# METROPCS MASSACHUSETTS, LLC NOTICE OF INTENT TO MODIFY AN EXISTING TELECOMMUNICATIONS FACILITY AT 148 ROBERTS STREET, EAST HARTFORD, CONNECTICUT

Pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes § 16-50g et. Seq. ("PUESA"), and Sections 16-50j-72(b) and 16-50j-73 of the Regulations of Connecticut State Agencies ("R.C.S.A") adopted pursuant to the PUESA, Metro PCS, Inc., by and through its agent MetroPCS Massachusetts, LLC ("MetroPCS") hereby notifies the Connecticut Siting Council of its intent to modify an existing facility located at 148 Roberts Street, East Hartford, Connecticut. The telecommunications facility is owned by Greater Hartford Transit District and leased to MetroPCS.

## MetroPCS' Proposed Wireless Modifications

MetroPCS achieved an initial exempt modification approval from the Siting Council to install antennas and related ground equipment on July 28, 2011. The facility consists of a one hundred and thirty (130') foot high monopole telecommunications tower (the "Tower") within a fenced compound. MetroPCS now intends to modify the facility as shown on the enclosed plans prepared by Advanced Engineering Group and annexed hereto as Exhibit 1. The modifications will consist of swapping exiting antennas with six (6) new antennas at an AGL of 100'and adding one (1) 1 5/8" hybriflex cable. One (1) GPS unit to be added to the existing cable bridge. On the ground MetroPCS will be swapping one (1) existing cabinet for one (1) equipment cabinet within existing lease area on existing concrete pad. A structural analysis has been completed for the site. Please see report attached in exhibit 3.

In accordance with R.C.S.A Section 16-50j-73, a copy of this submission is being sent to the Town of East Hartford. A copy of this submission is also being sent to Greater Hartford Transit District, the property owner on which the tower is located.

## MetroPCS' Proposed Wireless Modifications Constitutes An "Exempt Modification"

The proposed modification to the East Hartford, CT Facility constitutes an exempt modification of an existing facility provided for in R.C.S.A Section 16-50j-72(b)(2) and Council regulations promulgated pursuant thereto.

1) The proposed modifications will be to swap the existing MetroPCS antennas at the same AGL of 100' and to swap one (1) cabinet on the existing concrete pad. This installation will not result in an increase in the height of the existing tower.
2) The proposed modifications will not require expansion of the site boundaries.
3) The proposed modifications will not increase noise levels at the facility by six decibels or more.
4) MetroPCS' proposed facility will not increase the cumulative radio frequency electromagnetic radiation power density at the Tower site's boundary to or above the

standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. A cumulative General Power Density table for MetroPCS' proposed modified facility is included as Exhibit 2.

For all the foregoing reasons, MetroPCS' respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A Section 16-50j-72(b)(2)

Respectfully submitted,

Karla Hanna

**Karla Hanna (978) 852-7520**
On behalf of MetroPCS Massachusetts, LLC
c/o Tower Resource Management, Inc.
16 Chestnut Street, Suite 220
Foxboro, MA 02035

cc: **Town of East Hartford, CT**
**Greater Hartford Transit District**

# Exhibit 1

## Site Plan

## PROJECT INFORMATION

| | |
|---|---|
| SCOPE OF WORK: | UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS |
| SITE ADDRESS: | 148 ROBERTS STREET<br>EAST HARTFORD, CT 06108 |
| LATITUDE:<br>LONGITUDE: | 41.77333333<br>-72.61354167 |
| JURISDICTION: | NATIONAL, STATE & LOCAL CODES OR ORDINANCES |
| CURRENT USE: | TELECOMMUNICATIONS FACILITY |
| PROPOSED USE: | TELECOMMUNICATIONS FACILITY |
| DESIGN GUIDELINE: | 5A |

# SITE NAME: CROWN E HARTFORD MONOPOLE

148 ROBERTS STREET
EAST HARTFORD, CT 06108
HARTFORD COUNTY

SITE NUMBER: HFC1287B
(CTHA505)

## DRAWING INDEX

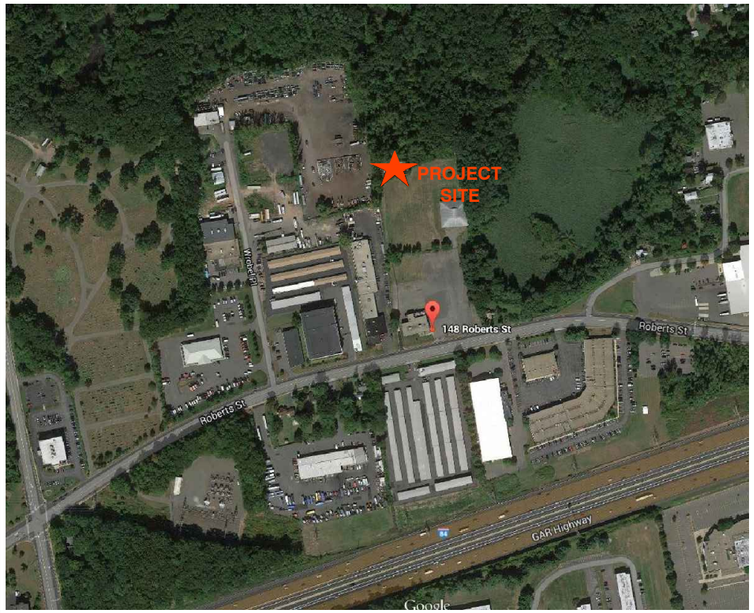


## SIGNATURES

| | | | |
|---|---|---|---|
| CONSTRUCTION | DATE | OPERATIONS | DATE |
| RF ENGINEERING | DATE | LAND OWNER | DATE |
| ZONING / SITE ACQ. | DATE | | |

STATE OF CONNECTICUT
MARC R. CHRETIEN
No.28307
LICENSED PROFESSIONAL ENGINEER

## LOCUS MAP




## GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE NORTHEAST, LLC. 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 T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL

BEFORE YOU DIG

CALL TOLL FREE 811 OR 888-DIG-SAFE

UNDERGROUND SERVICE ALERT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Civil Engineering - Site Development Surveying - Telecommunications
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Unlimit Yourself.
285 BILLERICA ROAD
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**SITE NUMBER: HFC1287B**
**SITE NAME: CROWN E HARTFORD MONOPOLE**
148 ROBERTS STREET
EAST HARTFORD, CT 06108

| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|---|---|---|---|---|---|
| 0 | 08/08/14 | ISSUED FOR REVIEW | JTG | SNA | SNA |

SCALE: AS SHOWN | DESIGNED BY: SNA | DRAWN BY: JTG

MetroPCS

TITLE SHEET

| JOB NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| HFC1287B | T-1 | 0 |

# GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE LESEE/LICENSEE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.

4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.

15. THE CONTRACTOR SHALL NOTIFY THE LESEE/LICENSEE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESEE/LICENSEE REPRESENTATIVE.

16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233 CALL BEFORE YOU DIG (CT): 1-800-922-4455

18. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS SHOWN HEREIN.

19. ALL DIMENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH PROJECT OWNER PRIOR TO CONSTRUCTION.

20. NORTH ARROW SHOWN ON PLANS REFERS TO APPROXIMATE TRUE NORTH. PRIOR TO THE START OF CONSTRUCTION, ORDERING OR FABRICATING OF ANTENNA MOUNTS, CONTRACTOR SHALL CONSULT WITH PROJECT OWNER'S RF ENGINEER AND FIELD VERIFY ALL ANTENNA SECTOR LOCATIONS AND ANTENNA AZIMUTHS.

21. THE CONTRACTOR AND OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

22. ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURES.

23. COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE PROJECT OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF PROJECT OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE EXHIBIT 3). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.

24. WHEN "PAINT TO MATCH" IS SPECIFIED FOR ANTENNA CONCEALMENT, PAINT PRODUCT FOR ANTENNA RADOME SHALL BE SHERWIN WILLIAMS COROTHANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND PROJECT OWNER'S GUIDELINE'S.

25. COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

26. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

27. ALL (E)ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.

28. ALL (E)INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF UTILITY COMPANY ENGINEERING. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR

29. GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES

30. DURING CONSTRUCTION. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS

31. FOR WIRELESS COMMUNICATIONS SYSTEMS. PROJECT OWNER'S IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. PROJECT OWNER RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

32. 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:

2009 INTERNATIONAL BUILDING CODE
2005 CT STATE BUILDING CODE
ELECTRICAL CODE: NEC 2014
LIGHTING CODE: NEC 2014

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, NINTH EDITION;

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

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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.

# ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.

2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.

3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.

4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.

5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.

6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.

7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION.

8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.

9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE AND GREENLEE CONDUIT MEASURING TAPE IN EACH INSTALLED TELCO CONDUIT.

10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.

11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.

12. PPC SUPPLIED BY PROJECT OWNER.

13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".

14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.

16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.

17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.

18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.

19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.

20. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.

21. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ (E) MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.

22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MAXIMUM RESISTANCE REQUIRED.

23.CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

STATE OF CONNECTICUT
MARC R. CHRETIEN
No.28307
LICENSED
PROFESSIONAL ENGINEER

# ABBREVIATIONS

| | | | | | |
|---|---|---|---|---|---|
| AGL | ABOVE GRADE LEVEL | G.C. | GENERAL CONTRACTOR | RF | RADIO FREQUENCY |
| AWG | AMERICAN WIRE GAUGE | MGB | MASTER GROUND BUS | | |
| BCW | BARE COPPER WIRE | MIN | MINIMUM | TBD | TO BE DETERMINED |
| BTS | BASE TRANSCEIVER STATION | (P) | PROPOSED/NEW | TBR | TO BE REMOVED |
| (E) | EXISTING | N.T.S. | NOT TO SCALE | TBRR | TO BE REMOVED AND REPLACED |
| EG | EQUIPMENT GROUND | REF | REFERENCE | TYP | TYPICAL |
| EGR | EQUIPMENT GROUND RING | REQ | REQUIRED | | |
| (F) | FUTURE | | | | |


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**SITE NUMBER: HFC1287B**
**SITE NAME: CROWN E HARTFORD MONOPOLE**
148 ROBERTS STREET
EAST HARTFORD, CT 06108

| NO. | DATE | REVISIONS | BY | CHK | APP'D |
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| 0 | 08/08/14 | ISSUED FOR REVIEW | JTG | SNA | SNA |

SCALE: AS SHOWN | DESIGNED BY: SNA | DRAWN BY: JTG

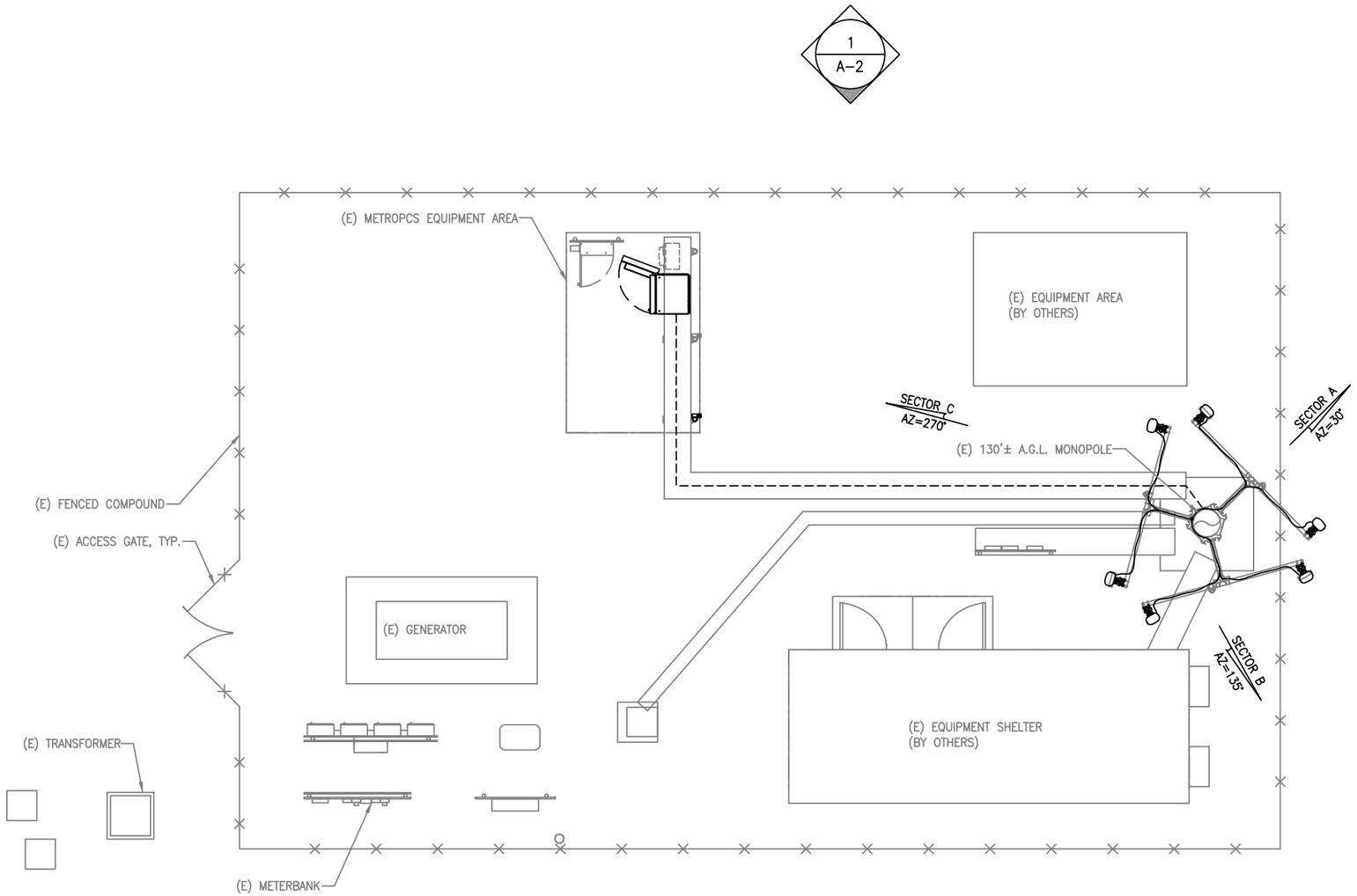
MetroPCS

GN-1

| JOB NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| HFC1287B | GENERAL NOTES | 0 |

NOTE:

1. A SITE VISIT/SURVEY WAS NOT CONDUCTED BY ADVANCED ENGINEERING GROUP, P.C. SITE INFORMATION AND PLANS ARE BASED UPON INFORMATION PROVIDED BY CLIENT
2. AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE CONDUCTED PRIOR TO CONSTRUCTION (BY OTHERS.) AEG HAS NOT CONDUCTED A STRUCTURAL ANALYSIS.

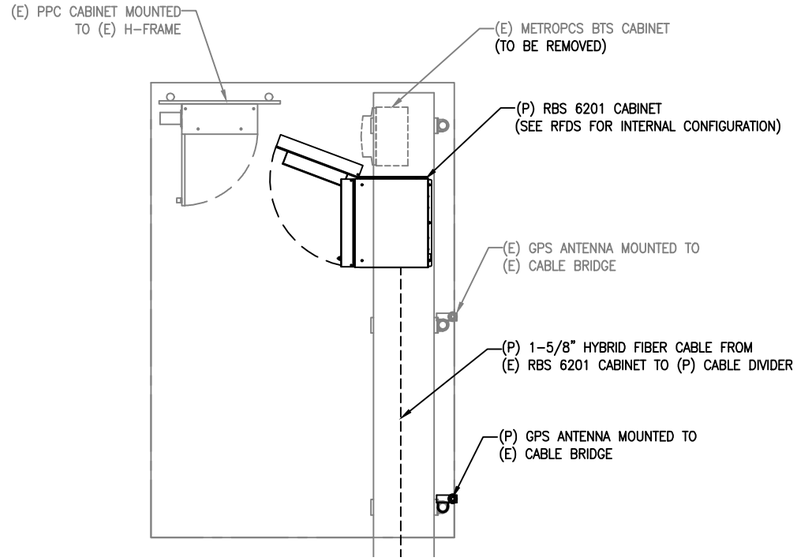



## COMPOUND PLAN

SCALE: 1"=10'-0"

TRUE NORTH

0' 5' 10' 20'




## EQUIPMENT PLAN

SCALE: 1"=5'-0"

TRUE NORTH

0' 2.5' 5' 10'

STATE OF CONNECTICUT
MARC R. CHRETIEN
No.28307
LICENSED
PROFESSIONAL ENGINEER

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**SITE NUMBER: HFC1287B**
**SITE NAME: CROWN E HARTFORD**
**MONOPOLE**
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EAST HARTFORD, CT 06108

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SCALE: AS SHOWN | DESIGNED BY: SNA | DRAWN BY: JTG

MetroPCS

COMPOUND & EQUIPMENT PLAN

| JOB NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| HFC1287B | A-1 | 0 |

## EXISTING ANTENNA SCHEDULE

| SECTOR | MAKE | MODEL# | SIZE (INCHES) |
|---|---|---|---|
| SECTOR A: | RFS | APXV18-206517S | 6.65x3.15x72 |
| SECTOR B: | RFS | APXV18-206517S | 6.65x3.15x72 |
| SECTOR C: | RFS | APXV18-206517S | 6.65x3.15x72 |

## PROPOSED ANTENNA SCHEDULE

| SECTOR | MAKE | MODEL# | SIZE (INCHES) |
|---|---|---|---|
| SECTOR A: | ERICSSON | AIR21 B2A/B4P | 12X8X56 |
| | ERICSSON | AIR21 B4A/B2P | 12X8X56 |
| SECTOR B: | ERICSSON | AIR21 B2A/B4P | 12X8X56 |
| | ERICSSON | AIR21 B4A/B2P | 12X8X56 |
| SECTOR C: | ERICSSON | AIR21 B2A/B4P | 12X8X56 |
| | ERICSSON | AIR21 B4A/B2P | 12X8X56 |

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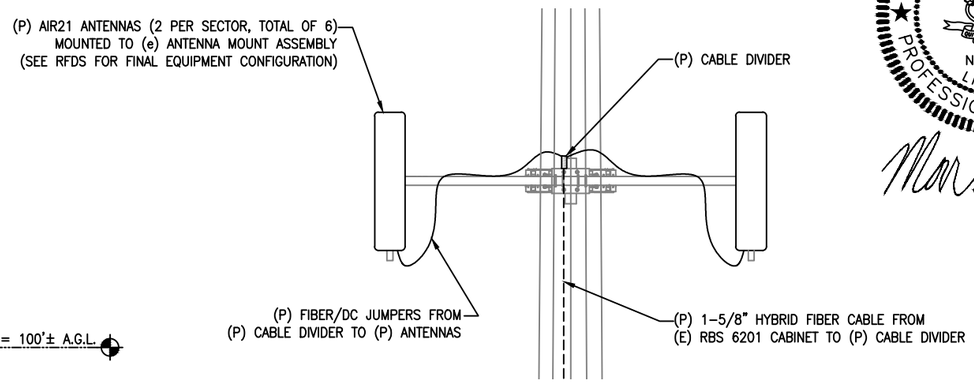
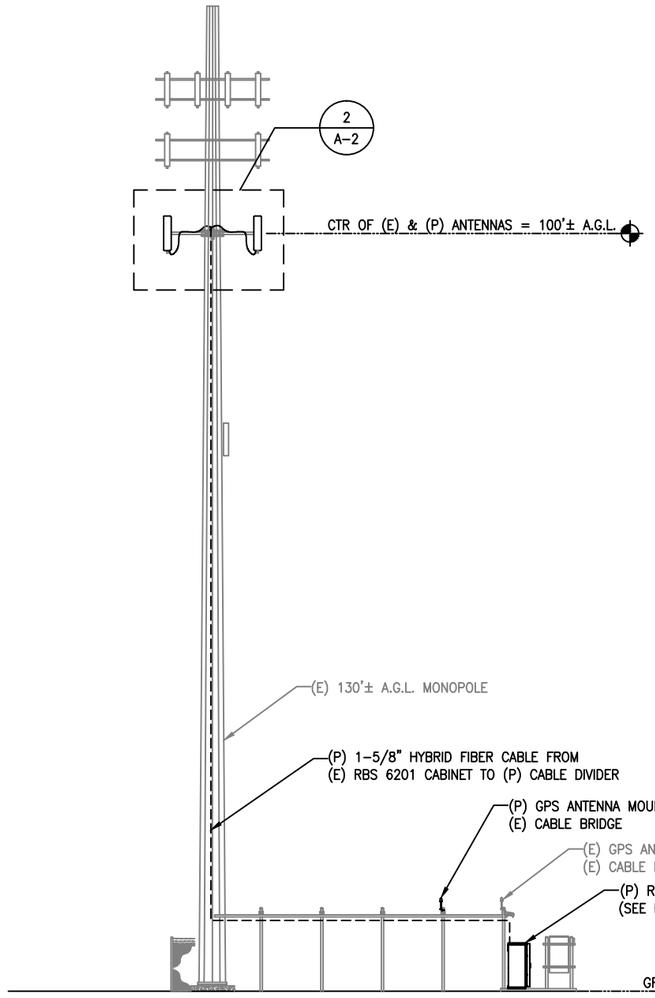
LICENSED
PROFESSIONAL ENGINEER




## ENLARGED ELEVATION (2/A-2)

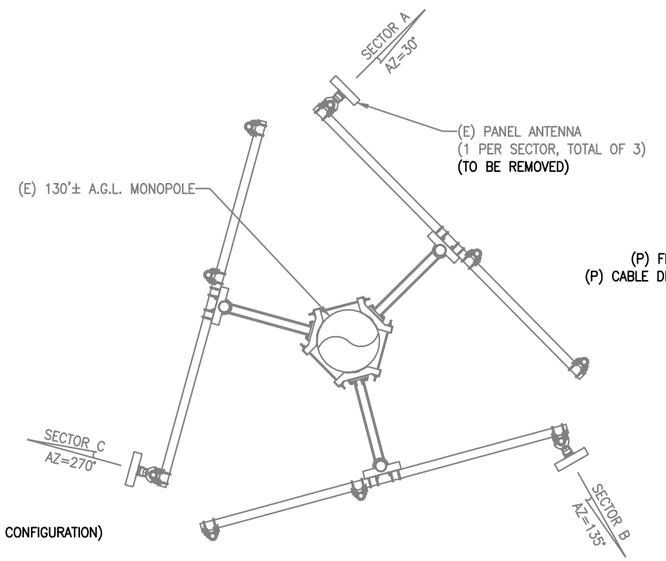
SCALE: 1"=5'-0"




## ELEVATION (1/A-2)

SCALE: 1"=10'-0"

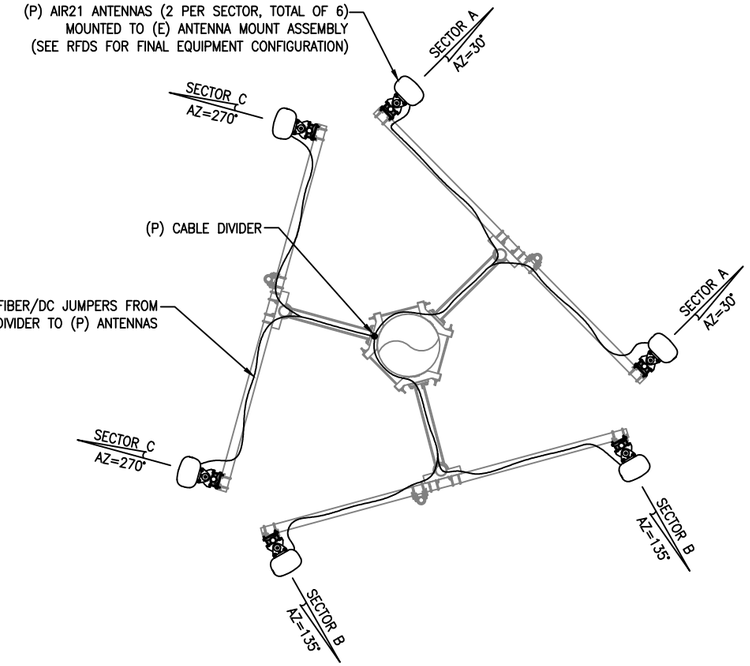
0' 5' 10' 20'




## EXISTING ANTENNA PLAN (3/A-2)

SCALE: N.T.S.

TRUE NORTH




## PROPOSED ANTENNA PLAN (4/A-2)

SCALE: N.T.S.

TRUE NORTH


ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development Surveying - Telecommunications
500 NORTH BROADWAY
EAST PROVIDENCE, RI 02914
PH: (401) 354-2403
FAX: (401) 633-6354


metroPCS
Unlimit Yourself.
285 BILLERICA ROAD
THIRD FLOOR
CHELMSFORD, MA 01824
TEL: (978) 244-7200
FAX: (978) 244-7240

**SITE NUMBER: HFC1287B**
**SITE NAME: CROWN E HARTFORD**
**MONOPOLE**
148 ROBERTS STREET
EAST HARTFORD, CT 06108

| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|---|---|---|---|---|---|
| 0 | 08/08/14 | ISSUED FOR REVIEW | JTG | SNA | SNA |

SCALE: AS SHOWN | DESIGNED BY: SNA | DRAWN BY: JTG

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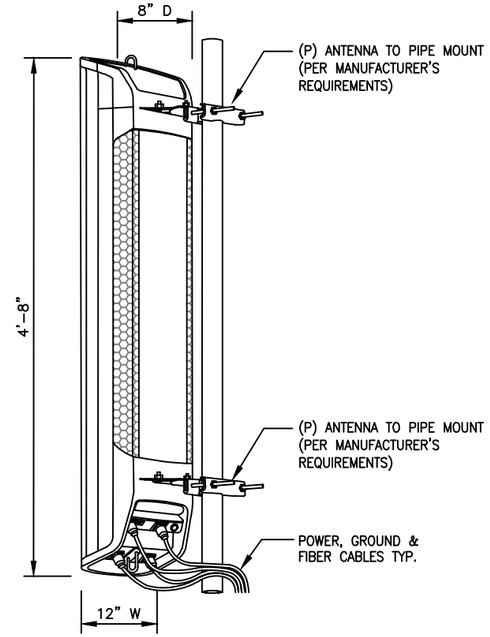
ELEVATION & ANTENNA PLAN

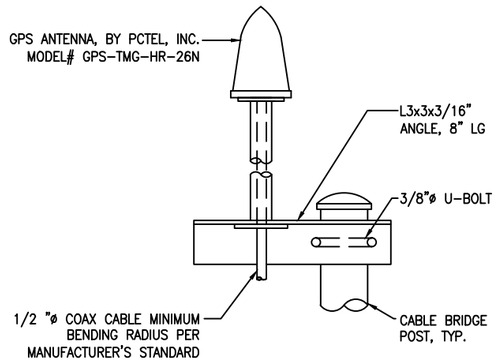
| JOB NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| HFC1287B | A-2 | 0 |




## AIR21 ANTENNA TYP.

SCALE: N.T.S.

1
A-3




## GPS MOUNTING DETAILS

SCALE: N.T.S.

2
A-3

STATE OF CONNECTICUT
MARC R. CHRETIEN
No.28307
LICENSED
PROFESSIONAL ENGINEER

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| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|---|---|---|---|---|---|
| 0 | 08/08/14 | ISSUED FOR REVIEW | JTG | SNA | SNA |

SCALE: AS SHOWN | DESIGNED BY: SNA | DRAWN BY: JTG

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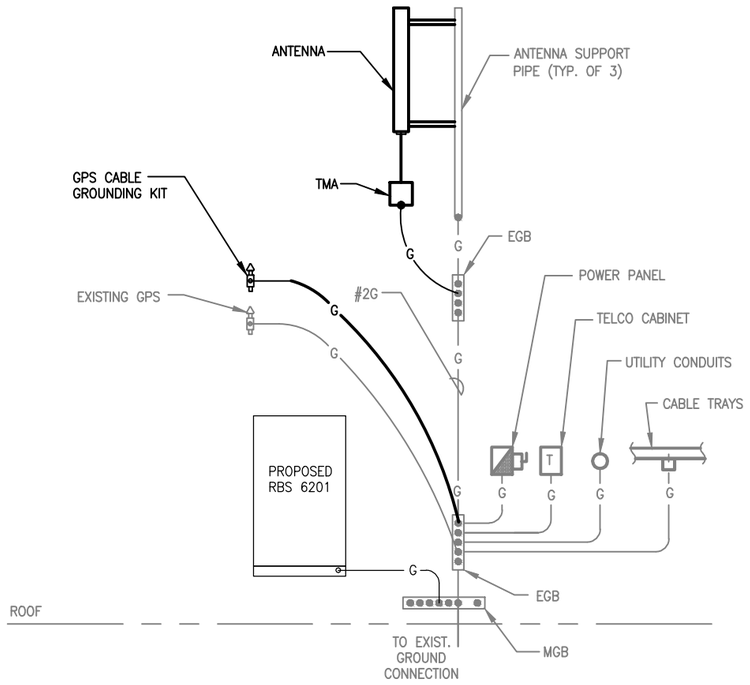
DETAILS

| JOB NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| HFC1287B | A-3 | 0 |

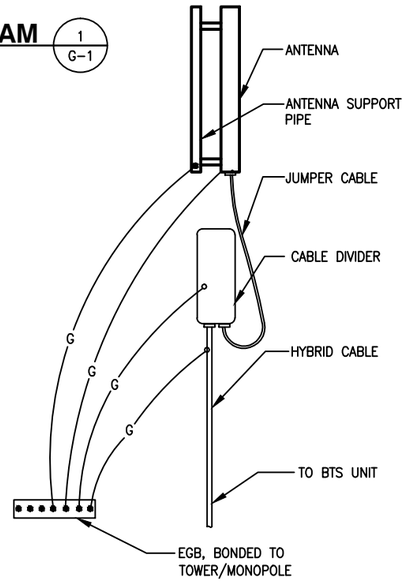



## GROUNDING RISER DIAGRAM

1 G-1

SCALE: N.T.S.

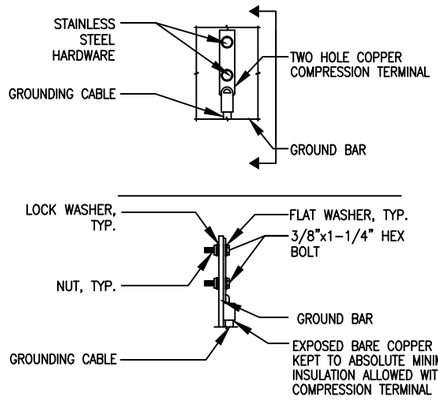
NOTE:
1. A SITE VISIT/SURVEY WAS NOT CONDUCTED BY ADVANCED ENGINEERING GROUP, P.C. SITE INFORMATION AND PLANS ARE BASED UPON INFORMATION PROVIDED BY CLIENT CONTRACTOR TO VERIFY IN FIELD




## HYBRID CABLE CONNECTION & GROUNDING DETAIL

4 G-1

SCALE: N.T.S.

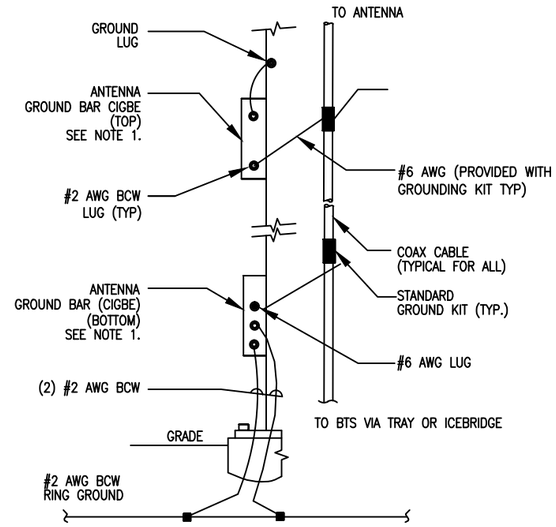



NOTES:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.
4. ALL GROUND LUGS MUST BE HEAT SHRUNK AT WIRE/LUG CONNECTION

## TYP. GROUND BAR CONNECTION DETAIL

2 G-1

SCALE: N.T.S.

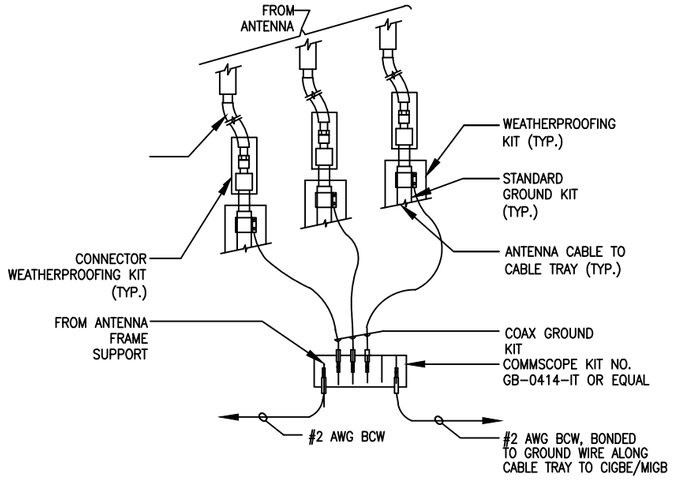



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

## ANTENNA CABLE GROUNDING

3 G-1

SCALE: N.T.S.



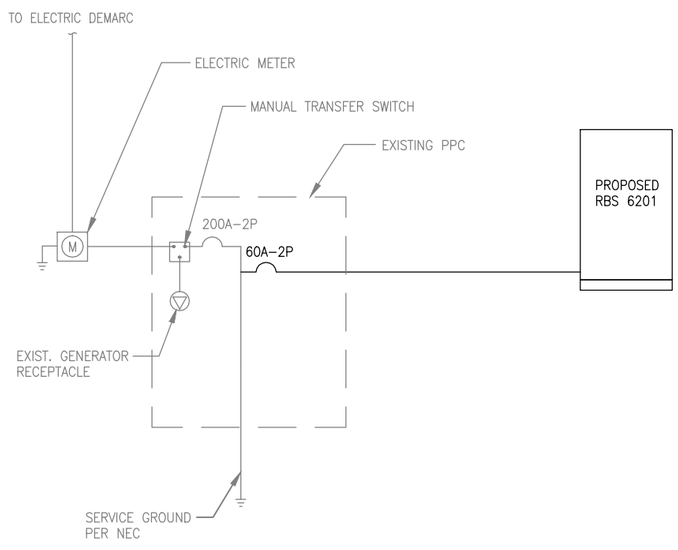

NOTE:

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

5 G-1

SCALE: N.T.S.




## ONE-LINE POWER DIAGRAM

6 G-1

SCALE: N.T.S.

HALF SIZE PRINT
THIS DRAWING IS SCALEABLE AT TWICE THE NOTED SCALE

STATE OF CONNECTICUT
MARC R. CHRETIEN
No.28307
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| NO. | DATE | REVISIONS | BY | CHK | APP'D |
|---|---|---|---|---|---|
| 0 | 08/08/14 | ISSUED FOR REVIEW | JTG | SNA | SNA |

SCALE: AS SHOWN | DESIGNED BY: SNA | DRAWN BY: JTG

MetroPCS

GROUNDING, ONE-LINE DIAGRAM & DETAILS

| JOB NUMBER | DRAWING NUMBER | REV |
|---|---|---|
| HFC1287B | G-1 | 0 |

# Exhibit 2

## Power Density Calculation

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environmental | engineering | due diligence

# RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
# EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

MetroPCS Existing Facility

Site ID: CTHA505A

Crown East Hartford Monopole
148 Roberts Street
East Hartford, CT 06108

**September 2, 2014**

| Site Compliance Summary | |
|---|---|
| Compliance Status: | **COMPLIANT** |
| Site total MPE% of FCC general public allowable limit: | **69.64 %** |

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

September 2, 2014

MetroPCS USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CTHA505A – Crown East Hartford Monopole**

EBI Consulting was directed to analyze the proposed MetroPCS facility located at **148 Roberts Street, East Hartford, CT**, for the purpose of determining whether the emissions from the Proposed MetroPCS 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 (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure 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 done for the proposed MetroPCS Wireless antenna facility located at **148 Roberts Street, East Hartford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since MetroPCS 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.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel

2) **2** UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.

5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** has a maximum gain of **15.9 dBd** at its main lobe. 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.

7) The antenna mounting height centerline of the proposed antennas is **100 feet** above ground level (AGL).

8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

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environmental | engineering | due diligence

## MetroPCS Site Inventory and Power Data

| Sector: | A | Sector: | B | Sector: | C |
|---|---|---|---|---|---|
| Antenna #: | 1 | Antenna #: | 1 | Antenna #: | 1 |
| Make / Model: | Ericsson AIR21 B4A/B2P | Make / Model: | Ericsson AIR21 B4A/B2P | Make / Model: | Ericsson AIR21 B4A/B2P |
| Gain: | 15.9 dBd | Gain: | 15.9 dBd | Gain: | 15.9 dBd |
| Height (AGL): | 100 | Height (AGL): | 100 | Height (AGL): | 100 |
| Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) |
| Channel Count | 2 | Channel Count | 2 | # PCS Channels: | 2 |
| Total TX Power: | 120 | Total TX Power: | 120 | # AWS Channels: | 120 |
| ERP (W): | 1,906.06 | ERP (W): | 1,906.06 | ERP (W): | 1,906.06 |
| Antenna A1 MPE% | 1.90 | Antenna B1 MPE% | 1.90 | Antenna C1 MPE% | 1.90 |
| Antenna #: | 2 | Antenna #: | 2 | Antenna #: | 2 |
| Make / Model: | Ericsson AIR21 B4A/B2P | Make / Model: | Ericsson AIR21 B4A/B2P | Make / Model: | Ericsson AIR21 B4A/B2P |
| Gain: | 15.9 dBd | Gain: | 15.9 dBd | Gain: | 15.9 dBd |
| Height (AGL): | 100 | Height (AGL): | 100 | Height (AGL): | 100 |
| Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) |
| Channel Count | 4 | Channel Count | 4 | Channel Count | 4 |
| Total TX Power: | 120 | Total TX Power: | 120 | Total TX Power: | 120 |
| ERP (W): | 1,906.06 | ERP (W): | 1,906.06 | ERP (W): | 1,906.06 |
| Antenna A2 MPE% | 1.90 | Antenna B2 MPE% | 1.90 | Antenna C2 MPE% | 1.90 |

| Site Composite MPE% | |
|---|---|
| **Carrier** | **MPE%** |
| MetroPCS | **11.40** |
| Verizon Wireless | 28.05 % |
| Clearwire | 1.13 % |
| Sprint | 10.08 % |
| AT&T | 18.98 % |
| **Site Total MPE %:** | **69.64 %** |

| | |
|---|---|
| MetroPCS Sector 1 Total: | 3.80 % |
| MetroPCS Sector 2 Total: | 3.80 % |
| MetroPCS Sector 3 Total: | 3.80 % |
| | |
| Site Total: | 69.64 % |

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environmental | engineering | due diligence

## Summary

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

The anticipated maximum composite contributions from the MetroPCS facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

| MetroPCS Sector | Power Density Value (%) |
|---|---|
| Sector 1: | 3.80 % |
| Sector 2: | 3.80 % |
| Sector 3 : | 3.80 % |
| MetroPCS Total: | 11.40 % |
| | |
| Site Total: | 69.64 % |
| | |
| Site Compliance Status: | **COMPLIANT** |

The anticipated composite MPE value for this site assuming all carriers present is **69.64%** of the allowable FCC established general public 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.

Scott Heffernan
RF Engineering Director

**EBI Consulting**
21 B Street
Burlington, MA 01803`

# Exhibit 3

## Structural Calculations

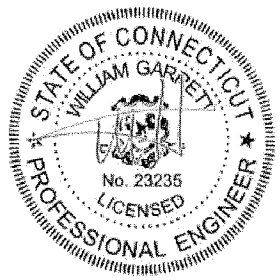
AMERICAN TOWER®
CORPORATION

# Structural Analysis Report

| | | |
|---|---|---|
| **Structure** | : | **130 ft Monopole** |
| **ATC Site Name** | : | **East Hartford, CT** |
| **ATC Site Number** | : | **370626** |
| **Engineering Number** | : | **59131421** |
| **Proposed Carrier** | : | **Metro PCS** |
| **Carrier Site Name** | : | **East Hartford** |
| **Carrier Site Number** | : | **CTHA505A** |
| **Site Location** | : | **148 Roberts St.**<br>**East Hartford, CT 06108-0000**<br>**41.773306,-72.613417** |
| **County** | : | **Hartford** |
| **Date** | : | **June 13, 2014** |
| **Max Usage** | : | **68%** |
| **Result** | : | **Pass** |

Zach Graham

Zach Graham




Jun 16 2014 4:03 PM

AMERICAN TOWER®
CORPORATION

## Table of Contents

AMERICAN TOWER®
CORPORATION

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 130 ft monopole to reflect the change in loading by Metro PCS.

## Supporting Documents

| | |
|---|---|
| **Tower Drawings** | Glen Martin Engineering Drawing #MP1400800-0001, dated August 20, 2003 |
| **Foundation Drawing** | Glen Martin Engineering Drawing #GME-03309, dated August 26, 2003 |
| **Geotechnical Report** | Dr. Clarence Welti Project Name: The Marcus Group, dated April 25, 2003 |

## 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:** | 95 mph (3-Second Gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-Second Gust) w/ 1" radial ice concurrent |
| **Code:** | ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment |
| **Structure Class:** | II |
| **Exposure Category:** | B |
| **Topographic Category:** | 1 |

## 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 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

| Elevation[1] (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|---|
| Mount | RAD | | | | | |
| 128.0 | 128.0 | 3 | DragonWave Horizon Compact | Side Arms | (3) 1/2" Coax<br>(3) 1/4" Coax<br>(3) 5/8" Coax<br>(2) 2" Conduit | Clearwire |
| | | 3 | BTS | | | |
| | | 3 | Argus LLPX310R | | | |
| | | 3 | DragonWave A-ANT-18G-2-C | | | |
| 119.7 | 119.7 | 3 | Alcatel-Lucent RRH2x40-AWS | Low Profile Platform | (18) 1 5/8" Coax<br>(1) 1 5/8" Hybriflex | Verizon |
| | | 3 | Antel BXA-171063-8BF-EDIN-X | | | |
| | | 3 | Antel BXA-185063/8CF | | | |
| | | 6 | Andrew DB844G65ZAXY | | | |
| | | 1 | RFS DB-T1-6Z-8AB-0Z | | | |
| | | 3 | Antel BXA-70063-6CF-EDIN-X | | | |
| 110.0 | 110.0 | 9 | 48" x 12" Panel | Low Profile Platform | (9) 1 5/8" Coax | Sprint Nextel |
| 90.0 | 90.0 | 6 | 14" x 9" TTA | Platform w/ Handrails | (3) 1/2" Coax<br>(12) 1 5/8" Coax<br>(8) 0.76" Cable<br>(2) 0.35" Fiber | AT&T Mobility |
| | | 4 | Raycap DC6-48-60-18-8F | | | |
| | | 6 | Ericsson RRUS A2 Module | | | |
| | | 9 | Ericsson RRUS 12 w/ S.S. | | | |
| | | 3 | Ericsson RRUS-32 | | | |
| | | 9 | Ericsson RRUS-11 | | | |
| | | 12 | CCI HPA-65R-BUU-H8 | | | |
| 70.0 | 70.0 | 1 | 2' Std. Dish | Pipe | (1) 1 5/8" Coax | Sprint Nextel |
| 50.0 | 50.0 | 1 | GPS | Side Arm | (1) 1/2" Coax | |

## Equipment to be Removed

| Elevation[1] (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|---|
| Mount | RAD | | | | | |
| 100.0 | 100.0 | 6 | Andrew ATM200-A20 | - | (12) 1 5/8" Coax<br>(1) 3/8" Coax | Metro PCS |
| | | 6 | Andrew HBX-6516DS-VTM (6.5" W) | | | |

## Proposed Equipment

| Elevation[1] (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|---|
| Mount | RAD | | | | | |
| 100.0 | 100.0 | 3 | Ericsson AIR 21, 1.3M, B2A B4P | T-Arms | (6) 7/8" Coax<br>(1) 1 5/8" Hybriflex | Metro PCS |
| | | 3 | Ericsson AIR 21, 1.3M, B4A B2P | | | |

**[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).**

Install proposed coax outside the pole shaft. Stacking coax is not allowed.

## Structure Usages

| Structural Component | Controlling Usage | Pass/Fail |
|---|---|---|
| Anchor Bolts | 43% | Pass |
| Shaft | 68% | Pass |
| Base Plate | 43% | Pass |
| Flanges | 8% | Pass |

## Foundations

| Reaction Component | Original Design Reactions | Factored Design Reactions* | Analysis Reactions | % of Design |
|---|---|---|---|---|
| Moment (Kips-Ft) | 2,740.2 | 3,699.3 | 2,627.2 | 71% |
| Shear (Kips) | 28.5 | 38.4 | 29.9 | 78% |

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

## Deflection and Sway*

| Antenna Elevation (ft) | Deflection (ft) | Sway (Rotation) (°) |
|---|---|---|
| 100.0 | 0.968 | 1.083 |

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

AMERICAN TOWER®
CORPORATION

## Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

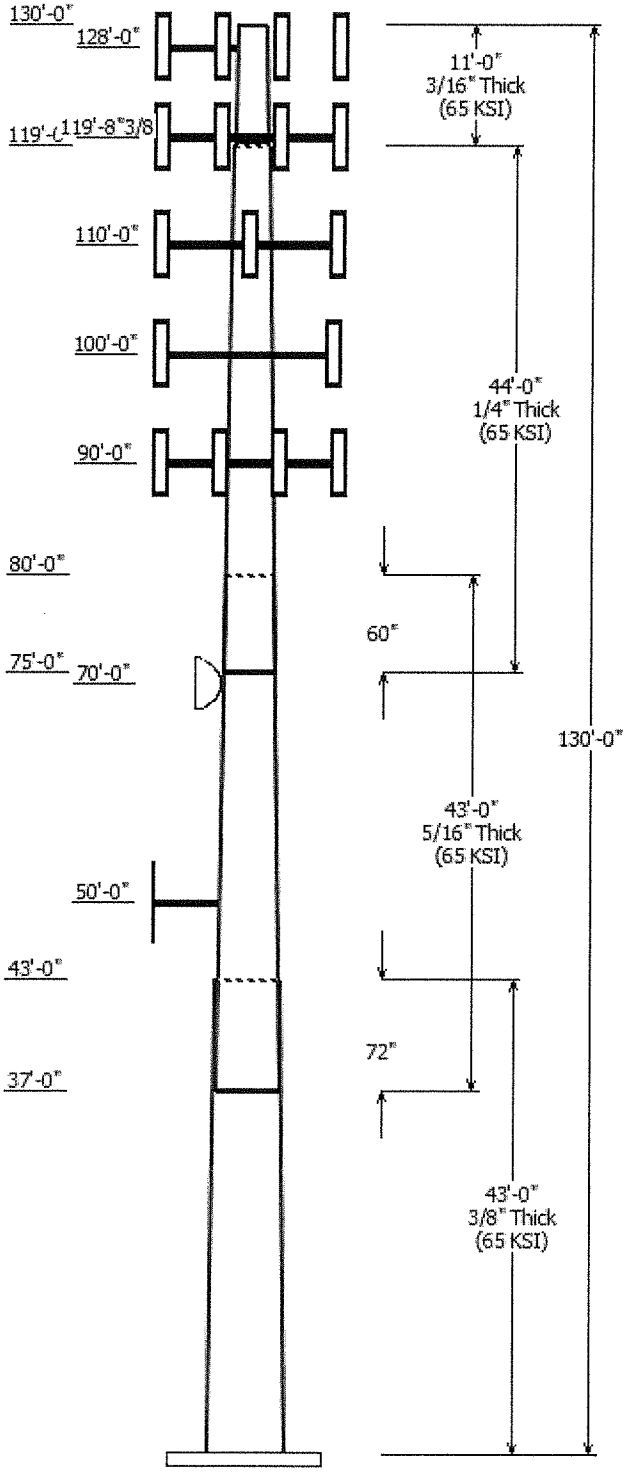
It is the responsibility of the client to ensure that the information provided to ATC Tower Services, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

## Job Information

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: | ANSI/TIA-222 Rev G |
| Description : | 130 ft. Monopole | | |
| Client : | Metro PCS | Struct Class : | II |
| Location : | East Hartford, CT | | |
| Shape : | 16 Sides | Exposure : | B |
| Height : | 130.00 (ft) | Topo : | 1 |
| Base Elev (ft): | 0.00 | | |
| Taper: | 0.24857 (in/ft) | | |




## Sections Properties

| Shaft Section | Length (ft) | Diameter (in) Across Flats Top | Diameter (in) Across Flats Bottom | Thick (in) | Joint Type | Overlap Length (in) | Taper (in/ft) | Steel Grade (ksi) |
|---|---|---|---|---|---|---|---|---|
| 1 | 43.000 | 38.50 | 49.19 | 0.375 | | 0.000 | 0.248577 | 65 |
| 2 | 43.000 | 29.92 | 40.61 | 0.313 | Slip Joint | 72.000 | 0.248577 | 65 |
| 3 | 44.000 | 20.73 | 31.67 | 0.250 | Slip Joint | 60.000 | 0.248577 | 65 |
| 4 | 11.000 | 18.00 | 20.73 | 0.188 | Butt Joint | 0.000 | 0.248577 | 65 |

## Discrete Appurtenance

| Attach Elev (ft) | Force Elev (ft) | Qty | Description |
|---|---|---|---|
| 128.000 | 128.000 | 3 | Argus LLPX310R |
| 128.000 | 128.000 | 3 | DragonWave A-ANT-18G-2-C |
| 128.000 | 128.000 | 3 | BTS |
| 128.000 | 128.000 | 3 | DragonWave Horizon Compact |
| 128.000 | 128.000 | 1 | Side Arms |
| 119.700 | 119.700 | 3 | Antel BXA-70063-6CF-EDIN-X |
| 119.700 | 119.700 | 1 | RFS DB-T1-6Z-8AB-0Z |
| 119.700 | 119.700 | 6 | Andrew DB844G65ZAXY |
| 119.700 | 119.700 | 3 | Antel BXA-185063/8CF |
| 119.700 | 119.700 | 3 | Antel BXA-171063-8BF-EDIN-X |
| 119.700 | 119.700 | 3 | Alcatel-Lucent RRH2x40-AWS |
| 119.700 | 119.700 | 1 | Flat Low Profile Platform |
| 110.000 | 110.000 | 9 | 48" x 12" Panel |
| 110.000 | 110.000 | 1 | Round Low Profile Platform |
| 100.000 | 100.000 | 3 | Ericsson AIR 21, 1.3M, B4A B2P |
| 100.000 | 100.000 | 3 | Ericsson AIR 21, 1.3M, B2A B4P |
| 100.000 | 100.000 | 3 | Round T-Arm |
| 90.000 | 90.000 | 12 | CCI HPA-65R-BUU-H8 |
| 90.000 | 90.000 | 9 | Ericsson RRUS-11 |
| 90.000 | 90.000 | 3 | Ericsson RRUS-32 |
| 90.000 | 90.000 | 9 | Ericsson RRUS 12 w/ S.S. |
| 90.000 | 90.000 | 6 | Ericsson RRUS A2 Module |
| 90.000 | 90.000 | 4 | Raycap DC6-48-60-18-8F |
| 90.000 | 90.000 | 6 | 14" x 9" TTA |
| 90.000 | 90.000 | 1 | Flat Platform w/ Handrails |
| 70.000 | 70.000 | 1 | 2' Std. Dish |
| 50.000 | 50.000 | 1 | GPS |
| 50.000 | 50.000 | 1 | Flat Side Arm |

## Linear Appurtenance

| Elev (ft) From | Elev (ft) To | Description | Exposed To Wind |
|---|---|---|---|
| 0.000 | 50.000 | 1/2" Coax | No |
| 0.000 | 70.000 | 1 5/8" Coax | No |
| 0.000 | 90.000 | 0.35" Fiber | No |
| 0.000 | 90.000 | 0.76" Cable | No |
| 0.000 | 90.000 | 1 5/8" Coax | No |
| 0.000 | 90.000 | 1/2" Coax | No |
| 0.000 | 100.0 | 1 5/8" Hybriflex | Yes |
| 0.000 | 100.0 | 7/8" Coax | Yes |

| | | | |
|---|---|---|---|
| 0.000 | 110.0 | 1 5/8" Coax | No |
| 0.000 | 119.7 | 1 5/8" Coax | No |
| 0.000 | 119.7 | 1 5/8" Coax | Yes |
| 0.000 | 119.7 | 1 5/8" Hybriflex | Yes |
| 0.000 | 128.0 | 1/2" Coax | No |
| 0.000 | 128.0 | 1/4" Coax | No |
| 0.000 | 128.0 | 2" Conduit | No |
| 0.000 | 128.0 | 5/8" Coax | No |

## Load Cases

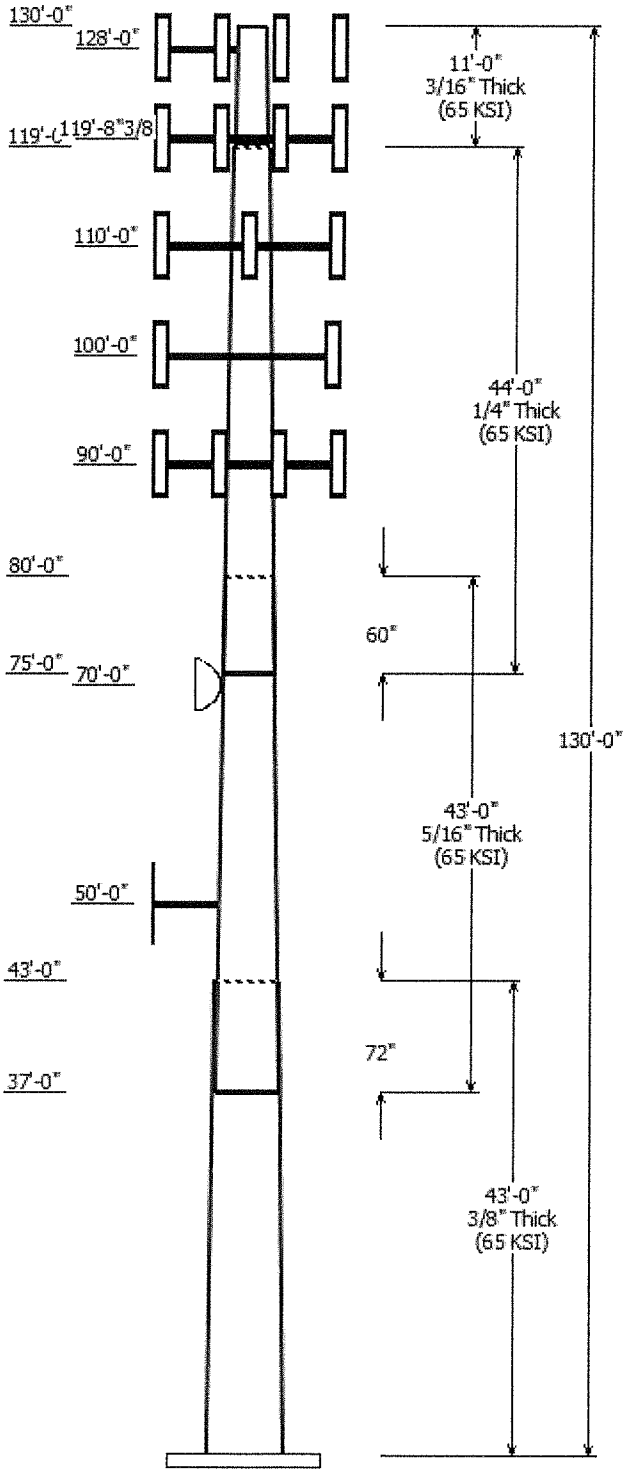
| | |
|---|---|
| 1.2D + 1.6W | 95.00 mph with No Ice |
| 0.9D + 1.6W | 95.00 mph with No Ice (Reduced DL) |
| 1.2D + 1.0Di + 1.0Wi | 50.00 mph with 1.00 in Radial Ice |
| 1.0D + 1.0W | 60.00 mph Serviceability |

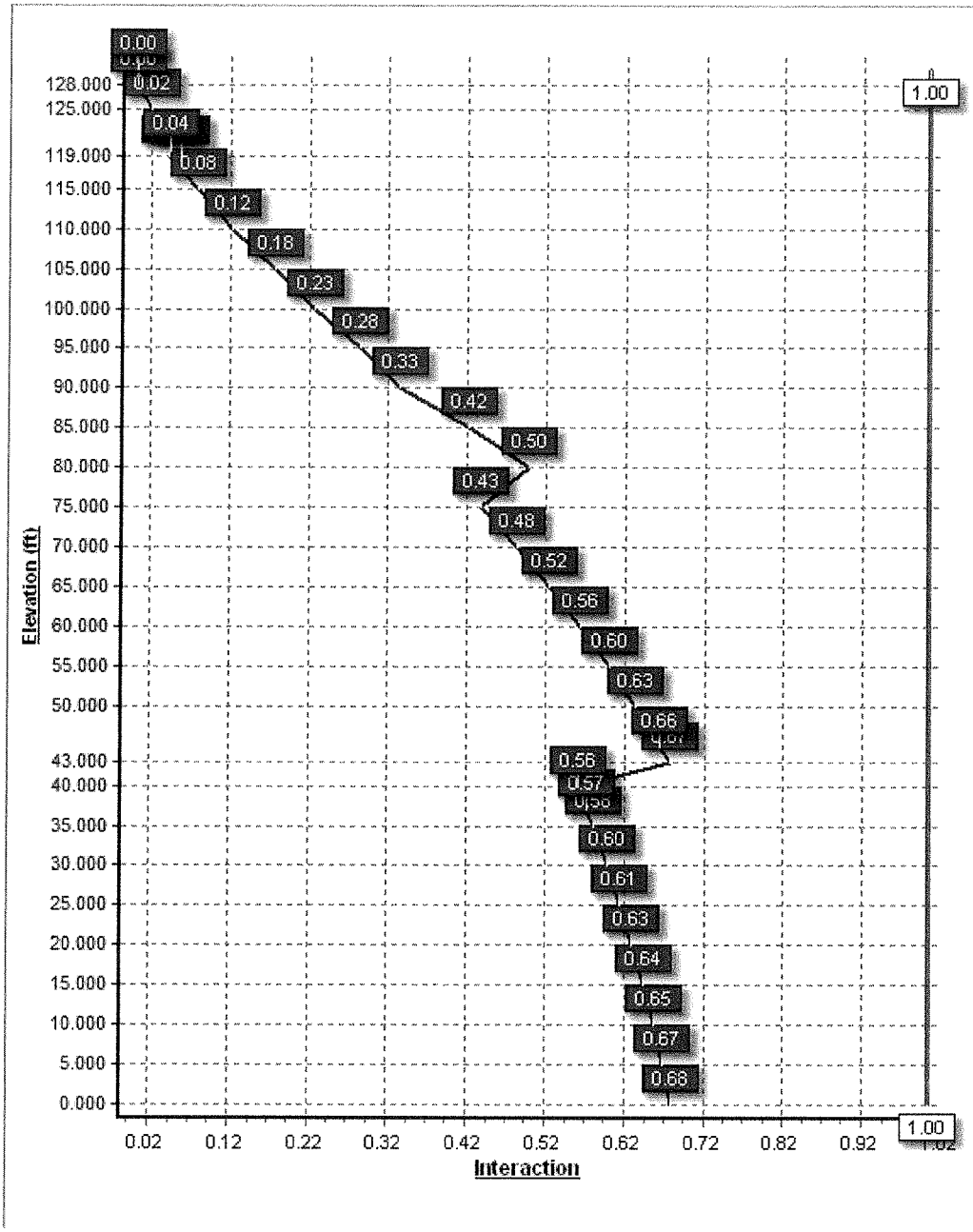
## Reactions

| Load Case | Moment (kip-ft) | Shear (kip) | Axial (kip) |
|---|---|---|---|
| 1.2D + 1.6W | 2627.24 | 29.95 | 38.36 |
| 0.9D + 1.6W | 2582.05 | 29.11 | 28.76 |
| 1.2D + 1.0Di + 1.0Wi | 703.26 | 7.54 | 76.83 |
| 1.0D + 1.0W | 646.22 | 7.26 | 32.01 |

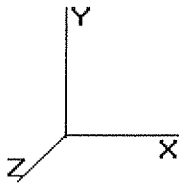
## Dish Deflections

| Load Case | Attach Elev (ft) | Deflection (in) | Rotation (deg) |
|---|---|---|---|
| 1.0D + 1.0W | 70.00 | 5.638 | 0.797 |




Elevation (ft)
128.000
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
43.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.00
0.02
0.04
0.08
0.12
0.18
0.23
0.28
0.33
0.42
0.50
0.43
0.48
0.52
0.56
0.60
0.63
0.66
0.56
0.57
0.60
0.61
0.63
0.64
0.65
0.67
0.68
1.00
1.00
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | Page: 1 |
| Height : | 130.0 (ft) | Exposure Category : B | |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






## Shaft Section Properties

| | | | | | | | Bottom | | | | | | Top | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sect Info | Length (ft) | Thick (in) | Fy (ksi) | Slip Joint Type | Joint Len (in) | Weight (lb) | Dia (in) | Elev (ft) | Area (sqin) | Ix (in^4) | W/t Ratio | D/t Ratio | Dia (in) | Elev (ft) | Area (sqin) | Ix (in^4) | W/t Ratio | D/t Ratio | Taper (in/ft) |
| 1-16 | 43.000 | 0.3750 | 65 | | 0.00 | 7,609 | 49.19 | 0.00 | 58.39 | 17579.0 | 24.50 | 131.17 | 38.50 | 43.00 | 45.61 | 8375.4 | 18.83 | 102.67 | 0.248577 |
| 2-16 | 43.000 | 0.3125 | 65 | Slip | 72.00 | 5,099 | 40.61 | 37.00 | 40.18 | 8245.8 | 24.26 | 129.98 | 29.92 | 80.00 | 29.52 | 3271.5 | 17.46 | 95.77 | 0.248577 |
| 3-16 | 44.000 | 0.2500 | 65 | Slip | 60.00 | 3,099 | 31.67 | 75.00 | 25.06 | 3125.6 | 23.61 | 126.69 | 20.73 | 119.00 | 16.34 | 866.0 | 14.91 | 82.94 | 0.248577 |
| 4-16 | 11.000 | 0.1875 | 65 | Butt | 0.00 | 429 | 20.73 | 119.00 | 12.29 | 655.4 | 20.41 | 110.58 | 18.00 | 130.00 | 10.65 | 427.0 | 17.50 | 96.00 | 0.248577 |
| | | | | Shaft Weight | | 16,237 | | | | | | | | | | | | | |

## Discrete Appurtenance Properties

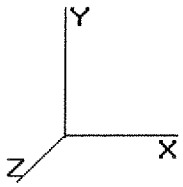
| Attach Elev (ft) | Description | Qty | No Ice Weight (lb) | No Ice EPAa (sf) | No Ice Orientation Factor | Ice Weight (lb) | Ice EPAa (sf) | Ice Orientation Factor | Distance From Face (ft) | Vert Ecc (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 128.00 | Argus LLPX310R | 3 | 28.60 | 4.290 | 0.73 | 180.87 | 5.497 | 0.73 | 0.000 | 0.000 |
| 128.00 | BTS | 3 | 20.00 | 1.800 | 0.50 | 106.38 | 2.570 | 0.50 | 0.000 | 0.000 |
| 128.00 | DragonWave A-ANT-18G-2-C | 3 | 27.10 | 4.690 | 1.00 | 155.43 | 6.366 | 1.00 | 0.000 | 0.000 |
| 128.00 | DragonWave Horizon | 3 | 11.50 | 0.840 | 0.50 | 56.44 | 1.243 | 0.50 | 0.000 | 0.000 |
| 128.00 | Side Arms | 1 | 560.00 | 8.500 | 1.00 | 1,175.64 | 17.845 | 1.00 | 0.000 | 0.000 |
| 119.70 | Alcatel-Lucent RRH2x40-AWS | 3 | 44.00 | 2.160 | 0.67 | 147.62 | 3.026 | 0.67 | 0.000 | 0.000 |
| 119.70 | Andrew DB844G65ZAXY | 6 | 12.00 | 4.340 | 0.94 | 198.53 | 5.597 | 0.94 | 0.000 | 0.000 |
| 119.70 | Antel BXA-171063-8BF-EDIN-X | 3 | 10.50 | 2.940 | 0.87 | 129.53 | 4.102 | 0.87 | 0.000 | 0.000 |
| 119.70 | Antel BXA-185063/8CF | 3 | 10.00 | 2.960 | 0.81 | 120.90 | 4.107 | 0.81 | 0.000 | 0.000 |
| 119.70 | Antel BXA-70063-6CF-EDIN-X | 3 | 17.00 | 7.570 | 0.77 | 259.10 | 9.255 | 0.77 | 0.000 | 0.000 |
| 119.70 | Flat Low Profile Platform | 1 | 1500.00 | 26.100 | 1.00 | 2,346.31 | 51.039 | 1.00 | 0.000 | 0.000 |
| 119.70 | RFS DB-T1-6Z-8AB-0Z | 1 | 44.00 | 4.800 | 0.67 | 241.68 | 5.962 | 0.67 | 0.000 | 0.000 |
| 110.00 | 48" x 12" Panel | 9 | 30.00 | 5.070 | 0.78 | 213.37 | 6.366 | 0.78 | 0.000 | 0.000 |
| 110.00 | Round Low Profile Platform | 1 | 1500.00 | 21.700 | 1.00 | 2,339.19 | 46.568 | 1.00 | 0.000 | 0.000 |
| 100.00 | Ericsson AIR 21, 1.3M, B2A | 3 | 91.50 | 6.040 | 0.85 | 317.31 | 7.464 | 0.85 | 0.000 | 0.000 |
| 100.00 | Ericsson AIR 21, 1.3M, B4A | 3 | 90.40 | 6.080 | 0.85 | 317.20 | 7.510 | 0.85 | 0.000 | 0.000 |
| 100.00 | Round T-Arm | 3 | 250.00 | 9.700 | 0.67 | 518.14 | 20.277 | 0.67 | 0.000 | 0.000 |
| 90.00 | 14" x 9" TTA | 6 | 10.00 | 1.050 | 0.50 | 61.15 | 1.639 | 0.50 | 0.000 | 0.000 |
| 90.00 | CCI HPA-65R-BUU-H8 | 12 | 68.00 | 12.980 | 0.79 | 453.09 | 15.060 | 0.79 | 0.000 | 0.000 |
| 90.00 | Ericsson RRUS 12 w/ S.S. | 9 | 57.90 | 3.150 | 0.67 | 185.38 | 4.076 | 0.67 | 0.000 | 0.000 |
| 90.00 | Ericsson RRUS A2 Module | 6 | 22.00 | 2.060 | 0.67 | 97.31 | 2.839 | 0.67 | 0.000 | 0.000 |
| 90.00 | Ericsson RRUS-11 | 9 | 55.00 | 3.790 | 0.67 | 196.09 | 4.815 | 0.67 | 0.000 | 0.000 |
| 90.00 | Ericsson RRUS-32 | 3 | 77.00 | 3.310 | 0.67 | 228.93 | 4.335 | 0.67 | 0.000 | 0.000 |
| 90.00 | Flat Platform w/ Handrails | 1 | 2000.00 | 42.400 | 1.00 | 3,804.22 | 69.025 | 1.00 | 0.000 | 0.000 |
| 90.00 | Raycap DC6-48-60-18-8F | 4 | 20.00 | 1.110 | 1.00 | 128.79 | 2.708 | 1.00 | 0.000 | 0.000 |
| 70.00 | 2' Std. Dish | 1 | 14.00 | 5.230 | 1.00 | 82.60 | 7.147 | 1.00 | 0.000 | 0.000 |
| 50.00 | Flat Side Arm | 1 | 150.00 | 6.300 | 1.00 | 237.56 | 9.242 | 1.00 | 0.000 | 0.000 |
| 50.00 | GPS | 1 | 10.00 | 1.000 | 1.00 | 59.18 | 1.035 | 1.00 | 0.000 | 0.000 |
| | Totals | 105 | 10256.90 | | | 31,347.87 | | | Number of Loadings : | 28 |

## Linear Appurtenance Properties

| Elev From (ft) | Elev To (ft) | Description | Exposed Width (in) | Exposed To Wind |
|---|---|---|---|---|
| 0.00 | 128.00 | (3) 1/2" Coax | 0.00 | N |
| 0.00 | 128.00 | (3) 1/4" Coax | 0.00 | N |
| 0.00 | 128.00 | (2) 2" Conduit | 0.00 | N |
| 0.00 | 128.00 | (3) 5/8" Coax | 0.00 | N |
| 0.00 | 119.70 | (12) 1 5/8" Coax | 0.00 | N |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: | ANSI/TIA-222 Rev G |
| Location : | East Hartford, CT | Struct Class : | II |
| Height : | 130.0 (ft) | Exposure Category : | B |
| Base Dia : | 49.19 (in) | Topographic Category : | 1 |
| Top Dia : | 18.00 (in) | Base Elev : | 0.000 (ft) |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |



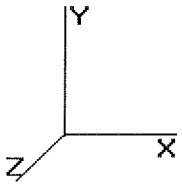





| | | | | |
|---|---|---|---|---|
| 0.00 | 119.70 | (6) 1 5/8" Coax | 3.96 | Y |
| 0.00 | 119.70 | (1) 1 5/8" Hybriflex | 1.98 | Y |
| 0.00 | 110.00 | (9) 1 5/8" Coax | 0.00 | N |
| 0.00 | 100.00 | (1) 1 5/8" Hybriflex | 1.98 | Y |
| 0.00 | 100.00 | (6) 7/8" Coax | 0.00 | Y |
| 0.00 | 90.00 | (2) 0.35" Fiber | 0.00 | N |
| 0.00 | 90.00 | (8) 0.76" Cable | 0.00 | N |
| 0.00 | 90.00 | (12) 1 5/8" Coax | 0.00 | N |
| 0.00 | 90.00 | (3) 1/2" Coax | 0.00 | N |
| 0.00 | 70.00 | (1) 1 5/8" Coax | 0.00 | N |
| 0.00 | 50.00 | (1) 1/2" Coax | 0.00 | N |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | Page: 3 |
| Height : | 130.0 (ft) | Exposure Category : B | |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |



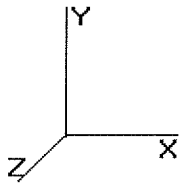



## Segment Properties (Max Len : 5 ft)

| Seg Top Elev (ft) | Description | Thick (in) | Flat Dia (in) | Area (in^2) | Ix (in^4) | W/t Ratio | D/t Ratio | Fy (ksi) | S (in3) | Weight (lb) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 0.3750 | 49.190 | 58.395 | 17,579.1 | 24.50 | 131.17 | 74.8 | 701.0 | 0.0 |
| 5.00 | | 0.3750 | 47.947 | 56.908 | 16,270.2 | 23.84 | 127.86 | 75.6 | 665.6 | 980.9 |
| 10.00 | | 0.3750 | 46.704 | 55.421 | 15,028.0 | 23.18 | 124.54 | 76.3 | 631.2 | 955.6 |
| 15.00 | | 0.3750 | 45.461 | 53.935 | 13,850.7 | 22.52 | 121.23 | 77.1 | 597.6 | 930.3 |
| 20.00 | | 0.3750 | 44.218 | 52.448 | 12,736.5 | 21.86 | 117.92 | 77.8 | 565.0 | 905.0 |
| 25.00 | | 0.3750 | 42.976 | 50.961 | 11,683.8 | 21.20 | 114.60 | 78.6 | 533.3 | 879.7 |
| 30.00 | | 0.3750 | 41.733 | 49.474 | 10,690.7 | 20.55 | 111.29 | 79.3 | 502.5 | 854.4 |
| 35.00 | | 0.3750 | 40.490 | 47.987 | 9,755.5 | 19.89 | 107.97 | 80.1 | 472.6 | 829.1 |
| 37.00 | Bot - Section 2 | 0.3750 | 39.993 | 47.393 | 9,397.3 | 19.62 | 106.65 | 80.4 | 460.9 | 324.6 |
| 40.00 | | 0.3750 | 39.247 | 46.501 | 8,876.5 | 19.23 | 104.66 | 80.8 | 443.7 | 885.6 |
| 43.00 | Top - Section 1 | 0.3125 | 39.126 | 38.692 | 7,363.9 | 23.31 | 125.20 | 76.2 | 369.2 | 868.9 |
| 45.00 | | 0.3125 | 38.629 | 38.197 | 7,084.6 | 23.00 | 123.61 | 76.6 | 359.8 | 261.6 |
| 50.00 | | 0.3125 | 37.386 | 36.958 | 6,417.3 | 22.21 | 119.64 | 77.4 | 336.7 | 639.3 |
| 55.00 | | 0.3125 | 36.143 | 35.719 | 5,793.3 | 21.41 | 115.66 | 78.3 | 314.4 | 618.3 |
| 60.00 | | 0.3125 | 34.900 | 34.480 | 5,211.1 | 20.62 | 111.68 | 79.2 | 292.9 | 597.2 |
| 65.00 | | 0.3125 | 33.658 | 33.241 | 4,669.3 | 19.83 | 107.70 | 80.1 | 272.1 | 576.1 |
| 70.00 | | 0.3125 | 32.415 | 32.002 | 4,166.4 | 19.04 | 103.73 | 81.0 | 252.1 | 555.0 |
| 75.00 | Bot - Section 3 | 0.3125 | 31.172 | 30.763 | 3,700.9 | 18.25 | 99.75 | 81.9 | 232.9 | 533.9 |
| 80.00 | Top - Section 2 | 0.2500 | 30.429 | 24.068 | 2,769.2 | 22.62 | 121.72 | 77.0 | 178.5 | 930.8 |
| 85.00 | | 0.2500 | 29.186 | 23.076 | 2,440.9 | 21.63 | 116.74 | 78.1 | 164.1 | 401.1 |
| 90.00 | | 0.2500 | 27.943 | 22.085 | 2,139.7 | 20.64 | 111.77 | 79.2 | 150.2 | 384.2 |
| 95.00 | | 0.2500 | 26.700 | 21.094 | 1,864.4 | 19.65 | 106.80 | 80.3 | 137.0 | 367.3 |
| 100.0 | | 0.2500 | 25.457 | 20.103 | 1,613.7 | 18.66 | 101.83 | 81.5 | 124.3 | 350.5 |
| 105.0 | | 0.2500 | 24.214 | 19.112 | 1,386.6 | 17.67 | 96.86 | 82.6 | 112.3 | 333.6 |
| 110.0 | | 0.2500 | 22.972 | 18.120 | 1,181.8 | 16.69 | 91.89 | 82.6 | 100.9 | 316.7 |
| 115.0 | | 0.2500 | 21.729 | 17.129 | 998.3 | 15.70 | 86.91 | 82.6 | 90.1 | 299.9 |
| 119.0 | Top - Section 3 | 0.2500 | 20.734 | 16.336 | 866.0 | 14.91 | 82.94 | 82.6 | 81.9 | 227.8 |
| 119.0 | Bot - Section 4 | 0.1875 | 20.734 | 12.290 | 655.5 | 20.41 | 110.58 | 79.5 | 62.0 | |
| 119.7 | | 0.1875 | 20.560 | 12.186 | 638.9 | 20.22 | 109.66 | 79.7 | 61.0 | 29.1 |
| 120.0 | | 0.1875 | 20.486 | 12.141 | 632.0 | 20.14 | 109.26 | 79.8 | 60.5 | 12.4 |
| 125.0 | | 0.1875 | 19.243 | 11.398 | 522.8 | 18.82 | 102.63 | 81.3 | 53.3 | 200.2 |
| 128.0 | | 0.1875 | 18.497 | 10.951 | 463.8 | 18.03 | 98.65 | 82.2 | 49.2 | 114.1 |
| 130.0 | | 0.1875 | 18.000 | 10.654 | 427.1 | 17.50 | 96.00 | 82.6 | 46.5 | 73.5 |
| | | | | | | | | | | 16,236.6 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | |
| Location : | East Hartford, CT | Struct Class : II | 6/13/2014 5:31:03 PM |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 4 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 1.2D + 1.6W — 95.00 mph with No Ice — 23 Iterations

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

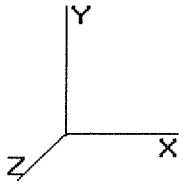
Wind Importance Factor : 1.00

## Shaft Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Kzt | Kz | qz (psf) | qzGh (psf) | C (mph-ft) | Cf | | Ice Thick (in) | Tributary (ft) | Ap (sf) | EPAs (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 332.19 | 0.750 | | 0.000 | 0.00 | 0.000 | 0.00 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 323.80 | 0.885 | * | 0.000 | 5.00 | 20.633 | 18.26 | 493.7 | 0.0 | 1,177.1 |
| 10.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 315.40 | 0.894 | * | 0.000 | 5.00 | 20.105 | 17.98 | 486.2 | 0.0 | 1,146.7 |
| 15.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 307.01 | 0.904 | * | 0.000 | 5.00 | 19.577 | 17.70 | 478.7 | 0.0 | 1,116.3 |
| 20.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 298.62 | 0.915 | * | 0.000 | 5.00 | 19.049 | 17.43 | 471.2 | 0.0 | 1,086.0 |
| 25.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 290.22 | 0.926 | * | 0.000 | 5.00 | 18.521 | 17.15 | 463.7 | 0.0 | 1,055.6 |
| 30.00 | | 1.00 | 0.70 | 15.377 | 16.91 | 281.95 | 0.938 | * | 0.000 | 5.00 | 17.993 | 16.87 | 456.6 | 0.0 | 1,025.3 |
| 35.00 | | 1.00 | 0.73 | 16.070 | 17.67 | 279.64 | 0.950 | * | 0.000 | 5.00 | 17.465 | 16.59 | 469.3 | 0.0 | 994.9 |
| 37.00 | Bot - Section 2 | 1.00 | 0.74 | 16.327 | 17.95 | 278.41 | 0.959 | * | 0.000 | 2.00 | 6.838 | 6.56 | 188.5 | 0.0 | 389.5 |
| 40.00 | | 1.00 | 0.76 | 16.694 | 18.36 | 276.28 | 0.966 | * | 0.000 | 3.00 | 10.258 | 9.91 | 291.2 | 0.0 | 1,062.7 |
| 43.00 | Top - Section 1 | 1.00 | 0.77 | 17.043 | 18.74 | 273.84 | 0.975 | * | 0.000 | 3.00 | 10.068 | 9.81 | 294.3 | 0.0 | 1,042.7 |
| 45.00 | | 1.00 | 0.78 | 17.266 | 18.99 | 276.54 | 0.975 | * | 0.000 | 2.00 | 6.607 | 6.44 | 195.7 | 0.0 | 314.0 |
| 50.00 | Appertunance(s) | 1.00 | 0.81 | 17.793 | 19.57 | 271.70 | 1.200 | * | 0.000 | 5.00 | 16.147 | 19.38 | 606.8 | 0.0 | 767.2 |
| 55.00 | | 1.00 | 0.83 | 18.285 | 20.11 | 266.27 | 1.200 | * | 0.000 | 5.00 | 15.619 | 18.74 | 603.2 | 0.0 | 741.9 |
| 60.00 | | 1.00 | 0.85 | 18.745 | 20.61 | 260.33 | 1.200 | * | 0.000 | 5.00 | 15.091 | 18.11 | 597.4 | 0.0 | 716.6 |
| 65.00 | | 1.00 | 0.87 | 19.179 | 21.09 | 253.95 | 1.200 | * | 0.000 | 5.00 | 14.563 | 17.48 | 589.9 | 0.0 | 691.3 |
| 70.00 | Appertunance(s) | 1.00 | 0.89 | 19.589 | 21.54 | 247.17 | 1.200 | * | 0.000 | 5.00 | 14.035 | 16.84 | 580.6 | 0.0 | 666.0 |
| 75.00 | Bot - Section 3 | 1.00 | 0.91 | 19.979 | 21.97 | 240.05 | 1.200 | * | 0.000 | 5.00 | 13.507 | 16.21 | 569.9 | 0.0 | 640.7 |
| 80.00 | Top - Section 2 | 1.00 | 0.92 | 20.351 | 22.38 | 232.61 | 1.200 | * | 0.000 | 5.00 | 13.191 | 15.83 | 567.0 | 0.0 | 1,116.9 |
| 85.00 | | 1.00 | 0.94 | 20.706 | 22.77 | 228.81 | 1.200 | * | 0.000 | 5.00 | 12.663 | 15.20 | 553.8 | 0.0 | 481.3 |
| 90.00 | Appertunance(s) | 1.00 | 0.95 | 21.047 | 23.15 | 220.86 | 1.200 | * | 0.000 | 5.00 | 12.135 | 14.56 | 539.4 | 0.0 | 461.0 |
| 95.00 | | 1.00 | 0.97 | 21.375 | 23.51 | 212.68 | 1.200 | * | 0.000 | 5.00 | 11.607 | 13.93 | 524.0 | 0.0 | 440.8 |
| 100.0 | Appertunance(s) | 1.00 | 0.98 | 21.690 | 23.86 | 204.27 | 1.200 | * | 0.000 | 5.00 | 11.079 | 13.29 | 507.5 | 0.0 | 420.6 |
| 105.0 | | 1.00 | 1.00 | 21.995 | 24.19 | 195.65 | 1.200 | * | 0.000 | 5.00 | 10.551 | 12.66 | 490.1 | 0.0 | 400.3 |
| 110.0 | Appertunance(s) | 1.00 | 1.01 | 22.289 | 24.51 | 186.85 | 1.200 | * | 0.000 | 5.00 | 10.023 | 12.03 | 471.8 | 0.0 | 380.1 |
| 115.0 | | 1.00 | 1.02 | 22.574 | 24.83 | 177.87 | 1.200 | * | 0.000 | 5.00 | 9.495 | 11.39 | 452.7 | 0.0 | 359.8 |
| 119.0 | Top - Section 3 | 1.00 | 1.03 | 22.796 | 25.07 | 170.56 | 1.200 | * | 0.000 | 4.00 | 7.216 | 8.66 | 347.4 | 0.0 | 273.3 |
| 119.7 | Appertunance(s) | 1.00 | 1.04 | 22.834 | 25.11 | 169.27 | 1.200 | * | 0.000 | 0.70 | 1.228 | 1.47 | 59.2 | 0.0 | 35.0 |
| 120.0 | | 1.00 | 1.04 | 22.850 | 25.13 | 168.71 | 0.750 | | 0.000 | 0.30 | 0.523 | 0.39 | 15.8 | 0.0 | 14.9 |
| 125.0 | | 1.00 | 1.05 | 23.118 | 25.43 | 159.40 | 0.750 | | 0.000 | 5.00 | 8.439 | 6.33 | 257.5 | 0.0 | 240.3 |
| 128.0 | Appertunance(s) | 1.00 | 1.06 | 23.276 | 25.60 | 153.75 | 0.750 | | 0.000 | 3.00 | 4.810 | 3.61 | 147.8 | 0.0 | 136.9 |
| 130.0 | | 1.00 | 1.06 | 23.379 | 25.71 | 149.95 | 0.750 | | 0.000 | 2.00 | 3.101 | 2.33 | 95.7 | 0.0 | 88.2 |
| * = Cf Adjusted By Linear Load Ra Effect | | | | | | | Totals: | | | 130.00 | | | 12,866.7 | 0.0 | 19,483.9 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 5 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 1.2D + 1.6W — 95.00 mph with No Ice — 23 Iterations

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

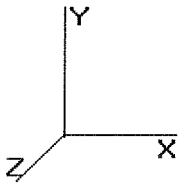
Wind Importance Factor : 1.00

## Discrete Appurtenance Segment Forces (Factored)

| Elev (ft) | Description | Qty | qz (psf) | qzGh (psf) | Orientation Factor | Ka | Total EPAa (sf) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) | Dead Load (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50.00 | Flat Side Arm | 1 | 17.793 | 19.573 | 1.00 | 1.00 | 6.30 | 0.000 | 0.000 | 197.29 | 0.00 | 0.00 | 180.00 |
| 50.00 | GPS | 1 | 17.793 | 19.573 | 1.00 | 1.00 | 1.00 | 0.000 | 0.000 | 31.32 | 0.00 | 0.00 | 12.00 |
| 70.00 | 2' Std. Dish | 1 | 19.589 | 21.548 | 1.00 | 1.00 | 5.23 | 0.000 | 0.000 | 180.31 | 0.00 | 0.00 | 16.80 |
| 90.00 | Flat Platform w/ Han | 1 | 21.047 | 23.152 | 1.00 | 1.00 | 42.40 | 0.000 | 0.000 | 1,570.63 | 0.00 | 0.00 | 2,400.00 |
| 90.00 | 14" x 9" TTA | 6 | 21.047 | 23.152 | 0.50 | 0.75 | 2.36 | 0.000 | 0.000 | 87.51 | 0.00 | 0.00 | 72.00 |
| 90.00 | Raycap DC6-48-60-18- | 4 | 21.047 | 23.152 | 1.00 | 0.75 | 3.33 | 0.000 | 0.000 | 123.35 | 0.00 | 0.00 | 96.00 |
| 90.00 | Ericsson RRUS A2 | 6 | 21.047 | 23.152 | 0.67 | 0.75 | 6.21 | 0.000 | 0.000 | 230.07 | 0.00 | 0.00 | 158.40 |
| 90.00 | Ericsson RRUS 12 w/ | 9 | 21.047 | 23.152 | 0.67 | 0.75 | 14.25 | 0.000 | 0.000 | 527.71 | 0.00 | 0.00 | 625.32 |
| 90.00 | Ericsson RRUS-32 | 3 | 21.047 | 23.152 | 0.67 | 0.75 | 4.99 | 0.000 | 0.000 | 184.84 | 0.00 | 0.00 | 277.20 |
| 90.00 | Ericsson RRUS-11 | 9 | 21.047 | 23.152 | 0.67 | 0.75 | 17.14 | 0.000 | 0.000 | 634.93 | 0.00 | 0.00 | 594.00 |
| 90.00 | CCI HPA-65R-BUU-H8 | 12 | 21.047 | 23.152 | 0.79 | 0.75 | 92.29 | 0.000 | 0.000 | 3,418.64 | 0.00 | 0.00 | 979.20 |
| 100.0 | Ericsson AIR 21, 1.3 | 3 | 21.690 | 23.860 | 0.85 | 0.80 | 12.32 | 0.000 | 0.000 | 470.38 | 0.00 | 0.00 | 329.40 |
| 100.0 | Ericsson AIR 21, 1.3 | 3 | 21.690 | 23.860 | 0.85 | 0.80 | 12.40 | 0.000 | 0.000 | 473.50 | 0.00 | 0.00 | 325.44 |
| 100.0 | Round T-Arm | 3 | 21.690 | 23.860 | 0.67 | 0.75 | 14.62 | 0.000 | 0.000 | 558.22 | 0.00 | 0.00 | 900.00 |
| 110.0 | Round Low Profile Pl | 1 | 22.289 | 24.518 | 1.00 | 1.00 | 21.70 | 0.000 | 0.000 | 851.27 | 0.00 | 0.00 | 1,800.00 |
| 110.0 | 48" x 12" Panel | 9 | 22.289 | 24.518 | 0.78 | 0.80 | 28.47 | 0.000 | 0.000 | 1,116.98 | 0.00 | 0.00 | 324.00 |
| 119.7 | Flat Low Profile Pla | 1 | 22.834 | 25.117 | 1.00 | 1.00 | 26.10 | 0.000 | 0.000 | 1,048.90 | 0.00 | 0.00 | 1,800.00 |
| 119.7 | Alcatel-Lucent RRH2x | 3 | 22.834 | 25.117 | 0.67 | 0.80 | 3.47 | 0.000 | 0.000 | 139.58 | 0.00 | 0.00 | 158.40 |
| 119.7 | Antel BXA-171063-8BF | 3 | 22.834 | 25.117 | 0.87 | 0.80 | 6.14 | 0.000 | 0.000 | 246.70 | 0.00 | 0.00 | 37.80 |
| 119.7 | Antel BXA-185063/8CF | 3 | 22.834 | 25.117 | 0.81 | 0.80 | 5.75 | 0.000 | 0.000 | 231.25 | 0.00 | 0.00 | 36.00 |
| 119.7 | Andrew | 6 | 22.834 | 25.117 | 0.94 | 0.80 | 19.58 | 0.000 | 0.000 | 786.96 | 0.00 | 0.00 | 86.40 |
| 119.7 | RFS DB-T1-6Z-8AB-0Z | 1 | 22.834 | 25.117 | 0.67 | 0.80 | 2.57 | 0.000 | 0.000 | 103.40 | 0.00 | 0.00 | 52.80 |
| 119.7 | Antel BXA-70063-6CF- | 3 | 22.834 | 25.117 | 0.77 | 0.80 | 13.99 | 0.000 | 0.000 | 562.20 | 0.00 | 0.00 | 61.20 |
| 128.0 | Side Arms | 1 | 23.276 | 25.603 | 1.00 | 1.00 | 8.50 | 0.000 | 0.000 | 348.20 | 0.00 | 0.00 | 672.00 |
| 128.0 | DragonWave Horizon | 3 | 23.276 | 25.603 | 0.50 | 0.80 | 1.01 | 0.000 | 0.000 | 41.29 | 0.00 | 0.00 | 41.40 |
| 128.0 | BTS | 3 | 23.276 | 25.603 | 0.50 | 0.80 | 2.16 | 0.000 | 0.000 | 88.48 | 0.00 | 0.00 | 72.00 |
| 128.0 | DragonWave A-ANT- | 3 | 23.276 | 25.603 | 1.00 | 0.80 | 11.26 | 0.000 | 0.000 | 461.10 | 0.00 | 0.00 | 97.56 |
| 128.0 | Argus LLPX310R | 3 | 23.276 | 25.603 | 0.73 | 0.80 | 7.52 | 0.000 | 0.000 | 307.90 | 0.00 | 0.00 | 102.96 |
| | | | | | | | | | | 15,022.93 | | | 12,308.28 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | Page: 6 |
| Height : | 130.0 (ft) | Exposure Category : B | |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 1.2D + 1.6W — 95.00 mph with No Ice — 23 Iterations

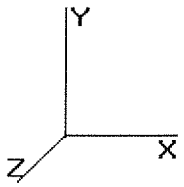
Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

## Linear Appurtenance Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Exposed To Wind | Length (ft) | Ca | Exposed Width (in) | Area (sqft) | CaAa (sqft) | qz (psf) | Ra | Cf Adjust Factor | FX (lb) | Dead Load (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 29.52 |
| 5.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 7.80 |
| 5.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 7.80 |
| 5.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 11.88 |
| 10.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 29.52 |
| 10.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 7.80 |
| 10.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 7.80 |
| 10.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 11.88 |
| 15.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 29.52 |
| 15.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 7.80 |
| 15.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 7.80 |
| 15.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 11.88 |
| 20.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 29.52 |
| 20.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 7.80 |
| 20.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 7.80 |
| 20.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 11.88 |
| 25.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 29.52 |
| 25.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 7.80 |
| 25.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 7.80 |
| 25.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 11.88 |
| 30.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 29.52 |
| 30.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 7.80 |
| 30.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 7.80 |
| 30.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 11.88 |
| 35.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 29.52 |
| 35.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 7.80 |
| 35.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 7.80 |
| 35.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 11.88 |
| 37.00 | (6) 1 5/8" Coax | Yes | 2.00 | 0.000 | 3.96 | 0.66 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 11.81 |
| 37.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 3.12 |
| 37.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 3.12 |
| 37.00 | (6) 7/8" Coax | Yes | 2.00 | 0.000 | 0.00 | 0.00 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 4.75 |
| 40.00 | (6) 1 5/8" Coax | Yes | 3.00 | 0.000 | 3.96 | 0.99 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 17.71 |
| 40.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 4.68 |
| 40.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 4.68 |
| 40.00 | (6) 7/8" Coax | Yes | 3.00 | 0.000 | 0.00 | 0.00 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 7.13 |
| 43.00 | (6) 1 5/8" Coax | Yes | 3.00 | 0.000 | 3.96 | 0.99 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 17.71 |
| 43.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 4.68 |
| 43.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 4.68 |
| 43.00 | (6) 7/8" Coax | Yes | 3.00 | 0.000 | 0.00 | 0.00 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 7.13 |
| 45.00 | (6) 1 5/8" Coax | Yes | 2.00 | 0.000 | 3.96 | 0.66 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 11.81 |
| 45.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 3.12 |
| 45.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 3.12 |
| 45.00 | (6) 7/8" Coax | Yes | 2.00 | 0.000 | 0.00 | 0.00 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 4.75 |
| 50.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 17.793 | 0.204 | 0.000 | 62.01 | 29.52 |
| 50.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 17.793 | 0.204 | 0.000 | 31.00 | 7.80 |
| 50.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 17.793 | 0.204 | 0.000 | 31.00 | 7.80 |
| 50.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 17.793 | 0.204 | 0.000 | 0.00 | 11.88 |
| 55.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 18.285 | 0.211 | 0.000 | 63.72 | 29.52 |
| 55.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.285 | 0.211 | 0.000 | 31.86 | 7.80 |
| 55.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.285 | 0.211 | 0.000 | 31.86 | 7.80 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 7 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 1.2D + 1.6W — 95.00 mph with No Ice — 23 Iterations

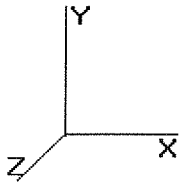
Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 18.285 | 0.211 | 0.000 | 0.00 | 11.88 |
| 60.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 18.745 | 0.219 | 0.000 | 65.32 | 29.52 |
| 60.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.745 | 0.219 | 0.000 | 32.66 | 7.80 |
| 60.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.745 | 0.219 | 0.000 | 32.66 | 7.80 |
| 60.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 18.745 | 0.219 | 0.000 | 0.00 | 11.88 |
| 65.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 19.179 | 0.227 | 0.000 | 66.83 | 29.52 |
| 65.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.179 | 0.227 | 0.000 | 33.42 | 7.80 |
| 65.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.179 | 0.227 | 0.000 | 33.42 | 7.80 |
| 65.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 19.179 | 0.227 | 0.000 | 0.00 | 11.88 |
| 70.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 19.589 | 0.235 | 0.000 | 68.26 | 29.52 |
| 70.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.589 | 0.235 | 0.000 | 34.13 | 7.80 |
| 70.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.589 | 0.235 | 0.000 | 34.13 | 7.80 |
| 70.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 19.589 | 0.235 | 0.000 | 0.00 | 11.88 |
| 75.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 19.979 | 0.244 | 0.000 | 69.62 | 29.52 |
| 75.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.979 | 0.244 | 0.000 | 34.81 | 7.80 |
| 75.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.979 | 0.244 | 0.000 | 34.81 | 7.80 |
| 75.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 19.979 | 0.244 | 0.000 | 0.00 | 11.88 |
| 80.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 20.351 | 0.254 | 0.000 | 70.92 | 29.52 |
| 80.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.351 | 0.254 | 0.000 | 35.46 | 7.80 |
| 80.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.351 | 0.254 | 0.000 | 35.46 | 7.80 |
| 80.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 20.351 | 0.254 | 0.000 | 0.00 | 11.88 |
| 85.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 20.706 | 0.261 | 0.000 | 72.16 | 29.52 |
| 85.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.706 | 0.261 | 0.000 | 36.08 | 7.80 |
| 85.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.706 | 0.261 | 0.000 | 36.08 | 7.80 |
| 85.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 20.706 | 0.261 | 0.000 | 0.00 | 11.88 |
| 90.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.047 | 0.272 | 0.000 | 73.35 | 29.52 |
| 90.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.047 | 0.272 | 0.000 | 36.67 | 7.80 |
| 90.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.047 | 0.272 | 0.000 | 36.67 | 7.80 |
| 90.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 21.047 | 0.272 | 0.000 | 0.00 | 11.88 |
| 95.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.375 | 0.284 | 0.000 | 74.49 | 29.52 |
| 95.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.375 | 0.284 | 0.000 | 37.24 | 7.80 |
| 95.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.375 | 0.284 | 0.000 | 37.24 | 7.80 |
| 95.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 21.375 | 0.284 | 0.000 | 0.00 | 11.88 |
| 100.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.690 | 0.298 | 0.000 | 75.59 | 29.52 |
| 100.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.690 | 0.298 | 0.000 | 37.79 | 7.80 |
| 100.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.690 | 0.298 | 0.000 | 37.79 | 7.80 |
| 100.0 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 21.690 | 0.298 | 0.000 | 0.00 | 11.88 |
| 105.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.995 | 0.235 | 0.000 | 76.65 | 29.52 |
| 105.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.995 | 0.235 | 0.000 | 38.32 | 7.80 |
| 110.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 22.289 | 0.247 | 0.000 | 77.67 | 29.52 |
| 110.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 22.289 | 0.247 | 0.000 | 38.84 | 7.80 |
| 115.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 22.574 | 0.261 | 0.000 | 78.67 | 29.52 |
| 115.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 22.574 | 0.261 | 0.000 | 39.33 | 7.80 |
| 119.0 | (6) 1 5/8" Coax | Yes | 4.00 | 1.200 | 3.96 | 1.32 | 1.58 | 22.796 | 0.274 | 0.000 | 63.55 | 23.62 |
| 119.0 | (1) 1 5/8" Hybriflex | Yes | 4.00 | 1.200 | 1.98 | 0.66 | 0.79 | 22.796 | 0.274 | 0.000 | 31.78 | 6.24 |
| 119.7 | (6) 1 5/8" Coax | Yes | 0.70 | 1.200 | 3.96 | 0.23 | 0.28 | 22.834 | 0.282 | 0.000 | 11.14 | 4.13 |
| 119.7 | (1) 1 5/8" Hybriflex | Yes | 0.70 | 1.200 | 1.98 | 0.12 | 0.14 | 22.834 | 0.282 | 0.000 | 5.57 | 1.09 |
| | | | | | | | | | | Totals: | 1,986.04 | 1,287.04 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | Page: 8 |
| Height : | 130.0 (ft) | Exposure Category : B | |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 1.2D + 1.6W — 95.00 mph with No Ice — 23 Iterations

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

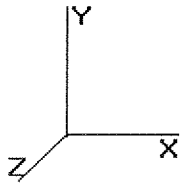
Wind Importance Factor : 1.00

## Applied Segment Forces Summary

| Seg Elev (ft) | Lateral FX (-) (lb) | Axial FY (-) (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) |
|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 493.70 | 1,481.25 | 0.00 | 0.00 |
| 10.00 | 486.20 | 1,450.90 | 0.00 | 0.00 |
| 15.00 | 478.71 | 1,420.54 | 0.00 | 0.00 |
| 20.00 | 471.21 | 1,390.19 | 0.00 | 0.00 |
| 25.00 | 463.72 | 1,359.83 | 0.00 | 0.00 |
| 30.00 | 456.61 | 1,329.47 | 0.00 | 0.00 |
| 35.00 | 469.33 | 1,299.12 | 0.00 | 0.00 |
| 37.00 | 188.50 | 511.15 | 0.00 | 0.00 |
| 40.00 | 291.20 | 1,245.26 | 0.00 | 0.00 |
| 43.00 | 294.33 | 1,225.22 | 0.00 | 0.00 |
| 45.00 | 195.65 | 435.64 | 0.00 | 0.00 |
| 50.00 | 959.42 | 1,263.40 | 0.00 | 0.00 |
| 55.00 | 730.59 | 1,045.21 | 0.00 | 0.00 |
| 60.00 | 728.08 | 1,019.91 | 0.00 | 0.00 |
| 65.00 | 723.53 | 994.61 | 0.00 | 0.00 |
| 70.00 | 897.48 | 986.12 | 0.00 | 0.00 |
| 75.00 | 709.17 | 939.10 | 0.00 | 0.00 |
| 80.00 | 708.80 | 1,415.30 | 0.00 | 0.00 |
| 85.00 | 698.09 | 779.64 | 0.00 | 0.00 |
| 90.00 | 7,463.80 | 5,961.53 | 0.00 | 0.00 |
| 95.00 | 672.96 | 651.39 | 0.00 | 0.00 |
| 100.0 | 2,160.80 | 2,185.99 | 0.00 | 0.00 |
| 105.0 | 605.10 | 591.23 | 0.00 | 0.00 |
| 110.0 | 2,556.59 | 2,695.00 | 0.00 | 0.00 |
| 115.0 | 570.69 | 506.48 | 0.00 | 0.00 |
| 119.0 | 442.73 | 390.61 | 0.00 | 0.00 |
| 119.7 | 3,194.93 | 2,288.11 | 0.00 | 0.00 |
| 120.0 | 15.78 | 17.92 | 0.00 | 0.00 |
| 125.0 | 257.53 | 290.57 | 0.00 | 0.00 |
| 128.0 | 1,394.76 | 1,152.98 | 0.00 | 0.00 |
| 130.0 | 95.70 | 88.22 | 0.00 | 0.00 |
| Totals: | 29,875.68 | 38,411.90 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |








**Load Case:** 1.2D + 1.6W — 95.00 mph with No Ice — 23 Iterations

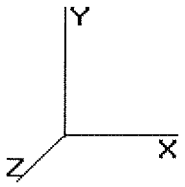
Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

## 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 | -38.36 | -29.95 | 0.00 | -2,627.24 | 0.00 | 2,627.24 | 3,933.71 | 1,966.86 | 7,926.85 | 3,935.22 | 0.00 | 0.00 | 0.678 |
| 5.00 | -36.77 | -29.58 | 0.00 | -2,477.51 | 0.00 | 2,477.51 | 3,871.76 | 1,935.88 | 7,601.85 | 3,773.88 | 0.11 | -0.21 | 0.666 |
| 10.00 | -35.21 | -29.22 | 0.00 | -2,329.59 | 0.00 | 2,329.59 | 3,807.81 | 1,903.90 | 7,279.43 | 3,613.82 | 0.44 | -0.42 | 0.654 |
| 15.00 | -33.69 | -28.86 | 0.00 | -2,183.50 | 0.00 | 2,183.50 | 3,741.86 | 1,870.93 | 6,959.92 | 3,455.20 | 0.99 | -0.63 | 0.641 |
| 20.00 | -32.20 | -28.49 | 0.00 | -2,039.22 | 0.00 | 2,039.22 | 3,673.92 | 1,836.96 | 6,643.62 | 3,298.17 | 1.77 | -0.85 | 0.627 |
| 25.00 | -30.74 | -28.12 | 0.00 | -1,896.78 | 0.00 | 1,896.78 | 3,603.99 | 1,801.99 | 6,330.83 | 3,142.89 | 2.78 | -1.07 | 0.612 |
| 30.00 | -29.31 | -27.75 | 0.00 | -1,756.18 | 0.00 | 1,756.18 | 3,532.05 | 1,766.03 | 6,021.87 | 2,989.51 | 4.01 | -1.29 | 0.596 |
| 35.00 | -27.95 | -27.33 | 0.00 | -1,617.42 | 0.00 | 1,617.42 | 3,458.12 | 1,729.06 | 5,717.06 | 2,838.19 | 5.48 | -1.51 | 0.578 |
| 37.00 | -27.39 | -27.18 | 0.00 | -1,562.77 | 0.00 | 1,562.77 | 3,427.99 | 1,714.00 | 5,596.36 | 2,778.27 | 6.14 | -1.61 | 0.571 |
| 40.00 | -26.08 | -26.92 | 0.00 | -1,481.22 | 0.00 | 1,481.22 | 3,382.20 | 1,691.10 | 5,416.68 | 2,689.07 | 7.19 | -1.74 | 0.559 |
| 43.00 | -24.81 | -26.63 | 0.00 | -1,400.48 | 0.00 | 1,400.48 | 2,653.26 | 1,326.63 | 4,249.62 | 2,109.69 | 8.33 | -1.88 | 0.674 |
| 45.00 | -24.30 | -26.50 | 0.00 | -1,347.21 | 0.00 | 1,347.21 | 2,631.58 | 1,315.79 | 4,160.48 | 2,065.44 | 9.14 | -1.98 | 0.662 |
| 50.00 | -22.96 | -25.60 | 0.00 | -1,214.72 | 0.00 | 1,214.72 | 2,575.99 | 1,288.00 | 3,939.42 | 1,955.70 | 11.35 | -2.23 | 0.630 |
| 55.00 | -21.84 | -24.92 | 0.00 | -1,086.74 | 0.00 | 1,086.74 | 2,518.41 | 1,259.20 | 3,721.17 | 1,847.34 | 13.83 | -2.49 | 0.597 |
| 60.00 | -20.75 | -24.24 | 0.00 | -962.14 | 0.00 | 962.14 | 2,458.83 | 1,229.41 | 3,506.02 | 1,740.53 | 16.57 | -2.74 | 0.562 |
| 65.00 | -19.69 | -23.55 | 0.00 | -840.96 | 0.00 | 840.96 | 2,397.25 | 1,198.62 | 3,294.28 | 1,635.42 | 19.58 | -2.99 | 0.523 |
| 70.00 | -18.66 | -22.67 | 0.00 | -723.22 | 0.00 | 723.22 | 2,333.68 | 1,166.84 | 3,086.28 | 1,532.16 | 22.83 | -3.22 | 0.480 |
| 75.00 | -17.68 | -21.98 | 0.00 | -609.85 | 0.00 | 609.85 | 2,268.11 | 1,134.05 | 2,882.31 | 1,430.90 | 26.33 | -3.45 | 0.434 |
| 80.00 | -16.24 | -21.24 | 0.00 | -499.96 | 0.00 | 499.96 | 1,667.40 | 833.70 | 2,076.00 | 1,030.61 | 30.06 | -3.67 | 0.495 |
| 85.00 | -15.44 | -20.55 | 0.00 | -393.75 | 0.00 | 393.75 | 1,621.96 | 810.98 | 1,935.58 | 960.90 | 34.01 | -3.86 | 0.420 |
| 90.00 | -9.96 | -12.72 | 0.00 | -291.01 | 0.00 | 291.01 | 1,574.54 | 787.27 | 1,797.58 | 892.40 | 38.16 | -4.06 | 0.333 |
| 95.00 | -9.33 | -12.03 | 0.00 | -227.40 | 0.00 | 227.40 | 1,525.11 | 762.56 | 1,662.31 | 825.24 | 42.50 | -4.23 | 0.282 |
| 100.00 | -7.29 | -9.73 | 0.00 | -167.25 | 0.00 | 167.25 | 1,473.69 | 736.85 | 1,530.08 | 759.60 | 47.02 | -4.38 | 0.225 |
| 105.00 | -6.73 | -9.09 | 0.00 | -118.61 | 0.00 | 118.61 | 1,420.27 | 710.14 | 1,401.20 | 695.61 | 51.67 | -4.51 | 0.175 |
| 110.00 | -4.24 | -6.34 | 0.00 | -73.15 | 0.00 | 73.15 | 1,346.26 | 673.13 | 1,258.58 | 624.81 | 56.45 | -4.61 | 0.120 |
| 115.00 | -3.77 | -5.73 | 0.00 | -41.47 | 0.00 | 41.47 | 1,272.62 | 636.31 | 1,123.95 | 557.98 | 61.31 | -4.68 | 0.077 |
| 119.00 | -3.42 | -5.26 | 0.00 | -18.55 | 0.00 | 18.55 | 1,213.70 | 606.85 | 1,021.73 | 507.23 | 65.24 | -4.71 | 0.039 |
| 119.00 | -3.42 | -5.26 | 0.00 | -18.55 | 0.00 | 18.55 | 879.13 | 439.56 | 744.60 | 369.65 | 65.24 | -4.71 | 0.054 |
| 119.70 | -1.40 | -1.88 | 0.00 | -14.87 | 0.00 | 14.87 | 873.97 | 436.99 | 733.91 | 364.34 | 65.93 | -4.71 | 0.042 |
| 120.00 | -1.38 | -1.87 | 0.00 | -14.31 | 0.00 | 14.31 | 871.75 | 435.88 | 729.34 | 362.07 | 66.22 | -4.72 | 0.041 |
| 125.00 | -1.11 | -1.59 | 0.00 | -4.97 | 0.00 | 4.97 | 833.68 | 416.84 | 654.38 | 324.86 | 71.17 | -4.74 | 0.017 |
| 128.00 | -0.08 | -0.10 | 0.00 | -0.21 | 0.00 | 0.21 | 809.87 | 404.94 | 610.58 | 303.12 | 74.14 | -4.74 | 0.001 |
| 130.00 | 0.00 | -0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 791.55 | 395.77 | 580.39 | 288.13 | 76.13 | -4.74 | 0.000 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 10 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 23 Iterations

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

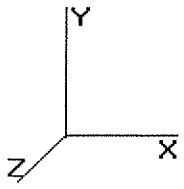
Wind Importance Factor : 1.00

## Shaft Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Kzt | Kz | qz (psf) | qzGh (psf) | C (mph-ft) | Cf | | Ice Thick (in) | Tributary (ft) | Ap (sf) | EPAs (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 332.19 | 0.750 | | 0.000 | 0.00 | 0.000 | 0.00 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 323.80 | 0.750 | * | 0.000 | 5.00 | 20.633 | 15.48 | 418.5 | 0.0 | 882.8 |
| 10.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 315.40 | 0.750 | * | 0.000 | 5.00 | 20.105 | 15.08 | 407.8 | 0.0 | 860.0 |
| 15.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 307.01 | 0.750 | * | 0.000 | 5.00 | 19.577 | 14.68 | 397.0 | 0.0 | 837.3 |
| 20.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 298.62 | 0.750 | * | 0.000 | 5.00 | 19.049 | 14.29 | 386.3 | 0.0 | 814.5 |
| 25.00 | | 1.00 | 0.70 | 15.364 | 16.90 | 290.22 | 0.750 | * | 0.000 | 5.00 | 18.521 | 13.89 | 375.6 | 0.0 | 791.7 |
| 30.00 | | 1.00 | 0.70 | 15.377 | 16.91 | 281.95 | 0.750 | * | 0.000 | 5.00 | 17.993 | 13.49 | 365.2 | 0.0 | 769.0 |
| 35.00 | | 1.00 | 0.73 | 16.070 | 17.67 | 279.64 | 0.750 | * | 0.000 | 5.00 | 17.465 | 13.10 | 370.5 | 0.0 | 746.2 |
| 37.00 | Bot - Section 2 | 1.00 | 0.74 | 16.327 | 17.95 | 278.41 | 0.750 | * | 0.000 | 2.00 | 6.838 | 5.13 | 147.4 | 0.0 | 292.1 |
| 40.00 | | 1.00 | 0.76 | 16.694 | 18.36 | 276.28 | 0.750 | * | 0.000 | 3.00 | 10.258 | 7.69 | 226.1 | 0.0 | 797.1 |
| 43.00 | Top - Section 1 | 1.00 | 0.77 | 17.043 | 18.74 | 273.84 | 0.750 | * | 0.000 | 3.00 | 10.068 | 7.55 | 226.5 | 0.0 | 782.0 |
| 45.00 | | 1.00 | 0.78 | 17.266 | 18.99 | 276.54 | 0.750 | * | 0.000 | 2.00 | 6.607 | 4.95 | 150.6 | 0.0 | 235.5 |
| 50.00 | Appertunance(s) | 1.00 | 0.81 | 17.793 | 19.57 | 271.70 | 1.200 | * | 0.000 | 5.00 | 16.147 | 19.38 | 606.8 | 0.0 | 575.4 |
| 55.00 | | 1.00 | 0.83 | 18.285 | 20.11 | 266.27 | 1.200 | * | 0.000 | 5.00 | 15.619 | 18.74 | 603.2 | 0.0 | 556.4 |
| 60.00 | | 1.00 | 0.85 | 18.745 | 20.61 | 260.33 | 1.200 | * | 0.000 | 5.00 | 15.091 | 18.11 | 597.4 | 0.0 | 537.5 |
| 65.00 | | 1.00 | 0.87 | 19.179 | 21.09 | 253.95 | 1.200 | * | 0.000 | 5.00 | 14.563 | 17.48 | 589.9 | 0.0 | 518.5 |
| 70.00 | Appertunance(s) | 1.00 | 0.89 | 19.589 | 21.54 | 247.17 | 1.200 | * | 0.000 | 5.00 | 14.035 | 16.84 | 580.6 | 0.0 | 499.5 |
| 75.00 | Bot - Section 3 | 1.00 | 0.91 | 19.979 | 21.97 | 240.05 | 1.200 | * | 0.000 | 5.00 | 13.507 | 16.21 | 569.9 | 0.0 | 480.5 |
| 80.00 | Top - Section 2 | 1.00 | 0.92 | 20.351 | 22.38 | 232.61 | 1.200 | * | 0.000 | 5.00 | 13.191 | 15.83 | 567.0 | 0.0 | 837.7 |
| 85.00 | | 1.00 | 0.94 | 20.706 | 22.77 | 228.81 | 1.200 | * | 0.000 | 5.00 | 12.663 | 15.20 | 553.8 | 0.0 | 360.9 |
| 90.00 | Appertunance(s) | 1.00 | 0.95 | 21.047 | 23.15 | 220.86 | 1.200 | * | 0.000 | 5.00 | 12.135 | 14.56 | 539.4 | 0.0 | 345.8 |
| 95.00 | | 1.00 | 0.97 | 21.375 | 23.51 | 212.68 | 1.200 | * | 0.000 | 5.00 | 11.607 | 13.93 | 524.0 | 0.0 | 330.6 |
| 100.0 | Appertunance(s) | 1.00 | 0.98 | 21.690 | 23.86 | 204.27 | 1.200 | * | 0.000 | 5.00 | 11.079 | 13.29 | 507.5 | 0.0 | 315.4 |
| 105.0 | | 1.00 | 1.00 | 21.995 | 24.19 | 195.65 | 1.200 | * | 0.000 | 5.00 | 10.551 | 12.66 | 490.1 | 0.0 | 300.2 |
| 110.0 | Appertunance(s) | 1.00 | 1.01 | 22.289 | 24.51 | 186.85 | 1.200 | * | 0.000 | 5.00 | 10.023 | 12.03 | 471.8 | 0.0 | 285.1 |
| 115.0 | | 1.00 | 1.02 | 22.574 | 24.83 | 177.87 | 1.200 | * | 0.000 | 5.00 | 9.495 | 11.39 | 452.7 | 0.0 | 269.9 |
| 119.0 | Top - Section 3 | 1.00 | 1.03 | 22.796 | 25.07 | 170.56 | 1.200 | * | 0.000 | 4.00 | 7.216 | 8.66 | 347.4 | 0.0 | 205.0 |
| 119.7 | Appertunance(s) | 1.00 | 1.04 | 22.834 | 25.11 | 169.27 | 1.200 | * | 0.000 | 0.70 | 1.228 | 1.47 | 59.2 | 0.0 | 26.2 |
| 120.0 | | 1.00 | 1.04 | 22.850 | 25.13 | 168.71 | 0.750 | | 0.000 | 0.30 | 0.523 | 0.39 | 15.8 | 0.0 | 11.2 |
| 125.0 | | 1.00 | 1.05 | 23.118 | 25.43 | 159.40 | 0.750 | | 0.000 | 5.00 | 8.439 | 6.33 | 257.5 | 0.0 | 180.2 |
| 128.0 | Appertunance(s) | 1.00 | 1.06 | 23.276 | 25.60 | 153.75 | 0.750 | | 0.000 | 3.00 | 4.810 | 3.61 | 147.8 | 0.0 | 102.7 |
| 130.0 | | 1.00 | 1.06 | 23.379 | 25.71 | 149.95 | 0.750 | | 0.000 | 2.00 | 3.101 | 2.33 | 95.7 | 0.0 | 66.2 |
| * = Cf Adjusted By Linear Load Ra Effect | | | | | | | | Totals: | | 130.00 | | | 12,049.0 | 0.0 | 14,612.9 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 11 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 23 Iterations

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

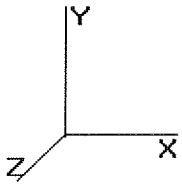
Wind Importance Factor : 1.00

## Discrete Appurtenance Segment Forces (Factored)

| Elev (ft) | Description | Qty | qz (psf) | qzGh (psf) | Orientation Factor | Ka | Total EPAa (sf) | Horiz Ecc (ft) | Vert Ecc (ft) | Wind FX (lb) | Mom Y (lb-ft) | Mom Z (lb-ft) | Dead Load (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50.00 | Flat Side Arm | 1 | 17.793 | 19.573 | 1.00 | 1.00 | 6.30 | 0.000 | 0.000 | 197.29 | 0.00 | 0.00 | 135.00 |
| 50.00 | GPS | 1 | 17.793 | 19.573 | 1.00 | 1.00 | 1.00 | 0.000 | 0.000 | 31.32 | 0.00 | 0.00 | 9.00 |
| 70.00 | 2' Std. Dish | 1 | 19.589 | 21.548 | 1.00 | 1.00 | 5.23 | 0.000 | 0.000 | 180.31 | 0.00 | 0.00 | 12.60 |
| 90.00 | Flat Platform w/ Han | 1 | 21.047 | 23.152 | 1.00 | 1.00 | 42.40 | 0.000 | 0.000 | 1,570.63 | 0.00 | 0.00 | 1,800.00 |
| 90.00 | 14" x 9" TTA | 6 | 21.047 | 23.152 | 0.50 | 0.75 | 2.36 | 0.000 | 0.000 | 87.51 | 0.00 | 0.00 | 54.00 |
| 90.00 | Raycap DC6-48-60-18- | 4 | 21.047 | 23.152 | 1.00 | 0.75 | 3.33 | 0.000 | 0.000 | 123.35 | 0.00 | 0.00 | 72.00 |
| 90.00 | Ericsson RRUS A2 | 6 | 21.047 | 23.152 | 0.67 | 0.75 | 6.21 | 0.000 | 0.000 | 230.07 | 0.00 | 0.00 | 118.80 |
| 90.00 | Ericsson RRUS 12 w/ | 9 | 21.047 | 23.152 | 0.67 | 0.75 | 14.25 | 0.000 | 0.000 | 527.71 | 0.00 | 0.00 | 468.99 |
| 90.00 | Ericsson RRUS-32 | 3 | 21.047 | 23.152 | 0.67 | 0.75 | 4.99 | 0.000 | 0.000 | 184.84 | 0.00 | 0.00 | 207.90 |
| 90.00 | Ericsson RRUS-11 | 9 | 21.047 | 23.152 | 0.67 | 0.75 | 17.14 | 0.000 | 0.000 | 634.93 | 0.00 | 0.00 | 445.50 |
| 90.00 | CCI HPA-65R-BUU-H8 | 12 | 21.047 | 23.152 | 0.79 | 0.75 | 92.29 | 0.000 | 0.000 | 3,418.64 | 0.00 | 0.00 | 734.40 |
| 100.0 | Ericsson AIR 21, 1.3 | 3 | 21.690 | 23.860 | 0.85 | 0.80 | 12.32 | 0.000 | 0.000 | 470.38 | 0.00 | 0.00 | 247.05 |
| 100.0 | Ericsson AIR 21, 1.3 | 3 | 21.690 | 23.860 | 0.85 | 0.80 | 12.40 | 0.000 | 0.000 | 473.50 | 0.00 | 0.00 | 244.08 |
| 100.0 | Round T-Arm | 3 | 21.690 | 23.860 | 0.67 | 0.75 | 14.62 | 0.000 | 0.000 | 558.22 | 0.00 | 0.00 | 675.00 |
| 110.0 | Round Low Profile Pl | 1 | 22.289 | 24.518 | 1.00 | 1.00 | 21.70 | 0.000 | 0.000 | 851.27 | 0.00 | 0.00 | 1,350.00 |
| 110.0 | 48" x 12" Panel | 9 | 22.289 | 24.518 | 0.78 | 0.80 | 28.47 | 0.000 | 0.000 | 1,116.98 | 0.00 | 0.00 | 243.00 |
| 119.7 | Flat Low Profile Pla | 1 | 22.834 | 25.117 | 1.00 | 1.00 | 26.10 | 0.000 | 0.000 | 1,048.90 | 0.00 | 0.00 | 1,350.00 |
| 119.7 | Alcatel-Lucent RRH2x | 3 | 22.834 | 25.117 | 0.67 | 0.80 | 3.47 | 0.000 | 0.000 | 139.58 | 0.00 | 0.00 | 118.80 |
| 119.7 | Antel BXA-171063-8BF | 3 | 22.834 | 25.117 | 0.87 | 0.80 | 6.14 | 0.000 | 0.000 | 246.70 | 0.00 | 0.00 | 28.35 |
| 119.7 | Antel BXA-185063/8CF | 3 | 22.834 | 25.117 | 0.81 | 0.80 | 5.75 | 0.000 | 0.000 | 231.25 | 0.00 | 0.00 | 27.00 |
| 119.7 | Andrew | 6 | 22.834 | 25.117 | 0.94 | 0.80 | 19.58 | 0.000 | 0.000 | 786.96 | 0.00 | 0.00 | 64.80 |
| 119.7 | RFS DB-T1-6Z-8AB-0Z | 1 | 22.834 | 25.117 | 0.67 | 0.80 | 2.57 | 0.000 | 0.000 | 103.40 | 0.00 | 0.00 | 39.60 |
| 119.7 | Antel BXA-70063-6CF- | 3 | 22.834 | 25.117 | 0.77 | 0.80 | 13.99 | 0.000 | 0.000 | 562.20 | 0.00 | 0.00 | 45.90 |
| 128.0 | Side Arms | 1 | 23.276 | 25.603 | 1.00 | 1.00 | 8.50 | 0.000 | 0.000 | 348.20 | 0.00 | 0.00 | 504.00 |
| 128.0 | DragonWave Horizon | 3 | 23.276 | 25.603 | 0.50 | 0.80 | 1.01 | 0.000 | 0.000 | 41.29 | 0.00 | 0.00 | 31.05 |
| 128.0 | BTS | 3 | 23.276 | 25.603 | 0.50 | 0.80 | 2.16 | 0.000 | 0.000 | 88.48 | 0.00 | 0.00 | 54.00 |
| 128.0 | DragonWave A-ANT- | 3 | 23.276 | 25.603 | 1.00 | 0.80 | 11.26 | 0.000 | 0.000 | 461.10 | 0.00 | 0.00 | 73.17 |
| 128.0 | Argus LLPX310R | 3 | 23.276 | 25.603 | 0.73 | 0.80 | 7.52 | 0.000 | 0.000 | 307.90 | 0.00 | 0.00 | 77.22 |
| | | | | | | | | | | 15,022.93 | | | 9,231.21 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:03 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 12 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 23 Iterations

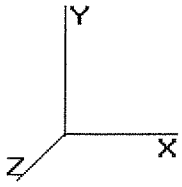
Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

## Linear Appurtenance Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Exposed To Wind | Length (ft) | Ca | Exposed Width (in) | Area (sqft) | CaAa (sqft) | qz (psf) | Ra | Cf Adjust Factor | F X (lb) | Dead Load (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 22.14 |
| 5.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 5.85 |
| 5.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 5.85 |
| 5.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.160 | 1.180 | 0.00 | 8.91 |
| 10.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 22.14 |
| 10.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 5.85 |
| 10.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 5.85 |
| 10.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.164 | 1.192 | 0.00 | 8.91 |
| 15.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 22.14 |
| 15.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 5.85 |
| 15.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 5.85 |
| 15.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.169 | 1.206 | 0.00 | 8.91 |
| 20.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 22.14 |
| 20.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 5.85 |
| 20.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 5.85 |
| 20.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.173 | 1.220 | 0.00 | 8.91 |
| 25.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 22.14 |
| 25.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 5.85 |
| 25.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 5.85 |
| 25.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.364 | 0.178 | 1.235 | 0.00 | 8.91 |
| 30.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 22.14 |
| 30.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 5.85 |
| 30.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 5.85 |
| 30.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 15.377 | 0.183 | 1.250 | 0.00 | 8.91 |
| 35.00 | (6) 1 5/8" Coax | Yes | 5.00 | 0.000 | 3.96 | 1.65 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 22.14 |
| 35.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 5.85 |
| 35.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 0.000 | 1.98 | 0.82 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 5.85 |
| 35.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 16.070 | 0.189 | 1.267 | 0.00 | 8.91 |
| 37.00 | (6) 1 5/8" Coax | Yes | 2.00 | 0.000 | 3.96 | 0.66 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 8.86 |
| 37.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 2.34 |
| 37.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 2.34 |
| 37.00 | (6) 7/8" Coax | Yes | 2.00 | 0.000 | 0.00 | 0.00 | 0.00 | 16.327 | 0.193 | 1.279 | 0.00 | 3.56 |
| 40.00 | (6) 1 5/8" Coax | Yes | 3.00 | 0.000 | 3.96 | 0.99 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 13.28 |
| 40.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 3.51 |
| 40.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 3.51 |
| 40.00 | (6) 7/8" Coax | Yes | 3.00 | 0.000 | 0.00 | 0.00 | 0.00 | 16.694 | 0.196 | 1.288 | 0.00 | 5.35 |
| 43.00 | (6) 1 5/8" Coax | Yes | 3.00 | 0.000 | 3.96 | 0.99 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 13.28 |
| 43.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 3.51 |
| 43.00 | (1) 1 5/8" Hybriflex | Yes | 3.00 | 0.000 | 1.98 | 0.50 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 3.51 |
| 43.00 | (6) 7/8" Coax | Yes | 3.00 | 0.000 | 0.00 | 0.00 | 0.00 | 17.043 | 0.200 | 1.299 | 0.00 | 5.35 |
| 45.00 | (6) 1 5/8" Coax | Yes | 2.00 | 0.000 | 3.96 | 0.66 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 8.86 |
| 45.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 2.34 |
| 45.00 | (1) 1 5/8" Hybriflex | Yes | 2.00 | 0.000 | 1.98 | 0.33 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 2.34 |
| 45.00 | (6) 7/8" Coax | Yes | 2.00 | 0.000 | 0.00 | 0.00 | 0.00 | 17.266 | 0.200 | 1.299 | 0.00 | 3.56 |
| 50.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 17.793 | 0.204 | 0.000 | 62.01 | 22.14 |
| 50.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 17.793 | 0.204 | 0.000 | 31.00 | 5.85 |
| 50.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 17.793 | 0.204 | 0.000 | 31.00 | 5.85 |
| 50.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 17.793 | 0.204 | 0.000 | 0.00 | 8.91 |
| 55.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 18.285 | 0.211 | 0.000 | 63.72 | 22.14 |
| 55.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.285 | 0.211 | 0.000 | 31.86 | 5.85 |
| 55.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.285 | 0.211 | 0.000 | 31.86 | 5.85 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:04 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 13 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 23 Iterations

Gust Response Factor : 1.10 — Wind Importance Factor : 1.00

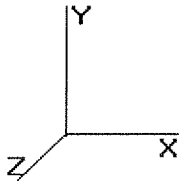
Dead Load Factor : 0.90

Wind Load Factor : 1.60

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 18.285 | 0.211 | 0.000 | 0.00 | 8.91 |
| 60.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 18.745 | 0.219 | 0.000 | 65.32 | 22.14 |
| 60.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.745 | 0.219 | 0.000 | 32.66 | 5.85 |
| 60.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 18.745 | 0.219 | 0.000 | 32.66 | 5.85 |
| 60.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 18.745 | 0.219 | 0.000 | 0.00 | 8.91 |
| 65.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 19.179 | 0.227 | 0.000 | 66.83 | 22.14 |
| 65.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.179 | 0.227 | 0.000 | 33.42 | 5.85 |
| 65.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.179 | 0.227 | 0.000 | 33.42 | 5.85 |
| 65.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 19.179 | 0.227 | 0.000 | 0.00 | 8.91 |
| 70.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 19.589 | 0.235 | 0.000 | 68.26 | 22.14 |
| 70.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.589 | 0.235 | 0.000 | 34.13 | 5.85 |
| 70.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.589 | 0.235 | 0.000 | 34.13 | 5.85 |
| 70.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 19.589 | 0.235 | 0.000 | 0.00 | 8.91 |
| 75.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 19.979 | 0.244 | 0.000 | 69.62 | 22.14 |
| 75.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.979 | 0.244 | 0.000 | 34.81 | 5.85 |
| 75.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 19.979 | 0.244 | 0.000 | 34.81 | 5.85 |
| 75.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 19.979 | 0.244 | 0.000 | 0.00 | 8.91 |
| 80.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 20.351 | 0.254 | 0.000 | 70.92 | 22.14 |
| 80.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.351 | 0.254 | 0.000 | 35.46 | 5.85 |
| 80.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.351 | 0.254 | 0.000 | 35.46 | 5.85 |
| 80.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 20.351 | 0.254 | 0.000 | 0.00 | 8.91 |
| 85.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 20.706 | 0.261 | 0.000 | 72.16 | 22.14 |
| 85.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.706 | 0.261 | 0.000 | 36.08 | 5.85 |
| 85.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 20.706 | 0.261 | 0.000 | 36.08 | 5.85 |
| 85.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 20.706 | 0.261 | 0.000 | 0.00 | 8.91 |
| 90.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.047 | 0.272 | 0.000 | 73.35 | 22.14 |
| 90.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.047 | 0.272 | 0.000 | 36.67 | 5.85 |
| 90.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.047 | 0.272 | 0.000 | 36.67 | 5.85 |
| 90.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 21.047 | 0.272 | 0.000 | 0.00 | 8.91 |
| 95.00 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.375 | 0.284 | 0.000 | 74.49 | 22.14 |
| 95.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.375 | 0.284 | 0.000 | 37.24 | 5.85 |
| 95.00 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.375 | 0.284 | 0.000 | 37.24 | 5.85 |
| 95.00 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 21.375 | 0.284 | 0.000 | 0.00 | 8.91 |
| 100.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.690 | 0.298 | 0.000 | 75.59 | 22.14 |
| 100.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.690 | 0.298 | 0.000 | 37.79 | 5.85 |
| 100.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.690 | 0.298 | 0.000 | 37.79 | 5.85 |
| 100.0 | (6) 7/8" Coax | Yes | 5.00 | 0.000 | 0.00 | 0.00 | 0.00 | 21.690 | 0.298 | 0.000 | 0.00 | 8.91 |
| 105.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 21.995 | 0.235 | 0.000 | 76.65 | 22.14 |
| 105.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 21.995 | 0.235 | 0.000 | 38.32 | 5.85 |
| 110.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 22.289 | 0.247 | 0.000 | 77.67 | 22.14 |
| 110.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 22.289 | 0.247 | 0.000 | 38.84 | 5.85 |
| 115.0 | (6) 1 5/8" Coax | Yes | 5.00 | 1.200 | 3.96 | 1.65 | 1.98 | 22.574 | 0.261 | 0.000 | 78.67 | 22.14 |
| 115.0 | (1) 1 5/8" Hybriflex | Yes | 5.00 | 1.200 | 1.98 | 0.82 | 0.99 | 22.574 | 0.261 | 0.000 | 39.33 | 5.85 |
| 119.0 | (6) 1 5/8" Coax | Yes | 4.00 | 1.200 | 3.96 | 1.32 | 1.58 | 22.796 | 0.274 | 0.000 | 63.55 | 17.71 |
| 119.0 | (1) 1 5/8" Hybriflex | Yes | 4.00 | 1.200 | 1.98 | 0.66 | 0.79 | 22.796 | 0.274 | 0.000 | 31.78 | 4.68 |
| 119.7 | (6) 1 5/8" Coax | Yes | 0.70 | 1.200 | 3.96 | 0.23 | 0.28 | 22.834 | 0.282 | 0.000 | 11.14 | 3.10 |
| 119.7 | (1) 1 5/8" Hybriflex | Yes | 0.70 | 1.200 | 1.98 | 0.12 | 0.14 | 22.834 | 0.282 | 0.000 | 5.57 | 0.82 |
| | | | | | | | | | | Totals: | 1,986.04 | 965.28 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |








**Load Case:** 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 23 Iterations

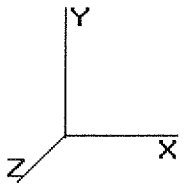
Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

## Applied Segment Forces Summary

| Seg Elev (ft) | Lateral FX (-) (lb) | Axial FY (-) (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) |
|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 418.46 | 1,110.94 | 0.00 | 0.00 |
| 10.00 | 407.75 | 1,088.17 | 0.00 | 0.00 |
| 15.00 | 397.04 | 1,065.41 | 0.00 | 0.00 |
| 20.00 | 386.33 | 1,042.64 | 0.00 | 0.00 |
| 25.00 | 375.62 | 1,019.87 | 0.00 | 0.00 |
| 30.00 | 365.22 | 997.11 | 0.00 | 0.00 |
| 35.00 | 370.47 | 974.34 | 0.00 | 0.00 |
| 37.00 | 147.37 | 383.36 | 0.00 | 0.00 |
| 40.00 | 226.06 | 933.94 | 0.00 | 0.00 |
| 43.00 | 226.50 | 918.92 | 0.00 | 0.00 |
| 45.00 | 150.57 | 326.73 | 0.00 | 0.00 |
| 50.00 | 959.42 | 947.55 | 0.00 | 0.00 |
| 55.00 | 730.59 | 783.91 | 0.00 | 0.00 |
| 60.00 | 728.08 | 764.93 | 0.00 | 0.00 |
| 65.00 | 723.53 | 745.96 | 0.00 | 0.00 |
| 70.00 | 897.48 | 739.59 | 0.00 | 0.00 |
| 75.00 | 709.17 | 704.33 | 0.00 | 0.00 |
| 80.00 | 708.80 | 1,061.48 | 0.00 | 0.00 |
| 85.00 | 698.09 | 584.73 | 0.00 | 0.00 |
| 90.00 | 7,463.80 | 4,471.14 | 0.00 | 0.00 |
| 95.00 | 672.96 | 488.54 | 0.00 | 0.00 |
| 100.0 | 2,160.80 | 1,639.49 | 0.00 | 0.00 |
| 105.0 | 605.10 | 443.43 | 0.00 | 0.00 |
| 110.0 | 2,556.59 | 2,021.25 | 0.00 | 0.00 |
| 115.0 | 570.69 | 379.86 | 0.00 | 0.00 |
| 119.0 | 442.73 | 292.96 | 0.00 | 0.00 |
| 119.7 | 3,194.93 | 1,716.08 | 0.00 | 0.00 |
| 120.0 | 15.78 | 13.44 | 0.00 | 0.00 |
| 125.0 | 257.53 | 217.93 | 0.00 | 0.00 |
| 128.0 | 1,394.76 | 864.73 | 0.00 | 0.00 |
| 130.0 | 95.70 | 66.17 | 0.00 | 0.00 |
| Totals: | 29,057.93 | 28,808.92 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:04 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 15 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 0.9D + 1.6W — 95.00 mph with No Ice (Reduced DL) — 23 Iterations

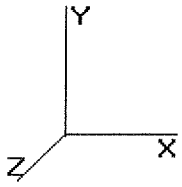
Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

## 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 | -28.76 | -29.11 | 0.00 | -2,582.05 | 0.00 | 2,582.05 | 3,933.71 | 1,966.86 | 7,926.85 | 3,935.22 | 0.00 | 0.00 | 0.664 |
| 5.00 | -27.54 | -28.79 | 0.00 | -2,436.50 | 0.00 | 2,436.50 | 3,871.76 | 1,935.88 | 7,601.85 | 3,773.88 | 0.11 | -0.20 | 0.653 |
| 10.00 | -26.35 | -28.47 | 0.00 | -2,292.56 | 0.00 | 2,292.56 | 3,807.81 | 1,903.90 | 7,279.43 | 3,613.82 | 0.43 | -0.41 | 0.642 |
| 15.00 | -25.19 | -28.16 | 0.00 | -2,150.21 | 0.00 | 2,150.21 | 3,741.86 | 1,870.93 | 6,959.92 | 3,455.20 | 0.98 | -0.62 | 0.629 |
| 20.00 | -24.05 | -27.85 | 0.00 | -2,009.43 | 0.00 | 2,009.43 | 3,673.92 | 1,836.96 | 6,643.62 | 3,298.17 | 1.74 | -0.83 | 0.616 |
| 25.00 | -22.93 | -27.54 | 0.00 | -1,870.19 | 0.00 | 1,870.19 | 3,603.99 | 1,801.99 | 6,330.83 | 3,142.89 | 2.73 | -1.05 | 0.602 |
| 30.00 | -21.83 | -27.24 | 0.00 | -1,732.47 | 0.00 | 1,732.47 | 3,532.05 | 1,766.03 | 6,021.87 | 2,989.51 | 3.95 | -1.27 | 0.586 |
| 35.00 | -20.80 | -26.90 | 0.00 | -1,596.26 | 0.00 | 1,596.26 | 3,458.12 | 1,729.06 | 5,717.06 | 2,838.19 | 5.40 | -1.49 | 0.569 |
| 37.00 | -20.36 | -26.79 | 0.00 | -1,542.45 | 0.00 | 1,542.45 | 3,427.99 | 1,714.00 | 5,596.36 | 2,778.27 | 6.04 | -1.58 | 0.561 |
| 40.00 | -19.37 | -26.58 | 0.00 | -1,462.09 | 0.00 | 1,462.09 | 3,382.20 | 1,691.10 | 5,416.68 | 2,689.07 | 7.08 | -1.72 | 0.550 |
| 43.00 | -18.41 | -26.36 | 0.00 | -1,382.35 | 0.00 | 1,382.35 | 2,653.26 | 1,326.63 | 4,249.62 | 2,109.69 | 8.21 | -1.86 | 0.663 |
| 45.00 | -18.01 | -26.26 | 0.00 | -1,329.62 | 0.00 | 1,329.62 | 2,631.58 | 1,315.79 | 4,160.48 | 2,065.44 | 9.00 | -1.95 | 0.651 |
| 50.00 | -16.98 | -25.34 | 0.00 | -1,198.34 | 0.00 | 1,198.34 | 2,575.99 | 1,288.00 | 3,939.42 | 1,955.70 | 11.18 | -2.20 | 0.620 |
| 55.00 | -16.12 | -24.65 | 0.00 | -1,071.65 | 0.00 | 1,071.65 | 2,518.41 | 1,259.20 | 3,721.17 | 1,847.34 | 13.62 | -2.45 | 0.587 |
| 60.00 | -15.29 | -23.95 | 0.00 | -948.42 | 0.00 | 948.42 | 2,458.83 | 1,229.41 | 3,506.02 | 1,740.53 | 16.33 | -2.70 | 0.551 |
| 65.00 | -14.48 | -23.25 | 0.00 | -828.66 | 0.00 | 828.66 | 2,397.25 | 1,198.62 | 3,294.28 | 1,635.42 | 19.29 | -2.94 | 0.513 |
| 70.00 | -13.70 | -22.37 | 0.00 | -712.40 | 0.00 | 712.40 | 2,333.68 | 1,166.84 | 3,086.28 | 1,532.16 | 22.50 | -3.18 | 0.471 |
| 75.00 | -12.96 | -21.67 | 0.00 | -600.54 | 0.00 | 600.54 | 2,268.11 | 1,134.05 | 2,882.31 | 1,430.90 | 25.95 | -3.40 | 0.426 |
| 80.00 | -11.87 | -20.94 | 0.00 | -492.18 | 0.00 | 492.18 | 1,667.40 | 833.70 | 2,076.00 | 1,030.61 | 29.63 | -3.61 | 0.485 |
| 85.00 | -11.26 | -20.25 | 0.00 | -387.47 | 0.00 | 387.47 | 1,621.96 | 810.98 | 1,935.58 | 960.90 | 33.51 | -3.80 | 0.411 |
| 90.00 | -7.27 | -12.52 | 0.00 | -286.24 | 0.00 | 286.24 | 1,574.54 | 787.27 | 1,797.58 | 892.40 | 37.60 | -4.00 | 0.326 |
| 95.00 | -6.80 | -11.83 | 0.00 | -223.66 | 0.00 | 223.66 | 1,525.11 | 762.56 | 1,662.31 | 825.24 | 41.88 | -4.17 | 0.276 |
| 100.00 | -5.30 | -9.57 | 0.00 | -164.51 | 0.00 | 164.51 | 1,473.69 | 736.85 | 1,530.08 | 759.60 | 46.33 | -4.32 | 0.220 |
| 105.00 | -4.89 | -8.94 | 0.00 | -116.67 | 0.00 | 116.67 | 1,420.27 | 710.14 | 1,401.20 | 695.61 | 50.92 | -4.44 | 0.171 |
| 110.00 | -3.06 | -6.24 | 0.00 | -71.98 | 0.00 | 71.98 | 1,346.26 | 673.13 | 1,258.58 | 624.81 | 55.62 | -4.54 | 0.118 |
| 115.00 | -2.73 | -5.64 | 0.00 | -40.80 | 0.00 | 40.80 | 1,272.62 | 636.31 | 1,123.95 | 557.98 | 60.41 | -4.61 | 0.075 |
| 119.00 | -2.47 | -5.18 | 0.00 | -18.24 | 0.00 | 18.24 | 1,213.70 | 606.85 | 1,021.73 | 507.23 | 64.28 | -4.64 | 0.038 |
| 119.00 | -2.47 | -5.18 | 0.00 | -18.24 | 0.00 | 18.24 | 879.13 | 439.56 | 744.60 | 369.65 | 64.28 | -4.64 | 0.052 |
| 119.70 | -1.02 | -1.85 | 0.00 | -14.62 | 0.00 | 14.62 | 873.97 | 436.99 | 733.91 | 364.34 | 64.96 | -4.64 | 0.041 |
| 120.00 | -1.00 | -1.84 | 0.00 | -14.06 | 0.00 | 14.06 | 871.75 | 435.88 | 729.34 | 362.07 | 65.25 | -4.65 | 0.040 |
| 125.00 | -0.81 | -1.56 | 0.00 | -4.89 | 0.00 | 4.89 | 833.68 | 416.84 | 654.38 | 324.86 | 70.13 | -4.67 | 0.016 |
| 128.00 | -0.06 | -0.10 | 0.00 | -0.20 | 0.00 | 0.20 | 809.87 | 404.94 | 610.58 | 303.12 | 73.06 | -4.67 | 0.001 |
| 130.00 | 0.00 | -0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 791.55 | 395.77 | 580.39 | 288.13 | 75.01 | -4.67 | 0.000 |

| | | | |
|---|---|---|---|
| Pole : | 370626 | Code: ANSI/TIA-222 Rev G | 6/13/2014 5:31:04 PM |
| Location : | East Hartford, CT | Struct Class : II | |
| Height : | 130.0 (ft) | Exposure Category : B | Page: 16 |
| Base Dia : | 49.19 (in) | Topographic Category : 1 | |
| Top Dia : | 18.00 (in) | Base Elev : 0.000 (ft) | |
| Shape : | 16 Sides | | |
| Taper : | 0.248577 (in/ft) | | |






**Load Case:** 1.2D + 1.0Di + 1.0Wi — 50.00 mph with 1.00 in Radial Ice — 23 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

## Shaft Segment Forces (Factored)

| Seg Top Elev (ft) | Description | Kzt | Kz | qz (psf) | qzGh (psf) | C (mph-ft) | Cf | | Ice Thick (in) | Tributary (ft) | Ap (sf) | EPAs (sf) | Wind Force X (lb) | Dead Load Ice (lb) | Tot Dead Load (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 1.00 | 0.70 | 4.256 | 4.682 | 0.000 | 1.200 | | 0.000 | 0.00 | 0.000 | 0.00 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 1.00 | 0.70 | 4.256 | 4.682 | 0.000 | 1.200 | * | 1.656 | 5.00 | 22.013 | 26.42 | 123.7 | 519.2 | 1,696.2 |
| 10.00 | | 1.00 | 0.70 | 4.256 | 4.682 | 0.000 | 1.200 | * | 1.775 | 5.00 | 21.584 | 25.90 | 121.3 | 543.8 | 1,690.5 |
| 15.00 | | 1.00 | 0.70 | 4.256 | 4.682 | 0.000 | 1.200 | * | 1.848 | 5.00 | 21.118 | 25.34 | 118.6 | 552.6 | 1,669.0 |
| 20.00 | | 1.00 | 0.70 | 4.256 | 4.682 | 0.000 | 1.200 | * | 1.902 | 5.00 | 20.635 | 24.76 | 115.9 | 554.4 | 1,640.4 |
| 25.00 | | 1.00 | 0.70 | 4.256 | 4.682 | 0.000 | 1.200 | * | 1.945 | 5.00 | 20.142 | 24.17 | 113.2 | 552.2 | 1,607.8 |
| 30.00 | | 1.00 | 0.70 | 4.260 | 4.686 | 0.000 | 1.200 | * | 1.981 | 5.00 | 19.644 | 23.57 | 110.5 | 547.2 | 1,572.5 |
| 35.00 | | 1.00 | 0.73 | 4.451 | 4.897 | 0.000 | 1.200 | * | 2.012 | 5.00 | 19.142 | 22.97 | 112.5 | 540.3 | 1,535.2 |
| 37.00 | Bot - Section 2 | 1.00 | 0.74 | 4.523 | 4.975 | 0.000 | 1.200 | * | 2.023 | 2.00 | 7.513 | 9.02 | 44.8 | 214.8 | 604.3 |
| 40.00 | | 1.00 | 0.76 | 4.625 | 5.087 | 0.000 | 1.200 | * | 2.039 | 3.00 | 11.278 | 13.53 | 68.8 | 323.9 | 1,386.7 |
| 43.00 | Top - Section 1 | 1.00 | 0.77 | 4.721 | 5.193 | 0.000 | 1.200 | * | 2.054 | 3.00 | 11.095 | 13.31 | 69.1 | 320.6 | 1,363.3 |
| 45.00 | | 1.00 | 0.78 | 4.783 | 5.261 | 0.000 | 1.200 | * | 2.063 | 2.00 | 7.294 | 8.75 | 46.1 | 212.2 | 526.1 |
| 50.00 | Appertunance(s) | 1.00 | 0.81 | 4.929 | 5.422 | 0.000 | 1.200 | * | 2.085 | 5.00 | 17.884 | 21.46 | 116.4 | 519.9 | 1,287.1 |
| 55.00 | | 1.00 | 0.83 | 5.065 | 5.572 | 0.000 | 1.200 | * | 2.105 | 5.00 | 17.373 | 20.85 | 116.2 | 508.6 | 1,250.5 |
| 60.00 | | 1.00 | 0.85 | 5.193 | 5.712 | 0.000 | 1.200 | * | 2.123 | 5.00 | 16.860 | 20.23 | 115.6 | 496.6 | 1,213.2 |
| 65.00 | | 1.00 | 0.87 | 5.313 | 5.844 | 0.000 | 1.200 | * | 2.140 | 5.00 | 16.346 | 19.62 | 114.6 | 484.0 | 1,175.3 |
| 70.00 | Appertunance(s) | 1.00 | 0.89 | 5.426 | 5.969 | 0.000 | 1.200 | * | 2.156 | 5.00 | 15.832 | 19.00 | 113.4 | 470.9 | 1,136.9 |
| 75.00 | Bot - Section 3 | 1.00 | 0.91 | 5.534 | 6.088 | 0.000 | 1.200 | * | 2.171 | 5.00 | 15.316 | 18.38 | 111.9 | 457.3 | 1,098.0 |
| 80.00 | Top - Section 2 | 1.00 | 0.92 | 5.637 | 6.201 | 0.000 | 1.200 | * | 2.185 | 5.00 | 15.012 | 18.01 | 111.7 | 450.1 | 1,567.1 |
| 85.00 | | 1.00 | 0.94 | 5.736 | 6.309 | 0.000 | 1.200 | * | 2.198 | 5.00 | 14.495 | 17.39 | 109.7 | 435.8 | 917.0 |
| 90.00 | Appertunance(s) | 1.00 | 0.95 | 5.830 | 6.413 | 0.000 | 1.200 | * | 2.211 | 5.00 | 13.978 | 16.77 | 107.6 | 421.1 | 882.1 |
| 95.00 | | 1.00 | 0.97 | 5.921 | 6.513 | 0.000 | 1.200 | * | 2.223 | 5.00 | 13.460 | 16.15 | 105.2 | 406.0 | 846.8 |
| 100.0 | Appertunance(s) | 1.00 | 0.98 | 6.008 | 6.609 | 0.000 | 1.200 | * | 2.234 | 5.00 | 12.941 | 15.53 | 102.6 | 390.7 | 811.3 |
| 105.0 | | 1.00 | 1.00 | 6.093 | 6.702 | 0.000 | 1.200 | * | 2.245 | 5.00 | 12.422 | 14.91 | 99.9 | 375.1 | 775.4 |
| 110.0 | Appertunance(s) | 1.00 | 1.01 | 6.174 | 6.792 | 0.000 | 1.200 | * | 2.256 | 5.00 | 11.903 | 14.28 | 97.0 | 359.3 | 739.4 |
| 115.0 | | 1.00 | 1.02 | 6.253 | 6.879 | 0.000 | 1.200 | * | 2.266 | 5.00 | 11.383 | 13.66 | 94.0 | 343.2 | 703.1 |
| 119.0 | Top - Section 3 | 1.00 | 1.03 | 6.315 | 6.946 | 0.000 | 1.200 | * | 2.274 | 4.00 | 8.732 | 10.48 | 72.8 | 264.2 | 537.5 |
| 119.7 | Appertunance(s) | 1.00 | 1.04 | 6.325 | 6.958 | 0.000 | 1.200 | * | 2.275 | 0.70 | 1.493 | 1.79 | 12.5 | 45.9 | 80.9 |
| 120.0 | | 1.00 | 1.04 | 6.330 | 6.963 | 0.000 | 1.200 | | 2.276 | 0.30 | 0.637 | 0.76 | 5.3 | 19.6 | 34.5 |
| 125.0 | | 1.00 | 1.05 | 6.404 | 7.044 | 0.000 | 1.200 | | 2.285 | 5.00 | 10.343 | 12.41 | 87.4 | 310.5 | 550.7 |
| 128.0 | Appertunance(s) | 1.00 | 1.06 | 6.448 | 7.092 | 0.000 | 1.200 | | 2.290 | 3.00 | 5.955 | 7.15 | 50.7 | 180.3 | 317.2 |
| 130.0 | | 1.00 | 1.06 | 6.476 | 7.124 | 0.000 | 1.200 | | 2.294 | 2.00 | 3.866 | 4.64 | 33.0 | 117.5 | 205.7 |
| * = Cf Adjusted By Linear Load Ra Effect | | | | | | | | Totals: | | 130.00 | | | 2,821.9 | 11,937.7 | 31,421.6 |