.9					0.0	52.5	231.6	119.4	0.0	0.0
135.00		260.3	162.3					0.0	131.3	260.3	293.5	0.0	0.0
138.00	Appurtenance(s)	158.8	93.9	1,640.8	0.0	6,563.2	941.0	0.0	78.8	1,799.6	1,113.7	0.0	0.0
140.00		93.9	61.1					0.0	47.1	93.9	108.3	0.0	0.0

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:13 PM

Customer: METRO PCS INC

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 28 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

141.00	Appurtenance(s)	153.0	30.1	639.4	0.0	0.0	675.0	0.0	23.6	792.4	728.7	0.0	0.0
145.00		269.0	117.7					0.0	92.3	269.0	210.0	0.0	0.0
150.00	Appurtenance(s)	147.0	140.6	1,678.3	0.0	1,403.4	2,205.0	0.0	114.6	1,825.3	2,460.2	0.0	0.0
								Totals:		28,136.9	35,225.7	0.00	0.00

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:13 PM

Customer: METRO PCS INC

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 28 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.89	-31.16	0.00	-3,210.07	0.00	3,210.07	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.602
5.00	-35.29	-30.67	0.00	-3,054.26	0.00	3,054.26	3,113.28	1,556.64	4,641.42	2,292.22	0.14	-0.25	0.584
10.00	-33.71	-30.18	0.00	-2,900.91	0.00	2,900.91	3,069.45	1,534.72	4,476.09	2,210.57	0.53	-0.50	0.566
14.92	-32.23	-29.87	0.00	-2,752.43	0.00	2,752.43	3,025.30	1,512.65	4,314.76	2,130.90	1.18	-0.75	0.548
14.92	-32.23	-29.87	0.00	-2,752.43	0.00	2,752.43	3,025.30	1,512.65	4,314.76	2,130.90	1.18	-0.75	0.771
15.00	-32.13	-29.71	0.00	-2,750.04	0.00	2,750.04	3,024.57	1,512.28	4,312.14	2,129.61	1.20	-0.75	0.771
20.00	-30.83	-29.27	0.00	-2,601.50	0.00	2,601.50	2,978.65	1,489.33	4,149.68	2,049.37	2.17	-1.10	0.748
25.00	-29.56	-28.83	0.00	-2,455.15	0.00	2,455.15	2,931.70	1,465.85	3,988.78	1,969.91	3.52	-1.46	0.725
30.00	-28.38	-28.50	0.00	-2,311.01	0.00	2,311.01	2,873.79	1,436.89	3,816.40	1,884.77	5.23	-1.81	0.704
31.00	-28.10	-28.37	0.00	-2,282.51	0.00	2,282.51	2,859.85	1,429.93	3,779.26	1,866.44	5.62	-1.88	0.700
31.50	-27.94	-28.26	0.00	-2,268.23	0.00	2,268.23	2,852.84	1,426.42	3,760.64	1,857.24	5.82	-1.91	0.698
34.00	-27.09	-28.04	0.00	-2,197.60	0.00	2,197.60	2,818.05	1,409.02	3,668.95	1,811.96	6.87	-2.09	0.678
35.00	-26.74	-27.92	0.00	-2,169.57	0.00	2,169.57	2,804.11	1,402.06	3,632.54	1,793.98	7.31	-2.16	0.674
35.67	-26.52	-27.87	0.00	-2,150.86	0.00	2,150.86	2,247.39	1,123.70	2,971.54	1,467.53	7.62	-2.21	0.773
36.00	-26.34	-27.65	0.00	-2,141.66	0.00	2,141.66	2,245.17	1,122.59	2,963.78	1,463.70	7.77	-2.23	0.771
40.00	-25.43	-27.22	0.00	-2,031.05	0.00	2,031.05	2,217.94	1,108.97	2,870.05	1,417.41	9.77	-2.52	0.745
45.00	-24.33	-26.70	0.00	-1,894.95	0.00	1,894.95	2,182.97	1,091.48	2,753.70	1,359.95	12.60	-2.89	0.713
50.00	-23.25	-26.16	0.00	-1,761.46	0.00	1,761.46	2,146.96	1,073.48	2,638.35	1,302.98	15.82	-3.24	0.680
55.00	-22.19	-25.60	0.00	-1,630.68	0.00	1,630.68	2,109.91	1,054.96	2,524.10	1,246.56	19.40	-3.59	0.646
60.00	-21.16	-25.02	0.00	-1,502.69	0.00	1,502.69	2,071.82	1,035.91	2,411.06	1,190.73	23.35	-3.94	0.611
65.00	-20.15	-24.43	0.00	-1,377.58	0.00	1,377.58	2,032.70	1,016.35	2,299.33	1,135.55	27.65	-4.28	0.576
70.00	-19.21	-24.02	0.00	-1,255.41	0.00	1,255.41	1,981.31	990.65	2,176.68	1,074.98	32.31	-4.61	0.543
70.05	-19.16	-23.88	0.00	-1,254.13	0.00	1,254.13	1,980.69	990.35	2,175.31	1,074.30	32.36	-4.61	0.543
73.55	-18.27	-23.51	0.00	-1,170.55	0.00	1,170.55	1,473.36	736.68	1,622.77	801.43	35.82	-4.84	0.600
75.00	-17.98	-23.19	0.00	-1,136.54	0.00	1,136.54	1,465.95	732.98	1,600.80	790.57	37.30	-4.93	0.587
80.00	-17.11	-22.57	0.00	-1,020.59	0.00	1,020.59	1,439.68	719.84	1,525.22	753.25	42.63	-5.25	0.540
85.00	-16.26	-21.94	0.00	-907.75	0.00	907.75	1,412.37	706.19	1,450.29	716.24	48.29	-5.56	0.492
90.00	-15.45	-21.46	0.00	-798.05	0.00	798.05	1,384.02	692.01	1,376.10	679.61	54.27	-5.85	0.444
91.10	-15.04	-21.32	0.00	-774.45	0.00	774.45	1,377.65	688.82	1,359.89	671.60	55.62	-5.92	0.430
91.10	-15.04	-21.32	0.00	-774.45	0.00	774.45	1,377.65	688.82	1,359.89	671.60	55.62	-5.92	0.433
91.50	-14.96	-21.15	0.00	-765.92	0.00	765.92	1,375.32	687.66	1,354.01	668.69	56.12	-5.94	0.429
95.00	-14.19	-20.69	0.00	-691.91	0.00	691.91	1,354.64	677.32	1,302.77	643.39	60.54	-6.13	0.276
98.00	-11.83	-16.50	0.00	-622.45	0.00	622.45	1,336.51	668.25	1,259.21	621.88	64.42	-6.24	0.251
100.00	-11.41	-16.24	0.00	-589.46	0.00	589.46	1,324.21	662.11	1,230.38	607.64	67.04	-6.31	0.240
101.50	-11.08	-15.94	0.00	-565.10	0.00	565.10	1,314.88	657.44	1,208.86	597.01	69.03	-6.36	0.230
101.50	-11.08	-15.94	0.00	-565.10	0.00	565.10	1,314.88	657.44	1,208.86	597.01	69.03	-6.36	0.321
105.00	-10.44	-15.46	0.00	-509.32	0.00	509.32	1,293.27	646.64	1,159.51	572.64	73.73	-6.47	0.296
108.50	-9.80	-15.08	0.00	-455.22	0.00	455.22	1,260.75	630.38	1,101.62	544.05	78.52	-6.62	0.273
108.50	-9.80	-15.08	0.00	-455.22	0.00	455.22	1,260.75	630.38	1,101.62	544.05	78.52	-6.62	0.476
110.00	-9.62	-15.00	0.00	-432.61	0.00	432.61	1,246.82	623.41	1,077.26	532.02	80.61	-6.68	0.461
110.00	-9.62	-15.00	0.00	-432.61	0.00	432.61	1,246.82	623.41	1,077.26	532.02	80.61	-6.68	0.288
110.05	-9.60	-14.84	0.00	-431.81	0.00	431.81	1,246.32	623.16	1,076.40	531.59	80.68	-6.69	0.288
110.05	-9.60	-14.84	0.00	-431.81	0.00	431.81	852.93	426.46	741.03	365.97	80.68	-6.69	0.346

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 28 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

115.00	-8.36	-14.07	0.00	-358.41	0.00	358.41	834.88	417.44	698.45	344.94	87.70	-6.89	0.296
118.00	-7.74	-13.21	0.00	-314.88	0.00	314.88	823.44	411.72	672.79	332.27	92.06	-7.02	0.265
118.50	-7.66	-13.17	0.00	-308.27	0.00	308.27	821.50	410.75	668.53	330.16	92.80	-7.04	0.260
118.50	-7.66	-13.17	0.00	-308.27	0.00	308.27	821.50	410.75	668.53	330.16	92.80	-7.04	0.944
119.00	-7.61	-13.10	0.00	-301.68	0.00	301.68	819.55	409.77	664.27	328.06	93.53	-7.06	0.930
120.00	-7.48	-12.94	0.00	-288.58	0.00	288.58	815.61	407.80	655.76	323.86	95.02	-7.20	0.901
125.00	-7.08	-12.68	0.00	-223.91	0.00	223.91	795.30	397.65	613.53	303.00	102.89	-7.84	0.749
128.00	-5.47	-9.37	0.00	-185.40	0.00	185.40	782.61	391.31	588.45	290.61	107.91	-8.18	0.646
130.00	-5.33	-9.16	0.00	-166.66	0.00	166.66	773.95	386.97	571.85	282.42	111.38	-8.40	0.598
135.00	-5.03	-8.89	0.00	-120.88	0.00	120.88	751.56	375.78	530.84	262.16	120.39	-8.85	0.468
138.00	-4.19	-6.95	0.00	-87.66	0.00	87.66	737.63	368.82	506.58	250.18	126.01	-9.09	0.356
140.00	-4.08	-6.84	0.00	-73.77	0.00	73.77	728.14	364.07	490.58	242.28	129.83	-9.22	0.310
141.00	-3.48	-5.95	0.00	-66.93	0.00	66.93	721.90	360.95	481.67	237.88	131.76	-9.28	0.286
145.00	-3.30	-5.66	0.00	-43.12	0.00	43.12	694.03	347.02	445.00	219.77	139.58	-9.47	0.201
150.00	0.00	-5.04	0.00	-14.81	0.00	14.81	659.19	329.60	401.19	198.13	149.54	-9.61	0.075

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:14 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 28 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		48.4	0.0					0.0	0.0	48.4	0.0	0.0	0.0
5.00		96.3	1,283.4					127.5	1,279.9	223.8	2,563.4	0.0	0.0
10.00		94.3	1,301.6					127.4	1,311.8	221.7	2,613.4	0.0	0.0
14.92	Reinf. Top	47.1	1,275.5					124.5	1,306.9	171.6	2,582.4	0.0	0.0
15.00		47.1	20.7					2.0	14.9	49.1	35.7	0.0	0.0
20.00		91.8	1,282.8					125.7	939.0	217.6	2,221.8	0.0	0.0
25.00		90.2	1,265.4					125.0	889.6	215.1	2,155.1	0.0	0.0
30.00		53.5	1,245.6					122.6	835.8	176.1	2,081.4	0.0	0.0
31.00	Appurtenance(s)	13.4	247.4	17.0	0.0	0.0	89.7	24.5	167.7	54.8	504.7	0.0	0.0
31.50	Bot - Section 2	27.3	124.2					12.4	84.4	39.7	208.7	0.0	0.0
34.00	Appurtenance(s)	32.0	949.8	7.3	0.0	21.9	37.1	62.0	419.4	101.3	1,406.3	0.0	0.0
35.00	Appurtenance(s)	15.4	378.0	7.0	0.0	-21.1	37.3	25.1	166.0	47.5	581.3	0.0	0.0
35.67	Top - Section 1	9.2	252.5					16.9	109.9	26.1	362.3	0.0	0.0
36.00	Appurtenance(s)	40.4	73.1	17.8	0.0	0.0	90.3	8.4	54.1	66.7	217.5	0.0	0.0
40.00		84.6	875.7					103.5	657.0	188.1	1,532.7	0.0	0.0
45.00		95.1	1,075.0					132.1	823.6	227.1	1,898.6	0.0	0.0
50.00		95.9	1,053.6					134.5	826.0	230.4	1,879.6	0.0	0.0
55.00		96.4	1,031.5					136.6	828.2	233.0	1,859.7	0.0	0.0
60.00		96.6	1,008.8					138.2	830.2	234.9	1,839.0	0.0	0.0
65.00		96.6	985.7					139.6	832.0	236.2	1,817.7	0.0	0.0
70.00		48.8	962.1					140.6	833.8	189.4	1,795.8	0.0	0.0
70.05	Bot - Section 3	34.7	10.2					1.5	8.9	36.2	19.1	0.0	0.0
73.55	Top - Section 2	48.3	975.6					98.9	584.6	147.3	1,560.3	0.0	0.0
75.00		62.7	243.8					41.4	241.9	104.1	485.7	0.0	0.0
80.00		96.9	825.2					143.5	836.9	240.3	1,662.1	0.0	0.0
85.00		96.1	803.9					143.9	838.4	239.9	1,642.3	0.0	0.0
90.00		58.3	782.3					144.0	839.7	202.3	1,622.0	0.0	0.0
91.10	Reinf. Top Reinf	14.3	170.1					34.1	511.6	48.3	681.7	0.0	0.0
91.50	Reinf Bottom	36.9	61.7					12.4	72.4	49.3	134.0	0.0	0.0
95.00		61.2	531.2					108.7	919.4	169.9	1,450.6	0.0	0.0
98.00	Appurtenance(s)	46.7	447.1	982.2	0.0	1,787.9	6,704.3	93.3	788.7	1,122.3	7,940.1	0.0	0.0
100.00		32.5	294.1					21.2	497.4	53.7	791.5	0.0	0.0
101.50	Reinf. Top Reinf	46.1	218.4					19.2	430.6	65.3	649.0	0.0	0.0
105.00		64.1	500.2					45.4	802.9	109.5	1,303.0	0.0	0.0
108.50	Reinf. Top	45.4	489.2					25.3	733.3	70.7	1,222.4	0.0	0.0
110.00	Reinf. Top Reinf	14.0	206.9					7.4	179.8	21.4	386.8	0.0	0.0
110.05	Top - Section 3	44.7	7.3					0.3	9.5	44.9	16.8	0.0	0.0
115.00	Appurtenance(s)	70.6	580.8	121.9	0.0	0.0	1,167.8	23.7	881.5	216.2	2,630.1	0.0	0.0
118.00	Appurtenance(s)	30.8	344.3	167.5	0.0	335.0	1,033.5	14.7	534.9	213.0	1,912.7	0.0	0.0
118.50	Reinf. Top Reinf.	8.7	57.0					2.5	88.7	11.2	145.7	0.0	0.0
119.00	Appurtenance(s)	13.1	56.8	7.5	0.0	0.0	54.4	2.5	32.0	23.0	143.2	0.0	0.0
120.00		51.7	112.9					5.0	59.7	56.7	172.5	0.0	0.0
125.00		68.3	547.8					0.0	204.0	68.3	751.8	0.0	0.0
128.00	Appurtenance(s)	42.1	320.5	731.8	0.0	113.7	5,423.9	0.0	122.4	773.9	5,866.9	0.0	0.0
130.00		57.8	210.2					0.0	70.0	57.8	280.2	0.0	0.0
135.00		65.3	507.9					0.0	175.0	65.3	682.9	0.0	0.0
138.00	Appurtenance(s)	40.1	296.5	410.9	0.0	1,643.8	3,230.1	0.0	105.0	451.1	3,631.6	0.0	0.0
140.00		23.8	194.1					0.0	62.8	23.8	256.9	0.0	0.0

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:22 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 28 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

141.00	Appurtenance(s)	39.1	96.1	226.9	0.0	0.0	1,582.2	0.0	31.4	266.0	1,709.7	0.0	0.0
145.00		69.2	373.3					0.0	123.1	69.2	496.4	0.0	0.0
150.00	Appurtenance(s)	38.0	447.1	576.2	0.0	397.1	4,471.0	0.0	152.8	614.2	5,070.9	0.0	0.0
								Totals:		8,833.79	75,475.9	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 28 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00
Dead Load Factor : 1.20 Ice Importance Factor : 1.00
Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-81.79	-9.59	0.00	-1,024.06	0.00	1,024.06	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.204
5.00	-79.22	-9.48	0.00	-976.09	0.00	976.09	3,113.28	1,556.64	4,641.42	2,292.22	0.04	-0.08	0.198
10.00	-76.59	-9.36	0.00	-928.69	0.00	928.69	3,069.45	1,534.72	4,476.09	2,210.57	0.17	-0.16	0.192
14.92	-74.00	-9.23	0.00	-882.65	0.00	882.65	3,025.30	1,512.65	4,314.76	2,130.90	0.38	-0.24	0.186
14.92	-74.00	-9.23	0.00	-882.65	0.00	882.65	3,025.30	1,512.65	4,314.76	2,130.90	0.38	-0.24	0.262
15.00	-73.96	-9.25	0.00	-881.91	0.00	881.91	3,024.57	1,512.28	4,312.14	2,129.61	0.38	-0.24	0.261
20.00	-71.72	-9.17	0.00	-835.64	0.00	835.64	2,978.65	1,489.33	4,149.68	2,049.37	0.69	-0.35	0.254
25.00	-69.55	-9.07	0.00	-789.80	0.00	789.80	2,931.70	1,465.85	3,988.78	1,969.91	1.13	-0.47	0.247
30.00	-67.46	-8.96	0.00	-744.44	0.00	744.44	2,873.79	1,436.89	3,816.40	1,884.77	1.67	-0.58	0.240
31.00	-66.95	-8.92	0.00	-735.48	0.00	735.48	2,859.85	1,429.93	3,779.26	1,866.44	1.80	-0.60	0.239
31.50	-66.74	-8.92	0.00	-730.99	0.00	730.99	2,852.84	1,426.42	3,760.64	1,857.24	1.86	-0.61	0.238
34.00	-65.33	-8.84	0.00	-708.71	0.00	708.71	2,818.05	1,409.02	3,668.95	1,811.96	2.20	-0.67	0.232
35.00	-64.74	-8.81	0.00	-699.87	0.00	699.87	2,804.11	1,402.06	3,632.54	1,793.98	2.34	-0.69	0.231
35.67	-64.38	-8.79	0.00	-693.97	0.00	693.97	2,247.39	1,123.70	2,971.54	1,467.53	2.44	-0.71	0.265
36.00	-64.16	-8.78	0.00	-691.07	0.00	691.07	2,245.17	1,122.59	2,963.78	1,463.70	2.49	-0.72	0.264
40.00	-62.61	-8.69	0.00	-655.94	0.00	655.94	2,217.94	1,108.97	2,870.05	1,417.41	3.13	-0.81	0.256
45.00	-60.70	-8.56	0.00	-612.50	0.00	612.50	2,182.97	1,091.48	2,753.70	1,359.95	4.04	-0.93	0.245
50.00	-58.81	-8.41	0.00	-569.72	0.00	569.72	2,146.96	1,073.48	2,638.35	1,302.98	5.08	-1.04	0.234
55.00	-56.93	-8.25	0.00	-527.67	0.00	527.67	2,109.91	1,054.96	2,524.10	1,246.56	6.23	-1.16	0.223
60.00	-55.09	-8.09	0.00	-486.40	0.00	486.40	2,071.82	1,035.91	2,411.06	1,190.73	7.50	-1.27	0.212
65.00	-53.26	-7.91	0.00	-445.97	0.00	445.97	2,032.70	1,016.35	2,299.33	1,135.55	8.89	-1.38	0.200
70.00	-51.46	-7.72	0.00	-406.42	0.00	406.42	1,981.31	990.65	2,176.68	1,074.98	10.39	-1.48	0.189
70.05	-51.44	-7.72	0.00	-406.01	0.00	406.01	1,980.69	990.35	2,175.31	1,074.30	10.41	-1.49	0.189
73.55	-49.88	-7.58	0.00	-378.99	0.00	378.99	1,473.36	736.68	1,622.77	801.43	11.53	-1.56	0.210
75.00	-49.38	-7.52	0.00	-368.03	0.00	368.03	1,465.95	732.98	1,600.80	790.57	12.00	-1.59	0.205
80.00	-47.72	-7.31	0.00	-330.45	0.00	330.45	1,439.68	719.84	1,525.22	753.25	13.72	-1.69	0.190
85.00	-46.07	-7.10	0.00	-293.88	0.00	293.88	1,412.37	706.19	1,450.29	716.24	15.55	-1.79	0.174
90.00	-44.45	-6.89	0.00	-258.36	0.00	258.36	1,384.02	692.01	1,376.10	679.61	17.48	-1.89	0.158
91.10	-43.77	-6.83	0.00	-250.78	0.00	250.78	1,377.65	688.82	1,359.89	671.60	17.92	-1.91	0.153
91.10	-43.77	-6.83	0.00	-250.78	0.00	250.78	1,377.65	688.82	1,359.89	671.60	17.92	-1.91	0.154
91.50	-43.63	-6.81	0.00	-248.05	0.00	248.05	1,375.32	687.66	1,354.01	668.69	18.08	-1.92	0.153
95.00	-42.18	-6.62	0.00	-224.23	0.00	224.23	1,354.64	677.32	1,302.77	643.39	19.51	-1.98	0.098
98.00	-34.28	-5.24	0.00	-202.58	0.00	202.58	1,336.51	668.25	1,259.21	621.88	20.76	-2.01	0.089
100.00	-33.49	-5.17	0.00	-192.10	0.00	192.10	1,324.21	662.11	1,230.38	607.64	21.61	-2.04	0.085
101.50	-32.84	-5.10	0.00	-184.35	0.00	184.35	1,314.88	657.44	1,208.86	597.01	22.25	-2.05	0.082
101.50	-32.84	-5.10	0.00	-184.35	0.00	184.35	1,314.88	657.44	1,208.86	597.01	22.25	-2.05	0.112
105.00	-31.54	-4.96	0.00	-166.51	0.00	166.51	1,293.27	646.64	1,159.51	572.64	23.77	-2.09	0.104
108.50	-30.32	-4.87	0.00	-149.13	0.00	149.13	1,260.75	630.38	1,101.62	544.05	25.32	-2.14	0.097
108.50	-30.32	-4.87	0.00	-149.13	0.00	149.13	1,260.75	630.38	1,101.62	544.05	25.32	-2.14	0.169
110.00	-29.93	-4.84	0.00	-141.83	0.00	141.83	1,246.82	623.41	1,077.26	532.02	26.00	-2.16	0.163
110.00	-29.93	-4.84	0.00	-141.83	0.00	141.83	1,246.82	623.41	1,077.26	532.02	26.00	-2.16	0.102
110.05	-29.91	-4.81	0.00	-141.57	0.00	141.57	1,246.32	623.16	1,076.40	531.59	26.02	-2.16	0.102
110.05	-29.91	-4.81	0.00	-141.57	0.00	141.57	852.93	426.46	741.03	365.97	26.02	-2.16	0.123

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:22 PM

Customer: METRO PCS INC

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 28 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

115.00	-27.29	-4.52	0.00	-117.79	0.00	117.79	834.88	417.44	698.45	344.94	28.29	-2.23	0.106
118.00	-25.39	-4.24	0.00	-103.90	0.00	103.90	823.44	411.72	672.79	332.27	29.71	-2.27	0.095
118.50	-25.24	-4.23	0.00	-101.78	0.00	101.78	821.50	410.75	668.53	330.16	29.95	-2.27	0.094
118.50	-25.24	-4.23	0.00	-101.78	0.00	101.78	821.50	410.75	668.53	330.16	29.95	-2.27	0.339
119.00	-25.10	-4.21	0.00	-99.67	0.00	99.67	819.55	409.77	664.27	328.06	30.18	-2.28	0.335
120.00	-24.92	-4.20	0.00	-95.46	0.00	95.46	815.61	407.80	655.76	323.86	30.67	-2.33	0.325
125.00	-24.16	-4.17	0.00	-74.44	0.00	74.44	795.30	397.65	613.53	303.00	33.22	-2.54	0.276
128.00	-18.33	-3.16	0.00	-61.81	0.00	61.81	782.61	391.31	588.45	290.61	34.85	-2.65	0.236
130.00	-18.04	-3.13	0.00	-55.49	0.00	55.49	773.95	386.97	571.85	282.42	35.98	-2.73	0.220
135.00	-17.36	-3.06	0.00	-39.85	0.00	39.85	751.56	375.78	530.84	262.16	38.92	-2.88	0.175
138.00	-13.75	-2.44	0.00	-29.02	0.00	29.02	737.63	368.82	506.58	250.18	40.75	-2.96	0.135
140.00	-13.49	-2.41	0.00	-24.14	0.00	24.14	728.14	364.07	490.58	242.28	42.00	-3.00	0.118
141.00	-11.80	-2.06	0.00	-21.73	0.00	21.73	721.90	360.95	481.67	237.88	42.63	-3.02	0.108
145.00	-11.31	-1.98	0.00	-13.47	0.00	13.47	694.03	347.02	445.00	219.77	45.18	-3.08	0.078
150.00	0.00	-1.36	0.00	-3.58	0.00	3.58	659.19	329.60	401.19	198.13	48.43	-3.12	0.018

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:22 PM

Customer: METRO PCS INC

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		57.7	0.0					0.0	0.0	57.7	0.0	0.0	0.0
5.00		114.2	751.8					24.1	877.6	138.3	1,629.4	0.0	0.0
10.00		110.9	735.7					24.1	877.6	135.0	1,613.3	0.0	0.0
14.92	Reinf. Top	55.3	708.2					23.7	863.6	79.0	1,571.8	0.0	0.0
15.00		54.9	11.4					0.4	8.7	55.3	20.1	0.0	0.0
20.00		106.9	703.5					24.1	543.6	131.0	1,247.1	0.0	0.0
25.00		104.4	687.5					24.1	543.6	128.6	1,231.1	0.0	0.0
30.00		61.8	671.4					24.1	543.6	86.0	1,215.0	0.0	0.0
31.00	Appurtenance(s)	15.4	132.3	12.2	0.0	0.0	50.0	4.9	108.7	32.4	291.1	0.0	0.0
31.50	Bot - Section 2	31.5	66.4					2.5	54.7	33.9	121.1	0.0	0.0
34.00	Appurtenance(s)	36.9	605.0	5.2	0.0	15.6	10.0	12.4	271.4	54.4	886.5	0.0	0.0
35.00	Appurtenance(s)	17.7	240.3	5.0	0.0	-14.9	10.0	5.0	108.6	27.7	358.8	0.0	0.0
35.67	Top - Section 1	10.6	160.3					3.4	72.6	14.0	233.0	0.0	0.0
36.00	Appurtenance(s)	46.4	36.2	12.7	0.0	0.0	50.0	1.7	35.8	60.8	122.0	0.0	0.0
40.00		96.9	434.5					20.7	433.7	117.6	868.2	0.0	0.0
45.00		108.5	531.0					26.7	542.1	135.2	1,073.1	0.0	0.0
50.00		109.0	517.6					27.5	542.1	136.5	1,059.7	0.0	0.0
55.00		109.1	504.2					28.3	542.1	137.4	1,046.3	0.0	0.0
60.00		108.9	490.8					29.1	542.1	138.0	1,032.9	0.0	0.0
65.00		108.3	477.4					29.8	542.1	138.1	1,019.5	0.0	0.0
70.00		54.6	464.0					30.4	542.1	85.0	1,006.1	0.0	0.0
70.05	Bot - Section 3	38.8	4.9					0.3	5.8	39.1	10.7	0.0	0.0
73.55	Top - Section 2	54.0	575.5					21.7	379.5	75.7	955.0	0.0	0.0
75.00		69.7	105.4					9.1	156.8	78.8	262.3	0.0	0.0
80.00		107.3	357.5					31.7	542.1	139.0	899.6	0.0	0.0
85.00		105.9	346.8					32.2	542.1	138.2	888.9	0.0	0.0
90.00		64.0	336.0					32.8	542.1	96.8	878.1	0.0	0.0
91.10	Reinf. Top Reinf	15.6	72.5					7.3	379.8	22.9	452.3	0.0	0.0
91.50	Reinf Bottom	40.3	26.2					2.7	43.4	42.9	69.6	0.0	0.0
95.00		66.7	226.6					23.4	617.6	90.1	844.2	0.0	0.0
98.00	Appurtenance(s)	50.8	190.0	773.1	0.0	1,590.8	2,369.5	20.2	529.4	844.2	3,088.9	0.0	0.0
100.00		35.3	124.6					13.6	346.5	48.8	471.0	0.0	0.0
101.50	Reinf. Top Reinf	49.8	92.3					10.2	293.3	60.0	385.5	0.0	0.0
105.00		69.0	211.6					24.1	515.5	93.0	727.1	0.0	0.0
108.50	Reinf. Top	46.3	206.3					24.3	515.5	70.6	721.8	0.0	0.0
110.00	Reinf. Top Reinf	12.5	86.8					0.0	118.9	12.5	205.7	0.0	0.0
110.05	Top - Section 3	39.6	3.1					0.0	7.1	39.6	10.2	0.0	0.0
115.00	Appurtenance(s)	62.5	210.2	75.3	0.0	0.0	560.0	0.0	657.6	137.9	1,427.7	0.0	0.0
118.00	Appurtenance(s)	27.2	123.6	142.0	0.0	284.1	262.2	0.0	398.8	169.2	784.6	0.0	0.0
118.50	Reinf. Top Reinf.	7.7	20.3					0.0	66.1	7.7	86.4	0.0	0.0
119.00	Appurtenance(s)	11.5	20.2	5.4	0.0	0.0	10.0	0.0	18.8	16.9	49.1	0.0	0.0
120.00		45.2	40.2					0.0	34.0	45.2	74.2	0.0	0.0
125.00		59.6	196.4					0.0	170.0	59.6	366.4	0.0	0.0
128.00	Appurtenance(s)	36.5	114.0	625.7	0.0	101.6	2,025.3	0.0	102.0	662.2	2,241.3	0.0	0.0
130.00		49.8	74.4					0.0	58.3	49.8	132.7	0.0	0.0
135.00		55.9	180.3					0.0	145.9	55.9	326.2	0.0	0.0
138.00	Appurtenance(s)	34.1	104.3	352.5	0.0	1,410.1	1,045.6	0.0	87.5	386.6	1,237.4	0.0	0.0
140.00		20.2	67.9					0.0	52.3	20.2	120.3	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Wind Importance Factor : 1.00

141.00	Appurtenance(s)	32.9	33.5	137.4	0.0	0.0	750.0	0.0	26.2	170.2	809.7	0.0	0.0
145.00		57.8	130.7					0.0	102.6	57.8	233.3	0.0	0.0
150.00	Appurtenance(s)	31.6	156.2	360.6	0.0	301.5	2,450.0	0.0	127.4	392.2	2,733.5	0.0	0.0
								Totals:		6,045.61	39,139.7	0.00	0.00

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 9/26/2019 12:16:32 PM

Customer: METRO PCS INC

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.06	-6.70	0.00	-696.34	0.00	696.34	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.136
5.00	-39.42	-6.60	0.00	-662.86	0.00	662.86	3,113.28	1,556.64	4,641.42	2,292.22	0.03	-0.05	0.132
10.00	-37.80	-6.49	0.00	-629.89	0.00	629.89	3,069.45	1,534.72	4,476.09	2,210.57	0.12	-0.11	0.128
14.92	-36.23	-6.43	0.00	-597.94	0.00	597.94	3,025.30	1,512.65	4,314.76	2,130.90	0.26	-0.16	0.124
14.92	-36.23	-6.43	0.00	-597.94	0.00	597.94	3,025.30	1,512.65	4,314.76	2,130.90	0.26	-0.16	0.174
15.00	-36.21	-6.40	0.00	-597.43	0.00	597.43	3,024.57	1,512.28	4,312.14	2,129.61	0.26	-0.16	0.174
20.00	-34.95	-6.31	0.00	-565.44	0.00	565.44	2,978.65	1,489.33	4,149.68	2,049.37	0.47	-0.24	0.169
25.00	-33.71	-6.22	0.00	-533.90	0.00	533.90	2,931.70	1,465.85	3,988.78	1,969.91	0.76	-0.32	0.164
30.00	-32.49	-6.15	0.00	-502.81	0.00	502.81	2,873.79	1,436.89	3,816.40	1,884.77	1.14	-0.39	0.159
31.00	-32.20	-6.12	0.00	-496.66	0.00	496.66	2,859.85	1,429.93	3,779.26	1,866.44	1.22	-0.41	0.158
31.50	-32.08	-6.10	0.00	-493.58	0.00	493.58	2,852.84	1,426.42	3,760.64	1,857.24	1.26	-0.42	0.158
34.00	-31.19	-6.05	0.00	-478.33	0.00	478.33	2,818.05	1,409.02	3,668.95	1,811.96	1.49	-0.45	0.154
35.00	-30.83	-6.03	0.00	-472.28	0.00	472.28	2,804.11	1,402.06	3,632.54	1,793.98	1.59	-0.47	0.153
35.67	-30.59	-6.02	0.00	-468.23	0.00	468.23	2,247.39	1,123.70	2,971.54	1,467.53	1.65	-0.48	0.175
36.00	-30.47	-5.98	0.00	-466.25	0.00	466.25	2,245.17	1,122.59	2,963.78	1,463.70	1.69	-0.48	0.175
40.00	-29.60	-5.89	0.00	-442.35	0.00	442.35	2,217.94	1,108.97	2,870.05	1,417.41	2.12	-0.55	0.169
45.00	-28.52	-5.78	0.00	-412.91	0.00	412.91	2,182.97	1,091.48	2,753.70	1,359.95	2.74	-0.63	0.162
50.00	-27.45	-5.67	0.00	-384.01	0.00	384.01	2,146.96	1,073.48	2,638.35	1,302.98	3.44	-0.71	0.154
55.00	-26.40	-5.55	0.00	-355.67	0.00	355.67	2,109.91	1,054.96	2,524.10	1,246.56	4.22	-0.78	0.147
60.00	-25.36	-5.43	0.00	-327.91	0.00	327.91	2,071.82	1,035.91	2,411.06	1,190.73	5.08	-0.86	0.139
65.00	-24.34	-5.31	0.00	-300.75	0.00	300.75	2,032.70	1,016.35	2,299.33	1,135.55	6.02	-0.93	0.131
70.00	-23.33	-5.22	0.00	-274.20	0.00	274.20	1,981.31	990.65	2,176.68	1,074.98	7.03	-1.00	0.124
70.05	-23.32	-5.19	0.00	-273.93	0.00	273.93	1,980.69	990.35	2,175.31	1,074.30	7.04	-1.00	0.124
73.55	-22.36	-5.11	0.00	-255.75	0.00	255.75	1,473.36	736.68	1,622.77	801.43	7.80	-1.05	0.138
75.00	-22.09	-5.05	0.00	-248.35	0.00	248.35	1,465.95	732.98	1,600.80	790.57	8.12	-1.07	0.135
80.00	-21.19	-4.92	0.00	-223.11	0.00	223.11	1,439.68	719.84	1,525.22	753.25	9.28	-1.14	0.124
85.00	-20.30	-4.78	0.00	-198.53	0.00	198.53	1,412.37	706.19	1,450.29	716.24	10.52	-1.21	0.113
90.00	-19.42	-4.68	0.00	-174.61	0.00	174.61	1,384.02	692.01	1,376.10	679.61	11.82	-1.28	0.103
91.10	-18.97	-4.65	0.00	-169.46	0.00	169.46	1,377.65	688.82	1,359.89	671.60	12.11	-1.29	0.100
91.10	-18.97	-4.65	0.00	-169.46	0.00	169.46	1,377.65	688.82	1,359.89	671.60	12.11	-1.29	0.100
91.50	-18.90	-4.61	0.00	-167.60	0.00	167.60	1,375.32	687.66	1,354.01	668.69	12.22	-1.29	0.099
95.00	-18.05	-4.52	0.00	-151.45	0.00	151.45	1,354.64	677.32	1,302.77	643.39	13.19	-1.34	0.064
98.00	-14.99	-3.60	0.00	-136.31	0.00	136.31	1,336.51	668.25	1,259.21	621.88	14.04	-1.36	0.058
100.00	-14.51	-3.55	0.00	-129.11	0.00	129.11	1,324.21	662.11	1,230.38	607.64	14.61	-1.38	0.055
101.50	-14.13	-3.48	0.00	-123.79	0.00	123.79	1,314.88	657.44	1,208.86	597.01	15.04	-1.39	0.053
101.50	-14.13	-3.48	0.00	-123.79	0.00	123.79	1,314.88	657.44	1,208.86	597.01	15.04	-1.39	0.073
105.00	-13.40	-3.38	0.00	-111.60	0.00	111.60	1,293.27	646.64	1,159.51	572.64	16.07	-1.41	0.068
108.50	-12.68	-3.29	0.00	-99.77	0.00	99.77	1,260.75	630.38	1,101.62	544.05	17.12	-1.44	0.063
108.50	-12.68	-3.29	0.00	-99.77	0.00	99.77	1,260.75	630.38	1,101.62	544.05	17.12	-1.44	0.109
110.00	-12.48	-3.28	0.00	-94.83	0.00	94.83	1,246.82	623.41	1,077.26	532.02	17.57	-1.46	0.106
110.00	-12.48	-3.28	0.00	-94.83	0.00	94.83	1,246.82	623.41	1,077.26	532.02	17.57	-1.46	0.066
110.05	-12.47	-3.24	0.00	-94.66	0.00	94.66	1,246.32	623.16	1,076.40	531.59	17.59	-1.46	0.066
110.05	-12.47	-3.24	0.00	-94.66	0.00	94.66	852.93	426.46	741.03	365.97	17.59	-1.46	0.080

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Wind Importance Factor : 1.00

115.00	-11.04	-3.08	0.00	-78.61	0.00	78.61	834.88	417.44	698.45	344.94	19.12	-1.50	0.068
118.00	-10.26	-2.89	0.00	-69.10	0.00	69.10	823.44	411.72	672.79	332.27	20.08	-1.53	0.061
118.50	-10.17	-2.88	0.00	-67.65	0.00	67.65	821.50	410.75	668.53	330.16	20.24	-1.53	0.060
118.50	-10.17	-2.88	0.00	-67.65	0.00	67.65	821.50	410.75	668.53	330.16	20.24	-1.53	0.217
119.00	-10.12	-2.86	0.00	-66.21	0.00	66.21	819.55	409.77	664.27	328.06	20.40	-1.54	0.214
120.00	-10.05	-2.83	0.00	-63.35	0.00	63.35	815.61	407.80	655.76	323.86	20.72	-1.57	0.208
125.00	-9.68	-2.78	0.00	-49.18	0.00	49.18	795.30	397.65	613.53	303.00	22.44	-1.71	0.175
128.00	-7.45	-2.06	0.00	-40.74	0.00	40.74	782.61	391.31	588.45	290.61	23.54	-1.79	0.150
130.00	-7.32	-2.01	0.00	-36.62	0.00	36.62	773.95	386.97	571.85	282.42	24.30	-1.83	0.139
135.00	-6.99	-1.96	0.00	-26.55	0.00	26.55	751.56	375.78	530.84	262.16	26.28	-1.93	0.111
138.00	-5.77	-1.53	0.00	-19.27	0.00	19.27	737.63	368.82	506.58	250.18	27.51	-1.99	0.085
140.00	-5.65	-1.51	0.00	-16.20	0.00	16.20	728.14	364.07	490.58	242.28	28.35	-2.01	0.075
141.00	-4.85	-1.31	0.00	-14.69	0.00	14.69	721.90	360.95	481.67	237.88	28.77	-2.03	0.068
145.00	-4.61	-1.25	0.00	-9.44	0.00	9.44	694.03	347.02	445.00	219.77	30.49	-2.07	0.050
150.00	0.00	-1.08	0.00	-3.18	0.00	3.18	659.19	329.60	401.19	198.13	32.67	-2.10	0.016

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	3.08	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	41.06	k
Seismic Base Shear (E):	1.60	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
50	147.50	284	6,168	0.018	28	351
49	143.00	233	4,771	0.014	22	289
48	140.50	60	1,178	0.003	5	74
47	139.00	120	2,324	0.007	11	149
46	136.50	192	3,574	0.010	16	238
45	132.50	326	5,726	0.016	26	404
44	129.00	133	2,208	0.006	10	164
43	126.50	216	3,456	0.010	16	267
42	122.50	366	5,498	0.016	25	454
41	119.50	74	1,060	0.003	5	92
40	118.75	39	551	0.002	3	48
39	118.25	86	1,208	0.003	6	107
38	116.50	522	7,090	0.020	32	647
37	112.53	868	10,987	0.031	50	1,075
36	110.03	10	123	0.000	1	13
35	109.25	206	2,455	0.007	11	255
34	106.75	722	8,225	0.023	38	894
33	103.25	727	7,751	0.022	35	900
32	100.75	386	3,914	0.011	18	477
31	99.00	471	4,617	0.013	21	583
30	96.50	719	6,699	0.019	31	891
29	93.25	844	7,341	0.021	33	1,045
28	91.30	70	580	0.002	3	86

27	90.55	452	3,708	0.011	17	560
26	87.50	878	6,723	0.019	31	1,087
25	82.50	889	6,050	0.017	28	1,101
24	77.50	900	5,403	0.015	25	1,114
23	74.28	262	1,447	0.004	7	325
22	71.80	955	4,924	0.014	22	1,183
21	70.03	11	52	0.000	0	13
20	67.50	1,006	4,584	0.013	21	1,246
19	62.50	1,020	3,983	0.011	18	1,263
18	57.50	1,033	3,415	0.010	16	1,279
17	52.50	1,046	2,884	0.008	13	1,296
16	47.50	1,060	2,391	0.007	11	1,312
15	42.50	1,073	1,938	0.006	9	1,329
14	38.00	868	1,254	0.004	6	1,075
13	35.83	72	92	0.000	0	89
12	35.33	233	291	0.001	1	288
11	34.50	349	415	0.001	2	432
10	32.75	876	940	0.003	4	1,085
9	31.25	121	118	0.000	1	150
8	30.50	241	224	0.001	1	299
7	27.50	1,215	919	0.003	4	1,505
6	22.50	1,231	623	0.002	3	1,525
5	17.50	1,247	382	0.001	2	1,544
4	14.96	20	4	0.000	0	25
3	12.46	1,572	244	0.001	1	1,947
2	7.50	1,613	91	0.000	0	1,998
1	2.50	1,629	10	0.000	0	2,018
Powerwave Allgon 702	150.00	13	297	0.001	1	16
Kaelus DBCT108F1V92-	150.00	42	938	0.003	4	52
Powerwave Allgon LGP	150.00	85	1,904	0.005	9	105
Raycap DC6-48-60-18-	150.00	40	900	0.003	4	50
Raycap DC6-48-60-18-	150.00	20	450	0.001	2	25
Ericsson Radio 8843	150.00	216	4,853	0.014	22	267
Ericsson RRUS 4449 B	150.00	213	4,793	0.014	22	264
Ericsson RRUS 4478 B	150.00	178	4,010	0.011	18	221
Ericsson RRUS-32 (77	150.00	231	5,198	0.015	24	286
Powerwave Allgon 777	150.00	81	1,823	0.005	8	100
CCI OPA-65R-LCUU-H6	150.00	219	4,928	0.014	22	271
Kathrein Scala 80010	150.00	586	13,176	0.038	60	725
Generic Round Side A	150.00	450	10,125	0.029	46	557
Round Platform w/ Ha	150.00	2,000	45,000	0.128	205	2,477
Round T-Arm	141.00	750	14,911	0.042	68	929
RFS IBC1900HG-2A	138.00	66	1,257	0.004	6	82
RFS IBC1900BB-1	138.00	66	1,257	0.004	6	82
Alcatel-Lucent 4X40W	138.00	178	3,399	0.010	16	221
Alcatel-Lucent 800 M	138.00	185	3,531	0.010	16	230
Alcatel-Lucent TD-RR	138.00	210	3,999	0.011	18	260
RFS APXVTM14-C-I20	138.00	159	3,022	0.009	14	197
RFS APXVSPP18-C-A20	138.00	57	1,086	0.003	5	71
RFS APXV9ERR18-C-A20	138.00	124	2,361	0.007	11	154
Ericsson Radio 4449	128.00	222	3,637	0.010	17	275
Ericsson AIR 21	128.00	273	4,473	0.013	20	338
Ericsson AIR32 B66Aa	128.00	397	6,498	0.019	30	491
Round T-Arm	128.00	750	12,288	0.035	56	929
RFS APXVAARR24_43-U-	128.00	384	6,287	0.018	29	475
Generic 12" x 12" Ju	119.00	10	142	0.000	1	12
DragonWave Horizon C	118.00	32	443	0.001	2	39
DragonWave A-ANT-23G	118.00	15	209	0.001	1	19
NextNet BTS-2500	118.00	105	1,462	0.004	7	130
Argus LLPX310R	118.00	86	1,195	0.003	5	106
DragonWave A-ANT-23G	118.00	25	343	0.001	2	30
Side Arm	115.00	560	7,406	0.021	34	694
Alcatel-Lucent RRH2X	98.00	138	1,325	0.004	6	171
Alcatel-Lucent RRH2x	98.00	170	1,634	0.005	7	211

Alcatel-Lucent RRH2X	98.00	165	1,585	0.005	7	204
RFS DB-T1-6Z-8AB-0Z	98.00	88	845	0.002	4	109
Andrew SBNHH-1D65B	98.00	608	5,843	0.017	27	753
Generic Flat Light S	98.00	1,200	11,525	0.033	53	1,486
Stand-off	36.00	50	65	0.000	0	62
Generic GPS	35.00	10	12	0.000	0	12
Generic GPS	34.00	10	12	0.000	0	12
Stand-off	31.00	50	48	0.000	0	62
		41,063	351,107	1.000	1,601	50,852

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
50	147.50	284	6,168	0.018	28	244
49	143.00	233	4,771	0.014	22	201
48	140.50	60	1,178	0.003	5	51
47	139.00	120	2,324	0.007	11	104
46	136.50	192	3,574	0.010	16	165
45	132.50	326	5,726	0.016	26	281
44	129.00	133	2,208	0.006	10	114
43	126.50	216	3,456	0.010	16	186
42	122.50	366	5,498	0.016	25	316
41	119.50	74	1,060	0.003	5	64
40	118.75	39	551	0.002	3	34
39	118.25	86	1,208	0.003	6	74
38	116.50	522	7,090	0.020	32	450
37	112.53	868	10,987	0.031	50	748
36	110.03	10	123	0.000	1	9
35	109.25	206	2,455	0.007	11	177
34	106.75	722	8,225	0.023	38	622
33	103.25	727	7,751	0.022	35	626
32	100.75	386	3,914	0.011	18	332
31	99.00	471	4,617	0.013	21	406
30	96.50	719	6,699	0.019	31	620
29	93.25	844	7,341	0.021	33	727
28	91.30	70	580	0.002	3	60
27	90.55	452	3,708	0.011	17	390
26	87.50	878	6,723	0.019	31	757
25	82.50	889	6,050	0.017	28	766
24	77.50	900	5,403	0.015	25	775
23	74.28	262	1,447	0.004	7	226
22	71.80	955	4,924	0.014	22	823
21	70.03	11	52	0.000	0	9
20	67.50	1,006	4,584	0.013	21	867
19	62.50	1,020	3,983	0.011	18	878
18	57.50	1,033	3,415	0.010	16	890
17	52.50	1,046	2,884	0.008	13	902
16	47.50	1,060	2,391	0.007	11	913
15	42.50	1,073	1,938	0.006	9	925
14	38.00	868	1,254	0.004	6	748
13	35.83	72	92	0.000	0	62
12	35.33	233	291	0.001	1	201
11	34.50	349	415	0.001	2	301
10	32.75	876	940	0.003	4	755
9	31.25	121	118	0.000	1	104
8	30.50	241	224	0.001	1	208
7	27.50	1,215	919	0.003	4	1,047
6	22.50	1,231	623	0.002	3	1,061
5	17.50	1,247	382	0.001	2	1,075

4	14.96	20	4	0.000	0	17
3	12.46	1,572	244	0.001	1	1,354
2	7.50	1,613	91	0.000	0	1,390
1	2.50	1,629	10	0.000	0	1,404
Powerwave Allgon 702	150.00	13	297	0.001	1	11
Kaelus DBCT108F1V92-	150.00	42	938	0.003	4	36
Powerwave Allgon LGP	150.00	85	1,904	0.005	9	73
Raycap DC6-48-60-18-	150.00	40	900	0.003	4	34
Raycap DC6-48-60-18-	150.00	20	450	0.001	2	17
Ericsson Radio 8843	150.00	216	4,853	0.014	22	186
Ericsson RRUS 4449 B	150.00	213	4,793	0.014	22	184
Ericsson RRUS 4478 B	150.00	178	4,010	0.011	18	154
Ericsson RRUS-32 (77	150.00	231	5,198	0.015	24	199
Powerwave Allgon 777	150.00	81	1,823	0.005	8	70
CCI OPA-65R-LCUU-H6	150.00	219	4,928	0.014	22	189
Kathrein Scala 80010	150.00	586	13,176	0.038	60	505
Generic Round Side A	150.00	450	10,125	0.029	46	388
Round Platform w/ Ha	150.00	2,000	45,000	0.128	205	1,723
Round T-Arm	141.00	750	14,911	0.042	68	646
RFS IBC1900HG-2A	138.00	66	1,257	0.004	6	57
RFS IBC1900BB-1	138.00	66	1,257	0.004	6	57
Alcatel-Lucent 4X40W	138.00	178	3,399	0.010	16	154
Alcatel-Lucent 800 M	138.00	185	3,531	0.010	16	160
Alcatel-Lucent TD-RR	138.00	210	3,999	0.011	18	181
RFS APXVTM14-C-I20	138.00	159	3,022	0.009	14	137
RFS APXVSPP18-C-A20	138.00	57	1,086	0.003	5	49
RFS APXV9ERR18-C-A20	138.00	124	2,361	0.007	11	107
Ericsson Radio 4449	128.00	222	3,637	0.010	17	191
Ericsson AIR 21	128.00	273	4,473	0.013	20	235
Ericsson AIR32 B66Aa	128.00	397	6,498	0.019	30	342
Round T-Arm	128.00	750	12,288	0.035	56	646
RFS APXVAARR24_43-U-	128.00	384	6,287	0.018	29	331
Generic 12" x 12" Ju	119.00	10	142	0.000	1	9
DragonWave Horizon C	118.00	32	443	0.001	2	27
DragonWave A-ANT-23G	118.00	15	209	0.001	1	13
NextNet BTS-2500	118.00	105	1,462	0.004	7	90
Argus LLPX310R	118.00	86	1,195	0.003	5	74
DragonWave A-ANT-23G	118.00	25	343	0.001	2	21
Side Arm	115.00	560	7,406	0.021	34	482
Alcatel-Lucent RRH2X	98.00	138	1,325	0.004	6	119
Alcatel-Lucent RRH2x	98.00	170	1,634	0.005	7	147
Alcatel-Lucent RRH2X	98.00	165	1,585	0.005	7	142
RFS DB-T1-6Z-8AB-0Z	98.00	88	845	0.002	4	76
Andrew SBNHH-1D65B	98.00	608	5,843	0.017	27	524
Generic Flat Light S	98.00	1,200	11,525	0.033	53	1,034
Stand-off	36.00	50	65	0.000	0	43
Generic GPS	35.00	10	12	0.000	0	9
Generic GPS	34.00	10	12	0.000	0	9
Stand-off	31.00	50	48	0.000	0	43
		41,063	351,107	1.000	1,601	35,380

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-48.83	-1.61	0.00	-207.85	0.00	207.85	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.047
5.00	-46.84	-1.62	0.00	-199.81	0.00	199.81	3,113.28	1,556.64	4,641.42	2,292.22	0.01	-0.02	0.046
10.00	-44.89	-1.63	0.00	-191.71	0.00	191.71	3,069.45	1,534.72	4,476.09	2,210.57	0.03	-0.03	0.045
14.92	-44.86	-1.64	0.00	-183.69	0.00	183.69	3,025.30	1,512.65	4,314.76	2,130.90	0.08	-0.05	0.044
14.92	-44.86	-1.64	0.00	-183.69	0.00	183.69	3,025.30	1,512.65	4,314.76	2,130.90	0.08	-0.05	0.061
15.00	-43.32	-1.64	0.00	-183.56	0.00	183.56	3,024.57	1,512.28	4,312.14	2,129.61	0.08	-0.05	0.061
20.00	-41.79	-1.66	0.00	-175.34	0.00	175.34	2,978.65	1,489.33	4,149.68	2,049.37	0.14	-0.07	0.059
25.00	-40.29	-1.67	0.00	-167.06	0.00	167.06	2,931.70	1,465.85	3,988.78	1,969.91	0.23	-0.10	0.058
30.00	-39.99	-1.67	0.00	-158.73	0.00	158.73	2,873.79	1,436.89	3,816.40	1,884.77	0.35	-0.12	0.057
31.00	-39.78	-1.68	0.00	-157.06	0.00	157.06	2,859.85	1,429.93	3,779.26	1,866.44	0.37	-0.13	0.057
31.50	-38.69	-1.67	0.00	-156.21	0.00	156.21	2,852.84	1,426.42	3,760.64	1,857.24	0.39	-0.13	0.057
34.00	-38.25	-1.68	0.00	-152.03	0.00	152.03	2,818.05	1,409.02	3,668.95	1,811.96	0.46	-0.14	0.055
35.00	-37.95	-1.68	0.00	-150.35	0.00	150.35	2,804.11	1,402.06	3,632.54	1,793.98	0.49	-0.15	0.055
35.67	-37.86	-1.68	0.00	-149.23	0.00	149.23	2,247.39	1,123.70	2,971.54	1,467.53	0.51	-0.15	0.064
36.00	-36.72	-1.68	0.00	-148.68	0.00	148.68	2,245.17	1,122.59	2,963.78	1,463.70	0.52	-0.15	0.063
40.00	-35.39	-1.68	0.00	-141.97	0.00	141.97	2,217.94	1,108.97	2,870.05	1,417.41	0.65	-0.17	0.061
45.00	-34.08	-1.68	0.00	-133.58	0.00	133.58	2,182.97	1,091.48	2,753.70	1,359.95	0.84	-0.20	0.059
50.00	-32.78	-1.68	0.00	-125.18	0.00	125.18	2,146.96	1,073.48	2,638.35	1,302.98	1.06	-0.22	0.057
55.00	-31.50	-1.67	0.00	-116.81	0.00	116.81	2,109.91	1,054.96	2,524.10	1,246.56	1.31	-0.25	0.055
60.00	-30.24	-1.66	0.00	-108.47	0.00	108.47	2,071.82	1,035.91	2,411.06	1,190.73	1.58	-0.27	0.052
65.00	-28.99	-1.64	0.00	-100.19	0.00	100.19	2,032.70	1,016.35	2,299.33	1,135.55	1.88	-0.30	0.050
70.00	-28.98	-1.65	0.00	-91.97	0.00	91.97	1,981.31	990.65	2,176.68	1,074.98	2.20	-0.32	0.048
70.05	-27.79	-1.62	0.00	-91.89	0.00	91.89	1,980.69	990.35	2,175.31	1,074.30	2.20	-0.32	0.047
73.55	-27.47	-1.62	0.00	-86.21	0.00	86.21	1,473.36	736.68	1,622.77	801.43	2.44	-0.34	0.053
75.00	-26.35	-1.60	0.00	-83.86	0.00	83.86	1,465.95	732.98	1,600.80	790.57	2.55	-0.34	0.052
80.00	-25.25	-1.57	0.00	-75.88	0.00	75.88	1,439.68	719.84	1,525.22	753.25	2.92	-0.37	0.049
85.00	-24.17	-1.54	0.00	-68.02	0.00	68.02	1,412.37	706.19	1,450.29	716.24	3.32	-0.39	0.045
90.00	-23.61	-1.53	0.00	-60.30	0.00	60.30	1,384.02	692.01	1,376.10	679.61	3.74	-0.41	0.042
91.10	-23.52	-1.53	0.00	-58.62	0.00	58.62	1,377.65	688.82	1,359.89	671.60	3.83	-0.42	0.041
91.10	-23.52	-1.53	0.00	-58.62	0.00	58.62	1,377.65	688.82	1,359.89	671.60	3.83	-0.42	0.041
91.50	-22.47	-1.49	0.00	-58.01	0.00	58.01	1,375.32	687.66	1,354.01	668.69	3.87	-0.42	0.040
95.00	-21.58	-1.46	0.00	-52.80	0.00	52.80	1,354.64	677.32	1,302.77	643.39	4.18	-0.43	0.026
98.00	-18.07	-1.31	0.00	-48.43	0.00	48.43	1,336.51	668.25	1,259.21	621.88	4.45	-0.44	0.024
100.00	-17.59	-1.29	0.00	-45.82	0.00	45.82	1,324.21	662.11	1,230.38	607.64	4.64	-0.45	0.023
101.50	-16.69	-1.25	0.00	-43.89	0.00	43.89	1,314.88	657.44	1,208.86	597.01	4.78	-0.45	0.022
101.50	-16.69	-1.25	0.00	-43.89	0.00	43.89	1,314.88	657.44	1,208.86	597.01	4.78	-0.45	0.029
105.00	-15.79	-1.20	0.00	-39.53	0.00	39.53	1,293.27	646.64	1,159.51	572.64	5.12	-0.46	0.027
108.50	-15.54	-1.19	0.00	-35.31	0.00	35.31	1,260.75	630.38	1,101.62	544.05	5.46	-0.47	0.025
108.50	-15.54	-1.19	0.00	-35.31	0.00	35.31	1,260.75	630.38	1,101.62	544.05	5.46	-0.47	0.044
110.00	-15.53	-1.19	0.00	-33.53	0.00	33.53	1,246.82	623.41	1,077.26	532.02	5.61	-0.48	0.043
110.00	-15.53	-1.19	0.00	-33.53	0.00	33.53	1,246.82	623.41	1,077.26	532.02	5.61	-0.48	0.027
110.05	-14.45	-1.14	0.00	-33.46	0.00	33.46	1,246.32	623.16	1,076.40	531.59	5.61	-0.48	0.026
110.05	-14.45	-1.14	0.00	-33.46	0.00	33.46	852.93	426.46	741.03	365.97	5.61	-0.48	0.032
115.00	-13.11	-1.06	0.00	-27.84	0.00	27.84	834.88	417.44	698.45	344.94	6.11	-0.49	0.027
118.00	-12.68	-1.04	0.00	-24.66	0.00	24.66	823.44	411.72	672.79	332.27	6.43	-0.50	0.025
118.50	-12.63	-1.03	0.00	-24.14	0.00	24.14	821.50	410.75	668.53	330.16	6.48	-0.50	0.025
118.50	-12.63	-1.03	0.00	-24.14	0.00	24.14	821.50	410.75	668.53	330.16	6.48	-0.50	0.088

119.00	-12.53	-1.03	0.00	-23.62	0.00	23.62	819.55	409.77	664.27	328.06	6.53	-0.51	0.087
120.00	-12.07	-1.01	0.00	-22.59	0.00	22.59	815.61	407.80	655.76	323.86	6.64	-0.52	0.085
125.00	-11.81	-1.00	0.00	-17.56	0.00	17.56	795.30	397.65	613.53	303.00	7.21	-0.57	0.073
128.00	-9.14	-0.81	0.00	-14.57	0.00	14.57	782.61	391.31	588.45	290.61	7.57	-0.59	0.062
130.00	-8.73	-0.79	0.00	-12.95	0.00	12.95	773.95	386.97	571.85	282.42	7.82	-0.61	0.057
135.00	-8.49	-0.77	0.00	-9.02	0.00	9.02	751.56	375.78	530.84	262.16	8.48	-0.65	0.046
138.00	-7.05	-0.65	0.00	-6.71	0.00	6.71	737.63	368.82	506.58	250.18	8.89	-0.66	0.036
140.00	-6.98	-0.65	0.00	-5.40	0.00	5.40	728.14	364.07	490.58	242.28	9.17	-0.67	0.032
141.00	-5.76	-0.55	0.00	-4.75	0.00	4.75	721.90	360.95	481.67	237.88	9.32	-0.68	0.028
145.00	-5.41	-0.51	0.00	-2.57	0.00	2.57	694.03	347.02	445.00	219.77	9.89	-0.69	0.019
150.00	0.00	-0.45	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	10.61	-0.70	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.98	-1.61	0.00	-202.50	0.00	202.50	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.043
5.00	-32.59	-1.61	0.00	-194.48	0.00	194.48	3,113.28	1,556.64	4,641.42	2,292.22	0.01	-0.02	0.042
10.00	-31.23	-1.62	0.00	-186.41	0.00	186.41	3,069.45	1,534.72	4,476.09	2,210.57	0.03	-0.03	0.041
14.92	-31.21	-1.62	0.00	-178.44	0.00	178.44	3,025.30	1,512.65	4,314.76	2,130.90	0.08	-0.05	0.040
14.92	-31.21	-1.62	0.00	-178.44	0.00	178.44	3,025.30	1,512.65	4,314.76	2,130.90	0.08	-0.05	0.057
15.00	-30.14	-1.63	0.00	-178.31	0.00	178.31	3,024.57	1,512.28	4,312.14	2,129.61	0.08	-0.05	0.056
20.00	-29.08	-1.64	0.00	-170.16	0.00	170.16	2,978.65	1,489.33	4,149.68	2,049.37	0.14	-0.07	0.055
25.00	-28.03	-1.64	0.00	-161.98	0.00	161.98	2,931.70	1,465.85	3,988.78	1,969.91	0.23	-0.09	0.054
30.00	-27.82	-1.65	0.00	-153.77	0.00	153.77	2,873.79	1,436.89	3,816.40	1,884.77	0.34	-0.12	0.053
31.00	-27.67	-1.65	0.00	-152.13	0.00	152.13	2,859.85	1,429.93	3,779.26	1,866.44	0.36	-0.12	0.053
31.50	-26.92	-1.65	0.00	-151.30	0.00	151.30	2,852.84	1,426.42	3,760.64	1,857.24	0.37	-0.12	0.052
34.00	-26.61	-1.65	0.00	-147.19	0.00	147.19	2,818.05	1,409.02	3,668.95	1,811.96	0.44	-0.14	0.051
35.00	-26.40	-1.65	0.00	-145.54	0.00	145.54	2,804.11	1,402.06	3,632.54	1,793.98	0.47	-0.14	0.051
35.67	-26.34	-1.65	0.00	-144.44	0.00	144.44	2,247.39	1,123.70	2,971.54	1,467.53	0.49	-0.14	0.059
36.00	-25.55	-1.64	0.00	-143.90	0.00	143.90	2,245.17	1,122.59	2,963.78	1,463.70	0.50	-0.15	0.058
40.00	-24.62	-1.64	0.00	-137.32	0.00	137.32	2,217.94	1,108.97	2,870.05	1,417.41	0.63	-0.17	0.057
45.00	-23.71	-1.64	0.00	-129.11	0.00	129.11	2,182.97	1,091.48	2,753.70	1,359.95	0.82	-0.19	0.055
50.00	-22.80	-1.63	0.00	-120.92	0.00	120.92	2,146.96	1,073.48	2,638.35	1,302.98	1.03	-0.21	0.053
55.00	-21.91	-1.62	0.00	-112.76	0.00	112.76	2,109.91	1,054.96	2,524.10	1,246.56	1.27	-0.24	0.050
60.00	-21.04	-1.61	0.00	-104.66	0.00	104.66	2,071.82	1,035.91	2,411.06	1,190.73	1.53	-0.26	0.048
65.00	-20.17	-1.59	0.00	-96.61	0.00	96.61	2,032.70	1,016.35	2,299.33	1,135.55	1.82	-0.29	0.046
70.00	-20.16	-1.60	0.00	-88.66	0.00	88.66	1,981.31	990.65	2,176.68	1,074.98	2.13	-0.31	0.044
70.05	-19.34	-1.57	0.00	-88.57	0.00	88.57	1,980.69	990.35	2,175.31	1,074.30	2.14	-0.31	0.044
73.55	-19.11	-1.57	0.00	-83.07	0.00	83.07	1,473.36	736.68	1,622.77	801.43	2.37	-0.33	0.049
75.00	-18.33	-1.54	0.00	-80.80	0.00	80.80	1,465.95	732.98	1,600.80	790.57	2.47	-0.33	0.048
80.00	-17.57	-1.52	0.00	-73.09	0.00	73.09	1,439.68	719.84	1,525.22	753.25	2.83	-0.36	0.044
85.00	-16.81	-1.49	0.00	-65.50	0.00	65.50	1,412.37	706.19	1,450.29	716.24	3.21	-0.38	0.041
90.00	-16.42	-1.47	0.00	-58.06	0.00	58.06	1,384.02	692.01	1,376.10	679.61	3.62	-0.40	0.038
91.10	-16.36	-1.47	0.00	-56.44	0.00	56.44	1,377.65	688.82	1,359.89	671.60	3.71	-0.40	0.037
91.10	-16.36	-1.47	0.00	-56.44	0.00	56.44	1,377.65	688.82	1,359.89	671.60	3.71	-0.40	0.037
91.50	-15.63	-1.43	0.00	-55.85	0.00	55.85	1,375.32	687.66	1,354.01	668.69	3.75	-0.40	0.036
95.00	-15.01	-1.40	0.00	-50.83	0.00	50.83	1,354.64	677.32	1,302.77	643.39	4.05	-0.42	0.024
98.00	-12.57	-1.26	0.00	-46.62	0.00	46.62	1,336.51	668.25	1,259.21	621.88	4.31	-0.43	0.022
100.00	-12.23	-1.24	0.00	-44.10	0.00	44.10	1,324.21	662.11	1,230.38	607.64	4.49	-0.43	0.021
101.50	-11.61	-1.20	0.00	-42.24	0.00	42.24	1,314.88	657.44	1,208.86	597.01	4.63	-0.44	0.020
101.50	-11.61	-1.20	0.00	-42.24	0.00	42.24	1,314.88	657.44	1,208.86	597.01	4.63	-0.44	0.027
105.00	-10.99	-1.16	0.00	-38.03	0.00	38.03	1,293.27	646.64	1,159.51	572.64	4.95	-0.44	0.025
108.50	-10.81	-1.15	0.00	-33.97	0.00	33.97	1,260.75	630.38	1,101.62	544.05	5.28	-0.46	0.023
108.50	-10.81	-1.15	0.00	-33.97	0.00	33.97	1,260.75	630.38	1,101.62	544.05	5.28	-0.46	0.040
110.00	-10.80	-1.15	0.00	-32.24	0.00	32.24	1,246.82	623.41	1,077.26	532.02	5.43	-0.46	0.039
110.00	-10.80	-1.15	0.00	-32.24	0.00	32.24	1,246.82	623.41	1,077.26	532.02	5.43	-0.46	0.024
110.05	-10.05	-1.10	0.00	-32.18	0.00	32.18	1,246.32	623.16	1,076.40	531.59	5.43	-0.46	0.024
110.05	-10.05	-1.10	0.00	-32.18	0.00	32.18	852.93	426.46	741.03	365.97	5.43	-0.46	0.029
115.00	-9.12	-1.02	0.00	-26.76	0.00	26.76	834.88	417.44	698.45	344.94	5.92	-0.48	0.025
118.00	-8.82	-1.00	0.00	-23.69	0.00	23.69	823.44	411.72	672.79	332.27	6.22	-0.48	0.023
118.50	-8.79	-1.00	0.00	-23.19	0.00	23.19	821.50	410.75	668.53	330.16	6.27	-0.49	0.022
118.50	-8.79	-1.00	0.00	-23.19	0.00	23.19	821.50	410.75	668.53	330.16	6.27	-0.49	0.081

119.00	-8.71	-0.99	0.00	-22.69	0.00	22.69	819.55	409.77	664.27	328.06	6.32	-0.49	0.080
120.00	-8.40	-0.97	0.00	-21.69	0.00	21.69	815.61	407.80	655.76	323.86	6.43	-0.50	0.077
125.00	-8.21	-0.96	0.00	-16.85	0.00	16.85	795.30	397.65	613.53	303.00	6.97	-0.55	0.066
128.00	-6.35	-0.78	0.00	-13.97	0.00	13.97	782.61	391.31	588.45	290.61	7.33	-0.57	0.056
130.00	-6.07	-0.75	0.00	-12.41	0.00	12.41	773.95	386.97	571.85	282.42	7.57	-0.59	0.052
135.00	-5.91	-0.74	0.00	-8.65	0.00	8.65	751.56	375.78	530.84	262.16	8.20	-0.62	0.041
138.00	-4.90	-0.63	0.00	-6.43	0.00	6.43	737.63	368.82	506.58	250.18	8.60	-0.64	0.032
140.00	-4.85	-0.62	0.00	-5.18	0.00	5.18	728.14	364.07	490.58	242.28	8.87	-0.65	0.028
141.00	-4.01	-0.52	0.00	-4.55	0.00	4.55	721.90	360.95	481.67	237.88	9.01	-0.65	0.025
145.00	-3.76	-0.49	0.00	-2.46	0.00	2.46	694.03	347.02	445.00	219.77	9.56	-0.66	0.017
150.00	0.00	-0.45	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	10.26	-0.67	0.000

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	3.08
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
50	147.50	284	1.828	1.667	1.025	0.321	79	351
49	143.00	233	1.718	1.191	0.842	0.255	51	289
48	140.50	60	1.658	0.970	0.752	0.221	11	74
47	139.00	120	1.623	0.851	0.702	0.201	21	149
46	136.50	192	1.565	0.674	0.624	0.170	28	238
45	132.50	326	1.475	0.441	0.513	0.125	35	404
44	129.00	133	1.398	0.280	0.430	0.090	10	164
43	126.50	216	1.344	0.186	0.377	0.067	13	267
42	122.50	366	1.261	0.069	0.302	0.034	11	454
41	119.50	74	1.200	0.004	0.254	0.013	1	92
40	118.75	39	1.185	-0.009	0.243	0.008	0	48
39	118.25	86	1.175	-0.018	0.236	0.005	0	107
38	116.50	522	1.140	-0.045	0.213	-0.006	-3	647
37	112.53	868	1.064	-0.088	0.165	-0.026	-20	1,075
36	110.03	10	1.017	-0.105	0.140	-0.037	0	13
35	109.25	206	1.003	-0.109	0.133	-0.040	-7	255
34	106.75	722	0.957	-0.118	0.111	-0.048	-30	894
33	103.25	727	0.895	-0.122	0.086	-0.056	-35	900
32	100.75	386	0.853	-0.119	0.070	-0.060	-20	477
31	99.00	471	0.823	-0.116	0.061	-0.061	-25	583
30	96.50	719	0.782	-0.108	0.049	-0.061	-38	891
29	93.25	844	0.730	-0.096	0.036	-0.059	-43	1,045
28	91.30	70	0.700	-0.087	0.030	-0.055	-3	86
27	90.55	452	0.689	-0.083	0.028	-0.054	-21	560
26	87.50	878	0.643	-0.068	0.020	-0.046	-35	1,087
25	82.50	889	0.572	-0.043	0.012	-0.027	-21	1,101
24	77.50	900	0.505	-0.018	0.007	-0.005	-4	1,114
23	74.28	262	0.463	-0.003	0.006	0.010	2	325
22	71.80	955	0.433	0.007	0.006	0.020	17	1,183
21	70.03	11	0.412	0.014	0.006	0.027	0	13
20	67.50	1,006	0.383	0.023	0.007	0.035	31	1,246
19	62.50	1,020	0.328	0.039	0.010	0.047	42	1,263
18	57.50	1,033	0.278	0.050	0.014	0.055	49	1,279
17	52.50	1,046	0.232	0.058	0.019	0.058	53	1,296

16	47.50	1,060	0.190	0.064	0.025	0.059	54	1,312
15	42.50	1,073	0.152	0.068	0.030	0.058	54	1,329
14	38.00	868	0.121	0.070	0.034	0.057	43	1,075
13	35.83	72	0.108	0.071	0.036	0.056	4	89
12	35.33	233	0.105	0.071	0.037	0.056	11	288
11	34.50	349	0.100	0.071	0.037	0.056	17	432
10	32.75	876	0.090	0.071	0.038	0.056	42	1,085
9	31.25	121	0.082	0.072	0.039	0.055	6	150
8	30.50	241	0.078	0.072	0.040	0.055	11	299
7	27.50	1,215	0.064	0.072	0.041	0.054	57	1,505
6	22.50	1,231	0.043	0.070	0.042	0.053	56	1,525
5	17.50	1,247	0.026	0.067	0.040	0.050	54	1,544
4	14.96	20	0.019	0.063	0.037	0.049	1	25
3	12.46	1,572	0.013	0.059	0.034	0.046	63	1,947
2	7.50	1,613	0.005	0.044	0.025	0.037	52	1,998
1	2.50	1,629	0.001	0.018	0.010	0.018	26	2,018
Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.361	4	16
Kaelus DBCT108F1V92-	150.00	42	1.890	1.980	1.140	0.361	13	52
Powerwave Allgon LGP	150.00	85	1.890	1.980	1.140	0.361	26	105
Raycap DC6-48-60-18-	150.00	40	1.890	1.980	1.140	0.361	13	50
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.361	6	25
Ericsson Radio 8843	150.00	216	1.890	1.980	1.140	0.361	67	267
Ericsson RRUS 4449 B	150.00	213	1.890	1.980	1.140	0.361	67	264
Ericsson RRUS 4478 B	150.00	178	1.890	1.980	1.140	0.361	56	221
Ericsson RRUS-32 (77	150.00	231	1.890	1.980	1.140	0.361	72	286
Powerwave Allgon 777	150.00	81	1.890	1.980	1.140	0.361	25	100
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.361	68	271
Kathrein Scala 80010	150.00	586	1.890	1.980	1.140	0.361	183	725
Generic Round Side A	150.00	450	1.890	1.980	1.140	0.361	141	557
Round Platform w/ Ha	150.00	2,000	1.890	1.980	1.140	0.361	625	2,477
Round T-Arm	141.00	750	1.670	1.012	0.769	0.227	148	929
RFS IBC1900HG-2A	138.00	66	1.600	0.778	0.670	0.189	11	82
RFS IBC1900BB-1	138.00	66	1.600	0.778	0.670	0.189	11	82
Alcatel-Lucent 4X40W	138.00	178	1.600	0.778	0.670	0.189	29	221
Alcatel-Lucent 800 M	138.00	185	1.600	0.778	0.670	0.189	30	230
Alcatel-Lucent TD-RR	138.00	210	1.600	0.778	0.670	0.189	34	260
RFS APXVTM14-C-I20	138.00	159	1.600	0.778	0.670	0.189	26	197
RFS APXVSPP18-C-A20	138.00	57	1.600	0.778	0.670	0.189	9	71
RFS APXV9ERR18-C-A20	138.00	124	1.600	0.778	0.670	0.189	20	154
Ericsson Radio 4449	128.00	222	1.376	0.240	0.408	0.081	16	275
Ericsson AIR 21	128.00	273	1.376	0.240	0.408	0.081	19	338
Ericsson AIR32 B66Aa	128.00	397	1.376	0.240	0.408	0.081	28	491
Round T-Arm	128.00	750	1.376	0.240	0.408	0.081	52	929
RFS APXVAARR24_43-U-	128.00	384	1.376	0.240	0.408	0.081	27	475
Generic 12" x 12" Ju	119.00	10	1.190	-0.005	0.247	0.010	0	12
DragonWave Horizon C	118.00	32	1.170	-0.022	0.233	0.003	0	39
DragonWave A-ANT-23G	118.00	15	1.170	-0.022	0.233	0.003	0	19
NextNet BTS-2500	118.00	105	1.170	-0.022	0.233	0.003	0	130
Argus LLPX310R	118.00	86	1.170	-0.022	0.233	0.003	0	106
DragonWave A-ANT-23G	118.00	25	1.170	-0.022	0.233	0.003	0	30
Side Arm	115.00	560	1.111	-0.064	0.194	-0.014	-7	694
Alcatel-Lucent RRH2X	98.00	138	0.807	-0.113	0.056	-0.062	-7	171
Alcatel-Lucent RRH2x	98.00	170	0.807	-0.113	0.056	-0.062	-9	211
Alcatel-Lucent RRH2X	98.00	165	0.807	-0.113	0.056	-0.062	-9	204
RFS DB-T1-6Z-8AB-0Z	98.00	88	0.807	-0.113	0.056	-0.062	-5	109
Andrew SBNHH-1D65B	98.00	608	0.807	-0.113	0.056	-0.062	-32	753
Generic Flat Light S	98.00	1,200	0.807	-0.113	0.056	-0.062	-64	1,486
Stand-off	36.00	50	0.109	0.071	0.036	0.056	2	62
Generic GPS	35.00	10	0.103	0.071	0.037	0.056	0	12
Generic GPS	34.00	10	0.097	0.071	0.038	0.056	0	12
Stand-off	31.00	50	0.081	0.072	0.040	0.055	2	62
		41,063	94.711	41.772	34.288	8.996	2,402	50,852

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
50	147.50	284	1.828	1.667	1.025	0.321	79	244
49	143.00	233	1.718	1.191	0.842	0.255	51	201
48	140.50	60	1.658	0.970	0.752	0.221	11	51
47	139.00	120	1.623	0.851	0.702	0.201	21	104
46	136.50	192	1.565	0.674	0.624	0.170	28	165
45	132.50	326	1.475	0.441	0.513	0.125	35	281
44	129.00	133	1.398	0.280	0.430	0.090	10	114
43	126.50	216	1.344	0.186	0.377	0.067	13	186
42	122.50	366	1.261	0.069	0.302	0.034	11	316
41	119.50	74	1.200	0.004	0.254	0.013	1	64
40	118.75	39	1.185	-0.009	0.243	0.008	0	34
39	118.25	86	1.175	-0.018	0.236	0.005	0	74
38	116.50	522	1.140	-0.045	0.213	-0.006	-3	450
37	112.53	868	1.064	-0.088	0.165	-0.026	-20	748
36	110.03	10	1.017	-0.105	0.140	-0.037	0	9
35	109.25	206	1.003	-0.109	0.133	-0.040	-7	177
34	106.75	722	0.957	-0.118	0.111	-0.048	-30	622
33	103.25	727	0.895	-0.122	0.086	-0.056	-35	626
32	100.75	386	0.853	-0.119	0.070	-0.060	-20	332
31	99.00	471	0.823	-0.116	0.061	-0.061	-25	406
30	96.50	719	0.782	-0.108	0.049	-0.061	-38	620
29	93.25	844	0.730	-0.096	0.036	-0.059	-43	727
28	91.30	70	0.700	-0.087	0.030	-0.055	-3	60
27	90.55	452	0.689	-0.083	0.028	-0.054	-21	390
26	87.50	878	0.643	-0.068	0.020	-0.046	-35	757
25	82.50	889	0.572	-0.043	0.012	-0.027	-21	766
24	77.50	900	0.505	-0.018	0.007	-0.005	-4	775
23	74.28	262	0.463	-0.003	0.006	0.010	2	226
22	71.80	955	0.433	0.007	0.006	0.020	17	823
21	70.03	11	0.412	0.014	0.006	0.027	0	9
20	67.50	1,006	0.383	0.023	0.007	0.035	31	867
19	62.50	1,020	0.328	0.039	0.010	0.047	42	878
18	57.50	1,033	0.278	0.050	0.014	0.055	49	890
17	52.50	1,046	0.232	0.058	0.019	0.058	53	902
16	47.50	1,060	0.190	0.064	0.025	0.059	54	913
15	42.50	1,073	0.152	0.068	0.030	0.058	54	925
14	38.00	868	0.121	0.070	0.034	0.057	43	748
13	35.83	72	0.108	0.071	0.036	0.056	4	62
12	35.33	233	0.105	0.071	0.037	0.056	11	201
11	34.50	349	0.100	0.071	0.037	0.056	17	301
10	32.75	876	0.090	0.071	0.038	0.056	42	755
9	31.25	121	0.082	0.072	0.039	0.055	6	104
8	30.50	241	0.078	0.072	0.040	0.055	11	208
7	27.50	1,215	0.064	0.072	0.041	0.054	57	1,047
6	22.50	1,231	0.043	0.070	0.042	0.053	56	1,061
5	17.50	1,247	0.026	0.067	0.040	0.050	54	1,075
4	14.96	20	0.019	0.063	0.037	0.049	1	17
3	12.46	1,572	0.013	0.059	0.034	0.046	63	1,354
2	7.50	1,613	0.005	0.044	0.025	0.037	52	1,390
1	2.50	1,629	0.001	0.018	0.010	0.018	26	1,404
Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.361	4	11
Kaelus DBCT108F1V92-	150.00	42	1.890	1.980	1.140	0.361	13	36
Powerwave Allgon LGP	150.00	85	1.890	1.980	1.140	0.361	26	73
Raycap DC6-48-60-18-	150.00	40	1.890	1.980	1.140	0.361	13	34
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.361	6	17
Ericsson Radio 8843	150.00	216	1.890	1.980	1.140	0.361	67	186

Ericsson RRUS 4449 B	150.00	213	1.890	1.980	1.140	0.361	67	184
Ericsson RRUS 4478 B	150.00	178	1.890	1.980	1.140	0.361	56	154
Ericsson RRUS-32 (77	150.00	231	1.890	1.980	1.140	0.361	72	199
Powerwave Allgon 777	150.00	81	1.890	1.980	1.140	0.361	25	70
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.361	68	189
Kathrein Scala 80010	150.00	586	1.890	1.980	1.140	0.361	183	505
Generic Round Side A	150.00	450	1.890	1.980	1.140	0.361	141	388
Round Platform w/ Ha	150.00	2,000	1.890	1.980	1.140	0.361	625	1,723
Round T-Arm	141.00	750	1.670	1.012	0.769	0.227	148	646
RFS IBC1900HG-2A	138.00	66	1.600	0.778	0.670	0.189	11	57
RFS IBC1900BB-1	138.00	66	1.600	0.778	0.670	0.189	11	57
Alcatel-Lucent 4X40W	138.00	178	1.600	0.778	0.670	0.189	29	154
Alcatel-Lucent 800 M	138.00	185	1.600	0.778	0.670	0.189	30	160
Alcatel-Lucent TD-RR	138.00	210	1.600	0.778	0.670	0.189	34	181
RFS APXVTM14-C-I20	138.00	159	1.600	0.778	0.670	0.189	26	137
RFS APXVSPP18-C-A20	138.00	57	1.600	0.778	0.670	0.189	9	49
RFS APXV9ERR18-C-A20	138.00	124	1.600	0.778	0.670	0.189	20	107
Ericsson Radio 4449	128.00	222	1.376	0.240	0.408	0.081	16	191
Ericsson AIR 21	128.00	273	1.376	0.240	0.408	0.081	19	235
Ericsson AIR32 B66Aa	128.00	397	1.376	0.240	0.408	0.081	28	342
Round T-Arm	128.00	750	1.376	0.240	0.408	0.081	52	646
RFS APXVAARR24_43-U-	128.00	384	1.376	0.240	0.408	0.081	27	331
Generic 12" x 12" Ju	119.00	10	1.190	-0.005	0.247	0.010	0	9
DragonWave Horizon C	118.00	32	1.170	-0.022	0.233	0.003	0	27
DragonWave A-ANT-23G	118.00	15	1.170	-0.022	0.233	0.003	0	13
NextNet BTS-2500	118.00	105	1.170	-0.022	0.233	0.003	0	90
Argus LLPX310R	118.00	86	1.170	-0.022	0.233	0.003	0	74
DragonWave A-ANT-23G	118.00	25	1.170	-0.022	0.233	0.003	0	21
Side Arm	115.00	560	1.111	-0.064	0.194	-0.014	-7	482
Alcatel-Lucent RRH2X	98.00	138	0.807	-0.113	0.056	-0.062	-7	119
Alcatel-Lucent RRH2x	98.00	170	0.807	-0.113	0.056	-0.062	-9	147
Alcatel-Lucent RRH2X	98.00	165	0.807	-0.113	0.056	-0.062	-9	142
RFS DB-T1-6Z-8AB-0Z	98.00	88	0.807	-0.113	0.056	-0.062	-5	76
Andrew SBNHH-1D65B	98.00	608	0.807	-0.113	0.056	-0.062	-32	524
Generic Flat Light S	98.00	1,200	0.807	-0.113	0.056	-0.062	-64	1,034
Stand-off	36.00	50	0.109	0.071	0.036	0.056	2	43
Generic GPS	35.00	10	0.103	0.071	0.037	0.056	0	9
Generic GPS	34.00	10	0.097	0.071	0.038	0.056	0	9
Stand-off	31.00	50	0.081	0.072	0.040	0.055	2	43
		41,063	94.711	41.772	34.288	8.996	2,402	35,380

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-48.83	-2.39	0.00	-313.51	0.00	313.51	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.066
5.00	-46.83	-2.35	0.00	-301.58	0.00	301.58	3,113.28	1,556.64	4,641.42	2,292.22	0.01	-0.02	0.065
10.00	-44.89	-2.31	0.00	-289.81	0.00	289.81	3,069.45	1,534.72	4,476.09	2,210.57	0.05	-0.05	0.064
14.92	-44.86	-2.32	0.00	-278.45	0.00	278.45	3,025.30	1,512.65	4,314.76	2,130.90	0.12	-0.07	0.062
14.92	-44.86	-2.32	0.00	-278.45	0.00	278.45	3,025.30	1,512.65	4,314.76	2,130.90	0.12	-0.07	0.087
15.00	-43.32	-2.28	0.00	-278.26	0.00	278.26	3,024.57	1,512.28	4,312.14	2,129.61	0.12	-0.07	0.087
20.00	-41.79	-2.24	0.00	-266.88	0.00	266.88	2,978.65	1,489.33	4,149.68	2,049.37	0.22	-0.11	0.085
25.00	-40.29	-2.21	0.00	-255.67	0.00	255.67	2,931.70	1,465.85	3,988.78	1,969.91	0.35	-0.15	0.084
30.00	-39.99	-2.21	0.00	-244.62	0.00	244.62	2,873.79	1,436.89	3,816.40	1,884.77	0.52	-0.18	0.083
31.00	-39.77	-2.21	0.00	-242.41	0.00	242.41	2,859.85	1,429.93	3,779.26	1,866.44	0.56	-0.19	0.083
31.50	-38.69	-2.17	0.00	-241.30	0.00	241.30	2,852.84	1,426.42	3,760.64	1,857.24	0.58	-0.20	0.083
34.00	-38.24	-2.16	0.00	-235.88	0.00	235.88	2,818.05	1,409.02	3,668.95	1,811.96	0.69	-0.21	0.081
35.00	-37.94	-2.15	0.00	-233.73	0.00	233.73	2,804.11	1,402.06	3,632.54	1,793.98	0.74	-0.22	0.081
35.67	-37.85	-2.15	0.00	-232.29	0.00	232.29	2,247.39	1,123.70	2,971.54	1,467.53	0.77	-0.23	0.093
36.00	-36.72	-2.11	0.00	-231.58	0.00	231.58	2,245.17	1,122.59	2,963.78	1,463.70	0.78	-0.23	0.093
40.00	-35.39	-2.07	0.00	-223.14	0.00	223.14	2,217.94	1,108.97	2,870.05	1,417.41	0.99	-0.26	0.091
45.00	-34.07	-2.04	0.00	-212.78	0.00	212.78	2,182.97	1,091.48	2,753.70	1,359.95	1.28	-0.30	0.089
50.00	-32.77	-2.00	0.00	-202.60	0.00	202.60	2,146.96	1,073.48	2,638.35	1,302.98	1.62	-0.34	0.087
55.00	-31.49	-1.96	0.00	-192.60	0.00	192.60	2,109.91	1,054.96	2,524.10	1,246.56	2.00	-0.38	0.084
60.00	-30.23	-1.94	0.00	-182.78	0.00	182.78	2,071.82	1,035.91	2,411.06	1,190.73	2.42	-0.42	0.082
65.00	-28.98	-1.92	0.00	-173.10	0.00	173.10	2,032.70	1,016.35	2,299.33	1,135.55	2.89	-0.47	0.080
70.00	-28.97	-1.93	0.00	-163.52	0.00	163.52	1,981.31	990.65	2,176.68	1,074.98	3.40	-0.51	0.078
70.05	-27.79	-1.91	0.00	-163.41	0.00	163.41	1,980.69	990.35	2,175.31	1,074.30	3.41	-0.51	0.078
73.55	-27.46	-1.91	0.00	-156.74	0.00	156.74	1,473.36	736.68	1,622.77	801.43	3.79	-0.54	0.089
75.00	-26.35	-1.92	0.00	-153.97	0.00	153.97	1,465.95	732.98	1,600.80	790.57	3.96	-0.55	0.088
80.00	-25.24	-1.95	0.00	-144.38	0.00	144.38	1,439.68	719.84	1,525.22	753.25	4.56	-0.60	0.084
85.00	-24.15	-1.99	0.00	-134.64	0.00	134.64	1,412.37	706.19	1,450.29	716.24	5.20	-0.64	0.081
90.00	-23.59	-2.02	0.00	-124.69	0.00	124.69	1,384.02	692.01	1,376.10	679.61	5.90	-0.68	0.077
91.10	-23.51	-2.02	0.00	-122.47	0.00	122.47	1,377.65	688.82	1,359.89	671.60	6.06	-0.69	0.075
91.10	-23.51	-2.02	0.00	-122.47	0.00	122.47	1,377.65	688.82	1,359.89	671.60	6.06	-0.69	0.076
91.50	-22.46	-2.06	0.00	-121.66	0.00	121.66	1,375.32	687.66	1,354.01	668.69	6.12	-0.70	0.075
95.00	-21.57	-2.09	0.00	-114.46	0.00	114.46	1,354.64	677.32	1,302.77	643.39	6.64	-0.73	0.050
98.00	-18.05	-2.21	0.00	-108.17	0.00	108.17	1,336.51	668.25	1,259.21	621.88	7.10	-0.75	0.047
100.00	-17.57	-2.22	0.00	-103.76	0.00	103.76	1,324.21	662.11	1,230.38	607.64	7.42	-0.76	0.046
101.50	-16.67	-2.25	0.00	-100.43	0.00	100.43	1,314.88	657.44	1,208.86	597.01	7.66	-0.77	0.044
101.50	-16.67	-2.25	0.00	-100.43	0.00	100.43	1,314.88	657.44	1,208.86	597.01	7.66	-0.77	0.061
105.00	-15.77	-2.27	0.00	-92.55	0.00	92.55	1,293.27	646.64	1,159.51	572.64	8.23	-0.79	0.057
108.50	-15.52	-2.28	0.00	-84.59	0.00	84.59	1,260.75	630.38	1,101.62	544.05	8.82	-0.82	0.054
108.50	-15.52	-2.28	0.00	-84.59	0.00	84.59	1,260.75	630.38	1,101.62	544.05	8.82	-0.82	0.095
110.00	-15.51	-2.29	0.00	-81.17	0.00	81.17	1,246.82	623.41	1,077.26	532.02	9.08	-0.83	0.093
110.00	-15.51	-2.29	0.00	-81.17	0.00	81.17	1,246.82	623.41	1,077.26	532.02	9.08	-0.83	0.058
110.05	-14.43	-2.29	0.00	-81.05	0.00	81.05	1,246.32	623.16	1,076.40	531.59	9.09	-0.83	0.058
110.05	-14.43	-2.29	0.00	-81.05	0.00	81.05	852.93	426.46	741.03	365.97	9.09	-0.83	0.069
115.00	-13.09	-2.29	0.00	-69.69	0.00	69.69	834.88	417.44	698.45	344.94	9.97	-0.87	0.062
118.00	-12.66	-2.29	0.00	-62.82	0.00	62.82	823.44	411.72	672.79	332.27	10.52	-0.89	0.057
118.50	-12.61	-2.29	0.00	-61.68	0.00	61.68	821.50	410.75	668.53	330.16	10.61	-0.90	0.056
118.50	-12.61	-2.29	0.00	-61.68	0.00	61.68	821.50	410.75	668.53	330.16	10.61	-0.90	0.202

119.00	-12.50	-2.29	0.00	-60.53	0.00	60.53	819.55	409.77	664.27	328.06	10.71	-0.90	0.200
120.00	-12.05	-2.29	0.00	-58.25	0.00	58.25	815.61	407.80	655.76	323.86	10.90	-0.93	0.195
125.00	-11.77	-2.29	0.00	-46.81	0.00	46.81	795.30	397.65	613.53	303.00	11.94	-1.06	0.169
128.00	-9.10	-2.10	0.00	-39.94	0.00	39.94	782.61	391.31	588.45	290.61	12.63	-1.13	0.149
130.00	-8.70	-2.06	0.00	-35.75	0.00	35.75	773.95	386.97	571.85	282.42	13.12	-1.18	0.138
135.00	-8.46	-2.04	0.00	-25.43	0.00	25.43	751.56	375.78	530.84	262.16	14.41	-1.28	0.108
138.00	-7.02	-1.82	0.00	-19.30	0.00	19.30	737.63	368.82	506.58	250.18	15.22	-1.33	0.087
140.00	-6.94	-1.81	0.00	-15.66	0.00	15.66	728.14	364.07	490.58	242.28	15.78	-1.35	0.074
141.00	-5.73	-1.59	0.00	-13.85	0.00	13.85	721.90	360.95	481.67	237.88	16.07	-1.37	0.066
145.00	-5.38	-1.50	0.00	-7.50	0.00	7.50	694.03	347.02	445.00	219.77	17.23	-1.40	0.042
150.00	0.00	-1.37	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	18.71	-1.42	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.98	-2.38	0.00	-304.40	0.00	304.40	3,156.09	1,578.04	4,808.01	2,374.50	0.00	0.00	0.062
5.00	-32.58	-2.34	0.00	-292.49	0.00	292.49	3,113.28	1,556.64	4,641.42	2,292.22	0.01	-0.02	0.061
10.00	-31.23	-2.29	0.00	-280.77	0.00	280.77	3,069.45	1,534.72	4,476.09	2,210.57	0.05	-0.05	0.059
14.92	-31.21	-2.30	0.00	-269.49	0.00	269.49	3,025.30	1,512.65	4,314.76	2,130.90	0.11	-0.07	0.058
14.92	-31.21	-2.30	0.00	-269.49	0.00	269.49	3,025.30	1,512.65	4,314.76	2,130.90	0.11	-0.07	0.082
15.00	-30.14	-2.25	0.00	-269.31	0.00	269.31	3,024.57	1,512.28	4,312.14	2,129.61	0.11	-0.07	0.082
20.00	-29.07	-2.21	0.00	-258.05	0.00	258.05	2,978.65	1,489.33	4,149.68	2,049.37	0.21	-0.11	0.080
25.00	-28.03	-2.17	0.00	-246.99	0.00	246.99	2,931.70	1,465.85	3,988.78	1,969.91	0.34	-0.14	0.079
30.00	-27.82	-2.17	0.00	-236.14	0.00	236.14	2,873.79	1,436.89	3,816.40	1,884.77	0.51	-0.18	0.078
31.00	-27.67	-2.16	0.00	-233.98	0.00	233.98	2,859.85	1,429.93	3,779.26	1,866.44	0.55	-0.19	0.077
31.50	-26.91	-2.12	0.00	-232.89	0.00	232.89	2,852.84	1,426.42	3,760.64	1,857.24	0.57	-0.19	0.077
34.00	-26.61	-2.11	0.00	-227.59	0.00	227.59	2,818.05	1,409.02	3,668.95	1,811.96	0.67	-0.21	0.076
35.00	-26.40	-2.10	0.00	-225.48	0.00	225.48	2,804.11	1,402.06	3,632.54	1,793.98	0.71	-0.21	0.076
35.67	-26.33	-2.10	0.00	-224.07	0.00	224.07	2,247.39	1,123.70	2,971.54	1,467.53	0.74	-0.22	0.087
36.00	-25.54	-2.06	0.00	-223.38	0.00	223.38	2,245.17	1,122.59	2,963.78	1,463.70	0.76	-0.22	0.087
40.00	-24.62	-2.01	0.00	-215.15	0.00	215.15	2,217.94	1,108.97	2,870.05	1,417.41	0.96	-0.25	0.085
45.00	-23.70	-1.97	0.00	-205.08	0.00	205.08	2,182.97	1,091.48	2,753.70	1,359.95	1.24	-0.29	0.083
50.00	-22.80	-1.93	0.00	-195.22	0.00	195.22	2,146.96	1,073.48	2,638.35	1,302.98	1.57	-0.33	0.081
55.00	-21.91	-1.89	0.00	-185.57	0.00	185.57	2,109.91	1,054.96	2,524.10	1,246.56	1.94	-0.37	0.079
60.00	-21.03	-1.86	0.00	-176.11	0.00	176.11	2,071.82	1,035.91	2,411.06	1,190.73	2.34	-0.41	0.077
65.00	-20.16	-1.83	0.00	-166.83	0.00	166.83	2,032.70	1,016.35	2,299.33	1,135.55	2.79	-0.45	0.075
70.00	-20.15	-1.84	0.00	-157.65	0.00	157.65	1,981.31	990.65	2,176.68	1,074.98	3.29	-0.49	0.073
70.05	-19.33	-1.82	0.00	-157.55	0.00	157.55	1,980.69	990.35	2,175.31	1,074.30	3.29	-0.49	0.073
73.55	-19.10	-1.83	0.00	-151.17	0.00	151.17	1,473.36	736.68	1,622.77	801.43	3.66	-0.52	0.083
75.00	-18.33	-1.83	0.00	-148.53	0.00	148.53	1,465.95	732.98	1,600.80	790.57	3.82	-0.53	0.082
80.00	-17.56	-1.86	0.00	-139.38	0.00	139.38	1,439.68	719.84	1,525.22	753.25	4.40	-0.57	0.079
85.00	-16.80	-1.90	0.00	-130.09	0.00	130.09	1,412.37	706.19	1,450.29	716.24	5.03	-0.62	0.076
90.00	-16.41	-1.92	0.00	-120.60	0.00	120.60	1,384.02	692.01	1,376.10	679.61	5.70	-0.66	0.072
91.10	-16.35	-1.93	0.00	-118.49	0.00	118.49	1,377.65	688.82	1,359.89	671.60	5.85	-0.67	0.071
91.10	-16.35	-1.93	0.00	-118.49	0.00	118.49	1,377.65	688.82	1,359.89	671.60	5.85	-0.67	0.071
91.50	-15.62	-1.97	0.00	-117.72	0.00	117.72	1,375.32	687.66	1,354.01	668.69	5.91	-0.67	0.071
95.00	-15.00	-2.00	0.00	-110.84	0.00	110.84	1,354.64	677.32	1,302.77	643.39	6.41	-0.70	0.047
98.00	-12.55	-2.13	0.00	-104.83	0.00	104.83	1,336.51	668.25	1,259.21	621.88	6.86	-0.72	0.045
100.00	-12.22	-2.14	0.00	-100.58	0.00	100.58	1,324.21	662.11	1,230.38	607.64	7.17	-0.73	0.043
101.50	-11.59	-2.17	0.00	-97.36	0.00	97.36	1,314.88	657.44	1,208.86	597.01	7.40	-0.74	0.042
101.50	-11.59	-2.17	0.00	-97.36	0.00	97.36	1,314.88	657.44	1,208.86	597.01	7.40	-0.74	0.058
105.00	-10.97	-2.20	0.00	-89.75	0.00	89.75	1,293.27	646.64	1,159.51	572.64	7.95	-0.76	0.055
108.50	-10.79	-2.21	0.00	-82.04	0.00	82.04	1,260.75	630.38	1,101.62	544.05	8.52	-0.79	0.052
108.50	-10.79	-2.21	0.00	-82.04	0.00	82.04	1,260.75	630.38	1,101.62	544.05	8.52	-0.79	0.090
110.00	-10.78	-2.21	0.00	-78.73	0.00	78.73	1,246.82	623.41	1,077.26	532.02	8.77	-0.80	0.088
110.00	-10.78	-2.21	0.00	-78.73	0.00	78.73	1,246.82	623.41	1,077.26	532.02	8.77	-0.80	0.055
110.05	-10.03	-2.22	0.00	-78.61	0.00	78.61	1,246.32	623.16	1,076.40	531.59	8.78	-0.80	0.055
110.05	-10.03	-2.22	0.00	-78.61	0.00	78.61	852.93	426.46	741.03	365.97	8.78	-0.80	0.066
115.00	-9.10	-2.22	0.00	-67.61	0.00	67.61	834.88	417.44	698.45	344.94	9.63	-0.84	0.058
118.00	-8.80	-2.22	0.00	-60.94	0.00	60.94	823.44	411.72	672.79	332.27	10.16	-0.86	0.054
118.50	-8.76	-2.22	0.00	-59.83	0.00	59.83	821.50	410.75	668.53	330.16	10.25	-0.87	0.053
118.50	-8.76	-2.22	0.00	-59.83	0.00	59.83	821.50	410.75	668.53	330.16	10.25	-0.87	0.192

119.00	-8.69	-2.22	0.00	-58.71	0.00	58.71	819.55	409.77	664.27	328.06	10.34	-0.87	0.190
120.00	-8.37	-2.22	0.00	-56.49	0.00	56.49	815.61	407.80	655.76	323.86	10.53	-0.90	0.185
125.00	-8.18	-2.22	0.00	-45.40	0.00	45.40	795.30	397.65	613.53	303.00	11.54	-1.02	0.160
128.00	-6.32	-2.04	0.00	-38.76	0.00	38.76	782.61	391.31	588.45	290.61	12.20	-1.10	0.141
130.00	-6.04	-2.00	0.00	-34.69	0.00	34.69	773.95	386.97	571.85	282.42	12.67	-1.14	0.131
135.00	-5.87	-1.98	0.00	-24.67	0.00	24.67	751.56	375.78	530.84	262.16	13.92	-1.23	0.102
138.00	-4.87	-1.77	0.00	-18.74	0.00	18.74	737.63	368.82	506.58	250.18	14.71	-1.28	0.082
140.00	-4.82	-1.76	0.00	-15.20	0.00	15.20	728.14	364.07	490.58	242.28	15.25	-1.31	0.069
141.00	-3.98	-1.54	0.00	-13.45	0.00	13.45	721.90	360.95	481.67	237.88	15.53	-1.32	0.062
145.00	-3.73	-1.46	0.00	-7.29	0.00	7.29	694.03	347.02	445.00	219.77	16.65	-1.36	0.039
150.00	0.00	-1.37	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	18.09	-1.37	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	31.19	0.00	49.20	0.00	0.00	3275.18	118.50	0.98
0.9D + 1.6W	31.16	0.00	36.89	0.00	0.00	3210.07	118.50	0.94
1.2D + 1.0Di + 1.0Wi	9.59	0.00	81.79	0.00	0.00	1024.06	118.50	0.34
(1.2 + 0.2Sds) * DL + E ELFM	1.61	0.00	48.83	0.00	0.00	207.85	118.50	0.09
(1.2 + 0.2Sds) * DL + E EMAM	2.39	0.00	48.83	0.00	0.00	313.51	118.50	0.20
(0.9 - 0.2Sds) * DL + E ELFM	1.61	0.00	33.98	0.00	0.00	202.50	118.50	0.08
(0.9 - 0.2Sds) * DL + E EMAM	2.38	0.00	33.98	0.00	0.00	304.40	118.50	0.19
1.0D + 1.0W	6.70	0.00	41.06	0.00	0.00	696.34	118.50	0.22

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	91.10	(4) SOL-#20 All Thread Bar	440.5	13.2	16.8	0.786	328.3	330.5	0.993
0.00	14.92	(4) SOL-#20 All Thread Bar	204.8	6.1	16.8	0.366	247.5	330.5	0.749
91.10	101.50	(4) SOL-#20 All Thread Bar	441.1	13.2	16.8	0.787	195.4	330.5	0.591
91.50	108.50	(4) PL-PL 4 x 1.25	289.5	6.9	38.3	0.182	123.7	180.0	0.687
101.50	110.00	(4) PL-PL 3" x 1"	303.9	7.3	38.3	0.191	110.4	116.3	0.949
110.00	118.50	(3) PL-PL 3" x 1"	203.9	4.9	38.3	0.128	66.8	116.3	0.574
110.00	118.50	(3) PL-PL 5" x 1.25"	429.7	10.3	38.3	0.269	140.6	180.0	0.781

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
0.00	91.10	(4) SOL-#20 All Thread Bar	0.0	12.0	0	0	0.000	0.0	12.0	0	0	0.000
0.00	14.92	(4) SOL-#20 All Thread Bar	230.6	12.0	20	24	0.801	0.0	12.0	0	0	0.000
91.10	101.50	(4) SOL-#20 All Thread Bar	107.6	12.0	9	14	0.640	0.0	12.0	0	0	0.000
91.50	108.50	(4) PL-PL 4 x 1.25	105.1	38.3	3	6	0.458	111.0	38.3	3	6	0.484
101.50	110.00	(4) PL-PL 3" x 1"	105.4	38.3	3	6	0.459	72.5	38.3	2	6	0.316
110.00	118.50	(3) PL-PL 3" x 1"	0.0	38.3	0	6	0.000	0.0	38.3	0	6	0.000
110.00	118.50	(3) PL-PL 5" x 1.25"	117.3	38.3	4	8	0.383	138.8	38.3	4	8	0.453

Base/Flange Plate			
	Plate Type	***Flange***	***@ 110.0 ft***
	Pole Diameter	21.2543	in
	Pole Thickness	0.1875	in
	Plate Diameter	28	in
	Plate Thickness	1	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	183.84	k-in
	Applied	93.89	k-in

Stiffeners			
	#	***12***	***Show***
	Thickness	0.5	in
	Length	3.875	in
	Height	5	in
	Chamfer	1	in
	Offset Angle	0	°
	Fy	36	ksi

Bolts			
	#	***12***	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
●	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A490	
	Fy	130	ksi
	Fu	150	ksi
	ϕ_s Resistance	68.15	k
	Applied	68.39	k

Reinforcement ●		
#	***0***	

Extra Bolts O		
#	***0***	

Code Rev. ***G***

Moment 447.7 k-ft

Axial 13.3 k

Date	9/26/2019
Engineer	Jennifer.Yu
Site #	302473
Carrier	AT&T MOBILITY

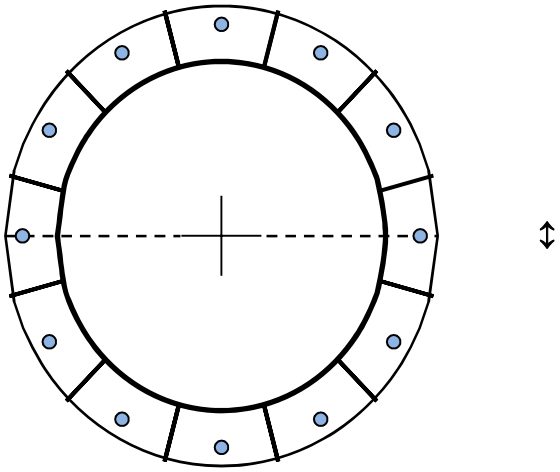


Plate Stress Ratio:

0.51 (Pass)

Bolt Stress Ratio:

1.00 (Acceptable Overstress)

Base Plate & Anchor Rod Analysis

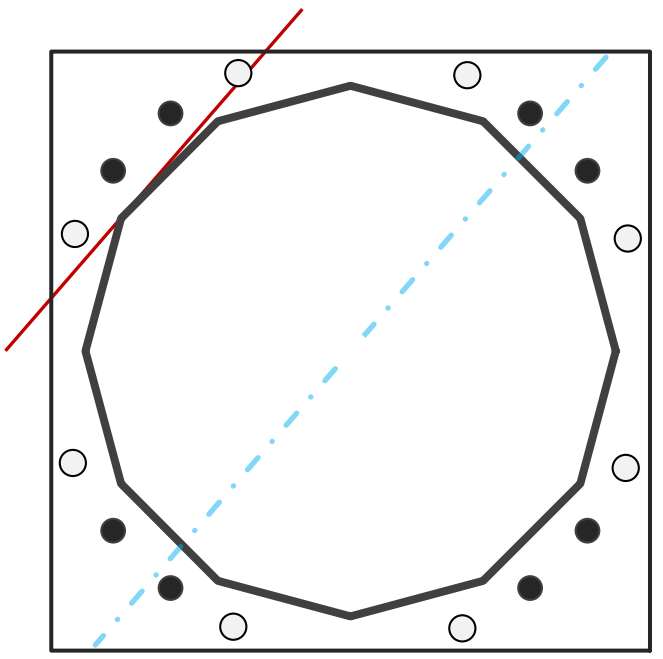
Pole Dimensions		
Number of Sides	12	-
Diameter	37.36	in
Thickness	0.375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	3290.6	k-ft
Axial, Pu	49.2	k
Shear, Vu	31.3	k
Neutral Axis	49	°

Report Capacities		
Component	Capacity	Result
Base Plate	52%	Pass
Anchor Rods	76%	Pass
Dwyidag	62%	Pass

Base Plate		
Shape	Square	-
Width	44.25	in
Thickness	2 1/2	in
Grade	Other	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Clip	0	in
Orientation Offset		°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	1096.4	k
Bending Stress, ϕMn	2106.8	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	8	-
Diameter, ø	2 1/4	in
Bolt Circle	44	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset		°
Applied Force, Pu	196.6	k
Anchor Rods, ϕPn	259.8	k



Dywidag Reinforcement		
Quantity	8	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	44.24	in
Orientation Offset	-23	°
Applied Force, Pu	243.5	k
Dywidag Bar, ϕPn	392.7	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	31.3	1426.9	0.43
Anchor Rod Forces	31.3	1426.9	0.43
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	1863.7	0.57
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	43.0759	3.5897	0.1691		7367.42
Bolt	3.9761	3.2477	0.8393	4.5	6294.24
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		9622.61
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	44.25	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Base Plate Chord	23.713	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

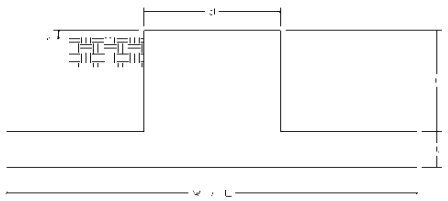
Anchor Rods		
Anchor Rod Quantity, N	8	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	44	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	196.6	k
Applied Shear, Vu	0.5	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.757	OK
Interaction Capacity	0.760	OK

External Base Plate		
Chord Length AA	24.719	in
Additional AA	0.250	in
Section Modulus, Z	39.014	in^3
Applied Moment, Mu	1096.4	k-ft
Bending Capacity, ϕMn	2106.8	k-ft
Capacity, Mu/ϕMn	0.520	OK
Chord Length AB	23.383	in
Additional AB	0.250	in
Section Modulus, Z	36.927	in^3
Applied Moment, Mu	836.3	k-ft
Bending Capacity, ϕMn	1994.1	k-ft
Capacity, Mu/ϕMn	0.419	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Dywidag Reinforcement		
Dywidag Quantity, N	8	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	44.24	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	243.5	k
Compressive Capacity, ϕPn	392.7	k
Capacity, Pu/ϕPn	0.620	OK

Site Name:	E H F R - Prestige Park, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302473		
Engineering Number:	Structural		
Engineer:	kingsley.igboanugo		
Date:	09/26/19		
Tower Type:	MP		



Design Loads (Factored) - Analysis per TIA-222-G Standards

Design / Analysis / Mapping:	Analysis				
Compression/Leg:	49.2	k	Concrete Strength (f'_c):	4000	psi
Uplift/Leg:	0	k	Pad Tension Steel Depth:	32.0	in
Total Shear:	31.2	k	ϕ_{Shear}:	0.75	
Moment:	3275.2	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.9	
Tower + Appurtenance Weight:	49.2	k	$\phi_{Compression:}$	0.65	
Depth to Base of Foundation (l + t - h):	8	ft	β:	0.85	
Diameter of Pier (d):	5.5	ft	Bottom Pad Rebar Size #:	10	
Length of Pier (l):	5.5	ft	Dead Load Factor:	1.2	
Height of Pier above Ground (h):	0.5	ft	# of Bottom Pad Rebar:	36	
Width of Pad (W):	18	ft	Pad Bottom Steel Area:	45.72	in^2
Length of Pad (L):	18	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	3	ft	Top Pad Rebar Size #:	5	
Tower Leg Center to Center:	0	ft	# of Top Pad Rebar:	36	
Number of Tower Legs:	1	(1 if MP or GT)	Pad Top Steel Area:	11.16	in^2
Tower Center from Mat Center:	0	ft	Pier Rebar Size #:	11	
Depth Below Ground Surface to Water Table:	12	ft	Pier Steel Area (Single Bar):	1.56	in^2
Unit Weight of Concrete:	150	pcf	# of Pier Rebar:	52	
Unit Weight of Soil Above Water Table:	121	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	58.0	in
Unit Weight of Soil Below Water Table:	58.6	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	15	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.4		Tie Rebar Size #:	4	
Ultimate Compressive Bearing Pressure:	39000	psf	Tie Steel Area (Single Bar):	0.2	in^2
Ultimate Passive Pressure on Pad Face:	2600	psf	Tie Spacing:	12	in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9		Tie Steel F_y:	60000	psi
ϕ_{Soil}:	0.75				

Overturning Moment Usage

Design OTM:	3540.3	k-ft
OTM Resistance:	3643.4	k-ft
Design OTM / OTM Resistance:	0.97	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	7591	psf
Factored Nominal Bearing Pressure:	29250	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.26	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety

Total Factored Sliding Resistance:	211.2	k
Sliding Design / Sliding Resistance:	0.15	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	239.0	k
One Way Shear Capacity (ϕV_c):	532.7	k - ACI11.3.1.1
V_u / ϕV_c:	0.45	Result: OK
Load Direction Controling Shear Capacity:	Diagonal to Pad Edge	
Lower Steel Pad Factored Moment (M_u):	1382.7	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	6257.1	k-ft - ACI10.3
M_u / ϕM_n:	0.22	Result: OK
Load Direction Controling Flexural Capacity:	Parallel to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	593.4	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	1587.6	k-ft
M_u / ϕM_n:	0.37	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0066	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0016	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1869.3	k - ACI11.12.2.1
V_u / ϕV_c:	0.00	Result: OK
Factored Moment in Pier (M_u):	3446.7	k-ft
Pier Moment Capacity (ϕM_n):	10352.3	k-ft
M_u / ϕM_n:	0.33	Result: OK
Factored Shear in Pier (V_u):	31.2	k
Pier Shear Capacity (ϕV_n):	326.9	k
V_u / ϕV_c:	0.10	Result: OK
Pier Shear Reinforcement Ratio:	0.0006	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	4380.5	k
T_u / ϕT_n:	0.00	Result: OK
Factored Compression in Pier (P_u):	49.2	k
Pier Compression Capacity (ϕP_n):	5905.3	k - ACI10.3.6.2
P_u / ϕP_n:	0.01	Result: OK
Pier Compression Reinforcement Ratio:	0.024	OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.33	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads

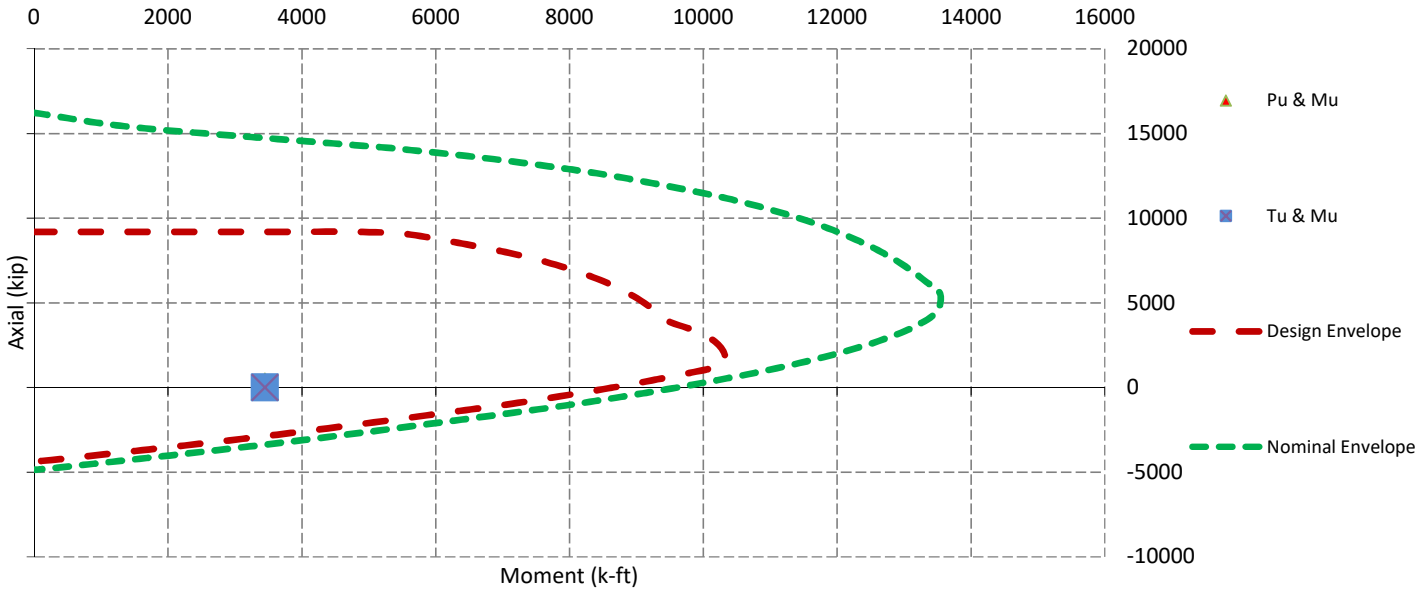


EXHIBIT 4

January 30, 2019

CENTERLINE COMMUNICATIONS at&t

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

RE:		
	Site Number:	CT1002 (LTE 4C/5C/6C)
	FA Number:	10034965
	PACE Number:	MRCTB033585
	PT Number:	2051A0JDA5
	Site Name:	EAST HARTFORD
	Site Address:	2 Prestige Park Road East Hartford, CT 06108

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0"– Wt. = 35 lbs. /each)
- (3) OPA-65R-LCUU-H6 Antennas (72.0"x14.8"x7.4" – Wt. = 73 lbs. /each)
- (3) RRUS-32 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (2) Squid Surge Arrestors (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)
- **(6) 800-10965 Antennas (78.7"x20.0"x6.9"– Wt. = 109 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (18.0"x13.2"x9.5" – Wt. = 71 lbs. /each)**
- **(3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. 72 lbs. /each)**
- **(6) DBCT108F1V92-1 Diplexers (10.7"x6.8"x3.5"– Wt. = 14 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mount. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mount on January 19, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R11.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-G Annex B, the max basic wind speed for this site is equal to105 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. Per the AT&T Mount Technical Directive and Appendix N of the Connecticut State Building Code, an ultimate wind speed of 125 mph converted to a nominal wind speed of 97 mph and an escalated ice thickness of 2.33 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with welded plates. The connection is considered OK by visual inspection.

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

- **Install new HSS 4x4x1/4 frame secured to the existing platform.**
- **Install new platform reinforcement kit, SitePro1 P/N PRK-1245 secured to proposed HSS 4x4x1/4 frame and existing tower (or approved equal).**
- **Install new 2-1/2" std. (2.88" O.D.) handrail kit secured to existing pipe masts (typ. of 1 per sector, total of 3).**
- **Install new Sector Frame Stabilizer Kit, SitePro1 P/N SFS-H secured to the proposed handrail kit and existing tower (or approved equal) (typ. of 1 per sector, total of 3).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 4C/5C/6C) Mount Rating	115	LC3	484%	**FAIL**
Modified (LTE 4C/5C/6C) Mount Rating	129	LC5	82%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities. Contractor to perform pre-inspection prior to construction.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

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

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Structural Dept. Head

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:

p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Ste 302, Easthampton, MA 01027

p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Ste 302, Easthampton, MA 01027

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	154 (ft)
	z_g=	1200 (ft)
K_z= 1.118	α=	7.0

Kzmin ≤ Kz ≤ 2.01

Table 2-4

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

2.6.6.4 Topographic Factor:

Table 2-5

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

$K_{zt} = [1+(K_e K_t/K_h)]^2$ $K_h = e^{(f*z/H)}$

K_{zt}= #DIV/0!

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

Category= **1**

K_h=	#DIV/0!	
K_e=	0.9	(from Table 2-4)
K_t=		(from Table 2-5)
f=		(from Table 2-5)
z=	154	
H=		(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	
K_{iz} =	1.17	(from Sec. 2.6.8)

2.6.8 Design Ice Thickness

Max Ice Thickness = t_i = 1.00 in

Importance Factor, I_{ice} = I_{ice}= 1.00 (from Table 2-3)

$t_{iz} = 2.0*t_i*I_{ice}*K_{iz}*(Kzt)^{0.35}$ t_{iz} = **2.33** in

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

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

h=	150	Gh=	0.85

2.6.7.2 Guyed Masts Gh= 0.85

2.6.7.3 Pole Structures Gh= 1.1

2.6.9 Appurtenances Gh= 1.0

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

Gh=	1.35	Gh=	1.00

2.6.9.2 Design Wind Force on Appurtenances

State Code Ultimate Design Wind Speed: V_{ult} = 125 mph

Nomial Design Wind Speed, $V_{asd} = V_{ult} \sqrt{(0.6)}$ V_{asd} = 97 mph

V_{asd} per the AT&T Mount Technical Directive and Connecticut State Building Code, Latest Edition.
Per TIA-222-G, V_{min} = 90 mph V_{max} = 105 mph

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

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

q_z=	**25.49**	K_z=	1.118
$q_{z\,(ice)}$=	**6.80**	K_{zt}=	1.0
$q_{z\,(30)}$=	**2.45**	K_d=	0.95 (from Table 2-2)
		V_{asd}=	97 mph
		$V_{max\,(ice)}$=	50 mph
		V_{30}=	30 mph
		I=	1.0 (from Table 2-3)
		I_{wice}=	1.0 (from Table 2-3)

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

Determine Ca:

Table 2-8

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Round	C < 32 (Subcritical)	0.7	0.8	1.2
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritical)	0.5	0.6	0.6

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

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

Ice Thickness = **2.33** in | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	**140**	**58**	**13**
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	4.86	1.31	**246**	**92**	**24**
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	**352**	**123**	**34**
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**70**	**30**	**7**
RRUS-32 RRH (Shielded)	27.2	0.0	7.0	0.00	0.00	1.20	**0**	**8**	**0**
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.89	1.20	**36**	**18**	**3**
4449 B5/B12 RRH (Shielded)	18.0	0.0	13.2	0.00	0.00	1.20	**0**	**6**	**0**
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.20	**34**	**17**	**3**
8843 B2/B66A RRH (Shielded)	14.9	0.0	13.2	0.00	0.00	1.20	**0**	**5**	**0**
4478 B14 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**52**	**23**	**5**
4478 B14 RRH (Shielded)	18.1	0.0	8.3	0.00	0.00	1.20	**0**	**6**	**0**
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	**9**	**9**	**1**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**29**	**14**	**3**
2" Pipe	2.4	12.0		0.20	0.20	1.20	**6**	**7**	**1**
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	**7**	**7**	**1**
1x1 HSS	1.0	12.0		0.08	0.08	2.00	**4**	**9**	**0**
L2-1/2x2-1/2x3/16 Angles	2.5	12.0		0.21	0.21	2.00	**11**	**11**	**1**

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	140	75	124
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	246	141	220
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	352	149	301
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	70	43	63
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	38	43	39
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	36	50	40
4449 B5/B12 RRH (Shielded)	18.0	4.8	13.2	0.59	1.65	3.79	1.36	1.26	1.20	19	50	27
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	34	42	36
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	17	42	23
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	52	32	47
4478 B14 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	26	32	27
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	9	28	14

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.01	3.81	6.17	1.26	1.36	56	37	51
OPA-65R-LCUU-H6 Antenna	76.7	19.5	12.1	10.36	6.42	3.94	6.35	1.26	1.37	89	60	82
800-10965 Antenna	83.4	24.7	11.6	14.28	6.70	3.38	7.21	1.24	1.41	120	64	106
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	30	21	28
RRUS-32 RRH (Shielded)	31.9	8.4	11.7	1.86	2.58	3.80	2.73	1.26	1.21	16	21	17
4449 B5/B12 RRH	22.7	14.2	17.9	2.23	2.81	1.60	1.27	1.20	1.20	18	23	19
4449 B5/B12 RRH (Shielded)	22.7	7.1	17.9	1.11	2.81	3.20	1.27	1.23	1.20	9	23	13
8843 B2/B66A RRH	19.6	15.6	17.9	2.12	2.43	1.26	1.10	1.20	1.20	17	20	18
8843 B2/B66A RRH (Shielded)	19.6	7.8	17.9	1.06	2.43	2.51	1.10	1.20	1.20	9	20	11
4478 B14 RRH	22.8	18.1	13.0	2.86	2.05	1.26	1.76	1.20	1.20	23	17	22
4478 B14 RRH (Shielded)	22.8	9.0	13.0	1.43	2.05	2.52	1.76	1.20	1.20	12	17	13
LGP21401 TMA	19.1	7.4	13.7	0.98	1.81	2.59	1.40	1.20	1.20	8	15	10

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	12
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	24	13	21
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	34	14	29
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	6
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	4	4	4
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	3	5	4
4449 B5/B12 RRH (Shielded)	18.0	4.8	13.2	0.59	1.65	3.79	1.36	1.26	1.20	2	5	3
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	4	2
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
4478 B14 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	2	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	1

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	140	75	91
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	246	141	167
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	352	149	200
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	70	43	49
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	53	43	45
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	36	50	47
4449 B5/B12 RRH (Shielded)	18.0	7.1	13.2	0.89	1.65	2.53	1.36	1.20	1.20	27	50	45
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	34	42	40
8843 B2/B66A RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	26	42	38
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	52	32	37
4478 B14 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	39	32	34
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	9	28	23

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.01	3.81	6.17	1.26	1.36	56	37	42
OPA-65R-LCUU-H6 Antenna	76.7	19.5	12.1	10.36	6.42	3.94	6.35	1.26	1.37	89	60	67
800-10965 Antenna	83.4	24.7	11.6	14.28	6.70	3.38	7.21	1.24	1.41	120	64	78
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	30	21	23
RRUS-32 RRH (Shielded)	31.9	12.6	11.7	2.78	2.58	2.53	2.73	1.20	1.21	23	21	22
4449 B5/B12 RRH	22.7	14.2	17.9	2.23	2.81	1.60	1.27	1.20	1.20	18	23	22
4449 B5/B12 RRH (Shielded)	22.7	10.6	17.9	1.67	2.81	2.13	1.27	1.20	1.20	14	23	21
8843 B2/B66A RRH	19.6	15.6	17.9	2.12	2.43	1.26	1.10	1.20	1.20	17	20	19
8843 B2/B66A RRH (Shielded)	19.6	11.7	17.9	1.59	2.43	1.68	1.10	1.20	1.20	13	20	18
4478 B14 RRH	22.8	18.1	13.0	2.86	2.05	1.26	1.76	1.20	1.20	23	17	18
4478 B14 RRH (Shielded)	22.8	13.5	13.0	2.14	2.05	1.68	1.76	1.20	1.20	17	17	17
LGP21401 TMA	19.1	7.4	13.7	0.98	1.81	2.59	1.40	1.20	1.20	8	15	13

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	9
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	24	13	16
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	34	14	19
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	5
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	3	5	5
4449 B5/B12 RRH (Shielded)	18.0	7.1	13.2	0.89	1.65	2.53	1.36	1.20	1.20	3	5	4
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	4
8843 B2/B66A RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	2	4	4
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
4478 B14 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	4	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	140	75	75
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	246	141	141
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	352	149	149
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	70	43	43
RRUS-32 RRH (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	43	43
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	36	50	50
4449 B5/B12 RRH (Shielded)	18.0	0.0	13.2	0.00	1.65	0.00	1.36	1.20	1.20	0	50	50
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	34	42	42
8843 B2/B66A RRH (Shielded)	14.9	0.0	13.2	0.00	1.37	0.00	1.13	1.20	1.20	0	42	42
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	52	32	32
4478 B14 RRH (Shielded)	18.1	0.0	8.3	0.00	1.04	0.00	2.18	1.20	1.20	0	32	32
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	9	28	28

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.01	3.81	6.17	1.26	1.36	56	37	37
OPA-65R-LCUU-H6 Antenna	76.7	19.5	12.1	10.36	6.42	3.94	6.35	1.26	1.37	89	60	60
800-10965 Antenna	83.4	24.7	11.6	14.28	6.70	3.38	7.21	1.24	1.41	120	64	64
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	30	21	21
RRUS-32 RRH (Shielded)	31.9	4.7	11.7	1.03	2.58	6.83	2.73	1.39	1.21	10	21	21
4449 B5/B12 RRH	22.7	14.2	17.9	2.23	2.81	1.60	1.27	1.20	1.20	18	23	23
4449 B5/B12 RRH (Shielded)	22.7	4.7	17.9	0.73	2.81	4.86	1.27	1.30	1.20	7	23	23
8843 B2/B66A RRH	19.6	15.6	17.9	2.12	2.43	1.26	1.10	1.20	1.20	17	20	20
8843 B2/B66A RRH (Shielded)	19.6	4.7	17.9	0.63	2.43	4.19	1.10	1.28	1.20	5	20	20
4478 B14 RRH	22.8	18.1	13.0	2.86	2.05	1.26	1.76	1.20	1.20	23	17	17
4478 B14 RRH (Shielded)	22.8	4.7	13.0	0.74	2.05	4.88	1.76	1.31	1.20	7	17	17
LGP21401 TMA	19.1	7.4	13.7	0.98	1.81	2.59	1.40	1.20	1.20	8	15	15

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	7
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	24	13	13
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	34	14	14
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	4
RRUS-32 RRH (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	4	4
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	3	5	5
4449 B5/B12 RRH (Shielded)	18.0	0.0	13.2	0.00	1.65	0.00	1.36	1.20	1.20	0	5	5
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	4
8843 B2/B66A RRH (Shielded)	14.9	0.0	13.2	0.00	1.37	0.00	1.13	1.20	1.20	0	4	4
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	3
4478 B14 RRH (Shielded)	18.1	0.0	8.3	0.00	1.04	0.00	2.18	1.20	1.20	0	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	3

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 120 (deg)

Ice Thickness = 2.33 in.

Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	140	75	91
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	246	141	167
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	352	149	200
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	70	43	49
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	53	43	45
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	36	50	47
4449 B5/B12 RRH (Shielded)	18.0	7.1	13.2	0.89	1.65	2.53	1.36	1.20	1.20	27	50	45
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	34	42	40
8843 B2/B66A RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	26	42	38
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	52	32	37
4478 B14 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	39	32	34
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	9	28	23

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.01	3.81	6.17	1.26	1.36	56	37	42
OPA-65R-LCUU-H6 Antenna	76.7	19.5	12.1	10.36	6.42	3.94	6.35	1.26	1.37	89	60	67
800-10965 Antenna	83.4	24.7	11.6	14.28	6.70	3.38	7.21	1.24	1.41	120	64	78
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	30	21	23
RRUS-32 RRH (Shielded)	31.9	12.6	11.7	2.78	2.58	2.53	2.73	1.20	1.21	23	21	22
4449 B5/B12 RRH	22.7	14.2	17.9	2.23	2.81	1.60	1.27	1.20	1.20	18	23	22
4449 B5/B12 RRH (Shielded)	22.7	10.6	17.9	1.67	2.81	2.13	1.27	1.20	1.20	14	23	21
8843 B2/B66A RRH	19.6	15.6	17.9	2.12	2.43	1.26	1.10	1.20	1.20	17	20	19
8843 B2/B66A RRH (Shielded)	19.6	11.7	17.9	1.59	2.43	1.68	1.10	1.20	1.20	13	20	18
4478 B14 RRH	22.8	18.1	13.0	2.86	2.05	1.26	1.76	1.20	1.20	23	17	18
4478 B14 RRH (Shielded)	22.8	13.5	13.0	2.14	2.05	1.68	1.76	1.20	1.20	17	17	17
LGP21401 TMA	19.1	7.4	13.7	0.98	1.81	2.59	1.40	1.20	1.20	8	15	13

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	9
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	24	13	16
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	34	14	19
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	5
RRUS-32 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	3	5	5
4449 B5/B12 RRH (Shielded)	18.0	7.1	13.2	0.89	1.65	2.53	1.36	1.20	1.20	3	5	4
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	4
8843 B2/B66A RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	2	4	4
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
4478 B14 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	4	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	2.33	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	140	75	124
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	246	141	220
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	352	149	301
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	70	43	63
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	38	43	39
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	36	50	40
4449 B5/B12 RRH (Shielded)	18.0	4.8	13.2	0.59	1.65	3.79	1.36	1.26	1.20	19	50	27
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	34	42	36
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	17	42	23
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	52	32	47
4478 B14 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	26	32	27
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	9	28	14

WIND LOADS WITH ICE:

7770 Antenna	59.7	15.7	9.7	6.49	4.01	3.81	6.17	1.26	1.36	56	37	51
OPA-65R-LCUU-H6 Antenna	76.7	19.5	12.1	10.36	6.42	3.94	6.35	1.26	1.37	89	60	82
800-10965 Antenna	83.4	24.7	11.6	14.28	6.70	3.38	7.21	1.24	1.41	120	64	106
RRUS-32 RRH	31.9	16.8	11.7	3.71	2.58	1.90	2.73	1.20	1.21	30	21	28
RRUS-32 RRH (Shielded)	31.9	8.4	11.7	1.86	2.58	3.80	2.73	1.26	1.21	16	21	17
4449 B5/B12 RRH	22.7	14.2	17.9	2.23	2.81	1.60	1.27	1.20	1.20	18	23	19
4449 B5/B12 RRH (Shielded)	22.7	7.1	17.9	1.11	2.81	3.20	1.27	1.23	1.20	9	23	13
8843 B2/B66A RRH	19.6	15.6	17.9	2.12	2.43	1.26	1.10	1.20	1.20	17	20	18
8843 B2/B66A RRH (Shielded)	19.6	7.8	17.9	1.06	2.43	2.51	1.10	1.20	1.20	9	20	11
4478 B14 RRH	22.8	18.1	13.0	2.86	2.05	1.26	1.76	1.20	1.20	23	17	22
4478 B14 RRH (Shielded)	22.8	9.0	13.0	1.43	2.05	2.52	1.76	1.20	1.20	12	17	13
LGP21401 TMA	19.1	7.4	13.7	0.98	1.81	2.59	1.40	1.20	1.20	8	15	10

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	12
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	24	13	21
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	34	14	29
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	7	4	6
RRUS-32 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	4	4	4
4449 B5/B12 RRH	18.0	9.5	13.2	1.19	1.65	1.89	1.36	1.20	1.20	3	5	4
4449 B5/B12 RRH (Shielded)	18.0	4.8	13.2	0.59	1.65	3.79	1.36	1.26	1.20	2	5	3
8843 B2/B66A RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	4	2
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
4478 B14 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	2	3	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	1

Date: 1/30/2019
Project Name: EAST HARTFORD
Project No.: CT1002
Designed By: JP **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 2.33 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		188 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		223 lbs

OPA-65R-LCUU-H6 Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0	
Width (in):	14.8	
Depth (in):	7.4	
Total weight of ice on object:		322 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		395 lbs

800-10965 Antenna

Weight of ice based on total radial SF area:

Height (in):	78.7	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		438 lbs
Weight of object:	109.0 lbs	
Combined weight of ice and object:		547 lbs

RRUS-32 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		105 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		165 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:

Height (in):	18.0	
Width (in):	13.2	
Depth (in):	9.5	
Total weight of ice on object:		79 lbs
Weight of object:	71.0 lbs	
Combined weight of ice and object:		150 lbs

8843 B2/B66A RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		69 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		141 lbs

4478 B14 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		78 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		138 lbs

LGP21401 TMA

Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	2.7	
Depth (in):	9.0	
Total weight of ice on object:		40 lbs
Weight of object:	19.0 lbs	
Combined weight of ice and object:		59 lbs

DBCT108F1V92-1 Diplexer

Weight of ice based on total radial SF area:

Height (in):	10.7	
Width (in):	6.8	
Depth (in):	3.5	
Total weight of ice on object:		25 lbs
Weight of object:	14.0 lbs	
Combined weight of ice and object:		39 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		68 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		101 lbs

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		13 plf

2-1/2" pipe

Per foot weight of ice:

diameter (in):	2.88	
Per foot weight of ice on object:		15 plf

HSS 1x1

Weight of ice based on total radial SF area:

Height (in):	1	
Width (in):	1	
Per foot weight of ice on object:		11 plf

HSS 4x4

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		23 plf

L 2-1/2x2-1/2x3/16 Angles

Weight of ice based on total radial SF area:

Height (in):	2.5	
Width (in):	2.5	
Per foot weight of ice on object:		17 plf

HUDSON
Design Group LLC

4C/5C/6C Mount Calculations
(Existing Conditions)

Bentley

Current Date: 1/30/2019 11:09 AM
Units system: English
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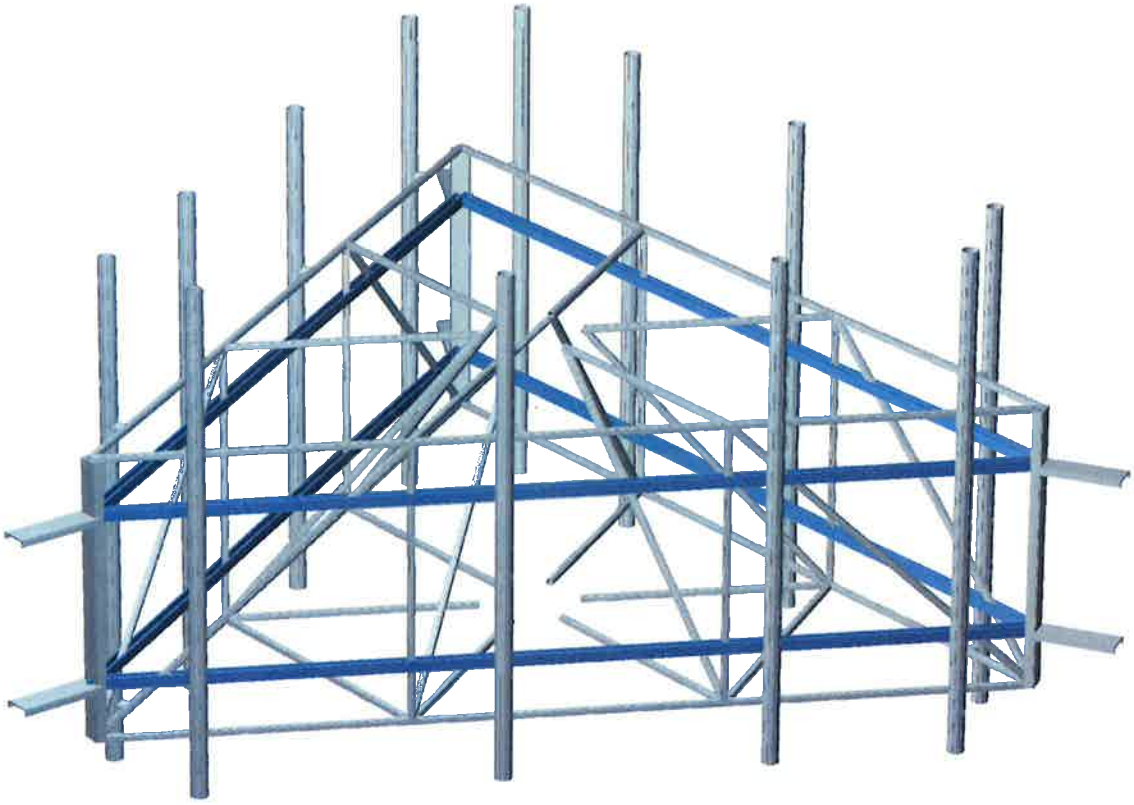

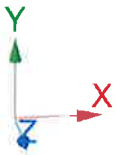

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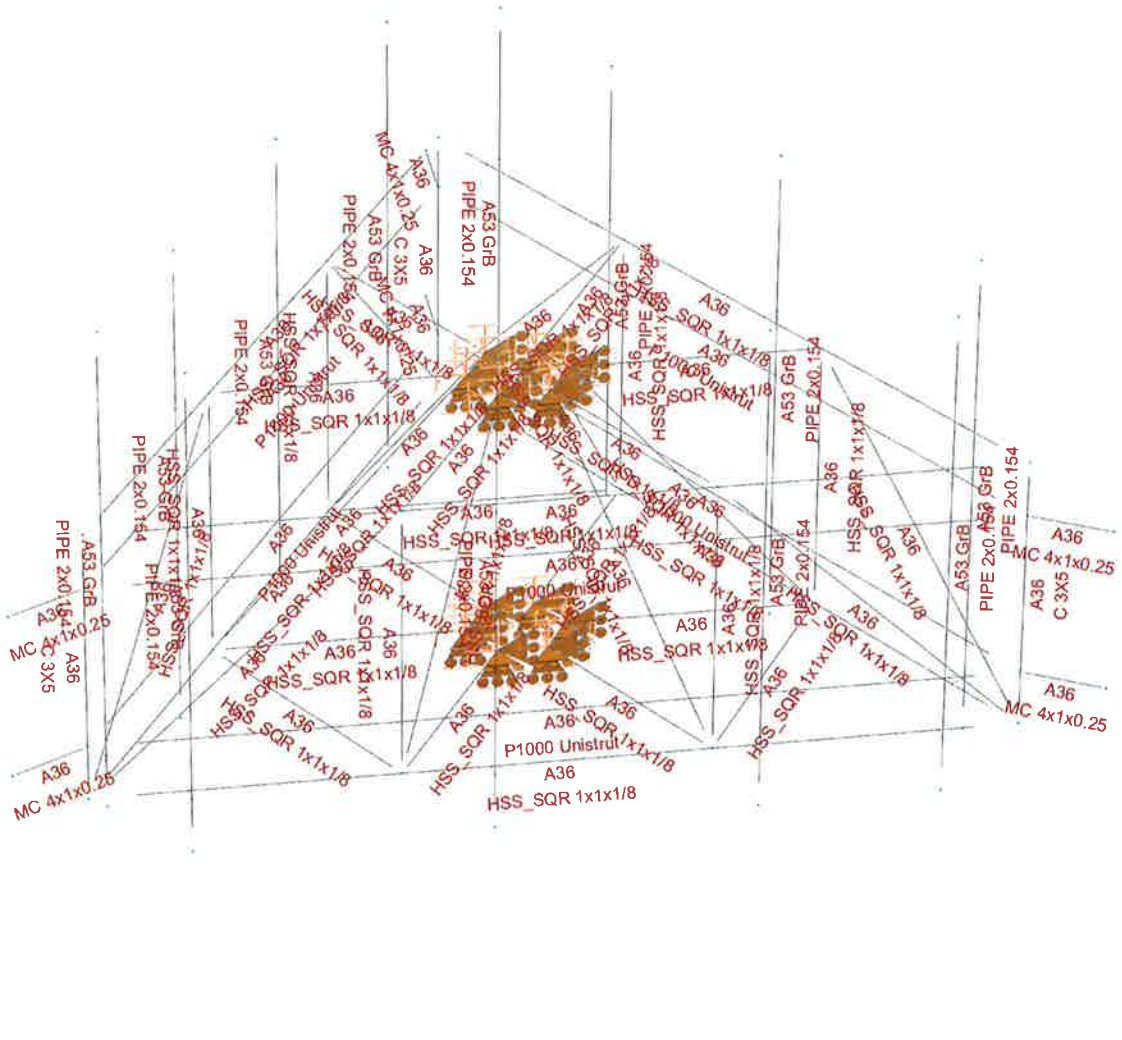

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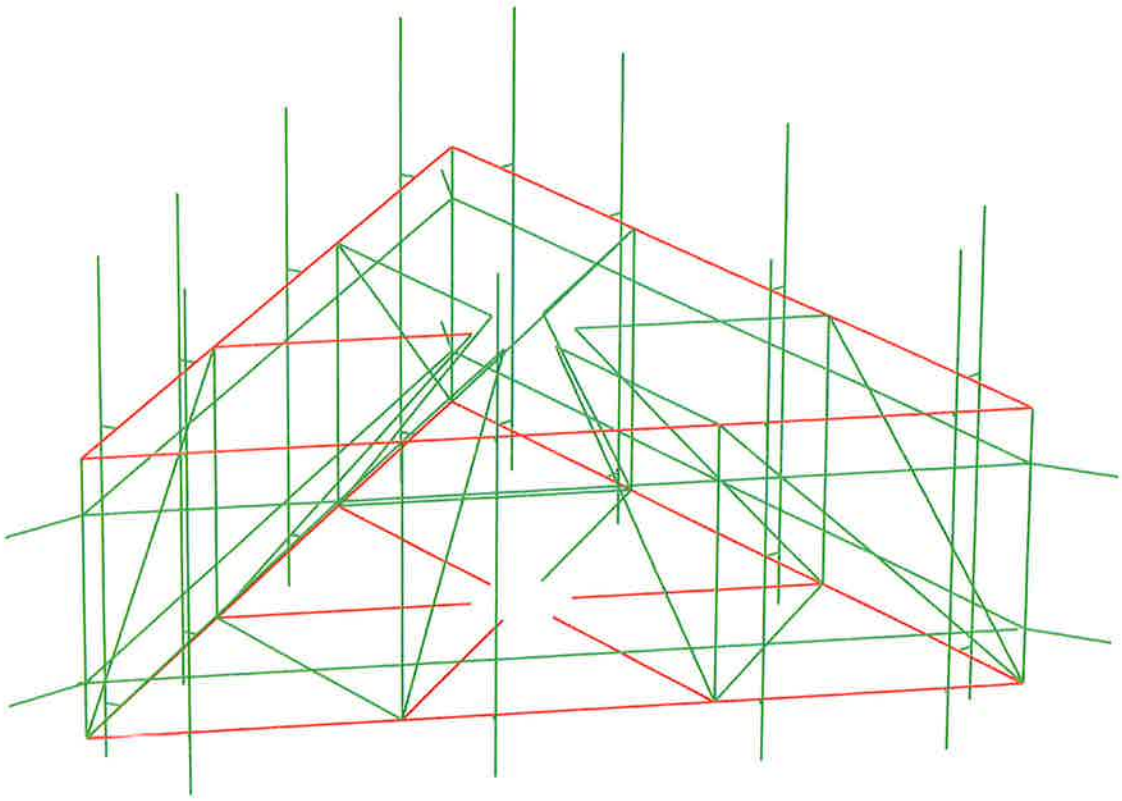
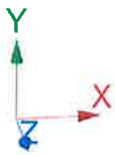
Design status

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





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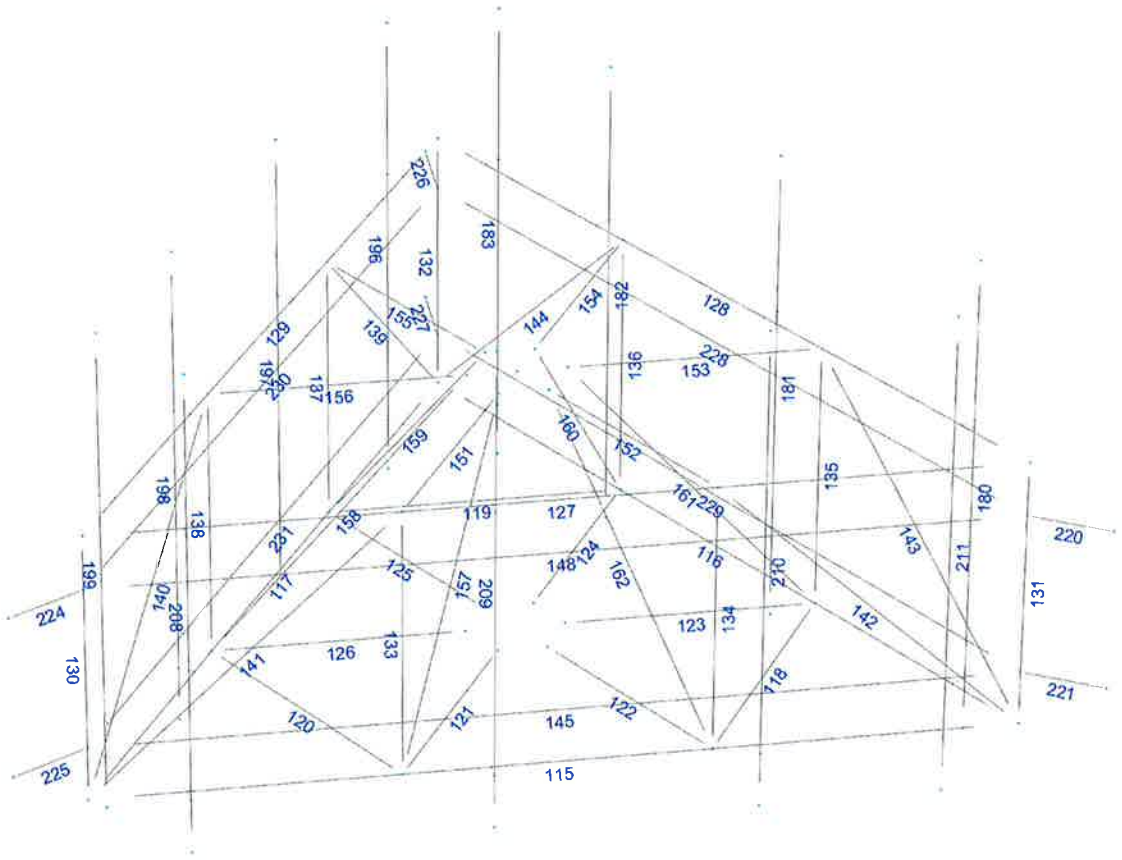

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Load data

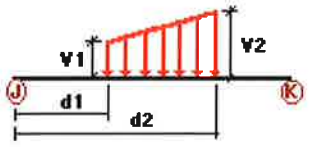
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

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

Distributed force on members

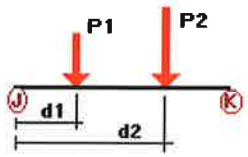


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	118	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	119	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	120	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	121	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	122	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	123	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	124	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	125	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	126	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
W0	115	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	116	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	117	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	127	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	128	Z	-0.006	-0.006	0.00	Yes	100.00	Yes

	129	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	133	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	134	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	141	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	142	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	151	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	152	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	153	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	154	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	155	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	156	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	157	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	158	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	159	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	160	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	161	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	162	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	180	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	181	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	182	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	183	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	196	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	197	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	198	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	199	z	-0.006	-0.006	0.00	Yes	100.00	Yes
W30	116	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	117	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	128	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	129	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	135	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	136	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	137	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	138	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	139	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	140	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	143	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	144	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	151	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	152	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	153	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	154	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	155	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	156	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	157	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	158	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	159	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	160	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	161	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	162	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	180	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	181	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	182	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	183	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	196	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	197	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	198	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	199	x	-0.006	-0.006	0.00	Yes	100.00	Yes
Di	115	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	116	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	117	Y	-0.011	-0.011	0.00	Yes	100.00	Yes

118	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
119	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
120	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
121	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
122	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
123	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
124	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
125	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
126	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
127	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
128	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
129	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
133	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
134	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
135	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
136	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
137	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
138	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
139	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
142	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
143	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
144	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
151	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
152	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
153	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
154	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
155	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
156	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
157	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
158	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
159	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
160	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
161	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
162	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
180	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
181	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
182	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
183	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
196	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
197	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
198	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
199	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
208	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
209	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
210	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
211	Y	-0.013	-0.013	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	180	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.06	1.50	No
	181	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.071	1.00	No
		y	-0.072	1.50	No
	182	y	-0.037	0.50	No
		y	-0.037	5.50	No
		y	-0.06	1.50	No
	183	y	-0.018	0.50	No
		y	-0.018	5.50	No
		y	-0.019	1.50	No
	196	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.06	1.50	No
	197	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.071	1.00	No
		y	-0.072	1.50	No
	198	y	-0.037	0.50	No
		y	-0.037	5.50	No
		y	-0.06	1.50	No
	199	y	-0.018	0.50	No
		y	-0.018	5.50	No
		y	-0.019	1.50	No
	208	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.06	1.50	No
	209	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.071	1.00	No
		y	-0.072	1.50	No
	210	y	-0.037	0.50	No
		y	-0.037	5.50	No
		y	-0.06	1.50	No
	211	y	-0.018	0.50	No
		y	-0.018	5.50	No
		y	-0.019	1.50	No
W0	180	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.034	1.50	No
	181	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.045	1.00	No
		z	-0.038	1.50	No
	182	z	-0.084	0.50	No
		z	-0.084	5.50	No
		z	-0.045	1.50	No
	183	z	-0.046	0.50	No
		z	-0.046	5.50	No
		z	-0.023	1.50	No
	196	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.034	1.50	No
	197	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.045	1.00	No
		z	-0.038	1.50	No
	198	z	-0.084	0.50	No

		z	-0.084	5.50	No
		z	-0.045	1.50	No
	199	z	-0.046	0.50	No
		z	-0.046	5.50	No
		z	-0.023	1.50	No
	208	z	-0.177	0.50	No
		z	-0.177	5.50	No
	209	z	-0.177	0.50	No
		z	-0.177	5.50	No
	210	z	-0.124	0.50	No
		z	-0.124	5.50	No
	211	z	-0.071	0.50	No
		z	-0.071	5.50	No
W30	180	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.50	No
	181	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.00	No
		x	-0.023	1.50	No
	182	x	-0.11	0.50	No
		x	-0.11	5.50	No
		x	-0.039	1.50	No
	183	x	-0.062	0.50	No
		x	-0.062	5.50	No
		x	-0.014	1.50	No
	196	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.50	No
	197	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.00	No
		x	-0.023	1.50	No
	198	x	-0.11	0.50	No
		x	-0.11	5.50	No
		x	-0.039	1.50	No
	199	x	-0.062	0.50	No
		x	-0.062	5.50	No
		x	-0.014	1.50	No
	208	x	-0.075	0.50	No
		x	-0.075	5.50	No
		x	-0.032	1.50	No
	209	x	-0.075	0.50	No
		x	-0.075	5.50	No
		x	-0.05	1.50	No
		x	-0.042	2.00	No
	210	x	-0.071	0.50	No
		x	-0.071	5.50	No
		x	-0.043	1.50	No
	211	x	-0.038	0.50	No
		x	-0.038	5.50	No
		x	-0.028	1.50	No
Di	180	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.078	1.50	No
	181	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.079	1.00	No
		y	-0.069	1.50	No
	182	y	-0.166	0.50	No

		y	-0.166	5.50	No
		y	-0.105	1.50	No
	183	y	-0.094	0.50	No
		y	-0.094	5.50	No
		y	-0.04	1.50	No
	196	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.078	1.50	No
	197	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.079	1.00	No
		y	-0.069	1.50	No
	198	y	-0.166	0.50	No
		y	-0.166	5.50	No
		y	-0.105	1.50	No
	199	y	-0.094	0.50	No
		y	-0.094	5.50	No
		y	-0.04	1.50	No
	208	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.078	1.50	No
	209	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.079	1.00	No
		y	-0.069	1.50	No
	210	y	-0.166	0.50	No
		y	-0.166	5.50	No
		y	-0.105	1.50	No
	211	y	-0.094	0.50	No
		y	-0.094	5.50	No
		y	-0.04	1.50	No
Wi0	180	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.017	1.50	No
	181	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.021	1.00	No
		z	-0.018	1.50	No
	182	z	-0.034	0.50	No
		z	-0.034	5.50	No
		z	-0.022	1.50	No
	183	z	-0.021	0.50	No
		z	-0.021	5.50	No
		z	-0.013	1.50	No
	196	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.017	1.50	No
	197	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.021	1.00	No
		z	-0.018	1.50	No
	198	z	-0.034	0.50	No
		z	-0.034	5.50	No
		z	-0.022	1.50	No
	199	z	-0.021	0.50	No
		z	-0.021	5.50	No
		z	-0.013	1.50	No
	208	z	-0.062	0.50	No
		z	-0.062	5.50	No
	209	z	-0.062	0.50	No

		z	-0.062	5.50	No
	210	z	-0.046	0.50	No
		z	-0.046	5.50	No
	211	z	-0.029	0.50	No
		z	-0.029	5.50	No
Wi30	180	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.50	No
	181	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.00	No
		x	-0.011	1.50	No
	182	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.017	1.50	No
	183	x	-0.026	0.50	No
		x	-0.026	5.50	No
		x	-0.01	1.50	No
	196	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.50	No
	197	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.00	No
		x	-0.011	1.50	No
	198	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.017	1.50	No
	199	x	-0.026	0.50	No
		x	-0.026	5.50	No
		x	-0.01	1.50	No
	208	x	-0.033	0.50	No
		x	-0.033	5.50	No
		x	-0.017	1.50	No
	209	x	-0.033	0.50	No
		x	-0.033	5.50	No
		x	-0.023	1.00	No
		x	-0.02	1.50	No
	210	x	-0.03	0.50	No
		x	-0.03	5.50	No
		x	-0.021	1.50	No
	211	x	-0.019	0.50	No
		x	-0.019	5.50	No
		x	-0.015	1.50	No
WL0	180	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.004	1.50	No
	181	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.005	1.00	No
		z	-0.004	1.50	No
	182	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.005	1.50	No
	183	z	-0.005	0.50	No
		z	-0.005	5.50	No
		z	-0.003	1.50	No
	196	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.004	1.50	No

	197	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.005	1.00	No
		z	-0.004	1.50	No
	198	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.005	1.50	No
	199	z	-0.005	0.50	No
		z	-0.005	5.50	No
		z	-0.003	1.50	No
	208	z	-0.017	0.50	No
		z	-0.017	5.50	No
	209	z	-0.017	0.50	No
		z	-0.017	5.50	No
	210	z	-0.012	0.50	No
		z	-0.012	5.50	No
	211	z	-0.007	0.50	No
		z	-0.007	5.50	No
WL30	180	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.50	No
	181	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.00	No
		x	-0.003	1.50	No
	182	x	-0.011	0.50	No
		x	-0.011	5.50	No
		x	-0.004	1.50	No
	183	x	-0.006	0.50	No
		x	-0.006	5.50	No
		x	-0.002	1.50	No
	196	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.50	No
	197	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.00	No
		x	-0.003	1.50	No
	198	x	-0.011	0.50	No
		x	-0.011	5.50	No
		x	-0.004	1.50	No
	199	x	-0.006	0.50	No
		x	-0.006	5.50	No
		x	-0.002	1.50	No
	208	x	-0.008	0.50	No
		x	-0.008	5.50	No
		x	-0.004	1.50	No
	209	x	-0.008	0.50	No
		x	-0.008	5.50	No
		x	-0.005	1.00	No
		x	-0.005	1.50	No
	210	x	-0.007	0.50	No
		x	-0.007	5.50	No
		x	-0.005	1.50	No
	211	x	-0.004	0.50	No
		x	-0.004	5.50	No
		x	-0.003	1.50	No
LL1	127	y	-0.25	50.00	Yes
LL2	127	y	-0.25	0.00	Yes
LLa1	211	y	-0.25	50.00	Yes

LLa2	210	y	-0.25	50.00	Yes
LLa3	209	y	-0.25	50.00	Yes
LLa4	208	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load on Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load on Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load on Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load on Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

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

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Current Date: 1/30/2019 11:10 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1002\LTE 4C-5C-6C\CT1002 (4C-5C-6C).etz\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+1.6W0
LC2=1.2DL+1.6W30
LC3=1.2DL-1.6W0
LC4=1.2DL-1.6W30
LC5=0.9DL+1.6W0
LC6=0.9DL+1.6W30
LC7=0.9DL-1.6W0
LC8=0.9DL-1.6W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC14=0.9DL
LC15=1.2DL+1.6LL1
LC16=1.2DL+1.6LL2
LC17=1.2DL+WL0+LLa1
LC18=1.2DL+WL30+LLa1
LC19=1.2DL-WL0+LLa1
LC20=1.2DL-WL30+LLa1
LC21=1.2DL+WL0+LLa2
LC22=1.2DL+WL30+LLa2
LC23=1.2DL-WL0+LLa2
LC24=1.2DL-WL30+LLa2
LC25=1.2DL+WL0+LLa3
LC26=1.2DL+WL30+LLa3
LC27=1.2DL-WL0+LLa3
LC28=1.2DL-WL30+LLa3
LC29=1.2DL+WL0+LLa4
LC30=1.2DL+WL30+LLa4
LC31=1.2DL-WL0+LLa4
LC32=1.2DL-WL30+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 3X5	**130**	LC12 at 100.00%	0.38	OK	Eq. H1-1b
		131	LC10 at 100.00%	**0.39**	**OK**	Eq. H1-1b
		132	LC11 at 100.00%	0.39	OK	Eq. H1-1b
	HSS_SQR 1x1x1/8	**115**	LC3 at 33.93%	**4.84**	**N.G.**	Eq. H1-1a
		116	LC4 at 33.93%	4.10	N.G.	Eq. H1-1a
		117	LC2 at 33.93%	3.99	N.G.	Eq. H1-1a
		118	LC4 at 100.00%	0.52	OK	Eq. H1-1a
		119	LC1 at 43.75%	0.42	OK	Eq. H1-1a
		120	LC2 at 0.00%	0.45	OK	Eq. H1-1a
		121	LC4 at 100.00%	1.14	N.G.	Eq. H1-1a
		122	LC2 at 100.00%	1.07	N.G.	Eq. H1-1a
		123	LC2 at 100.00%	1.01	N.G.	Eq. H1-1a
		124	LC4 at 100.00%	0.97	OK	Eq. H1-1b
		125	LC2 at 100.00%	1.04	N.G.	Eq. H1-1a
		126	LC4 at 100.00%	1.01	N.G.	Eq. H1-1b

	127	LC5 at 33.93%	2.08	N.G.	Eq. H1-1a
	128	LC4 at 66.96%	2.12	N.G.	Eq. H1-1a
	129	LC1 at 66.96%	2.22	N.G.	Eq. H1-1a
	133	LC11 at 0.00%	0.71	OK	Eq. H1-1a
	134	LC3 at 100.00%	0.41	OK	Eq. H1-1a
	135	LC12 at 0.00%	0.87	OK	Eq. H1-1a
	136	LC4 at 0.00%	0.64	OK	Eq. H1-1a
	137	LC9 at 0.00%	0.82	OK	Eq. H1-1a
	138	LC1 at 0.00%	0.61	OK	Eq. H1-1a
	139	LC8 at 0.00%	0.84	OK	Eq. H1-1a
	140	LC7 at 100.00%	0.82	OK	Eq. H1-1a
	141	LC5 at 100.00%	0.76	OK	Eq. H1-1a
	142	LC5 at 100.00%	0.72	OK	Eq. H1-1a
	143	LC7 at 0.00%	0.71	OK	Eq. H1-1a
	144	LC6 at 100.00%	0.93	OK	Eq. H1-1a
	151	LC2 at 100.00%	0.67	OK	Eq. H1-1b
	152	LC4 at 100.00%	0.67	OK	Eq. H1-1b
	153	LC4 at 100.00%	0.99	OK	Eq. H1-1b
	154	LC2 at 100.00%	0.91	OK	Eq. H1-1b
	155	LC4 at 100.00%	1.00	OK	Eq. H1-1b
	156	LC8 at 100.00%	1.05	N.G.	Eq. H1-1b
	157	LC5 at 100.00%	0.48	OK	Eq. H1-1a
	158	LC8 at 100.00%	0.52	OK	Eq. H1-1b
	159	LC8 at 100.00%	0.71	OK	Eq. H1-1a
	160	LC6 at 100.00%	0.76	OK	Eq. H1-1a
	161	LC4 at 100.00%	0.48	OK	Eq. H1-1b
	162	LC5 at 100.00%	0.49	OK	Eq. H1-1a
MC 4x1x0.25	**220**	LC2 at 100.00%	**0.01**	**OK**	Sec. F1
	221	LC12 at 100.00%	0.01	OK	Sec. F1
	224	LC3 at 100.00%	0.01	OK	Sec. F1
	225	LC2 at 100.00%	0.01	OK	Sec. F1
	226	LC1 at 100.00%	0.01	OK	Sec. F1
	227	LC9 at 100.00%	0.01	OK	Sec. F1
P1000 Unistrut	**145**	LC3 at 0.00%	0.53	OK	Sec. C5.2
	148	LC8 at 66.25%	0.38	OK	Sec. C5.2
	228	LC1 at 66.25%	0.37	OK	Sec. C5.1
	229	LC1 at 66.25%	0.54	OK	Sec. C5.2
	230	LC7 at 33.75%	0.37	OK	Sec. C5.2
	231	LC2 at 33.75%	**0.55**	**OK**	Sec. C5.2
PIPE 2x0.154	**180**	LC4 at 31.25%	0.41	OK	Eq. H1-1b
	181	LC4 at 31.25%	**0.45**	**OK**	Eq. H1-1b
	182	LC2 at 31.25%	0.31	OK	Eq. H1-1b
	183	LC2 at 31.25%	0.18	OK	Eq. H1-1b
	196	LC2 at 31.25%	0.41	OK	Eq. H1-1b
	197	LC2 at 31.25%	0.45	OK	Eq. H1-1b
	198	LC2 at 31.25%	0.31	OK	Eq. H1-1b
	199	LC4 at 33.33%	0.18	OK	Eq. H1-1b
	208	LC3 at 33.33%	0.32	OK	Eq. H1-1b
	209	LC3 at 33.33%	0.36	OK	Eq. H1-1b
	210	LC3 at 33.33%	0.23	OK	Eq. H1-1b
	211	LC1 at 33.33%	0.15	OK	Eq. H1-1b

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Current Date: 1/30/2019 11:10 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1002\LTE 4C-5C-6C\CT1002 (4C-5C-6C).etz\

Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
111	-1.75	-3.3333	3.0312	0
112	-0.2917	-3.3333	0.5052	0
113	-0.5833	-3.3333	5.00E-05	0
114	-0.2917	-3.3333	-0.5052	0
115	-5.25	-3.3333	3.0312	0
116	-3.50	-3.3333	5.00E-05	0
117	-1.75	-3.3333	-3.0311	0
118	0.00	-3.3333	-6.0621	0
119	1.75	-3.3333	3.0312	0
120	0.2917	-3.3333	0.5052	0
121	0.5833	-3.3333	5.00E-05	0
122	0.2917	-3.3333	-0.5052	0
123	5.25	-3.3333	3.0312	0
124	3.50	-3.3333	5.00E-05	0
125	1.75	-3.3333	-3.0311	0
126	-1.75	0.00	3.0312	0
127	-5.25	0.00	3.0312	0
128	1.75	0.00	3.0312	0
129	0.00	0.00	-6.0621	0
130	3.50	0.00	5.00E-05	0
131	1.75	0.00	-3.0311	0

132	5.25	0.00	3.0312	0
133	-3.50	0.00	5.00E-05	0
134	-1.75	0.00	-3.0311	0
135	5.25	-2.6666	3.0311	0
136	-5.25	-2.6666	3.0312	0
138	5.25	-0.6666	3.0311	0
139	-5.25	-0.6666	3.0312	0
141	-0.2917	0.00	0.5052	0
142	-0.5833	0.00	5.00E-05	0
143	0.2917	0.00	0.5052	0
144	0.5833	0.00	5.00E-05	0
145	0.2917	0.00	-0.5052	0
146	-0.2917	0.00	-0.5052	0
165	0.00	0.00	0.00	0
183	4.8608	2.00	1.9568	0
184	4.8608	-4.00	1.9568	0
188	3.1733	2.00	-0.966	0
189	1.6733	2.00	-3.5641	0
190	0.6316	2.00	-5.3683	0
191	3.1733	-4.00	-0.966	0
192	1.6733	-4.00	-3.5641	0
193	0.6316	-4.00	-5.3683	0
234	-0.7357	2.00	-5.188	0
235	-0.7357	-4.00	-5.188	0
236	-2.4232	2.00	-2.2651	0
237	-2.4232	-4.00	-2.2651	0
238	-3.9232	2.00	0.333	0
239	-3.9232	-4.00	0.333	0
240	-4.9649	2.00	2.1372	0
241	-4.9649	-4.00	2.1372	0
258	-4.125	2.00	3.2312	0
259	-4.125	-4.00	3.2312	0
260	-0.75	2.00	3.2312	0
261	-0.75	-4.00	3.2312	0
262	2.25	2.00	3.2312	0
263	2.25	-4.00	3.2312	0
264	4.3333	2.00	3.2312	0
265	4.3333	-4.00	3.2312	0
266	6.116	-0.6666	3.5311	0
267	6.116	-2.6666	3.5311	0
272	-6.116	-0.6666	3.5311	0
274	-6.116	-2.6666	3.5311	0
276	0.00	-0.6666	-7.0621	0
277	0.00	-0.6666	-6.0621	0
278	0.00	-2.6666	-7.0621	0
279	0.00	-2.6666	-6.0621	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
112	1	1	1	1	1	1
113	1	1	1	1	1	1
114	1	1	1	1	1	1
120	1	1	1	1	1	1
121	1	1	1	1	1	1

122	1	1	1	1	1	1
141	1	1	1	1	1	1
142	1	1	1	1	1	1
143	1	1	1	1	1	1
144	1	1	1	1	1	1
145	1	1	1	1	1	1
146	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
115	115	123		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
116	123	118		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
117	118	115		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
118	119	124		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
119	125	117		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
120	116	111		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
121	111	112		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
122	119	120		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
123	124	121		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
124	125	122		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
125	117	114		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
126	116	113		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
127	127	132		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
128	132	129		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
129	129	127		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
130	115	127		C 3X5	A36	0.00	0.00	0.00
131	123	132		C 3X5	A36	0.00	0.00	0.00
132	118	129		C 3X5	A36	0.00	0.00	0.00
133	111	126		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
134	119	128		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
135	124	130		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
136	125	131		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
137	117	134		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
138	116	133		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
139	118	134		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
140	115	133		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
141	115	126		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
142	123	128		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
143	123	130		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
144	118	131		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
145	135	136		P1000 Unistrut	A36	0.00	0.00	0.00
148	138	139		P1000 Unistrut	A36	0.00	0.00	0.00
151	126	141		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
152	128	143		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
153	130	144		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
154	131	145		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
155	134	146		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
156	133	142		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
157	111	141		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
158	116	142		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
159	117	146		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
160	125	145		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
161	124	144		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
162	119	143		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00

180	183	184	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
181	188	191	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
182	189	192	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
183	190	193	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
196	234	235	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
197	236	237	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
198	238	239	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
199	240	241	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
208	258	259	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
209	260	261	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
210	262	263	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
211	264	265	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
220	266	138	MC 4x1x0.25	A36	0.00	0.00	0.00
221	267	135	MC 4x1x0.25	A36	0.00	0.00	0.00
224	272	139	MC 4x1x0.25	A36	0.00	0.00	0.00
225	274	136	MC 4x1x0.25	A36	0.00	0.00	0.00
226	276	277	MC 4x1x0.25	A36	0.00	0.00	0.00
227	278	279	MC 4x1x0.25	A36	0.00	0.00	0.00
228	138	277	P1000 Unistrut	A36	0.00	0.00	0.00
229	135	279	P1000 Unistrut	A36	0.00	0.00	0.00
230	277	139	P1000 Unistrut	A36	0.00	0.00	0.00
231	279	136	P1000 Unistrut	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
130	120.00	0	0.00	0.00	0.00
131	240.00	0	0.00	0.00	0.00
145	270.00	0	0.00	0.00	0.00
148	270.00	0	0.00	0.00	0.00
180	0.00	2	-0.50	0.00	-0.866
181	0.00	2	-0.50	0.00	-0.866
182	0.00	2	-0.50	0.00	-0.866
183	0.00	2	-0.50	0.00	-0.866
196	0.00	2	-0.50	0.00	0.866
197	0.00	2	-0.50	0.00	0.866
198	0.00	2	-0.50	0.00	0.866
199	0.00	2	-0.50	0.00	0.866
220	90.00	0	0.00	0.00	0.00
221	90.00	0	0.00	0.00	0.00
224	90.00	0	0.00	0.00	0.00
225	90.00	0	0.00	0.00	0.00
226	90.00	0	0.00	0.00	0.00
227	90.00	0	0.00	0.00	0.00
228	270.00	0	0.00	0.00	0.00
229	270.00	0	0.00	0.00	0.00
230	270.00	0	0.00	0.00	0.00
231	270.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
145	-1.00	0.00	0.00	-1.00	0.00	0.00

HUDSON
Design Group LLC

4C/5C/6C Mount Calculations
(Modified Conditions)

Bentley

Current Date: 1/30/2019 10:41 AM
Units system: English
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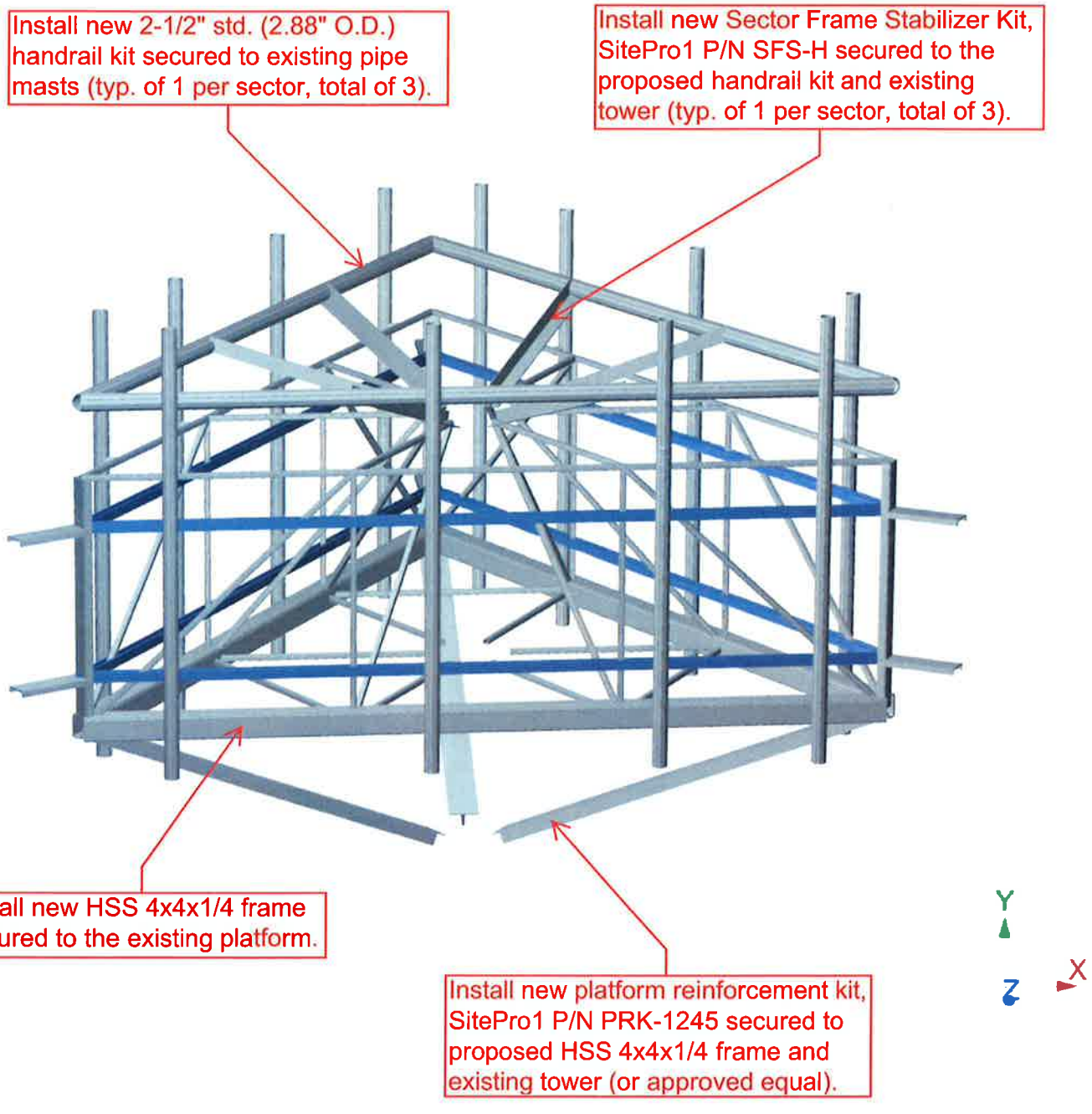

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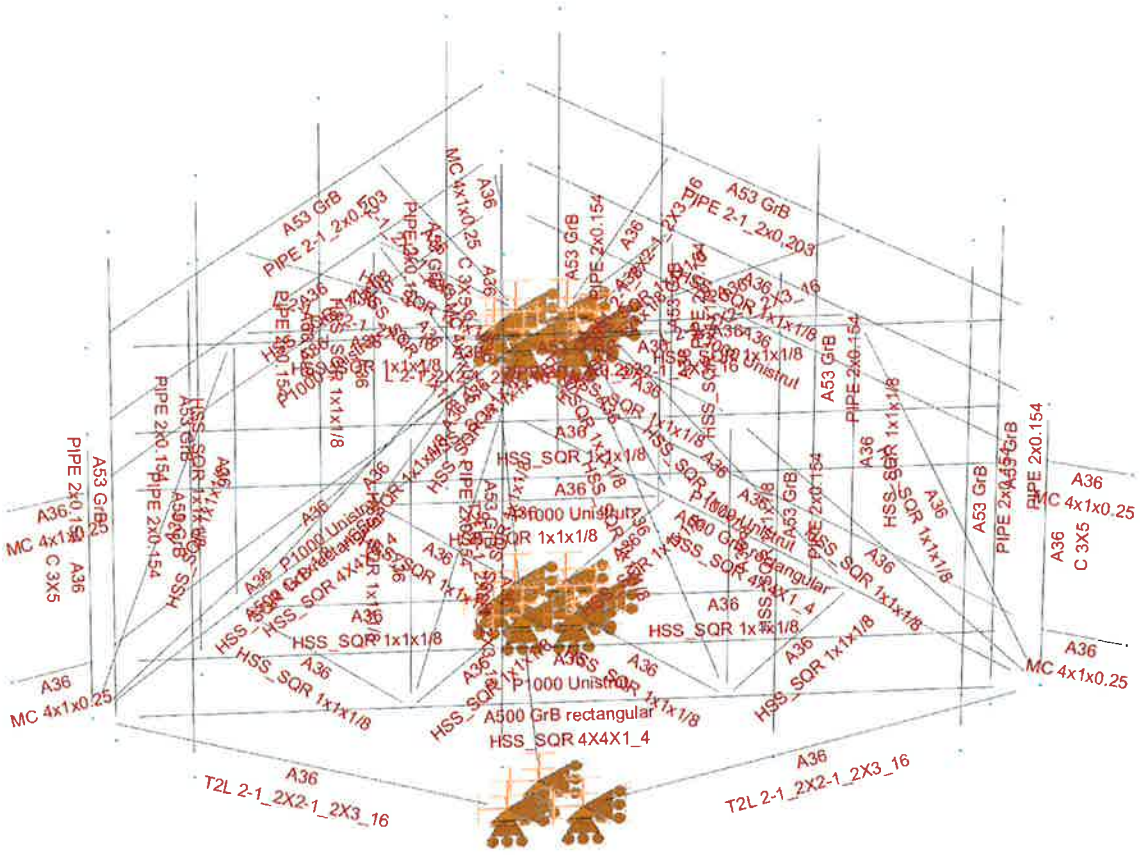

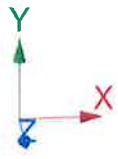

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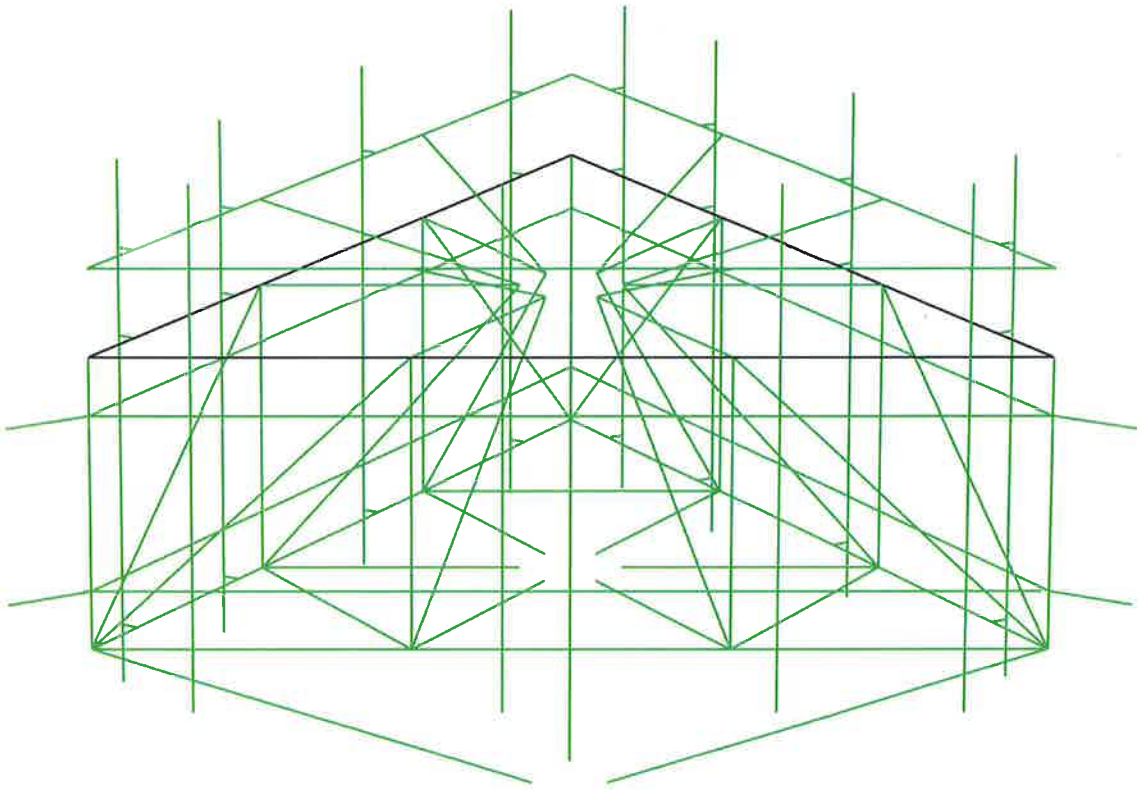
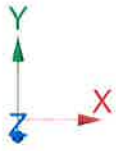
Design status

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





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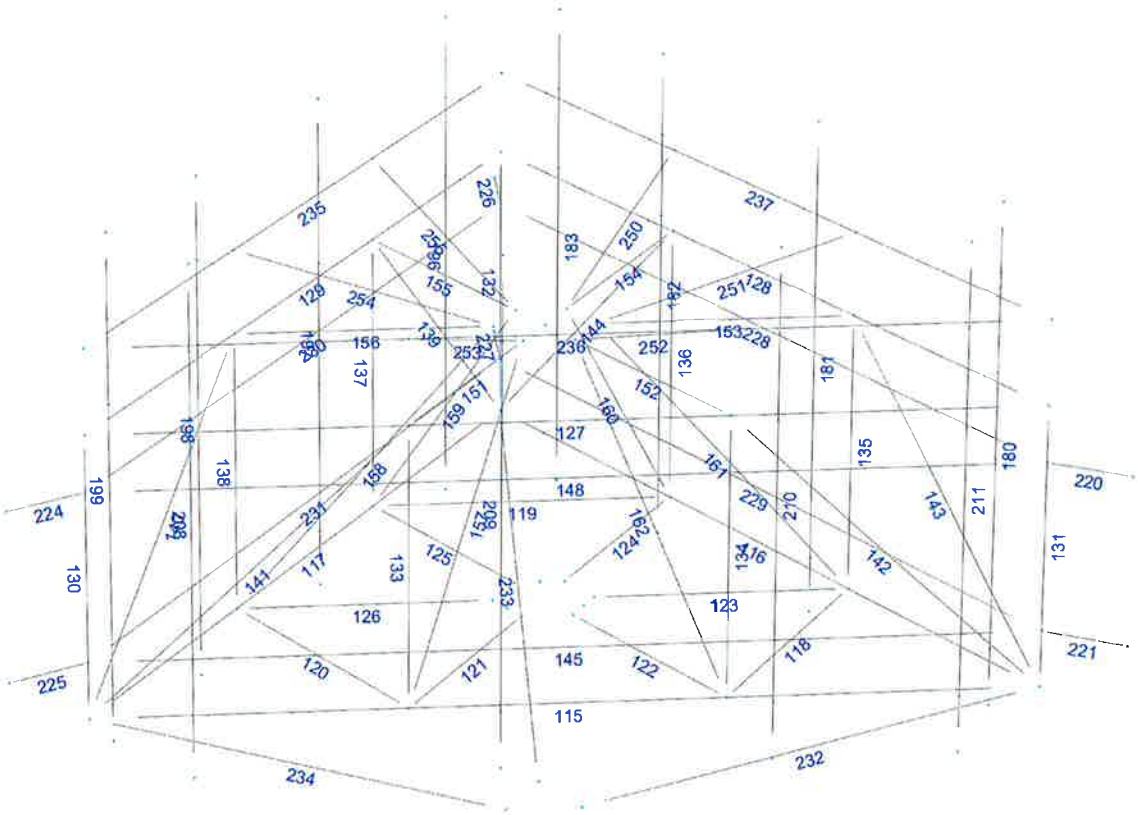

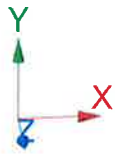

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Load data

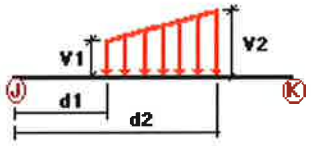
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

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

Distributed force on members



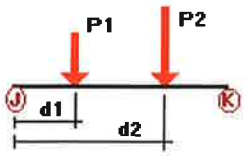
Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	118	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	119	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	120	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	121	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	122	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	123	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	124	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	125	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
	126	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
W0	115	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	116	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	117	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	127	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	128	Z	-0.006	-0.006	0.00	Yes	100.00	Yes

	129	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	133	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	134	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	141	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	142	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	151	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	152	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	153	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	154	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	155	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	156	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	157	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	158	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	159	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	160	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	161	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	162	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	180	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	181	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	182	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	183	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	196	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	197	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	198	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	199	z	-0.006	-0.006	0.00	Yes	100.00	Yes
	232	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	234	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	235	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
	236	Z	-0.004	-0.004	0.00	Yes	100.00	Yes
	237	Z	-0.006	-0.006	0.00	Yes	100.00	Yes
W30	116	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	117	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	128	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	129	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	135	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	136	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	137	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	138	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	139	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	140	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	143	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	144	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	151	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	152	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	153	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	154	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	155	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	156	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	157	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	158	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	159	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	160	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	161	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	162	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	180	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	181	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	182	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	183	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	196	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	197	x	-0.006	-0.006	0.00	Yes	100.00	Yes

	198	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	199	x	-0.006	-0.006	0.00	Yes	100.00	Yes
	232	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	233	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	234	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	235	X	-0.007	-0.007	0.00	Yes	100.00	Yes
	237	X	-0.007	-0.007	0.00	Yes	100.00	Yes
Di	115	Y	-0.023	-0.023	0.00	Yes	100.00	Yes
	116	Y	-0.023	-0.023	0.00	Yes	100.00	Yes
	117	Y	-0.023	-0.023	0.00	Yes	100.00	Yes
	118	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	119	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	120	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	121	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	122	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	123	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	124	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	125	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	126	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	127	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	128	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	129	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	133	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	134	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	135	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	136	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	137	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	138	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	139	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	142	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	143	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	144	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	151	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	152	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	153	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	154	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	155	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	156	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	157	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	158	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	159	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	160	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	161	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	162	Y	-0.011	-0.011	0.00	Yes	100.00	Yes
	180	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	181	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	182	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	183	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	196	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	197	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	198	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	199	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	208	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	209	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	210	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	211	Y	-0.013	-0.013	0.00	Yes	100.00	Yes
	232	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
	233	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
	234	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
	235	Y	-0.015	-0.015	0.00	Yes	100.00	Yes

236	Y	-0.015	-0.015	0.00	Yes	100.00	Yes
237	Y	-0.015	-0.015	0.00	Yes	100.00	Yes
250	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
251	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
252	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
253	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
254	Y	-0.017	-0.017	0.00	Yes	100.00	Yes
255	Y	-0.017	-0.017	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	180	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.06	1.50	No
	181	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.071	1.00	No
		y	-0.072	1.50	No
	182	y	-0.037	0.50	No
		y	-0.037	5.50	No
		y	-0.06	1.50	No
	183	y	-0.018	0.50	No
		y	-0.018	5.50	No
		y	-0.019	1.50	No
	196	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.06	1.50	No
	197	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.071	1.00	No
		y	-0.072	1.50	No
	198	y	-0.037	0.50	No
		y	-0.037	5.50	No
		y	-0.06	1.50	No
	199	y	-0.018	0.50	No
		y	-0.018	5.50	No
		y	-0.019	1.50	No
	208	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.06	1.50	No
	209	y	-0.055	0.50	No
		y	-0.055	5.50	No
		y	-0.071	1.00	No
		y	-0.072	1.50	No
	210	y	-0.037	0.50	No
		y	-0.037	5.50	No
		y	-0.06	1.50	No
	211	y	-0.018	0.50	No

		y	-0.018	5.50	No
		y	-0.019	1.50	No
W0	180	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.034	1.50	No
	181	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.045	1.00	No
		z	-0.038	1.50	No
	182	z	-0.084	0.50	No
		z	-0.084	5.50	No
		z	-0.045	1.50	No
	183	z	-0.046	0.50	No
		z	-0.046	5.50	No
		z	-0.023	1.50	No
	196	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.034	1.50	No
	197	z	-0.10	0.50	No
		z	-0.10	5.50	No
		z	-0.045	1.00	No
		z	-0.038	1.50	No
	198	z	-0.084	0.50	No
		z	-0.084	5.50	No
		z	-0.045	1.50	No
	199	z	-0.046	0.50	No
		z	-0.046	5.50	No
		z	-0.023	1.50	No
	208	z	-0.177	0.50	No
		z	-0.177	5.50	No
	209	z	-0.177	0.50	No
		z	-0.177	5.50	No
	210	z	-0.124	0.50	No
		z	-0.124	5.50	No
	211	z	-0.071	0.50	No
		z	-0.071	5.50	No
W30	180	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.50	No
	181	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.00	No
		x	-0.023	1.50	No
	182	x	-0.11	0.50	No
		x	-0.11	5.50	No
		x	-0.039	1.50	No
	183	x	-0.062	0.50	No
		x	-0.062	5.50	No
		x	-0.014	1.50	No
	196	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.50	No
	197	x	-0.151	0.50	No
		x	-0.151	5.50	No
		x	-0.027	1.00	No
		x	-0.023	1.50	No
	198	x	-0.11	0.50	No
		x	-0.11	5.50	No
		x	-0.039	1.50	No
	199	x	-0.062	0.50	No

		x	-0.062	5.50	No
		x	-0.014	1.50	No
	208	x	-0.075	0.50	No
		x	-0.075	5.50	No
		x	-0.032	1.50	No
	209	x	-0.075	0.50	No
		x	-0.075	5.50	No
		x	-0.05	1.50	No
		x	-0.042	2.00	No
	210	x	-0.071	0.50	No
		x	-0.071	5.50	No
		x	-0.043	1.50	No
	211	x	-0.038	0.50	No
		x	-0.038	5.50	No
		x	-0.028	1.50	No
Di	180	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.078	1.50	No
	181	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.079	1.00	No
		y	-0.069	1.50	No
	182	y	-0.166	0.50	No
		y	-0.166	5.50	No
		y	-0.105	1.50	No
	183	y	-0.094	0.50	No
		y	-0.094	5.50	No
		y	-0.04	1.50	No
	196	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.078	1.50	No
	197	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.079	1.00	No
		y	-0.069	1.50	No
	198	y	-0.166	0.50	No
		y	-0.166	5.50	No
		y	-0.105	1.50	No
	199	y	-0.094	0.50	No
		y	-0.094	5.50	No
		y	-0.04	1.50	No
	208	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.078	1.50	No
	209	y	-0.219	0.50	No
		y	-0.219	5.50	No
		y	-0.079	1.00	No
		y	-0.069	1.50	No
	210	y	-0.166	0.50	No
		y	-0.166	5.50	No
		y	-0.105	1.50	No
	211	y	-0.094	0.50	No
		y	-0.094	5.50	No
		y	-0.04	1.50	No
Wi0	180	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.017	1.50	No
	181	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.021	1.00	No

		z	-0.018	1.50	No
	182	z	-0.034	0.50	No
		z	-0.034	5.50	No
		z	-0.022	1.50	No
	183	z	-0.021	0.50	No
		z	-0.021	5.50	No
		z	-0.013	1.50	No
	196	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.017	1.50	No
	197	z	-0.04	0.50	No
		z	-0.04	5.50	No
		z	-0.021	1.00	No
		z	-0.018	1.50	No
	198	z	-0.034	0.50	No
		z	-0.034	5.50	No
		z	-0.022	1.50	No
	199	z	-0.021	0.50	No
		z	-0.021	5.50	No
		z	-0.013	1.50	No
	208	z	-0.062	0.50	No
		z	-0.062	5.50	No
	209	z	-0.062	0.50	No
		z	-0.062	5.50	No
	210	z	-0.046	0.50	No
		z	-0.046	5.50	No
	211	z	-0.029	0.50	No
		z	-0.029	5.50	No
Wi30	180	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.50	No
	181	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.00	No
		x	-0.011	1.50	No
	182	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.017	1.50	No
	183	x	-0.026	0.50	No
		x	-0.026	5.50	No
		x	-0.01	1.50	No
	196	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.50	No
	197	x	-0.054	0.50	No
		x	-0.054	5.50	No
		x	-0.013	1.00	No
		x	-0.011	1.50	No
	198	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.017	1.50	No
	199	x	-0.026	0.50	No
		x	-0.026	5.50	No
		x	-0.01	1.50	No
	208	x	-0.033	0.50	No
		x	-0.033	5.50	No
		x	-0.017	1.50	No
	209	x	-0.033	0.50	No
		x	-0.033	5.50	No
		x	-0.023	1.00	No

		x	-0.02	1.50	No
	210	x	-0.03	0.50	No
		x	-0.03	5.50	No
		x	-0.021	1.50	No
	211	x	-0.019	0.50	No
		x	-0.019	5.50	No
		x	-0.015	1.50	No
WL0	180	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.004	1.50	No
	181	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.005	1.00	No
		z	-0.004	1.50	No
	182	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.005	1.50	No
	183	z	-0.005	0.50	No
		z	-0.005	5.50	No
		z	-0.003	1.50	No
	196	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.004	1.50	No
	197	z	-0.01	0.50	No
		z	-0.01	5.50	No
		z	-0.005	1.00	No
		z	-0.004	1.50	No
	198	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.005	1.50	No
	199	z	-0.005	0.50	No
		z	-0.005	5.50	No
		z	-0.003	1.50	No
	208	z	-0.017	0.50	No
		z	-0.017	5.50	No
	209	z	-0.017	0.50	No
		z	-0.017	5.50	No
	210	z	-0.012	0.50	No
		z	-0.012	5.50	No
	211	z	-0.007	0.50	No
		z	-0.007	5.50	No
WL30	180	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.50	No
	181	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.00	No
		x	-0.003	1.50	No
	182	x	-0.011	0.50	No
		x	-0.011	5.50	No
		x	-0.004	1.50	No
	183	x	-0.006	0.50	No
		x	-0.006	5.50	No
		x	-0.002	1.50	No
	196	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.50	No
	197	x	-0.015	0.50	No
		x	-0.015	5.50	No
		x	-0.003	1.00	No

		x	-0.003	1.50	No
	198	x	-0.011	0.50	No
		x	-0.011	5.50	No
		x	-0.004	1.50	No
	199	x	-0.006	0.50	No
		x	-0.006	5.50	No
		x	-0.002	1.50	No
	208	x	-0.008	0.50	No
		x	-0.008	5.50	No
		x	-0.004	1.50	No
	209	x	-0.008	0.50	No
		x	-0.008	5.50	No
		x	-0.005	1.00	No
		x	-0.005	1.50	No
	210	x	-0.007	0.50	No
		x	-0.007	5.50	No
		x	-0.005	1.50	No
	211	x	-0.004	0.50	No
		x	-0.004	5.50	No
		x	-0.003	1.50	No
LL1	127	y	-0.25	50.00	Yes
	236	y	-0.25	50.00	Yes
LL2	127	y	-0.25	0.00	Yes
	236	y	-0.25	0.00	Yes
LLa1	211	y	-0.25	50.00	Yes
LLa2	210	y	-0.25	50.00	Yes
LLa3	209	y	-0.25	50.00	Yes
LLa4	208	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load on Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load on Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load on Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load on Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

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

Bentley

Current Date: 1/30/2019 11:21 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1002\LTE 4C-5C-6C\CT1002 (4C-5C (MOD).etz\

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+1.6W0
LC2=1.2DL+1.6W30
LC3=1.2DL-1.6W0
LC4=1.2DL-1.6W30
LC5=0.9DL+1.6W0
LC6=0.9DL+1.6W30
LC7=0.9DL-1.6W0
LC8=0.9DL-1.6W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC14=0.9DL
LC15=1.2DL+1.6LL1
LC16=1.2DL+1.6LL2
LC17=1.2DL+WL0+LLa1
LC18=1.2DL+WL30+LLa1
LC19=1.2DL-WL0+LLa1
LC20=1.2DL-WL30+LLa1
LC21=1.2DL+WL0+LLa2
LC22=1.2DL+WL30+LLa2
LC23=1.2DL-WL0+LLa2
LC24=1.2DL-WL30+LLa2
LC25=1.2DL+WL0+LLa3
LC26=1.2DL+WL30+LLa3
LC27=1.2DL-WL0+LLa3
LC28=1.2DL-WL30+LLa3
LC29=1.2DL+WL0+LLa4
LC30=1.2DL+WL30+LLa4
LC31=1.2DL-WL0+LLa4
LC32=1.2DL-WL30+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 3X5	**130**	LC9 at 0.00%	**0.05**	**OK**	Eq. H1-1b
		131	LC10 at 0.00%	0.04	OK	Eq. H1-1b
		132	LC9 at 100.00%	0.04	OK	Eq. H1-1b
	HSS_SQR 1x1x1/8	**118**	LC12 at 100.00%	0.36	OK	Eq. H1-1a
		119	LC1 at 100.00%	0.41	OK	Eq. H1-1a
		120	LC10 at 100.00%	0.35	OK	Eq. H1-1a
		121	LC4 at 100.00%	0.26	OK	Eq. H1-1b
		122	LC2 at 100.00%	0.25	OK	Eq. H1-1b
		123	LC2 at 100.00%	0.37	OK	Eq. H1-1a
		124	LC3 at 100.00%	0.27	OK	Eq. H1-1a
		125	LC3 at 100.00%	0.28	OK	Eq. H1-1a
		126	LC4 at 100.00%	0.28	OK	Eq. H1-1b
		127	LC15 at 42.86%	0.74	With warnings	Eq. H1-1a
		128	LC7 at 66.96%	0.70	With warnings	Eq. H1-1a
		129	LC5 at 66.96%	**0.82**	**With warnings**	Eq. H1-1a

	133	LC4 at 0.00%	0.11	OK	Eq. H1-1b
	134	LC2 at 0.00%	0.11	OK	Eq. H1-1b
	135	LC1 at 0.00%	0.16	OK	Eq. H1-1b
	136	LC3 at 0.00%	0.11	OK	Eq. H1-1b
	137	LC3 at 0.00%	0.12	OK	Eq. H1-1b
	138	LC1 at 0.00%	0.16	OK	Eq. H1-1b
	139	LC4 at 20.83%	0.25	OK	Eq. H1-1a
	140	LC3 at 100.00%	0.29	OK	Eq. H1-1a
	141	LC2 at 20.83%	0.19	OK	Sec. E1
	142	LC1 at 20.83%	0.18	OK	Sec. E1
	143	LC3 at 100.00%	0.29	OK	Eq. H1-1a
	144	LC2 at 20.83%	0.26	OK	Eq. H1-1a
	151	LC11 at 100.00%	0.08	OK	Eq. H1-1b
	152	LC11 at 100.00%	0.09	OK	Eq. H1-1b
	153	LC4 at 100.00%	0.20	OK	Eq. H1-1b
	154	LC4 at 100.00%	0.18	OK	Eq. H1-1b
	155	LC2 at 100.00%	0.18	OK	Eq. H1-1b
	156	LC2 at 100.00%	0.20	OK	Eq. H1-1b
	157	LC11 at 100.00%	0.30	OK	Eq. H1-1a
	158	LC10 at 100.00%	0.30	OK	Eq. H1-1a
	159	LC10 at 100.00%	0.30	OK	Eq. H1-1a
	160	LC12 at 100.00%	0.30	OK	Eq. H1-1a
	161	LC12 at 100.00%	0.31	OK	Eq. H1-1a
	162	LC11 at 100.00%	0.30	OK	Eq. H1-1a
HSS_SQR 4X4X1_4	**115**	LC11 at 10.71%	0.06	OK	Eq. H1-1b
	116	LC4 at 33.04%	0.06	OK	Eq. H1-1b
	117	LC1 at 33.04%	**0.06**	**OK**	Eq. H1-1b
L 2-1_2X2-1_2X3_16	**250**	LC4 at 0.00%	0.53	OK	Sec. F1
	251	LC2 at 0.00%	0.56	OK	Sec. F1
	252	LC4 at 0.00%	0.20	OK	Sec. F1
	253	LC2 at 0.00%	0.21	OK	Sec. F1
	254	LC4 at 0.00%	**0.57**	**OK**	Sec. F1
	255	LC2 at 0.00%	0.53	OK	Sec. F1
MC 4x1x0.25	**220**	LC4 at 100.00%	0.01	OK	Sec. F1
	221	LC4 at 100.00%	**0.01**	**OK**	Sec. F1
	224	LC3 at 100.00%	0.01	OK	Sec. F1
	225	LC2 at 100.00%	0.01	OK	Sec. F1
	226	LC11 at 100.00%	0.01	OK	Sec. F1
	227	LC1 at 100.00%	0.01	OK	Sec. F1
P1000 Unistrut	**145**	LC2 at 66.25%	0.07	OK	Sec. C5.2
	148	LC4 at 33.75%	0.09	OK	Sec. C5.2
	228	LC7 at 66.25%	0.10	OK	Sec. C5.2
	229	LC5 at 0.00%	0.08	OK	Sec. C5.2
	230	LC7 at 33.75%	**0.10**	**OK**	Sec. C5.2
	231	LC1 at 33.75%	0.08	OK	Sec. C5.2
PIPE 2-1_2x0.203	**235**	LC3 at 33.04%	0.23	OK	Eq. H1-1b
	236	LC1 at 33.04%	0.15	OK	Eq. H1-1b
	237	LC2 at 33.04%	**0.25**	**OK**	Eq. H1-1b
PIPE 2x0.154	**180**	LC2 at 15.63%	0.12	OK	Eq. H1-1b
	181	LC2 at 15.63%	0.12	OK	Eq. H1-1b
	182	LC4 at 15.63%	0.09	OK	Eq. H1-1b
	183	LC4 at 15.63%	0.05	OK	Eq. H1-1b
	196	LC2 at 15.63%	**0.12**	**OK**	Eq. H1-1b
	197	LC2 at 15.63%	0.12	OK	Eq. H1-1b
	198	LC2 at 15.63%	0.09	OK	Eq. H1-1b
	199	LC16 at 17.19%	0.06	OK	Eq. H1-1b
	208	LC1 at 15.63%	0.10	OK	Eq. H1-1b
	209	LC1 at 15.63%	0.10	OK	Eq. H1-1b

	210	LC1 at 15.63%	0.07	OK	Eq. H1-1b
	211	LC4 at 32.81%	0.05	OK	Eq. H1-1b
T2L 2-1_2X2-1_2X3_16	**232**	LC4 at 0.00%	0.28	OK	Eq. H2-1
	233	LC4 at 0.00%	**0.29**	**OK**	Eq. H2-1
	234	LC2 at 0.00%	0.28	OK	Eq. H2-1

Bentley

Current Date: 1/30/2019 11:21 AM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1002\LTE 4C-5C-6C\CT1002 (4C-5C (MOD).etz\

Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
111	-1.75	-3.3333	3.0312	0
112	-0.2917	-3.3333	0.5052	0
113	-0.5833	-3.3333	5.00E-05	0
114	-0.2917	-3.3333	-0.5052	0
115	-5.25	-3.3333	3.0312	0
116	-3.50	-3.3333	5.00E-05	0
117	-1.75	-3.3333	-3.0311	0
118	0.00	-3.3333	-6.0621	0
119	1.75	-3.3333	3.0312	0
120	0.2917	-3.3333	0.5052	0
121	0.5833	-3.3333	5.00E-05	0
122	0.2917	-3.3333	-0.5052	0
123	5.25	-3.3333	3.0312	0
124	3.50	-3.3333	5.00E-05	0
125	1.75	-3.3333	-3.0311	0
126	-1.75	0.00	3.0312	0
127	-5.25	0.00	3.0312	0
128	1.75	0.00	3.0312	0
129	0.00	0.00	-6.0621	0
130	3.50	0.00	5.00E-05	0
131	1.75	0.00	-3.0311	0

132	5.25	0.00	3.0312	0
133	-3.50	0.00	5.00E-05	0
134	-1.75	0.00	-3.0311	0
135	5.25	-2.6666	3.0311	0
136	-5.25	-2.6666	3.0312	0
138	5.25	-0.6666	3.0311	0
139	-5.25	-0.6666	3.0312	0
141	-0.2917	0.00	0.5052	0
142	-0.5833	0.00	5.00E-05	0
143	0.2917	0.00	0.5052	0
144	0.5833	0.00	5.00E-05	0
145	0.2917	0.00	-0.5052	0
146	-0.2917	0.00	-0.5052	0
165	0.00	0.00	0.00	0
183	4.8608	2.00	1.9568	0
184	4.8608	-4.00	1.9568	0
188	3.1733	2.00	-0.966	0
189	1.6733	2.00	-3.5641	0
190	0.6316	2.00	-5.3683	0
191	3.1733	-4.00	-0.966	0
192	1.6733	-4.00	-3.5641	0
193	0.6316	-4.00	-5.3683	0
234	-0.7357	2.00	-5.188	0
235	-0.7357	-4.00	-5.188	0
236	-2.4232	2.00	-2.2651	0
237	-2.4232	-4.00	-2.2651	0
238	-3.9232	2.00	0.333	0
239	-3.9232	-4.00	0.333	0
240	-4.9649	2.00	2.1372	0
241	-4.9649	-4.00	2.1372	0
258	-4.125	2.00	3.2312	0
259	-4.125	-4.00	3.2312	0
260	-0.75	2.00	3.2312	0
261	-0.75	-4.00	3.2312	0
262	2.25	2.00	3.2312	0
263	2.25	-4.00	3.2312	0
264	4.3333	2.00	3.2312	0
265	4.3333	-4.00	3.2312	0
266	6.116	-0.6666	3.5311	0
267	6.116	-2.6666	3.5311	0
272	-6.116	-0.6666	3.5311	0
274	-6.116	-2.6666	3.5311	0
276	0.00	-0.6666	-7.0621	0
277	0.00	-0.6666	-6.0621	0
278	0.00	-2.6666	-7.0621	0
279	0.00	-2.6666	-6.0621	0
280	-0.4375	-3.3333	0.2526	0
281	-0.4375	-5.8333	0.2526	0
282	0.4375	-3.3333	0.2526	0
283	0.4375	-5.8333	0.2526	0
284	0.00	-3.3333	-0.5052	0
285	0.00	-5.8333	-0.5052	0
310	0.00	1.00	-6.0621	0
311	-5.25	1.00	3.0312	0
312	5.25	1.00	3.0312	0
313	1.75	1.00	-3.0311	0
314	3.50	1.00	5.00E-05	0
315	1.75	1.00	3.0312	0
316	-1.75	1.00	3.0312	0
317	-3.50	1.00	5.00E-05	0

318	-1.75	1.00	-3.0311	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
112	1	1	1	1	1	1
113	1	1	1	1	1	1
114	1	1	1	1	1	1
120	1	1	1	1	1	1
121	1	1	1	1	1	1
122	1	1	1	1	1	1
141	1	1	1	1	1	1
142	1	1	1	1	1	1
143	1	1	1	1	1	1
144	1	1	1	1	1	1
145	1	1	1	1	1	1
146	1	1	1	1	1	1
281	1	1	1	1	1	1
283	1	1	1	1	1	1
285	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
115	115	123		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
116	123	118		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
117	118	115		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
118	119	124		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
119	125	117		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
120	116	111		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
121	111	112		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
122	119	120		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
123	124	121		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
124	125	122		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
125	117	114		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
126	116	113		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
127	127	132		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
128	132	129		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
129	129	127		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
130	115	127		C 3X5	A36	0.00	0.00	0.00
131	123	132		C 3X5	A36	0.00	0.00	0.00
132	118	129		C 3X5	A36	0.00	0.00	0.00
133	111	126		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
134	119	128		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
135	124	130		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
136	125	131		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
137	117	134		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
138	116	133		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
139	118	134		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
140	115	133		HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00

141	115	126	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
142	123	128	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
143	123	130	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
144	118	131	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
145	135	136	P1000 Unistrut	A36	0.00	0.00	0.00
148	138	139	P1000 Unistrut	A36	0.00	0.00	0.00
151	126	141	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
152	128	143	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
153	130	144	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
154	131	145	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
155	134	146	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
156	133	142	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
157	111	141	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
158	116	142	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
159	117	146	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
160	125	145	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
161	124	144	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
162	119	143	HSS_SQR 1x1x1/8	A36	0.00	0.00	0.00
180	183	184	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
181	188	191	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
182	189	192	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
183	190	193	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
196	234	235	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
197	236	237	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
198	238	239	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
199	240	241	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
208	258	259	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
209	260	261	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
210	262	263	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
211	264	265	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
220	266	138	MC 4x1x0.25	A36	0.00	0.00	0.00
221	267	135	MC 4x1x0.25	A36	0.00	0.00	0.00
224	272	139	MC 4x1x0.25	A36	0.00	0.00	0.00
225	274	136	MC 4x1x0.25	A36	0.00	0.00	0.00
226	276	277	MC 4x1x0.25	A36	0.00	0.00	0.00
227	278	279	MC 4x1x0.25	A36	0.00	0.00	0.00
228	138	277	P1000 Unistrut	A36	0.00	0.00	0.00
229	135	279	P1000 Unistrut	A36	0.00	0.00	0.00
230	277	139	P1000 Unistrut	A36	0.00	0.00	0.00
231	279	136	P1000 Unistrut	A36	0.00	0.00	0.00
232	283	123	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
233	285	118	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
234	281	115	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
235	310	311	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
236	311	312	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
237	312	310	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
250	145	313	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
251	144	314	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
252	143	315	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
253	141	316	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
254	142	317	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
255	146	318	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
130	120.00	0	0.00	0.00	0.00
131	240.00	0	0.00	0.00	0.00
145	270.00	0	0.00	0.00	0.00
148	270.00	0	0.00	0.00	0.00
180	0.00	2	-0.50	0.00	-0.866
181	0.00	2	-0.50	0.00	-0.866
182	0.00	2	-0.50	0.00	-0.866
183	0.00	2	-0.50	0.00	-0.866
196	0.00	2	-0.50	0.00	0.866
197	0.00	2	-0.50	0.00	0.866
198	0.00	2	-0.50	0.00	0.866
199	0.00	2	-0.50	0.00	0.866
220	90.00	0	0.00	0.00	0.00
221	90.00	0	0.00	0.00	0.00
224	90.00	0	0.00	0.00	0.00
225	90.00	0	0.00	0.00	0.00
226	90.00	0	0.00	0.00	0.00
227	90.00	0	0.00	0.00	0.00
228	270.00	0	0.00	0.00	0.00
229	270.00	0	0.00	0.00	0.00
230	270.00	0	0.00	0.00	0.00
231	270.00	0	0.00	0.00	0.00
251	270.00	0	0.00	0.00	0.00
253	270.00	0	0.00	0.00	0.00
255	270.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
145	-1.00	0.00	0.00	-1.00	0.00	0.00

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

SPECIAL INSPECTION CHECKLIST

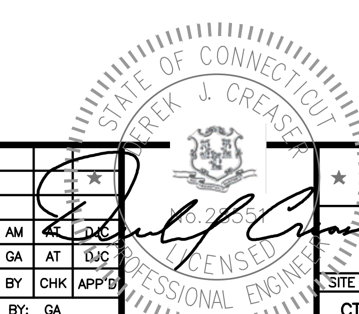
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS: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

NOTES:

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

NOTES:

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



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

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

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD
ATC SITE #: 302473

2 PRESTIGE PARK ROAD
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

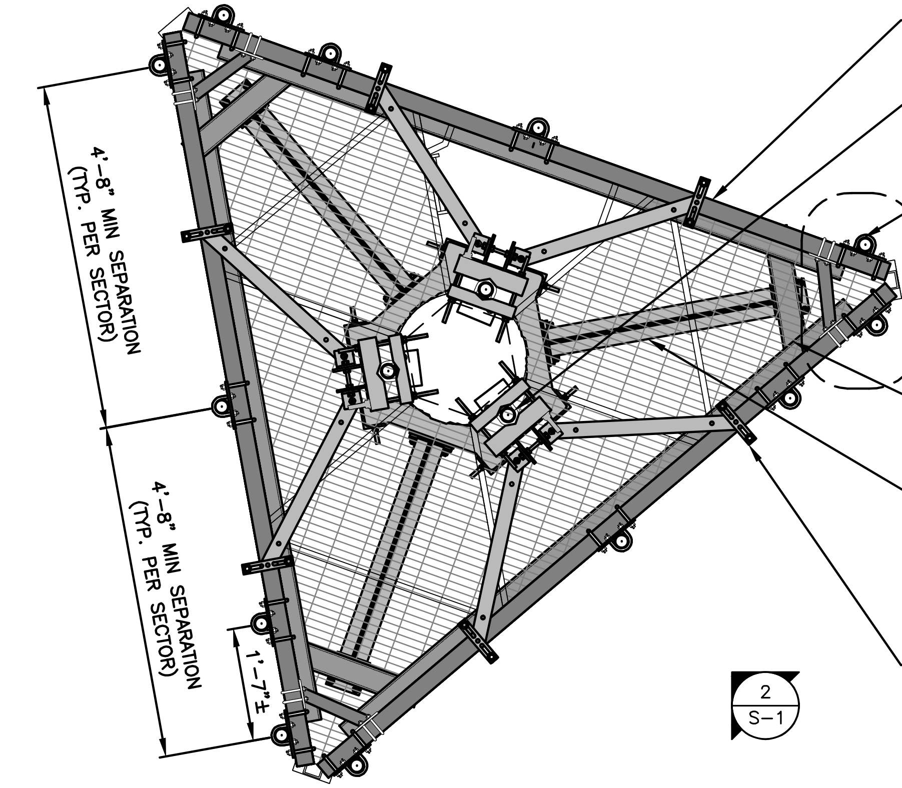
NO.	DATE	REVISIONS	BY	CHK	APP'D
1	05/29/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

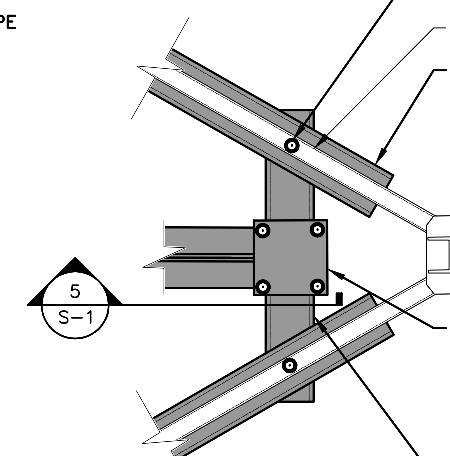
AT&T

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

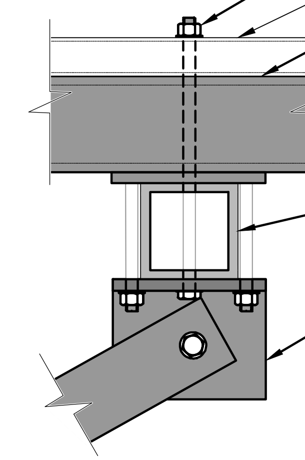
SITE NUMBER	DRAWING NUMBER	REV
CT1002	SN-1	1



MOUNT REINFORCEMENT PLAN 1 S-1
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



CONNECTION DETAIL PLAN 4 S-1
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"
0 0'-4" 0'-8" 1'-4" 2'-0"

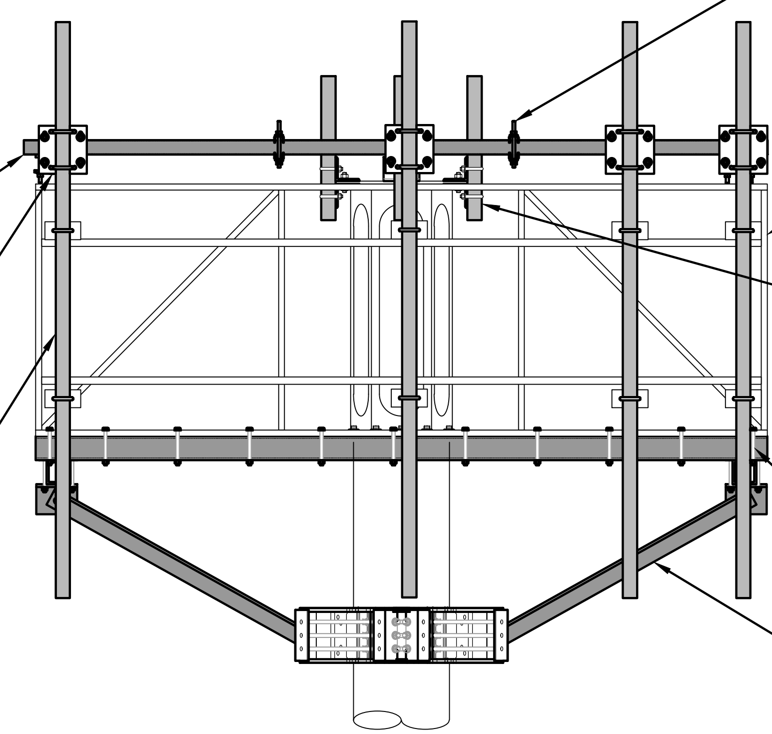


CONNECTION DETAIL ELEVATION 5 S-1
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"
0 0'-2" 0'-4" 0'-8" 1'-0"

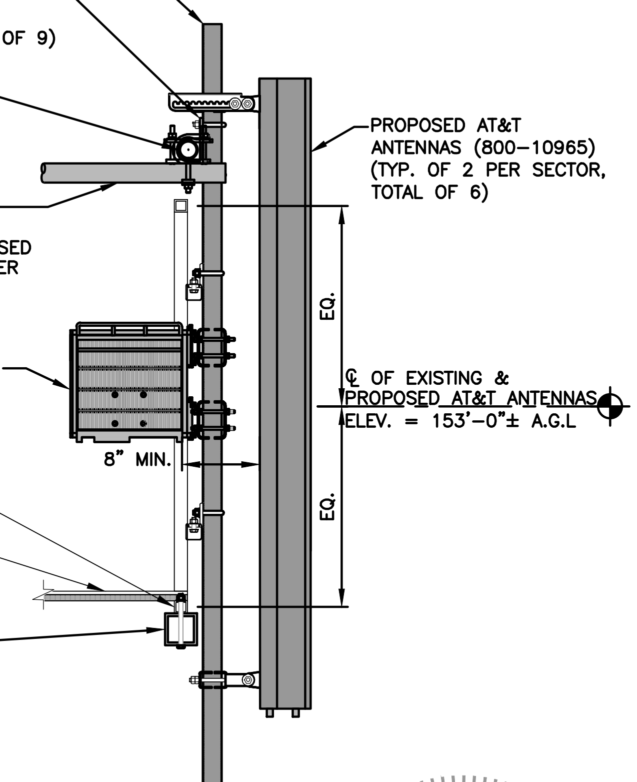
NOTE:
REFER TO **STRUCTURAL ANALYSIS** BY: AMERICAN TOWER CORPORATION, DATED: APRIL 29, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 30, 2019

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



PLATFORM REINFORCEMENT PLAN 2 S-1
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED MOUNT MODIFICATION DETAIL 3 S-1
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"

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

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at&t
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A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

STATE OF CONNECTICUT — DANIEL CREASER — LICENSED PROFESSIONAL ENGINEER

AT&T
MOUNT MODIFICATIONS DESIGN
(LTE 4C/5C/6C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT1002	S-1	1

NOTE:

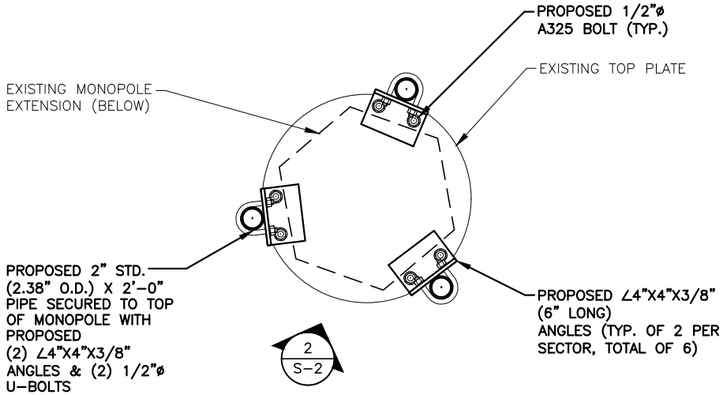
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

REFER TO **STRUCTURAL ANALYSIS** BY: AMERICAN TOWER CORPORATION, DATED: APRIL 29, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

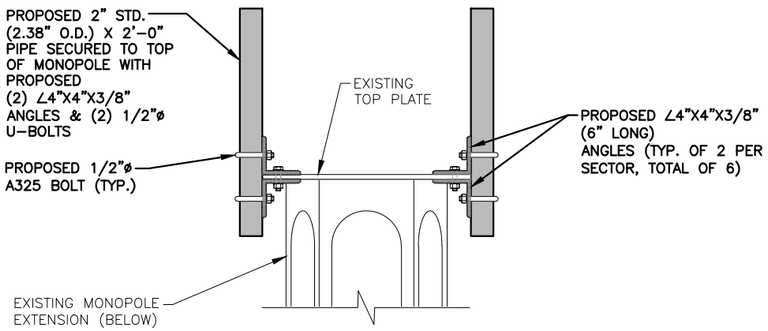
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 30, 2019



PROPOSED STABILIZER SUPPORT FRAME 1 / S-2

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

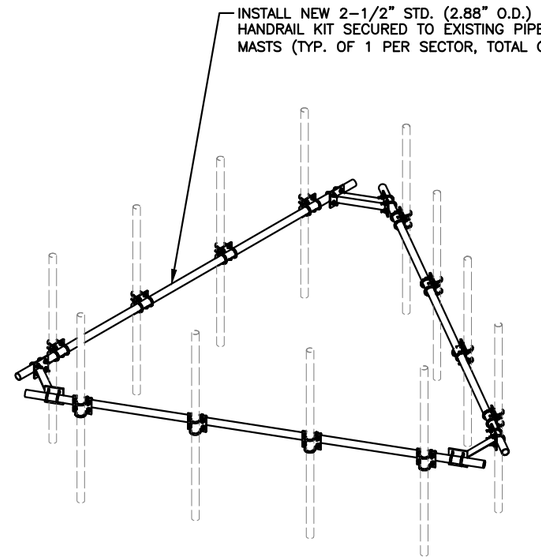
0 0'-4" 0'-8" 1'-4" 2'-0"



PROPOSED STABILIZER SUPPORT ELEVATION 2 / S-2

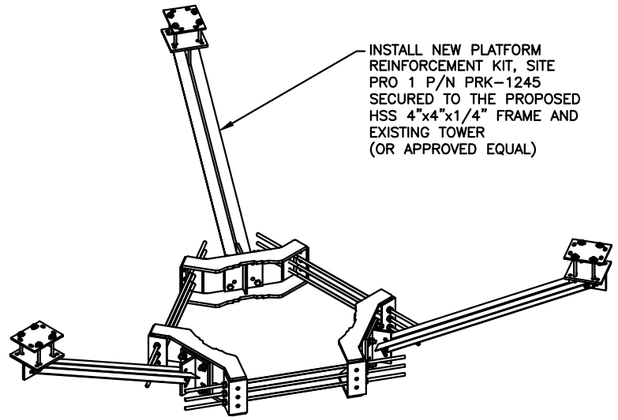
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"

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



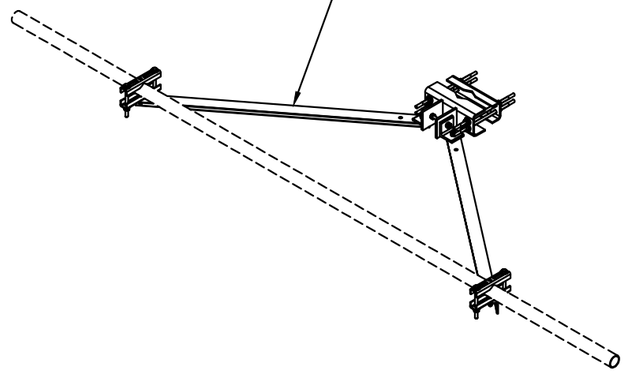
PROPOSED HANDRAIL KIT 3 / S-2

SCALE: N.T.S



PROPOSED PLATFORM REINFORCEMENT MOUNT DETAIL 5 / S-2

SCALE: N.T.S



PROPOSED REINFORCEMENT HANDRAIL KIT 4 / S-2

SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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A	01/16/19	ISSUED FOR REVIEW	GA	AT	DJC

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

STATE OF CONNECTICUT · DEREK J. CREASER · No. 28055 · LICENSED PROFESSIONAL ENGINEER

AT&T

MOUNT MODIFICATIONS DESIGN
(LTE 4C/5C/6C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT1002	S-2	1

EXHIBIT 5

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CTL01002

East Hartford
2 Prestige Park Road

East Hartford, CT 06108

June 4, 2019

Centerline Communications Project Number: 950012-220

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**17.52 %**

June 4, 2019

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

Emissions Analysis for Site: **CTL01002 – East Hartford**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **2 Prestige Park Road in East Hartford, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **2 Prestige Park Road in East Hartford, Connecticut**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
5G	850 MHz	2	25
LTE	850 MHz	2	40
LTE	700 MHz	2	40
LTE	2100 MHz (AWS)	4	30
LTE	1900 MHz (PCS)	4	40
LTE	2300 MHz (WCS)	4	30

Table 1: Channel Data Table

The following antennas listed in Table 2 were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	154
A	2	CCI OPA-65R-LCUU-H6	154
A	3	Kathrein 800-10965	154
A	4	Kathrein 800-10965	154
B	1	Powerwave 7770	154
B	2	CCI OPA-65R-LCUU-H6	154
B	3	Kathrein 800-10965	154
B	4	Kathrein 800-10965	154
C	1	Powerwave 7770	154
C	2	CCI OPA-65R-LCUU-H6	154
C	3	Kathrein 800-10965	154
C	4	Kathrein 800-10965	154

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	11.5 dBd	2	60	547.52	0.23
Antenna A2	CCI OPA-65R-LCUU-H6	2300 MHz	15.45 dBd	4	120	4,209.02	0.64
Antenna A3	Kathrein 800-10965	700 MHz / 2100 MHz	12.65 dBd / 15.95 dBd	6	200	6,195.22	1.19
Antenna A4	Kathrein 800-10965	700 MHz / 850 MHz / 1900 MHz / 1900 MHz / 850 MHz	12.65 dBd / 13.45 dBd / 15.65 dBd / 15.65 dBd / 13.45 dBd	10	370	10,226.16	2.14
						Sector A Composite MPE%	**4.20**
Antenna B1	Powerwave 7770	850 MHz	11.5 dBd	2	60	547.52	0.23
Antenna B2	CCI OPA-65R-LCUU-H6	2300 MHz	15.45 dBd	4	120	4,209.02	0.64
Antenna B3	Kathrein 800-10965	700 MHz / 2100 MHz	12.65 dBd / 15.95 dBd	6	200	6,195.22	1.19
Antenna B4	Kathrein 800-10965	700 MHz / 850 MHz / 1900 MHz / 1900 MHz / 850 MHz	12.65 dBd / 13.45 dBd / 15.65 dBd / 15.65 dBd / 13.45 dBd	10	370	10,226.16	2.14
						Sector B Composite MPE%	**4.20**
Antenna C1	Powerwave 7770	850 MHz	11.5 dBd	2	60	547.52	0.23
Antenna C2	CCI OPA-65R-LCUU-H6	2300 MHz	15.45 dBd	4	120	4,209.02	0.64
Antenna C3	Kathrein 800-10965	700 MHz / 2100 MHz	12.65 dBd / 15.95 dBd	6	200	6,195.22	1.19
Antenna C4	Kathrein 800-10965	700 MHz / 850 MHz / 1900 MHz / 1900 MHz / 850 MHz	12.65 dBd / 13.45 dBd / 15.65 dBd / 15.65 dBd / 13.45 dBd	10	370	10,226.16	2.14
						Sector C Composite MPE%	**4.20**

Table 3: AT&T Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**4.20 %**
Verizon	8.9 %
Clearwire	0.21 %
T-Mobile	3.19 %
Sprint	1.02 %
Site Total MPE %:	**17.52 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	4.20 %
AT&T Sector B Total:	4.20 %
AT&T Sector C Total:	4.20 %
Site Total:	17.52 %

Table 5: Site MPE Summary

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

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($i.tW/cm^2$)	Frequency (MHz)	Allowable MPE ($i.tW/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS- Antenna 1	2	423.76	154.0	1.28	850 MHz UMTS	567	0.23%
AT&T 2300 MHz LTE-WCS Antenna 2	4	1052.26	154.0	6.38	2300 MHz LTE-WCS	1000	0.64%
AT&T 700 MHz LTE Antenna 3	2	736.31	154.0	2.23	700 MHz LTE	467	0.48%
AT&T 2100 MHz LTE-AWS Antenna 3	4	1180.65	154.0	7.16	2100 MHz LTE-	1000	0.72%
AT&T 700 MHz LTE Antenna 4	2	736.31	154.0	2.23	700 MHz LTE	467	0.48%
AT&T 850 MHz LTE Antenna 4	2	885.24	154.0	2.68	850 MHz LTE	567	0.47%
AT&T 1900 MHz LTE Antenna 4	2	1469.13	154.0	4.45	1900 MHz LTE	1000	0.45%
AT&T 1900 MHz LTE Antenna 4	2	1469.13	154.0	4.45	1900 MHz LTE	1000	0.45%
AT&T 850 MHz 5G Antenna 4	2	553.27	154.0	1.68	850 MHz 5G	567	0.30%
						Total:	**4.20%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	4.20 %
Sector B:	4.20 %
Sector C:	4.20 %
AT&T Maximum Total (per sector):	4.20 %
Site Total:	17.52 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **17.52 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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

EXHIBIT 6

DOCKET NO. 40

ORIGINAL

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN THE HARTFORD AND MIDDLESEX COUNTIES.	:	CONNECTICUT SITING COUNCIL
	:	May 15, 1984

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to Southern New England Telephone for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Shuttle Meadow Road, Southington, Connecticut;
Mountain Street, Hartford, Connecticut;
Prestige Park Road, East Hartford, Connecticut;
Beckley Road, Berlin, Connecticut;
Slicer tract, Niederwerfer Road, South Windsor, Connecticut; and
Kikapoo Road, Middlefield, Connecticut.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions.

1. The towers shall be no taller than necessary to provide the proposed service and in no event shall exceed

   a) 150 feet at the Southington site,
   b) 100 feet at the Hartford site,
   c) 150 feet at the East Hartford site,
   d) 150 feet at the Berlin site,
   e) 75 feet at the South Windsor site, and
   f) 75 feet at the Middlefield site.

2. A fence not lower than eight feet shall surround each tower and its associated equipment.

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities.
4. The applicant or its successor shall permit in accordance with representations made by it during the proceeding public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
5. Unless necessary to comply with condition number seven, below, no lights shall be installed on any of these towers.
6. The facility construction shall be conducted in accordance with all applicable federal, state, and municipal laws and regulations.
7. The applicant shall submit a development and management plan (D&M) for the South Windsor, Southington, and Berlin sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites. The applicant shall consult with Mrs. Claire Aubin and the Town of South Windsor in the preparation of the South Windsor site D&M.
8. Construction activities shall take place during daylight working hours.
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed,

or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction.

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p(c) of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, Journal Inquirer, and the Middletown Press.

The parties to this proceeding are

Southern New England Telephone Company Room 314 227 Church Street New Haven, Connecticut 06506	(Applicant)
ATTN: Mr. Peter J. Tyrrell, Esquire	(its attorney)
Town of South Windsor 1540 Sullivan Avenue South Windsor, Connecticut 06074	represented by: Mr. Richard M. Rittenband Town Attorney 1734 Ellington Road South Windsor, Connecticut 06074
Frank Niederwerfer 260 Niederwerfer Road South Windsor, Connecticut 06074	(service waived)
Claire Aubin 407 Niederwerfer Road South Windsor, Connecticut 06074	(service waived)

Betty S. Kleiner
Chairman
Hartford Audubon Society, Inc.
5 Flintlock Ridge
Simsbury, Connecticut 06070

(service waived)

Roger Thorpe
2916 Ellington Road
South Windsor, Connecticut 06074

Intervenors in this proceeding are

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

representing:

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 15th day of May, 1984.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner John Downey Designee: Commissioner Peter G. Boucher	Yes
Commissioner Stanley Pac Designee: Christopher Cooper	Yes
Owen L. Clark	Yes
Fred J. Doocy	~~Yes~~ Abstain
Mortimer A. Gelston	Yes
James G. Horsfall	Absent
Janet Sitty	Yes
Colin C. Tait	Absent

STATE OF CONNECTICUT)
: ss. New Britain, May 15, 1984
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Christopher S. Wood, Executive Director
Connecticut Siting Council