August 6, 2020

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

**Regarding: Notice of Exempt Modification – AT&T Site CT2252 / ATC Asset 302469**
**Address: 1069 Connecticut Avenue, Bridgeport, CT 06607**

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing +/- 125' monopole tower at the above-referenced address, latitude 41.183600, longitude -73.158400. Said monopole tower is operated by American Tower Corporation.

AT&T desires to modify its existing telecommunications facility by adding three (3) antennae, swapping three (3) antennae, adding six (6) remote radio units, swapping three (3) remote radio units and adding two (2) surge arrestor and accompanying feedlines as more particularly detailed and described on the enclosed Construction Drawings prepared by SMW Engineering Group, Inc., last revised May 26, 2020. The centerline height of the existing antennas is and will remain at 106 feet.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Joseph P. Ganim, Mayor of the City of Bridgeport; Thomas F. Gill, Director of Planning & Economic Development of the City of Bridgeport; and American Tower Corporation, as tower operator.

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

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

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

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

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

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

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated April 27, 2020 and prepared by American Tower Corporation enclosed herewith.*

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

Sincerely,

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

Enclosures:
Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Original Tower Approval
Exhibit 7 – Notice Delivery Confirmations

cc: The Honorable Joseph P. Ganim, Mayor, City of Bridgeport, as elected official
Thomas F. Gill, Director, Planning & Economic Development, City of Bridgeport
American Tower Corporation, as tower operator

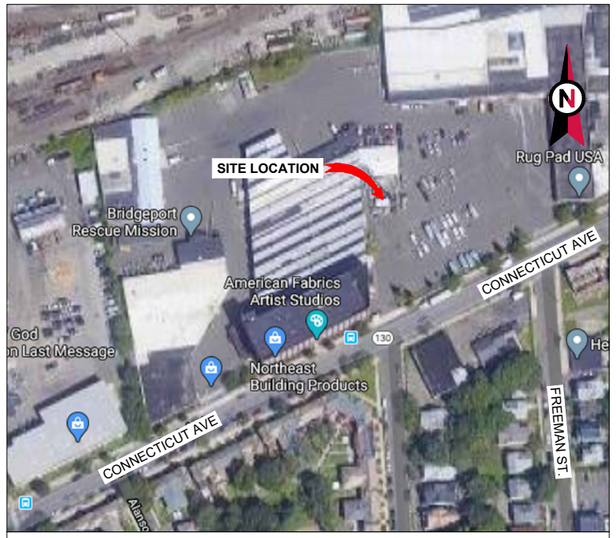
# EXHIBIT 1


VICINITY MAP

# AMERICAN TOWER®

ATC SITE NAME: BRIDGEPORT CT 2
ATC SITE NUMBER: 302469
AT&T PACE NUMBER: MRCTB045164/MRCTB045264/
MRCTB045348/MRCTB045267
AT&T SITE ID: CTL02252
AT&T FA CODE:10084453
PROJECTS: 5C, 6C,5G NR
SITE ADDRESS: 1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

AT&T MOBILITY
ANTENNA AMENDMENT DRAWINGS




LOCATION MAP

## COMPLIANCE CODE

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

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

## UTILITY COMPANIES

POWER COMPANY: UTILITY COMPANY DIRECT
PHONE: NOT PROVIDED

TELEPHONE COMPANY: NOT PROVIDED
PHONE: NOT PROVIDED

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

## PROJECT SUMMARY

SITE ADDRESS:

1069 CONNECTICUT AVENUE

BRIDGEPORT, CT 06607-1226

COUNTY: FAIRFIELD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.18361667

LONGITUDE: -73.15838333

GROUND ELEVATION: 32' AMSL

## PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

AT&T MOBILITY

ENGINEER:

SMW ENGINEERING GROUP, INC
158 BUSINESS CENTER DRIVE
BIRMINGHAM, AL 35244
JOB# 20-10207

PROPERTY OWNER:

CITY OF BRIDGEPORT
1069 CONNECTICUT AVE.
BRIDGEPORT, CT 06607

## PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:
TOWER WORK:
REMOVE (3) ANTENNAS, (3) RRH'S, (9) DIPLEXERS, AND (6) TMA'S.

INSTALL (6) ANTENNAS, (3) RRUS-E2 B29, (3) RRUS-4478 B14, (3) RRUS-4449 B5/B12, (2) SQUIDS, (4) 0.78" 8AWG6 DC CABLES AND (2) 0.39" FIBER CABLES

EXISTING (6) ANTENNAS, (6) RRH'S, (2) SQUIDS, (4) 0.78" 8AWG6 DC CABLES AND (2) 0.39" FIBER CABLES TO REMAIN.

GROUND WORK:
INSTALL (1) 6630 AND (1) IDLE CABLE.

## PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

## PROJECT LOCATION DIRECTIONS

FROM HARTFORD, CT TAKE I-91 SOUTH TO I-95 SOUTH TO EXIT 29. TURN LEFT OFF EXIT AND AT LIGHT TAKE A LEFT U-TURN ONTO STRATFORD AVENUE. FOLLOW STRATFORD TO FREEMAN STREET AND TURN LEFT. GO TO STOP SIGN AND CROSS OVER CONNECTICUT AVENUE INTO PARKING LOT. TOWER IS AT THE LEFT HAND END OF THE PARKING LOT.

## SHEET INDEX

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| C-101 | DETAILED SITE PLAN | A | 05/08/20 | ZDS |
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SMW ENGINEERING GROUP, INC.
TOGETHER PLANNING A BETTER TOMORROW
158 BUSINESS CENTER DRIVE
BIRMINGHAM, AL 35244
TEL: 205-252-6985 FAX: 205-320-1504

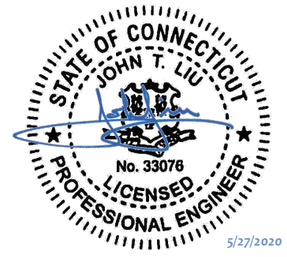
| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| 0 | FOR CONSTRUCTION | ZDS | 05/26/20 |

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:




AT&T

| | |
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

COVER SHEET

SHEET NUMBER: G-001

REVISION: 0

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## GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, AT&T MOBILITY "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF AT&T MOBILITY TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE AT&T MOBILITY REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T MOBILITY REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T MOBILITY REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE AT&T MOBILITY CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE AT&T MOBILITY REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH AT&T MOBILITY AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T MOBILITY REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T MOBILITY REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MOBILITY MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T MOBILITY SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T MOBILITY FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T MOBILITY SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY AT&T MOBILITY REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE AT&T MOBILITY REP. ANY WORK FOUND BY THE AT&T MOBILITY REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. AT&T MOBILITY FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T MOBILITY WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. AT&T MOBILITY OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO AT&T MOBILITY OR THEIR ARCHITECT/ENGINEER.

## SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY AT&T MOBILITY UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
   - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND AT&T MOBILITY SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

**ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.**

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| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| 0 | FOR CONSTRUCTION | ZDS | 05/26/20 |
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| | | | |
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| | | | |

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:


AT&T

| | |
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

GENERAL NOTES

| SHEET NUMBER: | REVISION: |
|---|---|
| G-002 | 0 |

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SITE PLAN NOTES:

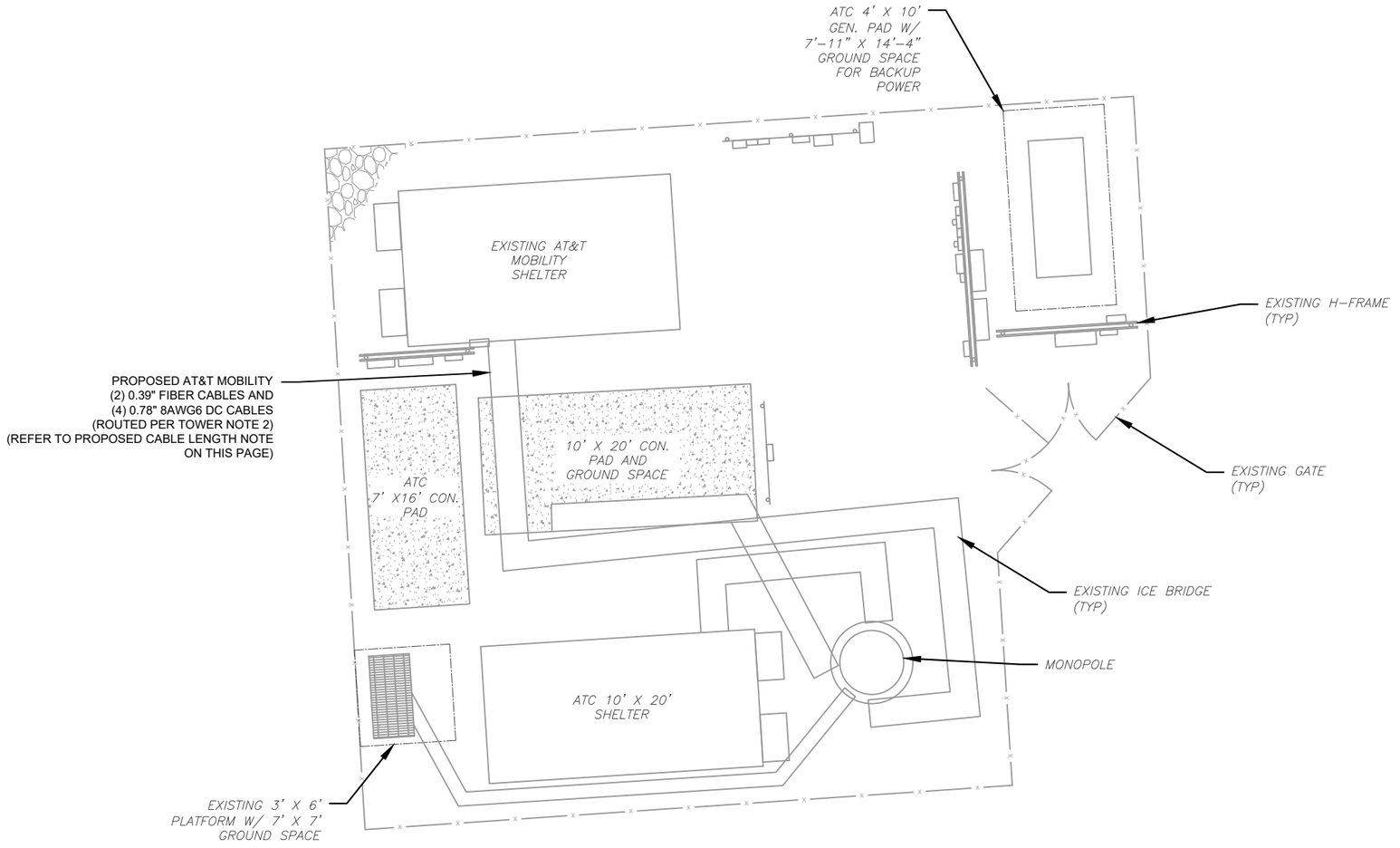
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

## LEGEND

| | |
|---|---|
| ⊗ | GROUNDING TEST WELL |
| ATS | AUTOMATIC TRANSFER SWITCH |
| B | BOLLARD |
| CSC | CELL SITE CABINET |
| D | DISCONNECT |
| E | ELECTRICAL |
| F | FIBER |
| GEN | GENERATOR |
| G | GENERATOR RECEPTACAL |
| HH, V | HAND HOLE, VAULT |
| IB | ICE BRIDGE |
| K | KENTROX BOX |
| LC | LIGHTING CONTROL |
| M | METER |
| PB | PULL BOX |
| PP | POWER POLE |
| T | TELCO |
| TRN | TRANSFORMER |
| ——x—— | CHAINLINK FENCE |




1 DETAILED SITE PLAN

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)

**PROPOSED CABLE LENGTH:**

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **XXX**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

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SITE ADDRESS:
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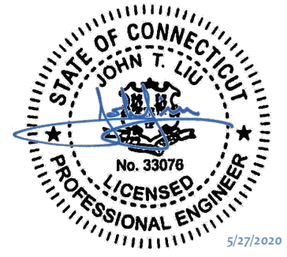
BRIDGEPORT, CT 06607-1226

SEAL:



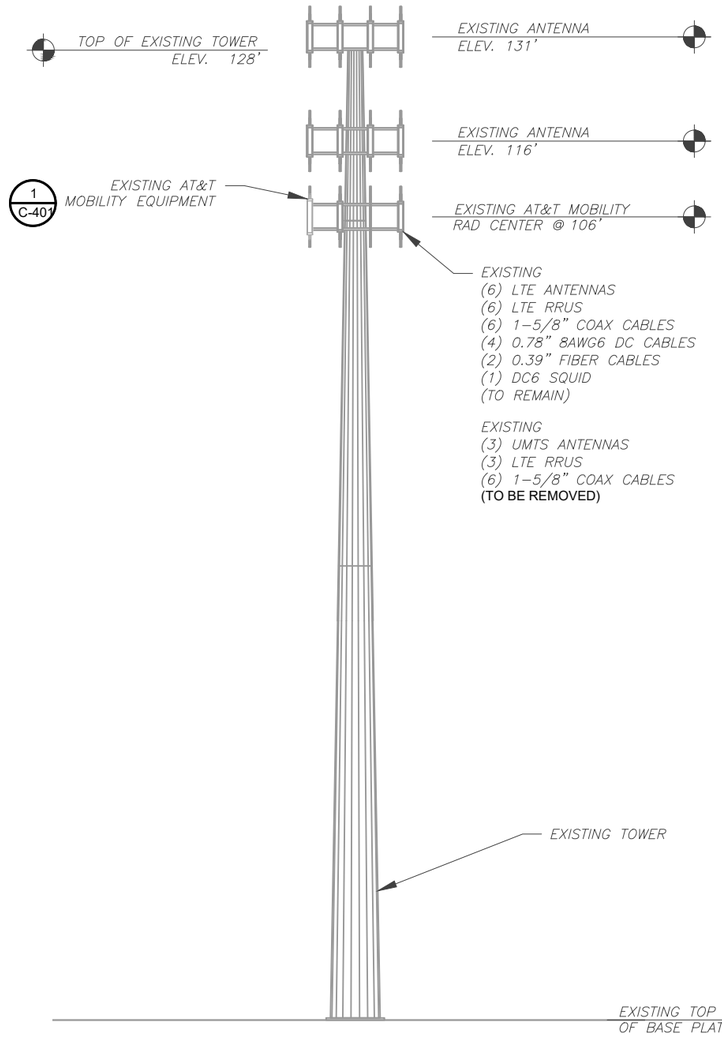

AT&T

| | |
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

DETAILED SITE PLAN

| SHEET NUMBER: | REVISION: |
|---|---|
| C-101 | 0 |

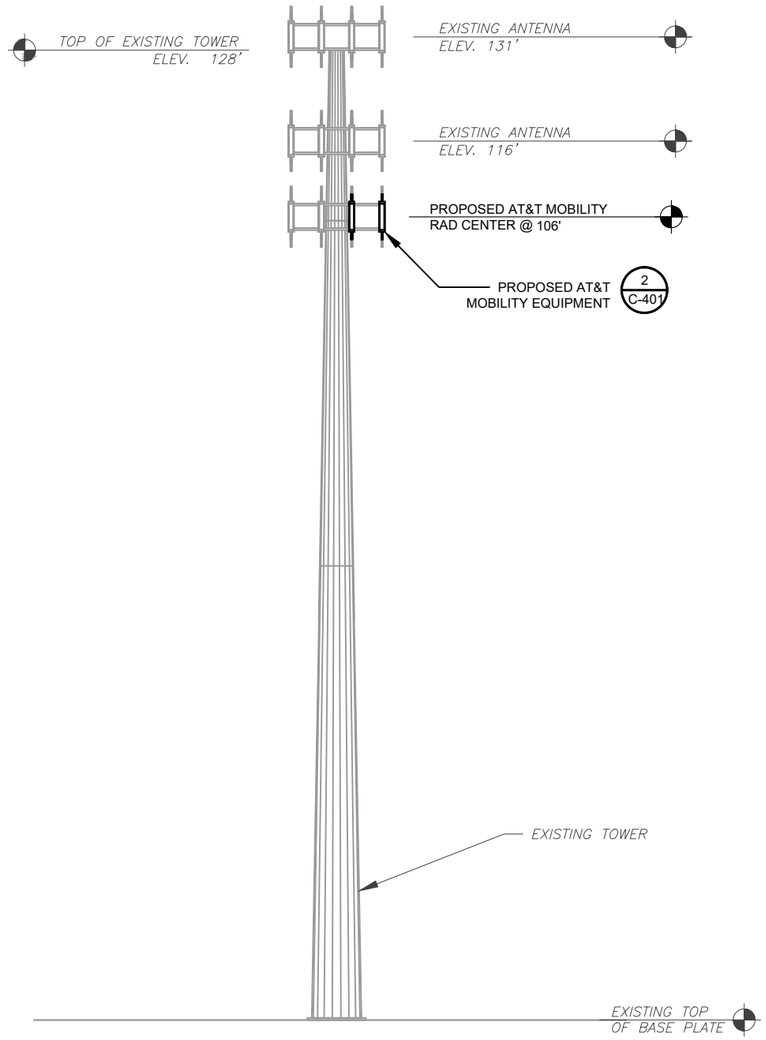
EXISTING AND FINAL CONFIGURATIONS ARE BASED ON RFDS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.




1 EXISTING TOWER ELEVATION

SCALE: 1"=20'

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 05/04/20, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING




2 FINAL TOWER ELEVATION

SCALE: 1"=20'

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
3. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

SCOPE OF WORK:

1. WHEN STACKING CABLES 3 OR MORE DEEP, USE STACKABLE SNAP-INS, TALLEY PART NUMBER SSH-158-3 (OR ENGINEER APPROVED EQUAL).
2. CONTRACTOR SHALL CONFIRM THE FINAL CABLE ROUTING PLAN WITH THE STRUCTURAL ANALYSIS.

COAXIAL CABLE NOTES:

1. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERISON.
2. CONTRACTOR SHALL WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCODRANCE WITH AT&T STANDARDS.
3. CONTRACTOR SHALL GROUND ALL EQUIPMENT. INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CBALES AS A COMPLETE SYTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.
4. CONRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

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| REV. | DESCRIPTION | BY | DATE |
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| 0 | FOR CONSTRUCTION | ZDS | 05/26/20 |
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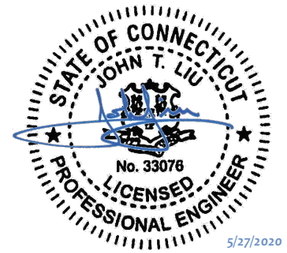
ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:




AT&T

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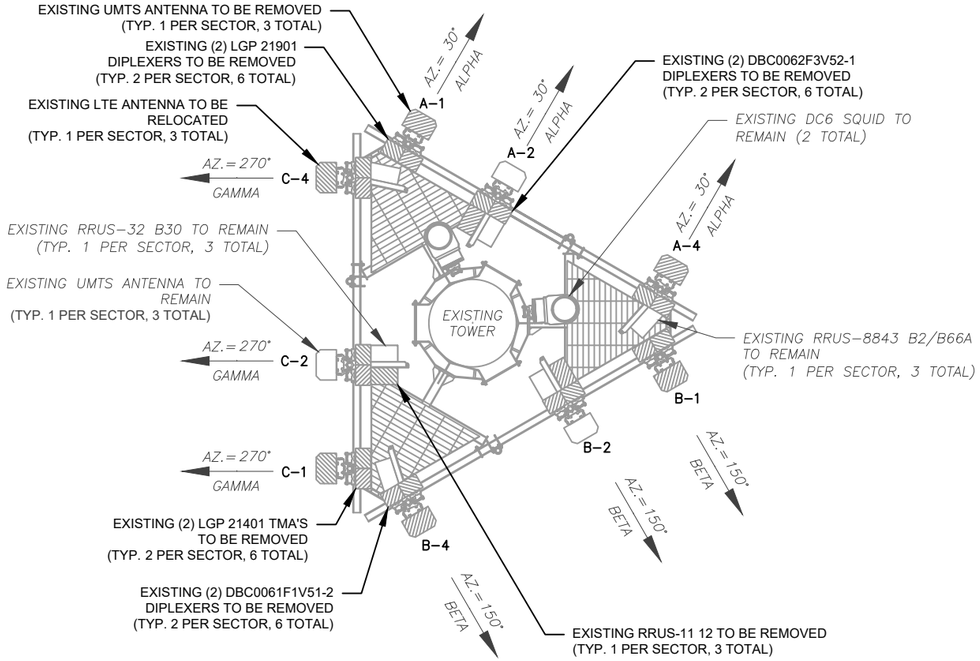
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

TOWER ELEVATION

| SHEET NUMBER: | REVISION: |
|---|---|
| C-201 | 0 |

EXISTING AND FINAL CONFIGURATIONS ARE BASED ON RFDS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.




1 CURRENT ANTENNA PLAN
1" = 5'-0"

NOTES

1. BASED ON APPROVED ATC APPLICATION 302469, DATED 04/16/20. CONFIRM WITH AT&T MOBILITY REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA SCHEDULE

| LOCATION | | | ANTENNA SUMMARY | | | | NON ANTENNA SUMMARY | |
|---|---|---|---|---|---|---|---|---|
| SECTOR | RAD | AZ | POS | ANTENNA | BAND | STATUS | ADDITIONAL TOWER MOUNTED EQUIPMENT | STATUS |
| ALPHA | 106' | 30° | A1 | POWERWAVE 7750 | UMTS | RMV | POWERWAVE LGP 21901 DIPLEXER | RMV |
| | | | | | | | (2) POWERWAVE LGP 21401 TMA | RMV |
| | | | A2 | CCI OPA-65R-LCUU-H4 | LTE | RMN | RRUS-11 B12 | RMV |
| | | | | | | | RRUS-32 B30 | RMN |
| | | | | | | | DBC0062F3V52-1 DIPLEXER | RMV |
| | | | A3 | – | – | – | – | – |
| | | | A4 | CCI OPA-65R-LCUU-H4 | LTE | REL | RRUS-8843 B2/B66A | RMN |
| | | | | | | | DBC0061F1V51-2 DIPLEXER | RMV |
| BETA | 106' | 150° | B1 | POWERWAVE 7750 | UMTS | RMV | POWERWAVE LGP 21901 DIPLEXER | RMV |
| | | | | | | | (2) POWERWAVE LGP 21401 TMA | RMV |
| | | | B2 | CCI OPA-65R-LCUU-H4 | LTE | RMN | RRUS-11 B12 | RMV |
| | | | | | | | RRUS-32 B30 | RMN |
| | | | | | | | DBC0062F3V52-1 DIPLEXER | RMV |
| | | | B3 | – | – | – | – | – |
| | | | B4 | CCI OPA-65R-LCUU-H4 | LTE | REL | RRUS-8843 B2/B66A | RMN |
| | | | | | | | DBC0061F1V51-2 DIPLEXER | RMV |
| GAMMA | 106' | 270° | C1 | POWERWAVE 7750 | UMTS | RMV | POWERWAVE LGP 21901 DIPLEXER | RMV |
| | | | | | | | (2) POWERWAVE LGP 21401 TMA | RMV |
| | | | C2 | CCI OPA-65R-LCUU-H4 | LTE | RMN | RRUS-11 B12 | RMV |
| | | | | | | | RRUS-32 B30 | RMN |
| | | | | | | | DBC0062F3V52-1 DIPLEXER | RMV |
| | | | C3 | – | – | – | – | – |
| | | | C4 | CCI OPA-65R-LCUU-H4 | LTE | REL | RRUS-8843 B2/B66A | RMN |
| | | | | | | | DBC0061F1V51-2 DIPLEXER | RMV |

CABLE LENGTHS FOR JUMPERS
FIBER DISTRIBUTION/SQUID TO RRU: 15'
RRU TO ANTENNA: 10'

STATUS ABBREVIATIONS
RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
DSC: TO BE DISCONNECTED & REMAIN
ADD: TO BE ADDED

| EXISTING FIBER DISTRIBUTION/SQUID | | EXISTING CABLING SUMMARY | | | |
|---|---|---|---|---|---|
| MODEL NUMBER | STATUS | COAX | DC | FIBER | STATUS |
| DC6-48-60-18-8F | RMN | (6) 1-5/8" COAX | (4) 0.78" | (2) 0.39" | RMN |
| DC6-48-60-18-8F | RMN | (6) 1-5/8" | – | – | RMV |

2 EQUIPMENT SCHEDULES

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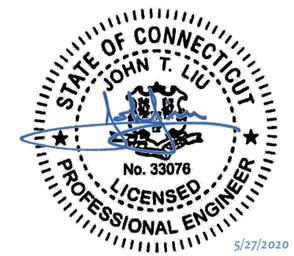
ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:

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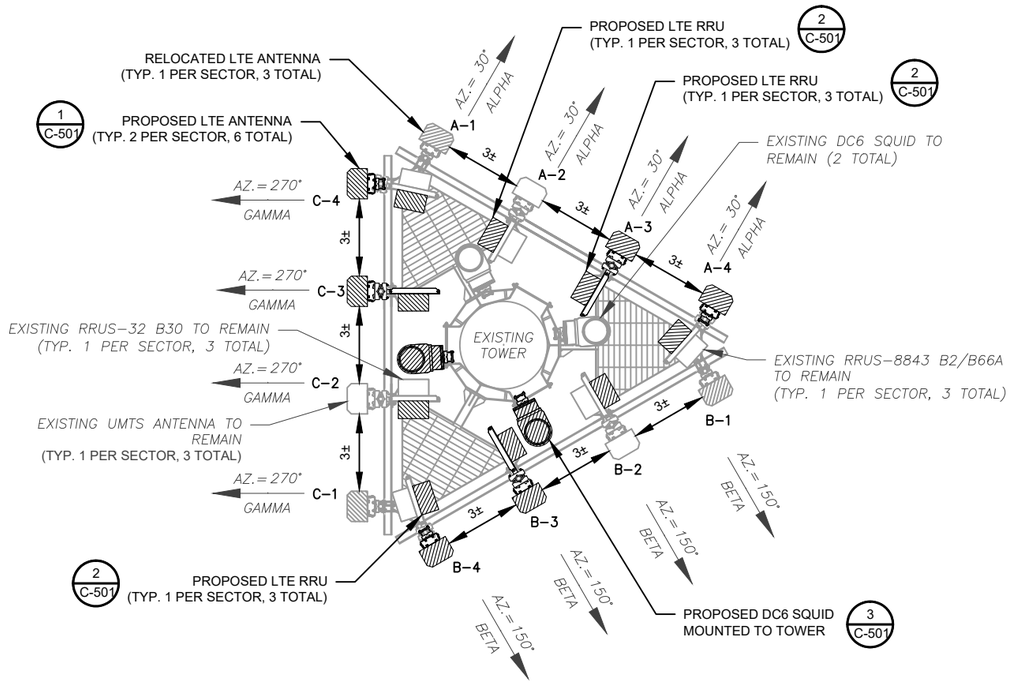
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

EXISTING RF SCHEDULE AND ANTENNA INSTALLATION

| SHEET NUMBER: | REVISION: |
|---|---|
| C-401 | 0 |

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 05/04/20, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING




1 FINAL ANTENNA PLAN
1" = 5'-0"

PROPOSED RRUs MUST BE INSTALLED A MINIMUM OF 8" AWAY FROM ALL ANTENNAS

NOTES

1. BASED ON APPROVED ATC APPLICATION 302469, DATED 04/16/20. CONFIRM WITH AT&T MOBILITY REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA SCHEDULE

| LOCATION | | | ANTENNA SUMMARY | | | | NON ANTENNA SUMMARY | |
|---|---|---|---|---|---|---|---|---|
| SECTOR | RAD | AZ | POS | ANTENNA | BAND | STATUS | ADDITIONAL TOWER MOUNTED EQUIPMENT | STATUS |
| ALPHA | 106' | 30° | A1 | CCI OPA-65R-LCUU-H4 | UMTS | REL | - | - |
| | | | A2 | *CCI OPA-65R-LCUU-H4* | *LTE* | *RMN* | RRUS-E2 B29 | ADD |
| | | | | | | | *RRUS-32 B30* | *RMN* |
| | | | A3 | CCI OPA65R-BU4DA | LTE | ADD | RRUS-4478 B14 | ADD |
| | | | A4 | CCI DMP65R-BU4DA | LTE | ADD | RRUS-4449 B5/B12 | ADD |
| | | | | | | | *RRUS-8843 B2/B66A* | *RMN* |
| BETA | 106' | 150° | B1 | CCI OPA-65R-LCUU-H4 | UMTS | REL | - | - |
| | | | B2 | *CCI OPA-65R-LCUU-H4* | *LTE* | *RMN* | RRUS-E2 B29 | ADD |
| | | | | | | | *RRUS-32 B30* | *RMN* |
| | | | B3 | CCI OPA65R-BU4DA | LTE | ADD | RRUS-4478 B14 | ADD |
| | | | B4 | CCI DMP65R-BU4DA | LTE | ADD | RRUS-4449 B5/B12 | ADD |
| | | | | | | | *RRUS-8843 B2/B66A* | *RMN* |
| GAMMA | 106' | 270° | C1 | CCI OPA-65R-LCUU-H4 | UMTS | REL | - | - |
| | | | C2 | *CCI OPA-65R-LCUU-H4* | *LTE* | *RMN* | RRUS-E2 B29 | ADD |
| | | | | | | | *RRUS-32 B30* | *RMN* |
| | | | C3 | CCI OPA65R-BU4DA | LTE | ADD | RRUS-4478 B14 | ADD |
| | | | C4 | CCI DMP65R-BU4DA | LTE | ADD | RRUS-4449 B5/B12 | ADD |
| | | | | | | | *RRUS-8843 B2/B66A* | *RMN* |

CABLE LENGTHS FOR JUMPERS
FIBER DISTRIBUTION/SQUID TO RRU: 15'
RRU TO ANTENNA: 10'

STATUS ABBREVIATIONS
RMV: TO BE REMOVED
*RMN*: TO REMAIN
REL: TO BE RELOCATED
DSC: TO BE DISCONNECTED & REMAIN
ADD: TO BE ADDED

| FINAL FIBER DISTRIBUTION/SQUID | | FINAL CABLING SUMMARY | | | |
|---|---|---|---|---|---|
| MODEL NUMBER | STATUS | COAX | DC | FIBER | STATUS |
| *DC6-48-60-18-8F* | *RMN* | *(6) 1-5/8" COAX* | *(4) 0.78"* | *(2) 0.39"* | *RMN* |
| *DC6-48-60-18-8F* | *RMN* | - | - | - | - |
| DC6-48-60-18-8C | ADD | - | (2) 0.78" 8AWG6 | (1) 0.39" | ADD |
| DC6-48-60-18-8C | ADD | - | (2) 0.78" 8AWG6 | (1) 0.39" | ADD |

2 EQUIPMENT SCHEDULES

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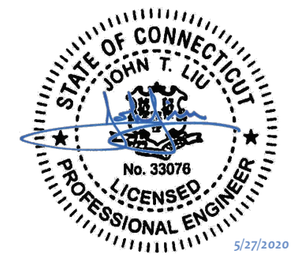
ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:

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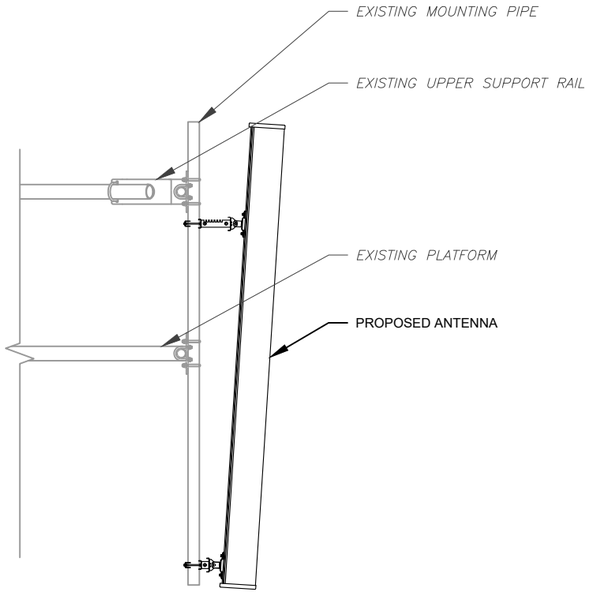
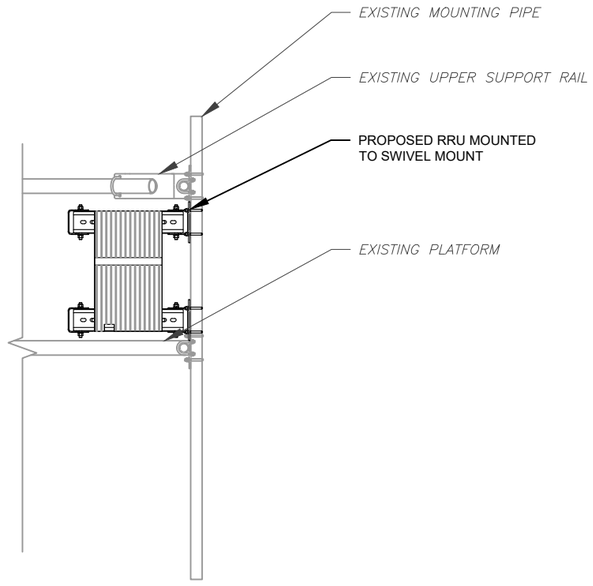
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

FINAL RF SCHEDULE AND ANTENNA INSTALLATION

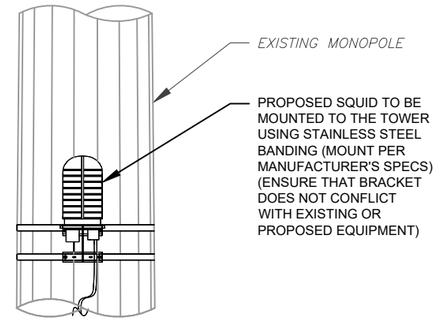
| SHEET NUMBER: | REVISION: |
|---|---|
| C-402 | 0 |




1 ANTENNA DETAIL
SCALE: N.T.S.




2 RRU DETAIL
SCALE: N.T.S.




3 PROPOSED SQUID MOUNTING
SCALE: NOT TO SCALE

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| 0 | FOR CONSTRUCTION | ZDS | 05/26/20 |
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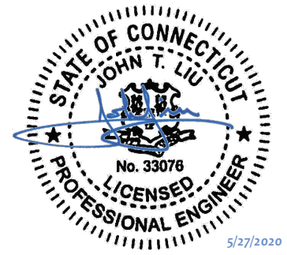
ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:

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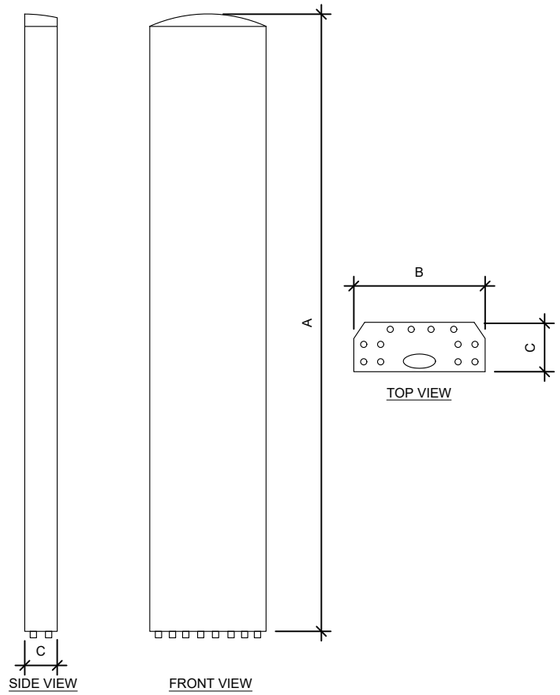
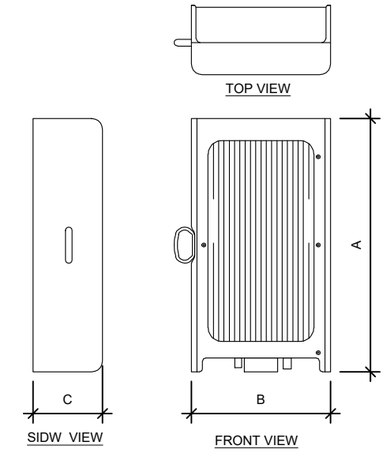
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

CONSTRUCTION DETAILS

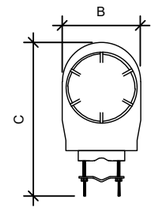
| SHEET NUMBER: | REVISION: |
|---|---|
| C-501 | 0 |

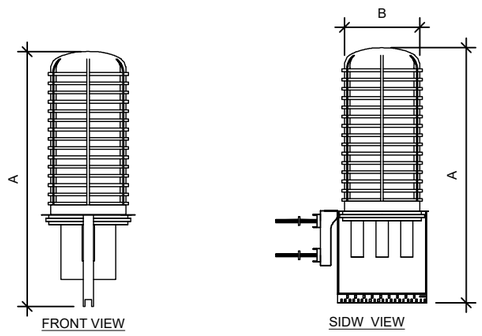



| ANTENNA SPECIFICATIONS | | | | |
|---|---|---|---|---|
| ANTENNA MODEL | A | B | C | WEIGHT (LBS) |
| CCI OPA65R-BU4DA | 48.2" | 21" | 7.8" | 52.5 |
| CCI DMP65R-BU4DA | 48.0" | 20.7" | 7.7" | 67.9 |




| RRU SPECIFICATIONS | | | | |
|---|---|---|---|---|
| RRU MODEL | A | B | C | WEIGHT (LBS) |
| RRUS-E2 B29 | 20.4" | 18.5" | 7.5" | 60.0 |
| 4478 B14 | 18.1" | 13.4" | 8.3" | 59.4 |
| RRUS-4449 B5/B12 | 17.9" | 13.2" | 9.4" | 71.0 |




| RAYCAP SPECIFICATIONS | | | | |
|---|---|---|---|---|
| RAYCAP MODEL | A | B | C | WEIGHT (LBS) |
| DC6-48-60-18-8F | 31.41" | 10.24" | 18.28" | 16.0 |

1 EQUIPMENT SPECIFICATIONS

SCALE: NOT TO SCALE

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ATC SITE NAME:
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SITE ADDRESS:
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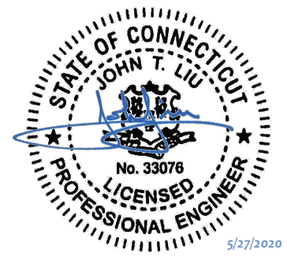
BRIDGEPORT, CT 06607-1226

SEAL:




AT&T

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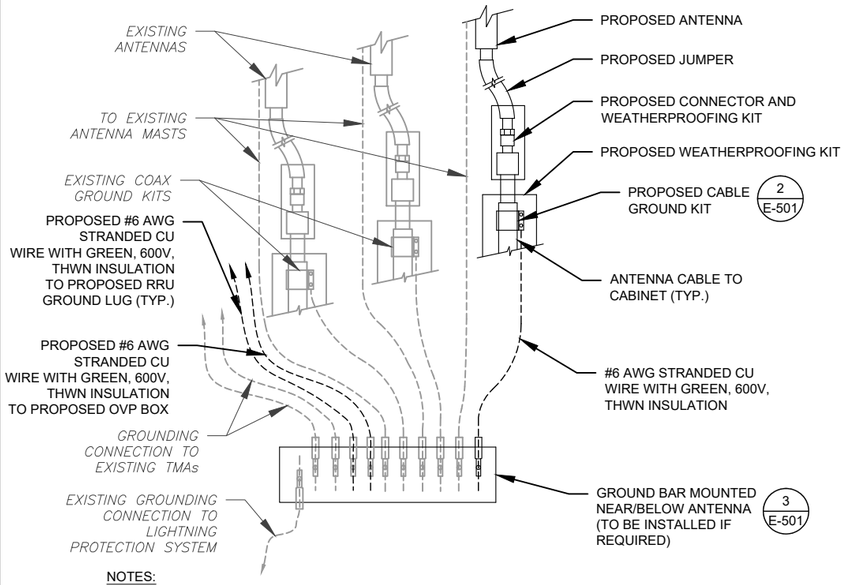
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

EQUIPMENT SPECIFICATIONS

| SHEET NUMBER: | REVISION: |
|---|---|
| C-502 | 0 |

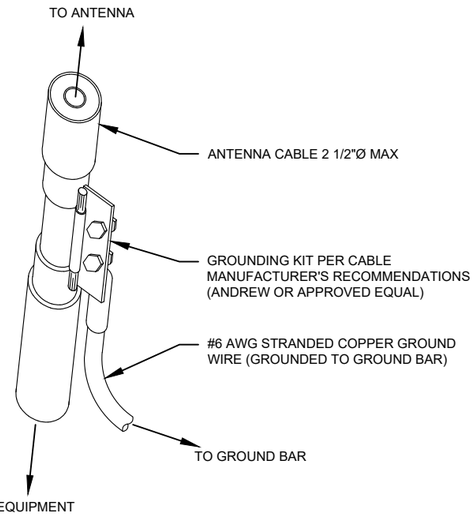



NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH AT&T MOBILITY GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH AT&T MOBILITY GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

## 1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

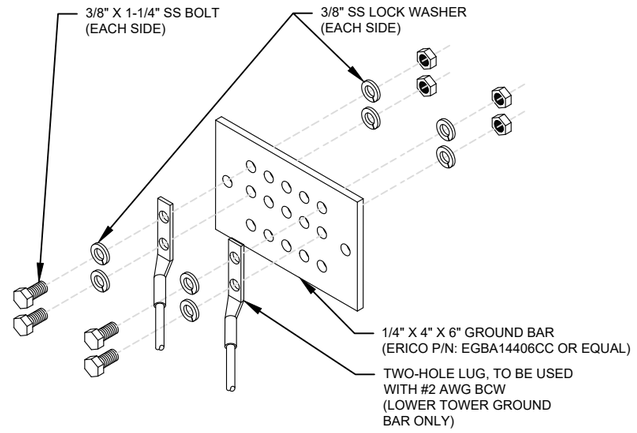



GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

## 2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

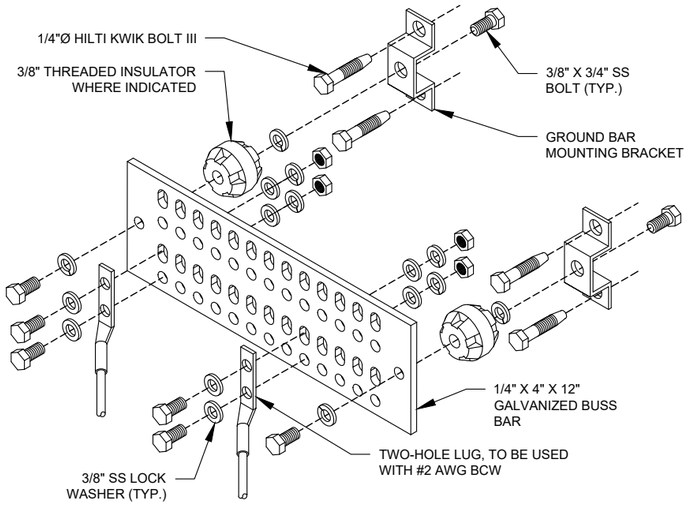



GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

## 3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

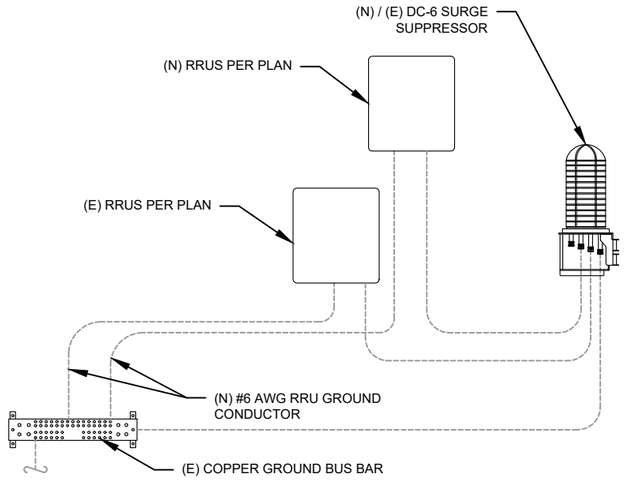



GROUND BAR NOTES

1. GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

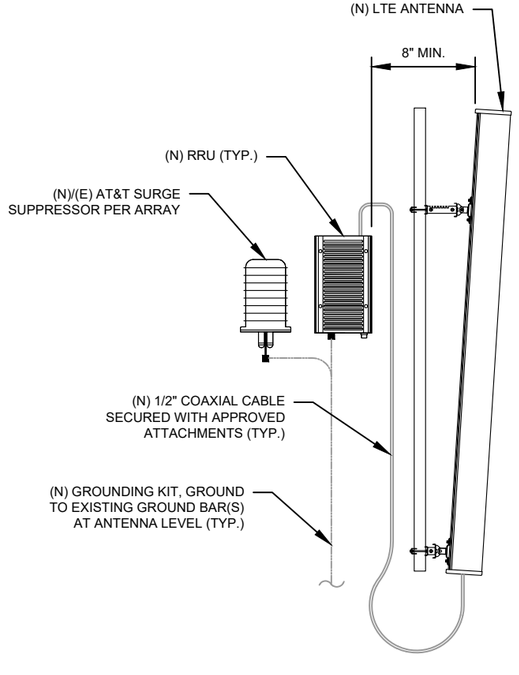
## 4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.




## 5 RRU GROUNDING

SCALE: N.T.S.




## 6 ANTENNA/RRU GROUNDING

SCALE: N.T.S.

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TOGETHER PLANNING A BETTER TOMORROW
158 BUSINESS CENTER DRIVE
BIRMINGHAM, AL 35244
TEL: 205-252-6985 FAX: 205-320-1504

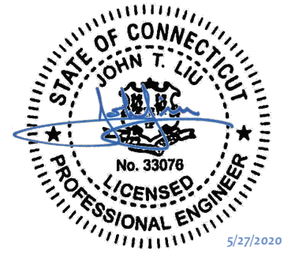
| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| 0 | FOR CONSTRUCTION | ZDS | 05/26/20 |
| | | | |
| | | | |
| | | | |
| | | | |

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:




AT&T

| | |
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

GROUNDING DETAILS

| SHEET NUMBER: | REVISION: |
|---|---|
| E-501 | 0 |

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# Antenna Mount Analysis Report

| | | |
|---|---|---|
| **ATC Site Name** | : | **Bridgeport CT 2, CT** |
| **ATC Site Number** | : | **302469** |
| **Engineering Number** | : | **13202054_C8_01** |
| **Mount Elevation** | : | **106 ft** |
| **Carrier** | : | **AT&T Mobility** |
| **Carrier Site Name** | : | **MRCTB045164** |
| **Carrier Site Number** | : | **CTL02252** |
| **Site Location** | : | **1069 Connecticut Avenue**<br>**Bridgeport, CT 06607-1226**<br>**41.18361667 , -73.15838333** |
| **County** | : | **Fairfield** |
| **Date** | : | **May 4, 2020** |
| **Max Usage** | : | **51%** |
| **Result** | : | **Pass** |

Prepared By:
Rohith Koduru
Structural Engineer

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
05 May 2020 05:16:08 cosign

**COA: PEC.0001553**



AMERICAN TOWER®
CORPORATION



## Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for AT&T Mobility at 106 ft.

## Supporting Documents

| | |
|---|---|
| **Mount Mapping** | Mastec Project #10084453, dated April 17, 2020 |
| **Radio Frequency Data Sheet** | RFDS ID #10084453, dated March 3, 2020 |
| **Reference Photos** | Site photos from 2020 |

## Analysis

This antenna mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

| | |
|---|---|
| **Basic Wind Speed:** | 119 mph (3-Second Gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-Second Gust) w/ 1'' radial ice concurrent |
| **Codes:** | ANSI/TIA-222-H |
| **Exposure Category:** | B |
| **Risk Category:** | II |
| **Topographic Factor Procedure:** | Method 2 |
| **Feature:** | Flat |
| **Crest Height (H):** | 0 ft |
| **Crest Length (L):** | 0 ft |
| **Spectral Response:** | Ss = 0.208, S1 = 0.054 |
| **Site Class:** | D - Stiff Soil |
| **Live Loads: *** | Lm = 500 lbs |

*** Based on experience it has been determined that the maintenance load cases do not control over rigging load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

## Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount 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.

A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERYIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

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SMW ENGINEERING GROUP, INC.
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158 BUSINESS CENTER DRIVE
BIRMINGHAM, AL 35244
TEL: 205-252-6985 FAX: 205-320-1504

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| 0 | FOR CONSTRUCTION | ZDS | 05/26/20 |
| | | | |
| | | | |
| | | | |
| | | | |

ATC SITE NUMBER:
302469

ATC SITE NAME:
BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:

STATE OF CONNECTICUT
JOHN T. LIU
No. 33076
LICENSED
PROFESSIONAL ENGINEER
5/27/2020

AT&T

| | |
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

SUPPLEMENTAL

| SHEET NUMBER: | REVISION: |
|---|---|
| R-601 | 0 |

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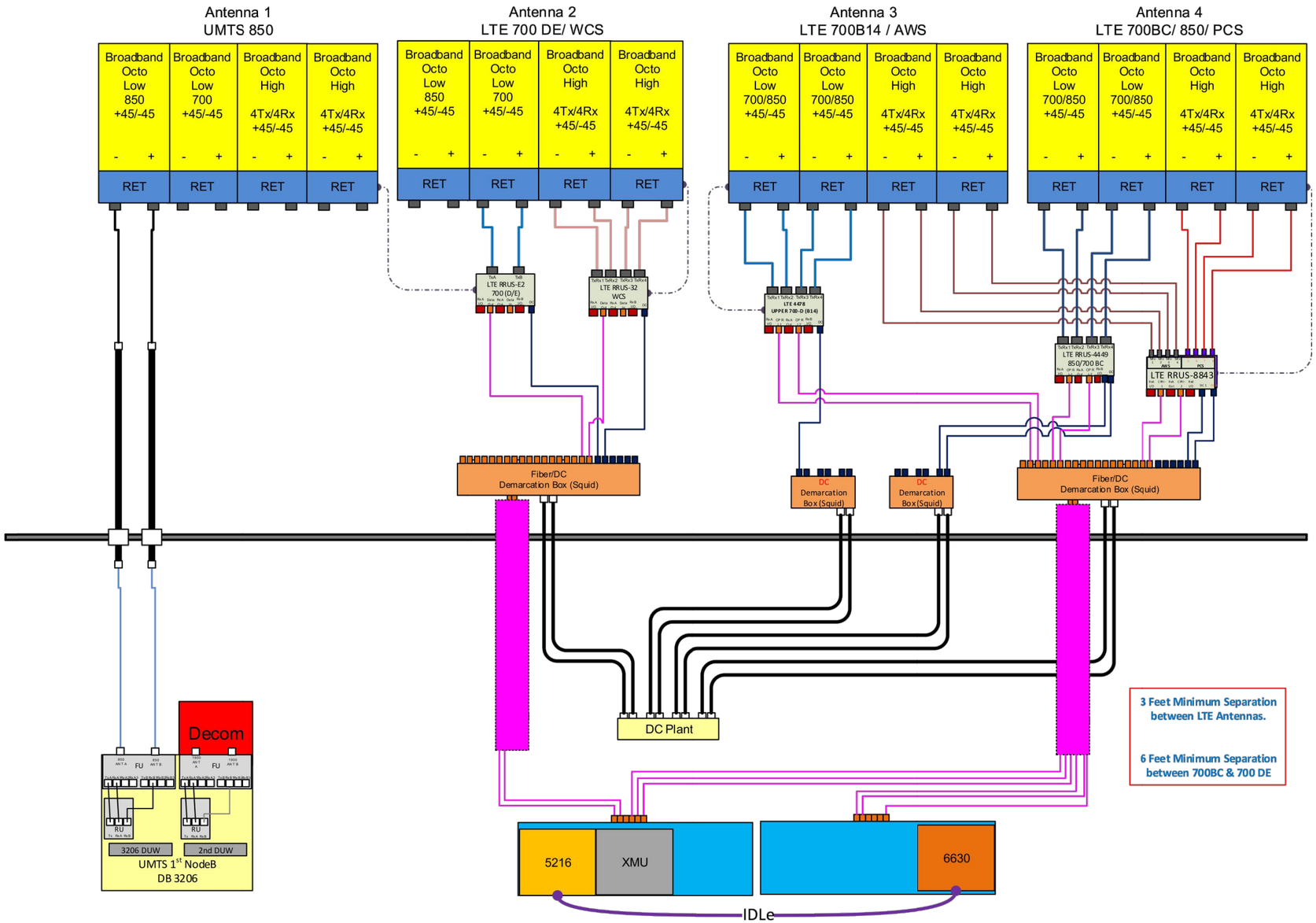
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Diagram - Sector | A | Diagram File Name - 5G_NR_CT2252_A-B-C_LTE-7C_R2.0.vsd | | | | | |
| Atoll Site Name - | CTL02252 | Location Name - | BRIDGEPORT CT. CONN AVE | Market - | CONNECTICUT | Market Cluster - | NEW ENGLAND |

Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)




1 PLUMBING DIAGRAM

SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

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TEL: 205-252-6985 FAX: 205-320-1504


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| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| 0 | FOR CONSTRUCTION | ZDS | 05/26/20 |

ATC SITE NUMBER:

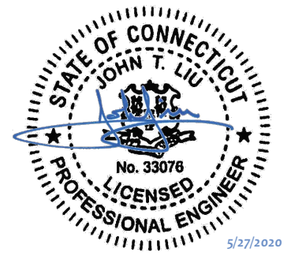
302469

ATC SITE NAME:

BRIDGEPORT CT 2

SITE ADDRESS:
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607-1226

SEAL:




AT&T

| | |
|---|---|
| DATE DRAWN: | 05/08/20 |
| ATC JOB NO: | 302469 |
| CUSTOMER ID: | 13202054 |
| CUSTOMER #: | 20-10207 |

SUPPLEMENTAL

| SHEET NUMBER: | REVISION: |
|---|---|
| R-602 | 0 |

# EXHIBIT 2

# 1069 CONNECTICUT AV

| | | | |
|---|---|---|---|
| **Location** | 1069 CONNECTICUT AV | **Mblu** | 44/ 723/ 3/A / |
| **Acct#** | R--0004050 | **Owner** | WR CT AVENUE LLC |
| **Assessment** | $1,902,240 | **Appraisal** | $2,717,490 |
| **PID** | 4911 | **Building Count** | 3 |

### Current Value

| Appraisal | | | |
|---|---|---|---|
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2019 | $1,808,490 | $909,000 | $2,717,490 |
| **Assessment** | | | |
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2019 | $1,265,940 | $636,300 | $1,902,240 |

### Owner of Record

| | | | |
|---|---|---|---|
| **Owner** | WR CT AVENUE LLC | **Sale Price** | $0 |
| **Co-Owner** | C/O WESTROCK DEVELOPMENT LLC | **Certificate** | |
| **Address** | 440 MAMARONECK AVENUE<br>SUITE N-503<br>HARRISON, NY 10528 | **Book & Page** | 7844/0040 |
| | | **Sale Date** | 06/27/2008 |
| | | **Instrument** | 14 |

### Ownership History

| Ownership History | | | | | |
|---|---|---|---|---|---|
| **Owner** | **Sale Price** | **Certificate** | **Book & Page** | **Instrument** | **Sale Date** |
| WR CT AVENUE LLC | $0 | | 7844/0040 | 14 | 06/27/2008 |
| WR CT AVENUE LLC | $0 | | 7844/0034 | 14 | 06/27/2008 |
| BRIDGEPORT CITY OF | $0 | | 7370/0268 | 14 | 02/09/2007 |
| AMERICAN FABRICS CO | $0 | | 2195/0149 | | 11/25/1986 |

### Building Information

#### Building 1 : Section 1

| | |
|---|---|
| **Year Built:** | 1939 |
| **Living Area:** | 106,726 |
| **Replacement Cost:** | $5,015,157 |

/

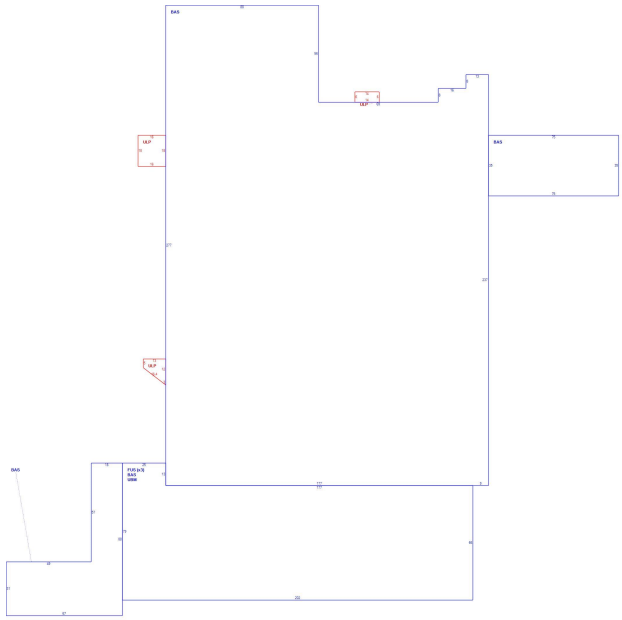
**Building Percent Good:** 20
**Replacement Cost Less Depreciation:** $1,003,030

| Building Attributes | |
|---|---|
| **Field** | **Description** |
| STYLE | Mill Building |
| MODEL | Ind/Comm |
| Grade: | Average |
| Stories: | 4 |
| Occupancy: | 1.00 |
| Exterior Wall 1: | Brick |
| Exterior Wall 2: | |
| Roof Struct: | Irregular |
| Roof Cover: | T+G/Rubber |
| Interior Wall 1: | Minim/Masonry |
| Interior Wall 2: | |
| Interior Floor 1: | Hardwood |
| Interior Floor 2: | Carpet |
| Heating Fuel: | Oil |
| Heating Type: | Hot Water |
| AC Type: | None |
| Struct Class | |
| Bldg Use: | Mill Building |
| Ttl Rooms: | |
| Ttl Bedrms: | 00 |
| Ttl Baths: | 0 |
| Ttl Half Baths: | 0 |
| Ttl Xtra Fix: | 0 |
| 1st Floor Use: | |
| Heat/AC: | None |
| Frame Type: | Masonry |
| Baths/Plumbing: | Average |
| Ceiling/Wall: | Ceiling Only |
| Rooms/Prtns: | Average |
| Wall Height: | 16.00 |
| % Comn Wall: | |

### Building Photo

(http://images.vgsi.com/photos2/BridgeportCTPhotos//\00\00\50\72.JPG)

### Building Layout



(ParcelSketch.ashx?pid=4911&bid=4911)

| Building Sub-Areas (sq ft) | | | Legend |
|---|---|---|---|
| **Code** | **Description** | **Gross Area** | **Living Area** |
| BAS | First Floor | 65,755 | 65,755 |
| FUS | Finished Upper Story | 40,971 | 40,971 |
| UBM | Unfin Basement | 13,657 | 0 |
| ULP | Uncovered Loading Platform | 502 | 0 |
| | | 120,885 | 106,726 |

### Building 2 : Section 1

**Year Built:** 1967
**Living Area:** 28,945
**Replacement Cost:** $1,058,496
**Building Percent Good:** 23

/

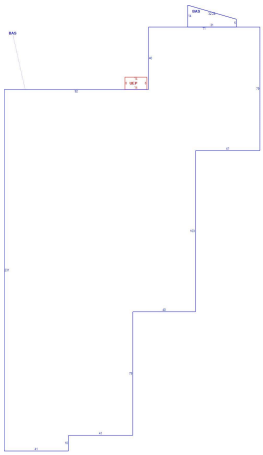
**Replacement Cost**
**Less Depreciation:** $243,450

| Building Attributes : Bldg 2 of 3 | |
|---|---|
| **Field** | **Description** |
| STYLE | Industrial |
| MODEL | Ind/Comm |
| Grade: | Average |
| Stories: | 1 |
| Occupancy: | 1.00 |
| Exterior Wall 1: | Concr/CinderBl |
| Exterior Wall 2: | |
| Roof Struct: | Flat |
| Roof Cover: | T+G/Rubber |
| Interior Wall 1: | Minim/Masonry |
| Interior Wall 2: | |
| Interior Floor 1: | Concr-Finished |
| Interior Floor 2: | |
| Heating Fuel: | Oil |
| Heating Type: | Hot Air-No Duc |
| AC Type: | None |
| Struct Class | |
| Bldg Use: | Industrial Mdl 96 |
| Ttl Rooms: | |
| Ttl Bedrms: | 00 |
| Ttl Baths: | 0 |
| Ttl Half Baths: | 0 |
| Ttl Xtra Fix: | 10 |
| 1st Floor Use: | |
| Heat/AC: | None |
| Frame Type: | Masonry |
| Baths/Plumbing: | Average |
| Ceiling/Wall: | None |
| Rooms/Prtns: | Average |
| Wall Height: | 14.00 |
| % Comn Wall: | |

### Building Photo


(http://images.vgsi.com/photos2/BridgeportCTPhotos//default.jpg)

### Building Layout



(ParcelSketch.ashx?pid=4911&bid=35325)

| Building Sub-Areas (sq ft) | | | Legend |
|---|---|---|---|
| **Code** | **Description** | **Gross Area** | **Living Area** |
| BAS | First Floor | 28,945 | 28,945 |
| UEP | Utility Enclosed Porch | 112 | 0 |
| | | 29,057 | 28,945 |

## Building 3 : Section 1

**Year Built:** 1955
**Living Area:** 16,539
**Replacement Cost:** $713,174
**Building Percent Good:** 20
**Replacement Cost**
**Less Depreciation:** $142,630

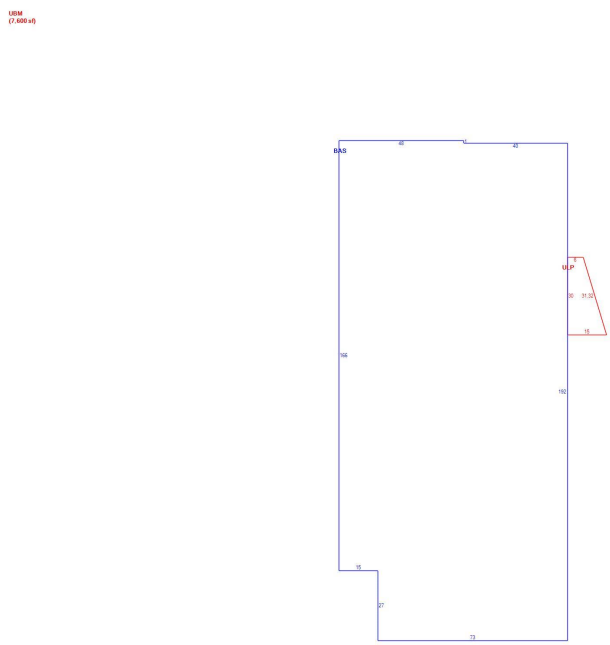
/

| Building Attributes : Bldg 3 of 3 | |
|---|---|
| **Field** | **Description** |
| STYLE | Mill Building |
| MODEL | Ind/Comm |
| Grade: | D+ |
| Stories: | 4 |
| Occupancy: | 1.00 |
| Exterior Wall 1: | Brick |
| Exterior Wall 2: | |
| Roof Struct: | Flat |
| Roof Cover: | Tar + Gravel |
| Interior Wall 1: | Minim/Masonry |
| Interior Wall 2: | |
| Interior Floor 1: | Concr-Finished |
| Interior Floor 2: | |
| Heating Fuel: | None |
| Heating Type: | None |
| AC Type: | None |
| Struct Class | |
| Bldg Use: | Industrial Mdl 96 |
| Ttl Rooms: | |
| Ttl Bedrms: | 00 |
| Ttl Baths: | 0 |
| Ttl Half Baths: | 0 |
| Ttl Xtra Fix: | 10 |
| 1st Floor Use: | |
| Heat/AC: | None |
| Frame Type: | Masonry |
| Baths/Plumbing: | Average |
| Ceiling/Wall: | None |
| Rooms/Prtns: | Average |
| Wall Height: | 15.00 |
| % Comn Wall: | |

### Building Photo


(http://images.vgsi.com/photos2/BridgeportCTPhotos//default.jpg)

### Building Layout



(ParcelSketch.ashx?pid=4911&bid=35327)

| Building Sub-Areas (sq ft) | | | Legend |
|---|---|---|---|
| **Code** | **Description** | **Gross Area** | **Living Area** |
| BAS | First Floor | 16,539 | 16,539 |
| UBM | Unfin Basement | 7,600 | 0 |
| ULP | Uncovered Loading Platform | 315 | 0 |
| | | 24,454 | 16,539 |

## Extra Features

| Extra Features | | | | Legend |
|---|---|---|---|---|
| **Code** | **Description** | **Size** | **Value** | **Bldg #** |
| SPR1 | Sprinklers-Wet | 106726.00 SF | $57,630 | 1 |
| SPR1 | Sprinklers-Wet | 28651.00 SF | $17,790 | 2 |

| | | | | |
|---|---|---|---|---|
| SPR1 | Sprinklers-Wet | 81037.00 SF | $43,760 | 3 |
| LDL1 | Load Levler | 2.00 UNITS | $1,610 | 2 |
| ELV1 | Freight | 5.00 STOPS | $16,500 | 1 |
| ELV1 | Freight | 5.00 STOPS | $16,500 | 1 |

## Land

### Land Use

| | |
|---|---|
| **Use Code** | 342 |
| **Description** | Mill Building |
| **Zone** | LI |
| **Neighborhood** | CTA |
| **Alt Land Appr** | No |
| **Category** | |

### Land Line Valuation

| | |
|---|---|
| **Size (Acres)** | 6.06 |
| **Frontage** | 0 |
| **Depth** | 0 |
| **Assessed Value** | $636,300 |
| **Appraised Value** | $909,000 |

## Outbuildings

| Outbuildings | | | | | | Legend |
|---|---|---|---|---|---|---|
| **Code** | **Description** | **Sub Code** | **Sub Description** | **Size** | **Value** | **Bldg #** |
| SHD1 | Shed | MT | Metal | 336.00 SF | $1,210 | 1 |
| PAV1 | Paving Asph | | | 110000.00 SF | $231,000 | 1 |
| FN1 | Fence, Chain | 4 | 4 ft | 668.00 LF | $2,200 | 1 |
| SHD3 | Shed w/ Lt | CM | Comm | 240.00 SF | $4,320 | 1 |
| TWR | Tower | | | 130.00 LF | $26,000 | 1 |
| PAV2 | Paving Conc | | | 240.00 SF | $860 | 1 |

## Valuation History

| Appraisal | | | |
|---|---|---|---|
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2018 | $1,808,490 | $909,000 | $2,717,490 |
| 2017 | $1,808,490 | $909,000 | $2,717,490 |
| 2016 | $1,808,490 | $909,000 | $2,717,490 |

| Assessment | | | |
|---|---|---|---|
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2018 | $1,265,940 | $636,300 | $1,902,240 |
| 2017 | $1,265,940 | $636,300 | $1,902,240 |
| 2016 | $1,265,940 | $636,300 | $1,902,240 |

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# City of Bridgeport

# My Map


Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

283.9 0 141.95 283.9 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Connecticut Metropolitan Council of Governments

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

METROCOG
Connecticut Metropolitan Council of Governments

# EXHIBIT 3

AMERICAN TOWER®
CORPORATION

# Structural Analysis Report

| | | |
|---|---|---|
| **Structure** | : | **125.7 ft Monopole** |
| **ATC Site Name** | : | **Bridgeport CT 2, CT** |
| **ATC Asset Number** | : | **302469** |
| **Engineering Number** | : | **13202054_C3_03** |
| **Proposed Carrier** | : | **AT&T MOBILITY** |
| **Carrier Site Name** | : | **MRCTB045164** |
| **Carrier Site Number** | : | **CTL02252** |
| **Site Location** | : | **1069 Connecticut Avenue**<br>**Bridgeport, CT 06607-1226**<br>**41.183600,-73.158400** |
| **County** | : | **Fairfield** |
| **Date** | : | **April 27, 2020** |
| **Max Usage** | : | **79%** |
| **Result** | : | **Pass** |


Prepared By:
Cole Melody Koffi
Structural Engineer I

Reviewed By:

**COA: PEC.0001553**

AMERICAN TOWER®
CORPORATION

**Table of Contents**

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 125.7 ft monopole to reflect the change in loading by AT&T MOBILITY.

## Supporting Documents

| | |
|---|---|
| **Tower Drawings** | EEI Project #5543, dated October 14, 1999 |
| **Foundation Drawing** | EEI Project #5543, dated October 14, 1999 |
| **Geotechnical Report** | Applied Earth Technologies Project #9903A, dated November 23, 1999 |
| **Modifications** | ATC Job #41045932, dated November 2, 2007 |

## Analysis

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

| | |
|---|---|
| **Basic Wind Speed:** | 97 mph (3-Second Gust, $V_{ASD}$) / 125 mph (3-Second Gust, $V_{ULT}$) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-Second Gust) w/ 3/4" radial ice concurrent |
| **Code:** | ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code |
| **Structure Class:** | II |
| **Exposure Category:** | B |
| **Topographic Category:** | 1 |
| **Crest Height:** | 0 ft |
| **Spectral Response:** | Ss = 0.20, $S_1$ = 0.06 |
| **Site Class:** | D - Stiff Soil |

## Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

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

## Existing and Reserved Equipment

| Elev.[1] (ft) | Qty | Antenna | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 131.0 | 3 | Nokia 2.5G MAA - AAHC(64T64R) | T-Arms | (3) 1 1/4" Hybriflex Cable<br>(1) 1.7" Hybrid<br>(3) 1/2" Coax<br>(2) 2" conduit | CLEARWIRE CORPORATION |
| | 3 | Alcatel-Lucent TD-RRH8x20 | | | |
| | 3 | Alcatel-Lucent 1900 MHz 4X45 RRH | | | |
| | 6 | Alcatel-Lucent RRH2x50-08 | | | |
| | 1 | DragonWave A-ANT-18G-2-C | | | |
| | 3 | Commscope NNVV-65B-R4 | | | |
| | 2 | DragonWave Horizon Compact | | | |
| | 1 | DragonWave A-ANT-23G-1-C | | | |
| 127.0 | 1 | Generic 24" x 24" Junction Box | | | |
| | 3 | Argus LLPX310R | | | |
| 116.0 | 3 | RFS APXVAARR24_43-U-NA20 | Low Profile Platform | (2) 1 5/8" Fiber<br>(2) 1 1/4" Fiber<br>(18) 1 5/8" Coax | T-MOBILE |
| | 3 | Ericsson Air 3246 B66 | | | |
| | 3 | Ericsson AIR-32 B2A/B66Aa | | | |
| | 3 | Ericsson Radio 4449 B12,B71 | | | |
| | 3 | Ericsson KRY 112 144/2 | | | |
| | 3 | Kathrein Scala Smart Bias Tee | | | |
| | 3 | Ericsson KRY 112 489/2 | | | |
| 106.0 | 2 | Raycap DC6-48-60-18-8F ("Squid") | Platform with Handrails | (4) 0.78" 8 AWG 6<br>(6) 1 5/8" Coax | AT&T MOBILITY |
| | 3 | Ericsson RRUS 32 B30 (53 lbs) | | | |
| | 6 | CCI OPA-65R-LCUU-H4 | | | |
| | 3 | Ericsson Radio 8843 - B2 + B66A | | | |
| 98.0 | 3 | Generic RCU (Remote Control Unit) | Flush | (6) 1 5/8" Coax<br>(1) 3/8" Coax | METRO PCS INC |
| | 3 | Kathrein Scala 800 10504 | | | |
| 88.0 | 1 | Generic 5" x 3" x 2" Cavity Filter | Side Arm | (1) 1/2" Coax | SIGFOX S.A. |
| | 1 | Generic Low Noise Amplifier | | | |
| | 1 | Procom CXL 900-3LW | | | |

## Equipment to be Removed

| Elev.[1] (ft) | Qty | Antenna | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 106.0 | 3 | Kaelus DBC0061F1V51-2 | - | (2) 0.39" Fiber Trunk<br>(6) 1 5/8" Coax | AT&T MOBILITY |
| | 6 | Kaelus DBC0062F3V52-1 | | | |
| | 3 | Powerwave Allgon 7750.00 | | | |
| | 3 | Ericsson RRUS-11 (19.7”) | | | |
| | 6 | Powerwave Allgon LGP21401 | | | |

## Proposed Equipment

| Elev.[1] (ft) | Qty | Antenna | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 106.0 | 2 | Raycap DC6-48-60-18-8F ("Squid") | Platform with Handrails | (4) 0.39" Cable<br>(4) 0.78" 8 AWG 6<br>(2) 3" conduit | AT&T MOBILITY |
| | 3 | Ericsson RRUS 4478 B14 | | | |
| | 3 | Ericsson RRUS 4449 B5, B12 | | | |
| | 3 | Ericsson RRUS E2 B29 | | | |
| | 3 | CCI DMP65R-BU4D | | | |
| | 3 | CCI OPA65R-BU4DA-K | | | |

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

Install proposed lines inside the pole shaft.

## Structure Usages

| Structural Component | Controlling Usage | Pass/Fail |
|---|---|---|
| Anchor Bolts | 63% | Pass |
| Shaft | 61% | Pass |
| Base Plate | 27% | Pass |

## Foundations

| Reaction Component | Original Design Reactions | Factored Design Reactions* | Analysis Reactions | % of Design |
|---|---|---|---|---|
| Moment (Kips-Ft) | 2,049.1 | 2,766.3 | 2,045.1 | 74% |
| Shear (Kips) | 20.7 | 27.9 | 22.0 | 79% |
| * 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) | Antenna | Carrier | Deflection (ft) | Sway (Rotation) (°) |
|---|---|---|---|---|
| 125.0 | DragonWave A-ANT-23G-1-C | CLEARWIRE CORPORATION | 1.357 | 1.167 |
| | DragonWave A-ANT-18G-2-C | | | |
| 106.0 | Raycap DC6-48-60-18-8F ("Squid") | AT&T MOBILITY | 0.980 | 1.084 |
| | Ericsson RRUS 4478 B14 | | | |
| | Ericsson RRUS 4449 B5, B12 | | | |
| | Ericsson RRUS E2 B29 | | | |
| | CCI DMP65R-BU4D | | | |
| | CCI OPA65R-BU4DA-K | | | |

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

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## Standard Conditions

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

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

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

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

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

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

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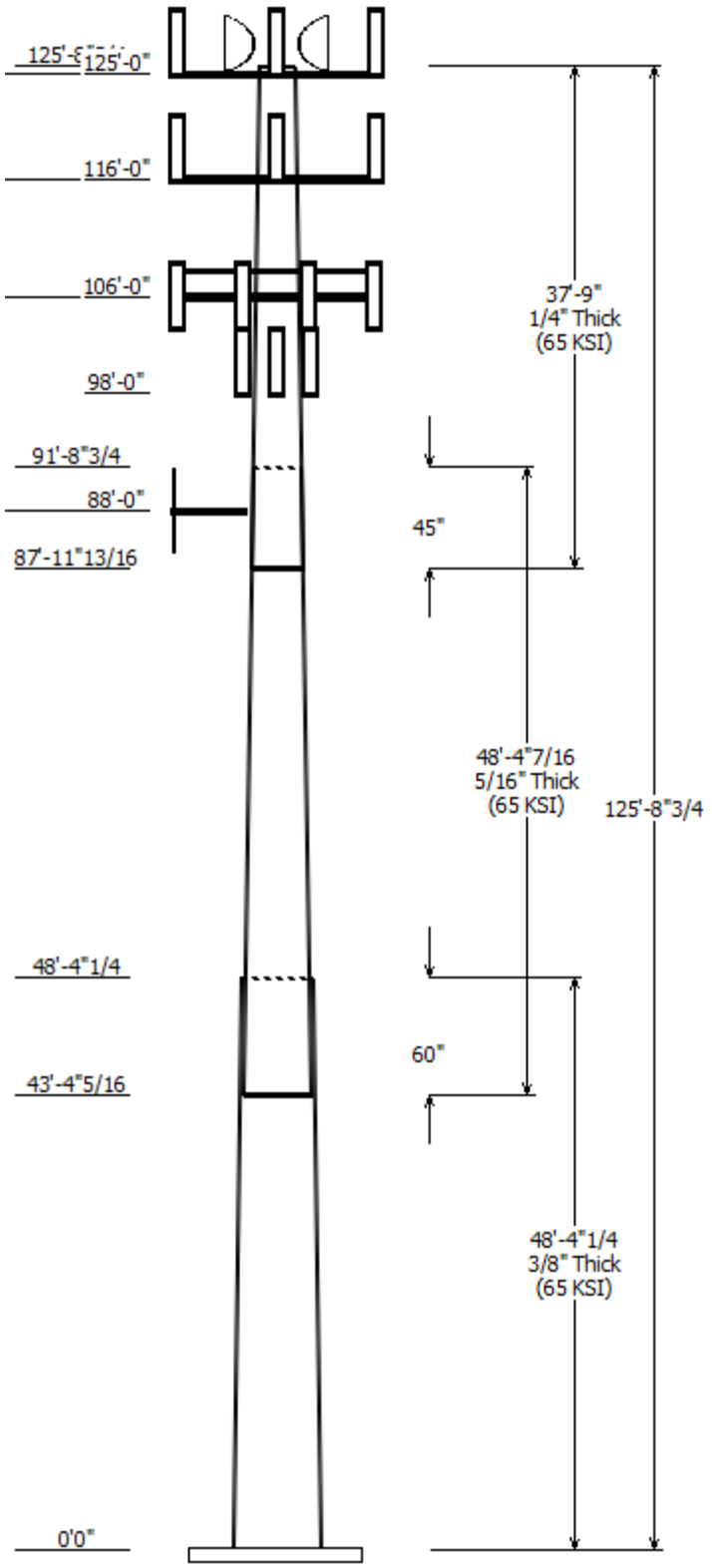



## Job Information

| | | | |
|---|---|---|---|
| Client : | AT&T MOBILITY | | |
| Pole : | 302469 | Code: | ANSI/TIA-222-G |
| Location : | Bridgeport CT 2, CT | | |
| Description : | 126 ft Monopole | Struct Class : | II |
| Shape : | 18 Sides | Exposure : | B |
| Height : | 125.73 (ft) | Topo : | 1 |
| Base Elev (ft): | 0.00 | | |
| Taper: | 0.235624 (in/ft) | | |

## Sections Properties

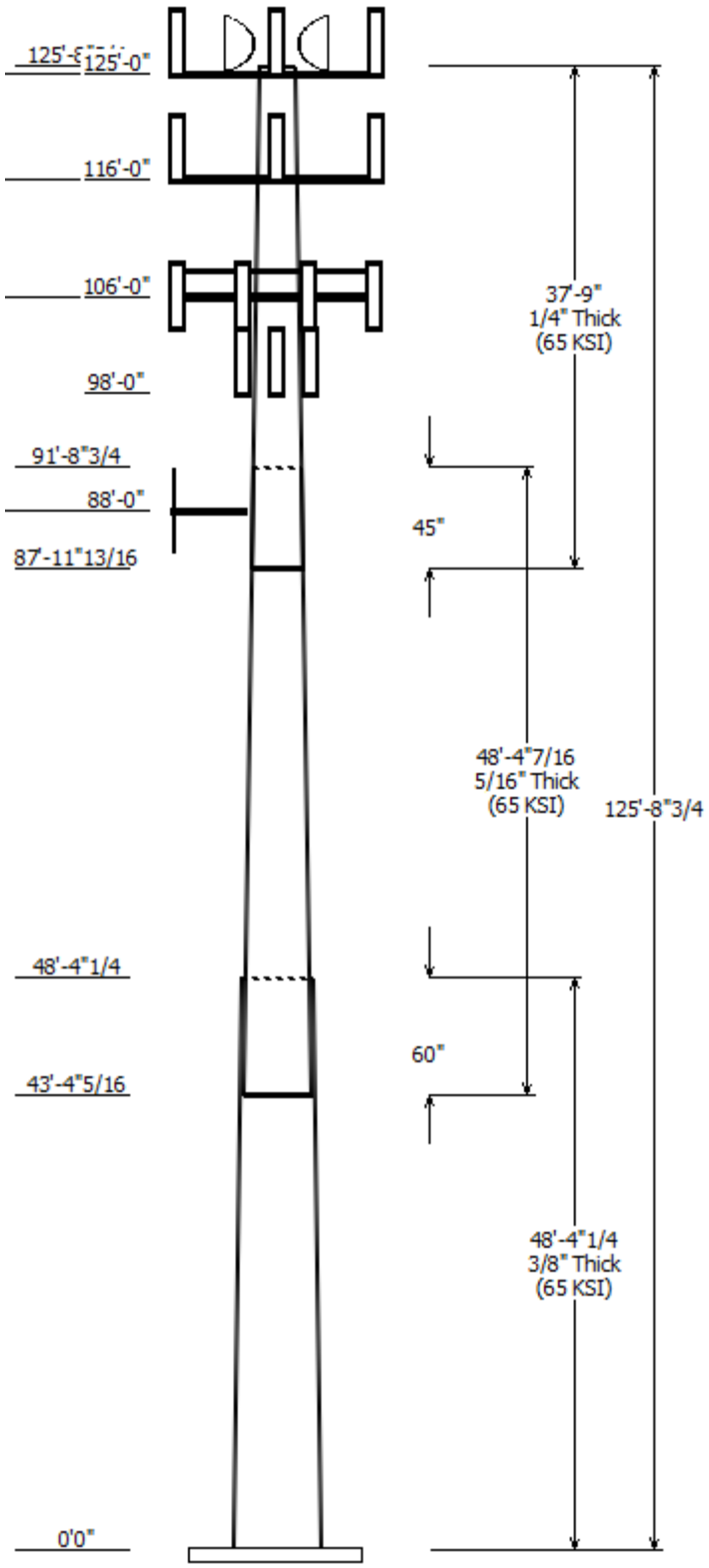
| Shaft Section | Length (ft) | Diameter (in) Accross Flats Top | Bottom | Thick (in) | Joint Type | Overlap Length (in) | Shape | Steel Grade (ksi) |
|---|---|---|---|---|---|---|---|---|
| 1 | 48.352 | 34.10 | 45.50 | 0.375 | | 0.000 | 18 Sides | 65 |
| 2 | 48.370 | 24.51 | 35.90 | 0.313 | Slip Joint | 59.906 | 18 Sides | 65 |
| 3 | 37.748 | 17.00 | 25.89 | 0.250 | Slip Joint | 44.969 | 18 Sides | 65 |

## Discrete Appurtenance

| Attach Elev (ft) | Force Elev (ft) | Qty | Description |
|---|---|---|---|
| 125.000 | 127.000 | 1 | Generic 24" x 24" Junction Box |
| 125.000 | 127.000 | 3 | Argus LLPX310R |
| 125.000 | 125.000 | 3 | Small T-Arms |
| 125.000 | 131.000 | 3 | Commscope NNVV-65B-R4 |
| 125.000 | 131.000 | 1 | DragonWave A-ANT-18G-2-C |
| 125.000 | 131.000 | 3 | Nokia 2.5G MAA - |
| 125.000 | 131.000 | 3 | Alcatel-Lucent TD-RRH8x20 |
| 125.000 | 131.000 | 3 | Alcatel-Lucent 1900 MHz 4X45 |
| 125.000 | 131.000 | 6 | Alcatel-Lucent RRH2x50-08 |
| 125.000 | 131.000 | 1 | DragonWave A-ANT-23G-1-C |
| 125.000 | 131.000 | 2 | DragonWave Horizon Compact |
| 116.000 | 116.000 | 1 | Round Low Profile Platform |
| 116.000 | 120.000 | 3 | RFS APXVAARR24_43-U-NA20 |
| 116.000 | 120.000 | 3 | Ericsson Air 3246 B66 |
| 116.000 | 120.000 | 3 | Ericsson AIR-32 B2A/B66Aa |
| 116.000 | 120.000 | 3 | Ericsson Radio 4449 B12,B71 |
| 116.000 | 120.000 | 3 | Ericsson KRY 112 489/2 |
| 116.000 | 120.000 | 3 | Ericsson KRY 112 144/2 |
| 116.000 | 120.000 | 3 | Kathrein Scala Smart Bias Tee |
| 106.000 | 106.000 | 1 | Round Platform w/ Handrails |
| 106.000 | 106.000 | 3 | CCI OPA65R-BU4DA-K |
| 106.000 | 106.000 | 3 | CCI DMP65R-BU4D |
| 106.000 | 106.000 | 6 | CCI OPA-65R-LCUU-H4 |
| 106.000 | 106.000 | 3 | Ericsson RRUS E2 B29 |
| 106.000 | 106.000 | 3 | Ericsson RRUS 32 B30 (53 lbs) |
| 106.000 | 106.000 | 3 | Ericsson RRUS 4449 B5, B12 |
| 106.000 | 106.000 | 3 | Ericsson RRUS 4478 B14 |
| 106.000 | 106.000 | 3 | Ericsson Radio 8843 - B2 + B66 |
| 106.000 | 106.000 | 2 | Raycap DC6-48-60-18-8F |
| 106.000 | 106.000 | 2 | Raycap DC6-48-60-18-8F |
| 98.000 | 101.000 | 3 | Kathrein Scala 800 10504 |
| 98.000 | 101.000 | 3 | Generic RCU (Remote Control |
| 88.000 | 88.000 | 1 | Flat Side Arm |
| 88.000 | 88.000 | 1 | Generic Low Noise Amplifier |
| 88.000 | 88.000 | 1 | Generic 5" x 3" x 2" Cavity Fi |
| 88.000 | 88.000 | 1 | Procom CXL 900-3LW |

## Linear Appurtenance

| Elev (ft) From | To | Description | Exposed To Wind |
|---|---|---|---|
| 0.000 | 88.000 | 1/2" Coax | Yes |
| 0.000 | 98.000 | 1 5/8" Coax | Yes |
| 0.000 | 98.000 | 3/8" Coax | Yes |




| | | | |
|---|---|---|---|
| 0.000 | 106.0 | 0.39" (9.8mm) | No |
| 0.000 | 106.0 | 0.78" (19.7mm) 8 | Yes |
| 0.000 | 106.0 | 0.78" (19.7mm) 8 | No |
| 0.000 | 106.0 | 1 5/8" Coax | Yes |
| 0.000 | 106.0 | 3" conduit | Yes |
| 0.000 | 116.0 | 1 1/4" (1.25"- | Yes |
| 0.000 | 116.0 | 1 5/8" (1.63"- | No |
| 0.000 | 116.0 | 1 5/8" Coax | No |
| 0.000 | 131.0 | 1 1/4" Hybriflex | No |
| 0.000 | 131.0 | 1.7" (43.2mm) | No |
| 0.000 | 131.0 | 1/2" Coax | No |
| 0.000 | 131.0 | 2" conduit | No |

## Load Cases

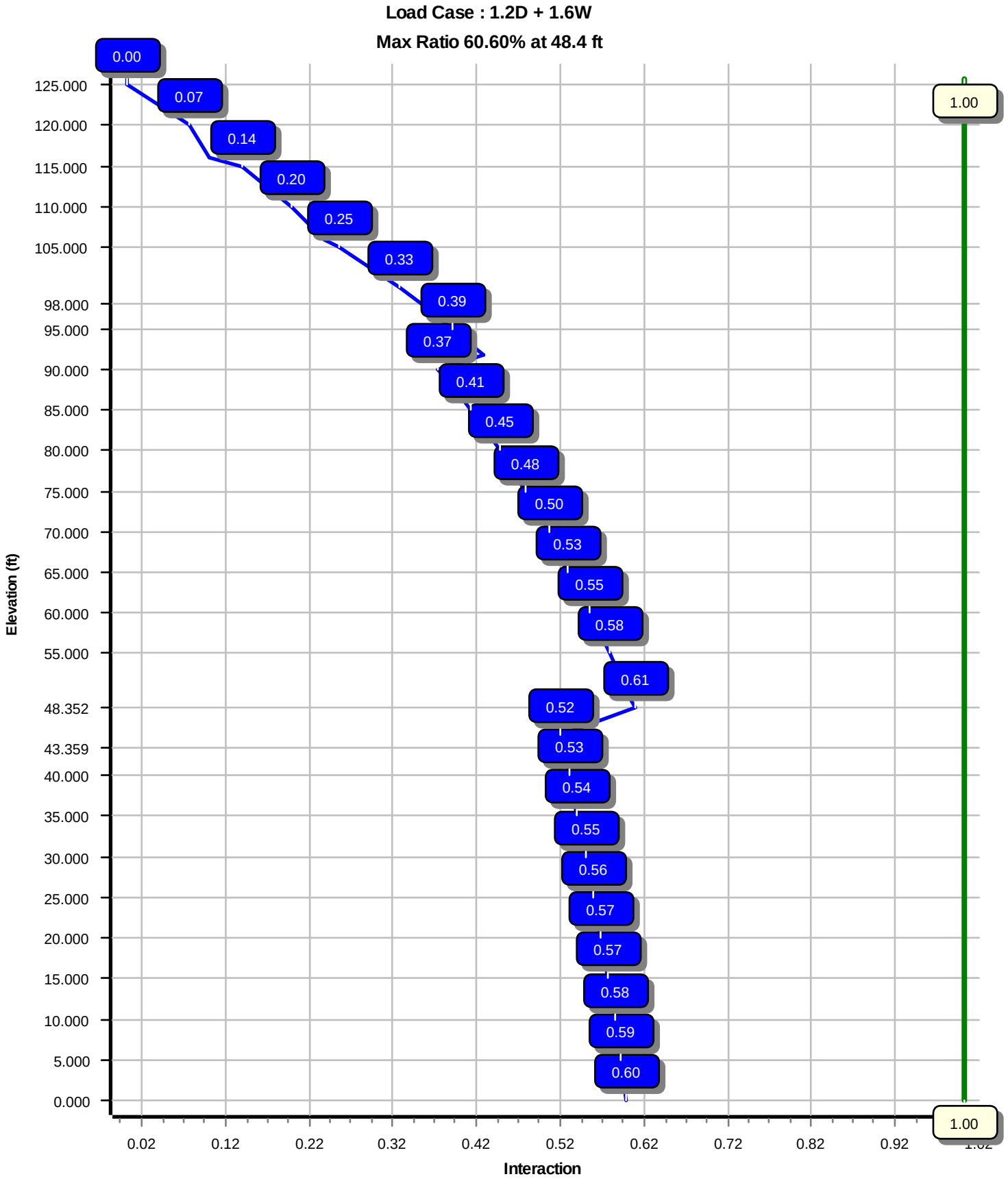
| | |
|---|---|
| 1.2D + 1.6W | 97 mph with No Ice |
| 0.9D + 1.6W | 97 mph with No Ice (Reduced DL) |
| 1.2D + 1.0Di + 1.0Wi | 50 mph with 0.75 in Radial Ice |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Lateral Forces Method |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Modal Analysis Method |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Lateral |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Modal |
| 1.0D + 1.0W | Serviceability 60 mph |

## Reactions

| Load Case | Moment (kip-ft) | Shear (kip) | Axial (kip) |
|---|---|---|---|
| 1.2D + 1.6W | 2045.09 | 21.98 | 36.88 |
| 0.9D + 1.6W | 2002.57 | 21.43 | 27.65 |
| 1.2D + 1.0Di + 1.0Wi | 1025.26 | 13.44 | 78.99 |
| (1.2 + 0.2Sds) * DL + E ELFM | 97.88 | 0.93 | 36.76 |
| (1.2 + 0.2Sds) * DL + E EMAM | 181.04 | 1.75 | 36.76 |
| (0.9 - 0.2Sds) * DL + E ELFM | 96.29 | 0.92 | 25.32 |
| (0.9 - 0.2Sds) * DL + E EMAM | 177.90 | 1.75 | 25.32 |
| 1.0D + 1.0W | 430.79 | 4.59 | 30.76 |

## Dish Deflections

| Load Case | Attach Elev (ft) | Deflection (in) | Rotation (deg) |
|---|---|---|---|
| 1.0D + 1.0W | 125.00 | 16.278 | 1.167 |
| 1.0D + 1.0W | 125.00 | 16.278 | 1.167 |


Load Case : 1.2D + 1.6W
Max Ratio 60.60% at 48.4 ft
0.00
0.07
0.14
0.20
0.25
0.33
0.39
0.37
0.41
0.45
0.48
0.50
0.53
0.55
0.58
0.61
0.52
0.53
0.54
0.55
0.56
0.57
0.57
0.58
0.59
0.60
1.00
1.00
125.000
120.000
115.000
110.000
105.000
98.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
48.352
43.359
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

**Site Number: 302469** **Code: ANSI/TIA-222-G**

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**Site Name: Bridgeport CT 2, CT** **Engineering Number:13202054_C3_03** **4/27/2020 3:36:24 PM**

**Customer: AT&T MOBILITY**

## Analysis Parameters

| | | | |
|---|---|---|---|
| **Location :** | **Fairfield County, CT** | **Height (ft) :** | **125.73** |
| **Code :** | **ANSI/TIA-222-G** | **Base Diameter (in) :** | **45.50** |
| **Shape :** | **18 Sides** | **Top Diameter (in) :** | **17.00** |
| **Pole Type :** | **Taper** | **Taper (in/ft) :** | **0.236** |
| **Pole Manfacturer :** | **EEI** | **Rotation (deg) :** | **0.00** |

## Ice & Wind Parameters

| | | | |
|---|---|---|---|
| **Structure Class:** | **II** | **Design Wind Speed Without Ice:** | **97 mph** |
| **Exposure Category:** | **B** | **Design Wind Speed With Ice:** | **50 mph** |
| **Topographic Category:** | **1** | **Operational Wind Speed:** | **60 mph** |
| **Crest Height:** | **0 ft** | **Design Ice Thickness:** | **0.75 in** |

## Seismic Parameters

**Analysis Method:** **Equivalent Modal Analysis & Equivalent Lateral Force Methods**

**Site Class:** **D - Stiff Soil**

**Period Based on Rayleigh Method (sec):** **2.29**

| | | | | | |
|---|---|---|---|---|---|
| **$T_L$ (sec):** | **6** | **p:** | **1** | **$C_s$:** | **0.030** |
| **$S_s$:** | **0.204** | **$S_1$:** | **0.064** | **$C_s$ Max:** | **0.030** |
| **$F_a$:** | **1.600** | **$F_v$:** | **2.400** | **$C_s$ Min:** | **0.030** |
| **$S_{ds}$:** | **0.218** | **$S_{d1}$:** | **0.102** | | |

## Load Cases

| | |
|---|---|
| **1.2D + 1.6W** | **97 mph with No Ice** |
| **0.9D + 1.6W** | **97 mph with No Ice (Reduced DL)** |
| **1.2D + 1.0Di + 1.0Wi** | **50 mph with 0.75 in Radial Ice** |
| **(1.2 + 0.2Sds) * DL + E ELFM** | **Seismic Equivalent Lateral Forces Method** |
| **(1.2 + 0.2Sds) * DL + E EMAM** | **Seismic Equivalent Modal Analysis Method** |
| **(0.9 - 0.2Sds) * DL + E ELFM** | **Seismic (Reduced DL) Equivalent Lateral Forces Method** |
| **(0.9 - 0.2Sds) * DL + E EMAM** | **Seismic (Reduced DL) Equivalent Modal Analysis Method** |
| **1.0D + 1.0W** | **Serviceability 60 mph** |

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## Shaft Section Properties

| Sect Info | Length (ft) | Thick (in) | Fy (ksi) | Slip Joint Type | Slip Joint Len (in) | Weight (lb) | Bottom Dia (in) | Bottom Elev (ft) | Bottom Area (in²) | Bottom Ix (in⁴) | Bottom W/t Ratio | Bottom D/t Ratio | Top Dia (in) | Top Elev (ft) | Top Area (in²) | Top Ix (in⁴) | Top W/t Ratio | Top D/t Ratio | Taper (in/ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-18 | 48.352 | 0.3750 | 65 | | 0.00 | 7,721 | 45.50 | 0.00 | 53.71 | 13817.4 | 19.98 | 121.33 | 34.10 | 48.35 | 40.15 | 5771.8 | 14.63 | 90.95 | 0.235624 |
| 2-18 | 48.370 | 0.3125 | 65 | Slip | 59.91 | 4,881 | 35.90 | 43.36 | 35.31 | 5651.9 | 18.85 | 114.91 | 24.51 | 91.73 | 24.00 | 1775.7 | 12.42 | 78.44 | 0.235624 |
| 3-18 | 37.748 | 0.2500 | 65 | Slip | 44.97 | 2,160 | 25.89 | 87.98 | 20.35 | 1690.7 | 16.85 | 103.58 | 17.00 | 125.73 | 13.29 | 471.1 | 10.58 | 68.00 | 0.235624 |
| | | | | Shaft Weight | | 14,762 | | | | | | | | | | | | | |

## Discrete Appurtenance Properties

| Attach Elev (ft) | Description | Qty | Ka | Vert Ecc (ft) | No Ice Weight (lb) | No Ice EPAa (sf) | No Ice Orientation Factor | Ice Weight (lb) | Ice EPAa (sf) | Ice Orientation Factor |
|---|---|---|---|---|---|---|---|---|---|---|
| 125.00 | DragonWave Horizon Compact | 2 | 0.80 | 6.000 | 10.60 | 0.721 | 0.50 | 32.68 | 1.280 | 0.50 |
| 125.00 | DragonWave A-ANT-23G-1-C | 1 | 1.00 | 6.000 | 15.00 | 1.610 | 1.00 | 49.69 | 2.353 | 1.00 |
| 125.00 | Alcatel-Lucent RRH2x50-08 | 6 | 0.80 | 6.000 | 52.90 | 1.701 | 0.50 | 111.09 | 2.548 | 0.50 |
| 125.00 | Alcatel-Lucent 1900 MHz 4X45 | 3 | 0.80 | 6.000 | 60.00 | 2.322 | 0.67 | 139.14 | 3.383 | 0.67 |
| 125.00 | Alcatel-Lucent TD-RRH8x20 | 3 | 0.80 | 6.000 | 66.10 | 3.690 | 0.60 | 148.04 | 4.937 | 0.60 |
| 125.00 | Nokia 2.5G MAA - AAHC(64T64R) | 3 | 0.80 | 6.000 | 103.60 | 4.203 | 0.64 | 214.30 | 5.520 | 0.64 |
| 125.00 | Argus LLPX310R | 3 | 0.80 | 2.000 | 28.60 | 4.292 | 0.63 | 117.09 | 5.916 | 0.63 |
| 125.00 | DragonWave A-ANT-18G-2-C | 1 | 1.00 | 6.000 | 27.10 | 4.688 | 1.00 | 122.93 | 5.939 | 1.00 |
| 125.00 | Generic 24" x 24" Junction Box | 1 | 0.80 | 2.000 | 20.00 | 4.800 | 1.00 | 132.74 | 6.196 | 1.00 |
| 125.00 | Small T-Arms | 3 | 0.75 | 0.000 | 200.00 | 6.700 | 0.67 | 364.18 | 12.292 | 0.67 |
| 125.00 | Commscope NNVV-65B-R4 | 3 | 0.80 | 6.000 | 77.40 | 12.271 | 0.64 | 324.14 | 15.024 | 0.64 |
| 116.00 | Kathrein Scala Smart Bias Tee | 3 | 0.80 | 4.000 | 3.30 | 0.080 | 0.50 | 6.51 | 0.283 | 0.50 |
| 116.00 | Ericsson KRY 112 144/2 | 3 | 0.80 | 4.000 | 9.70 | 0.480 | 0.50 | 23.56 | 0.943 | 0.50 |
| 116.00 | Ericsson KRY 112 489/2 | 3 | 0.80 | 4.000 | 15.40 | 0.559 | 0.50 | 32.64 | 1.071 | 0.50 |
| 116.00 | Ericsson Radio 4449 B12,B71 | 3 | 0.80 | 4.000 | 74.00 | 1.639 | 0.50 | 128.65 | 2.463 | 0.50 |
| 116.00 | Ericsson AIR-32 B2A/B66Aa | 3 | 0.80 | 4.000 | 132.20 | 6.510 | 0.71 | 288.01 | 8.648 | 0.71 |
| 116.00 | Ericsson Air 3246 B66 | 3 | 0.80 | 4.000 | 180.00 | 7.939 | 0.69 | 2,819.73 | 10.153 | 0.69 |
| 116.00 | RFS APXVAARR24_43-U-NA20 | 3 | 0.80 | 4.000 | 127.90 | 20.243 | 0.63 | 511.14 | 23.864 | 0.63 |
| 116.00 | Round Low Profile Platform | 1 | 1.00 | 0.000 | 1,500.00 | 21.700 | 1.00 | 2,132.47 | 40.442 | 1.00 |
| 106.00 | Raycap DC6-48-60-18-8F | 2 | 0.75 | 0.000 | 31.80 | 1.470 | 1.00 | 91.49 | 2.146 | 1.00 |
| 106.00 | Raycap DC6-48-60-18-8F | 2 | 0.75 | 0.000 | 31.80 | 1.470 | 1.00 | 91.49 | 2.146 | 1.00 |
| 106.00 | Ericsson Radio 8843 - B2 + B66A | 3 | 0.75 | 0.000 | 71.90 | 1.650 | 0.50 | 131.50 | 2.470 | 0.50 |
| 106.00 | Ericsson RRUS 4478 B14 | 3 | 0.75 | 0.000 | 59.90 | 1.842 | 0.50 | 113.39 | 2.710 | 0.50 |
| 106.00 | Ericsson RRUS 4449 B5, B12 | 3 | 0.75 | 0.000 | 71.00 | 1.969 | 0.50 | 133.35 | 2.871 | 0.50 |
| 106.00 | Ericsson RRUS 32 B30 (53 lbs) | 3 | 0.75 | 0.000 | 53.00 | 2.743 | 0.67 | 124.15 | 3.874 | 0.67 |
| 106.00 | Ericsson RRUS E2 B29 | 3 | 0.75 | 0.000 | 60.00 | 3.145 | 0.62 | 138.25 | 4.266 | 0.62 |
| 106.00 | CCI OPA-65R-LCUU-H4 | 6 | 0.75 | 0.000 | 57.00 | 6.083 | 0.66 | 193.10 | 7.924 | 0.66 |
| 106.00 | CCI DMP65R-BU4D | 3 | 0.75 | 0.000 | 67.90 | 8.280 | 0.62 | 242.62 | 10.239 | 0.62 |
| 106.00 | CCI OPA65R-BU4DA-K | 3 | 0.75 | 0.000 | 52.50 | 8.435 | 0.62 | 229.84 | 10.408 | 0.62 |
| 106.00 | Round Platform w/ Handrails | 1 | 1.00 | 0.000 | 2,000.00 | 27.200 | 1.00 | 3,253.54 | 50.847 | 1.00 |
| 98.00 | Generic RCU (Remote Control | 3 | 1.00 | 3.000 | 1.00 | 0.141 | 1.00 | 6.30 | 0.465 | 1.00 |
| 98.00 | Kathrein Scala 800 10504 | 3 | 1.00 | 3.000 | 17.60 | 3.344 | 0.66 | 77.82 | 5.082 | 0.66 |
| 88.00 | Procom CXL 900-3LW | 1 | 1.00 | 0.000 | 1.50 | 0.130 | 1.00 | 6.58 | 0.804 | 1.00 |
| 88.00 | Generic 5" x 3" x 2" Cavity Filter | 1 | 1.00 | 0.000 | 1.50 | 0.141 | 1.00 | 6.15 | 0.402 | 1.00 |
| 88.00 | Generic Low Noise Amplifier | 1 | 1.00 | 0.000 | 2.00 | 0.167 | 1.00 | 7.36 | 0.443 | 1.00 |
| 88.00 | Flat Side Arm | 1 | 1.00 | 0.000 | 150.00 | 6.300 | 1.00 | 219.49 | 8.635 | 1.00 |
| Totals | Num Loadings:36 | 93 | | | 9,123.90 | | | 27,130.45 | | |

## Linear Appurtenance Properties

Load Case Azimuth (deg) : 0

| Elev From (ft) | Elev To (ft) | Qty | Description | Coax Dia (in) | Coax Wt (lb/ft) | Flat | Max Coax / Row | Dist Between Rows (in) | Dist Between Cols (in) | Azimuth (deg) | Dist From Face (in) | Exposed To Wind | Carrier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 131.00 | 3 | 1 1/4" Hybriflex Cable | 1.54 | 1.00 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | CLEARWIRE |
| 0.00 | 131.00 | 1 | 1.7" (43.2mm) Hybrid | 1.70 | 1.78 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | CLEARWIRE |

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| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 131.00 | 3 | 1/2" Coax | 0.63 | 0.15 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | CLEARWIRE |
| 0.00 | 131.00 | 2 | 2" conduit | 2.38 | 3.65 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | CLEARWIRE |
| 0.00 | 116.00 | 2 | 1 1/4" (1.25"- 31.8mm) | 1.25 | 1.05 | N | 2 | 1.00 | 1.00 | 250 | 1.00 | Y | T-MOBILE |
| 0.00 | 116.00 | 1 | 1 5/8" (1.63"-41.3mm) | 1.63 | 1.61 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | T-MOBILE |
| 0.00 | 116.00 | 18 | 1 5/8" Coax | 1.98 | 0.82 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | T-MOBILE |
| 0.00 | 106.00 | 4 | 0.39" (9.8mm) Cable | 0.39 | 0.07 | N | 2 | 0.00 | 0.00 | 0 | 0.00 | N | AT&T MOBILITY |
| 0.00 | 106.00 | 4 | 0.78" (19.7mm) 8 AWG | 0.78 | 0.59 | N | 2 | 1.00 | 1.00 | 180 | 1.00 | Y | AT&T MOBILITY |
| 0.00 | 106.00 | 4 | 0.78" (19.7mm) 8 AWG | 0.78 | 0.59 | N | 2 | 0.00 | 0.00 | 0 | 0.00 | N | AT&T MOBILITY |
| 0.00 | 106.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 6 | 1.00 | 1.00 | 140 | 1.00 | Y | AT&T MOBILITY |
| 0.00 | 106.00 | 2 | 3" conduit | 3.50 | 7.58 | N | 2 | 1.00 | 1.00 | 90 | 1.00 | Y | AT&T MOBILITY |
| 0.00 | 98.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 6 | 1.00 | 1.00 | 300 | 1.00 | Y | METRO PCS INC |
| 0.00 | 98.00 | 1 | 3/8" Coax | 0.44 | 0.08 | N | 1 | 1.00 | 1.00 | 340 | 1.00 | Y | METRO PCS INC |
| 0.00 | 88.00 | 1 | 1/2" Coax | 0.63 | 0.15 | N | 1 | 1.00 | 1.00 | 0 | 1.00 | Y | SIGFOX S.A. |

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## Segment Properties (Max Len : 5. ft)

| Seg Top Elev (ft) | Description | Thick (in) | Flat Dia (in) | Area ($in^2$) | Ix ($in^4$) | W/t Ratio | D/t Ratio | F'y (ksi) | S ($in^3$) | Z ($in^3$) | Weight (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 0.3750 | 45.500 | 53.708 | 13,817.4 | 19.98 | 121.33 | 77.9 | 598.1 | 0.0 | 0.0 |
| 5.00 | | 0.3750 | 44.322 | 52.306 | 12,763.2 | 19.43 | 118.19 | 78.5 | 567.2 | 0.0 | 901.9 |
| 10.00 | | 0.3750 | 43.144 | 50.904 | 11,764.0 | 18.88 | 115.05 | 79.2 | 537.1 | 0.0 | 878.0 |
| 15.00 | | 0.3750 | 41.966 | 49.501 | 10,818.4 | 18.32 | 111.91 | 79.9 | 507.8 | 0.0 | 854.1 |
| 20.00 | | 0.3750 | 40.788 | 48.099 | 9,924.8 | 17.77 | 108.77 | 80.5 | 479.3 | 0.0 | 830.3 |
| 25.00 | | 0.3750 | 39.609 | 46.697 | 9,081.9 | 17.21 | 105.63 | 81.2 | 451.6 | 0.0 | 806.4 |
| 30.00 | | 0.3750 | 38.431 | 45.295 | 8,288.1 | 16.66 | 102.48 | 81.8 | 424.8 | 0.0 | 782.6 |
| 35.00 | | 0.3750 | 37.253 | 43.893 | 7,541.9 | 16.11 | 99.34 | 82.5 | 398.8 | 0.0 | 758.7 |
| 40.00 | | 0.3750 | 36.075 | 42.490 | 6,842.0 | 15.55 | 96.20 | 82.6 | 373.6 | 0.0 | 734.9 |
| 43.36 | Bot - Section 2 | 0.3750 | 35.283 | 41.548 | 6,396.9 | 15.18 | 94.09 | 82.6 | 357.1 | 0.0 | 480.3 |
| 45.00 | | 0.3750 | 34.897 | 41.088 | 6,186.7 | 15.00 | 93.06 | 82.6 | 349.2 | 0.0 | 426.7 |
| 48.35 | Top - Section 1 | 0.3125 | 34.732 | 34.139 | 5,109.9 | 18.19 | 111.14 | 80.0 | 289.8 | 0.0 | 857.1 |
| 50.00 | | 0.3125 | 34.344 | 33.754 | 4,938.9 | 17.97 | 109.90 | 80.3 | 283.2 | 0.0 | 190.4 |
| 55.00 | | 0.3125 | 33.166 | 32.585 | 4,443.5 | 17.30 | 106.13 | 81.0 | 263.9 | 0.0 | 564.3 |
| 60.00 | | 0.3125 | 31.988 | 31.417 | 3,982.4 | 16.64 | 102.36 | 81.8 | 245.2 | 0.0 | 544.5 |
| 65.00 | | 0.3125 | 30.809 | 30.248 | 3,554.4 | 15.97 | 98.59 | 82.6 | 227.2 | 0.0 | 524.6 |
| 70.00 | | 0.3125 | 29.631 | 29.080 | 3,158.2 | 15.31 | 94.82 | 82.6 | 209.9 | 0.0 | 504.7 |
| 75.00 | | 0.3125 | 28.453 | 27.911 | 2,792.5 | 14.64 | 91.05 | 82.6 | 193.3 | 0.0 | 484.8 |
| 80.00 | | 0.3125 | 27.275 | 26.743 | 2,456.3 | 13.98 | 87.28 | 82.6 | 177.4 | 0.0 | 464.9 |
| 85.00 | | 0.3125 | 26.097 | 25.574 | 2,148.2 | 13.31 | 83.51 | 82.6 | 162.1 | 0.0 | 445.1 |
| 87.98 | Bot - Section 3 | 0.3125 | 25.394 | 24.877 | 1,977.3 | 12.92 | 81.26 | 82.6 | 153.4 | 0.0 | 255.9 |
| 88.00 | | 0.3125 | 25.390 | 24.873 | 1,976.3 | 12.92 | 81.25 | 82.6 | 153.3 | 0.0 | 2.8 |
| 90.00 | | 0.3125 | 24.919 | 24.406 | 1,867.0 | 12.65 | 79.74 | 82.6 | 147.6 | 0.0 | 304.9 |
| 91.73 | Top - Section 2 | 0.2500 | 25.011 | 19.647 | 1,522.0 | 16.23 | 100.05 | 82.3 | 119.9 | 0.0 | 259.0 |
| 95.00 | | 0.2500 | 24.241 | 19.036 | 1,384.3 | 15.69 | 96.96 | 82.6 | 112.5 | 0.0 | 215.3 |
| 98.00 | | 0.2500 | 23.534 | 18.475 | 1,265.5 | 15.19 | 94.14 | 82.6 | 105.9 | 0.0 | 191.5 |
| 100.0 | | 0.2500 | 23.063 | 18.101 | 1,190.2 | 14.86 | 92.25 | 82.6 | 101.6 | 0.0 | 124.5 |
| 105.0 | | 0.2500 | 21.884 | 17.166 | 1,015.1 | 14.02 | 87.54 | 82.6 | 91.4 | 0.0 | 300.0 |
| 106.0 | | 0.2500 | 21.649 | 16.979 | 982.3 | 13.86 | 86.60 | 82.6 | 89.4 | 0.0 | 58.1 |
| 110.0 | | 0.2500 | 20.706 | 16.232 | 858.2 | 13.19 | 82.83 | 82.6 | 81.6 | 0.0 | 226.0 |
| 115.0 | | 0.2500 | 19.528 | 15.297 | 718.3 | 12.36 | 78.11 | 82.6 | 72.4 | 0.0 | 268.2 |
| 116.0 | | 0.2500 | 19.293 | 15.110 | 692.3 | 12.20 | 77.17 | 82.6 | 70.7 | 0.0 | 51.7 |
| 120.0 | | 0.2500 | 18.350 | 14.362 | 594.5 | 11.53 | 73.40 | 82.6 | 63.8 | 0.0 | 200.6 |
| 125.0 | | 0.2500 | 17.172 | 13.427 | 485.8 | 10.70 | 68.69 | 82.6 | 55.7 | 0.0 | 236.4 |
| 125.7 | | 0.2500 | 17.000 | 13.291 | 471.1 | 10.58 | 68.00 | 82.6 | 54.6 | 0.0 | 33.2 |
| | | | | | | | | | | | 14,762.2 |

Site Number: 302469 Code: ANSI/TIA-222-G © 2007 - 2020 by ATC IP LLC. All rights reserved.

Site Name: Bridgeport CT 2, CT Engineering Number:13202054_C3_03 4/27/2020 3:36:24 PM

Customer: AT&T MOBILITY

**Load Case:** 1.2D + 1.6W 97 mph with No Ice 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

## Applied Segment Forces Summary

| Seg Elev (ft) | Description | Shaft Forces Wind FX (lb) | Shaft Forces Dead Load (lb) | Discrete Forces Wind FX (lb) | Discrete Forces Torsion MY (lb-ft) | Discrete Forces Moment MZ (lb-ft) | Discrete Forces Dead Load (lb) | Linear Forces Wind FX (lb) | Linear Forces Dead Load (lb) | Sum of Forces Wind FX (lb) | Sum of Forces Dead Load (lb) | Sum of Forces Torsion MY (lb-ft) | Sum of Forces Moment MZ (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 189.0 | 0.0 | | | | | 0.0 | 0.0 | 189.0 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 375.5 | 1,082.2 | | | | | 0.0 | 367.4 | 375.5 | 1,449.6 | 0.0 | 0.0 |
| 10.00 | | 370.3 | 1,053.6 | | | | | 0.0 | 367.4 | 370.3 | 1,421.0 | 0.0 | 0.0 |
| 15.00 | | 365.1 | 1,025.0 | | | | | 0.0 | 367.4 | 365.1 | 1,392.3 | 0.0 | 0.0 |
| 20.00 | | 359.9 | 996.3 | | | | | 0.0 | 367.4 | 359.9 | 1,363.7 | 0.0 | 0.0 |
| 25.00 | | 354.6 | 967.7 | | | | | 0.0 | 367.4 | 354.6 | 1,335.1 | 0.0 | 0.0 |
| 30.00 | | 355.4 | 939.1 | | | | | 0.0 | 367.4 | 355.4 | 1,306.5 | 0.0 | 0.0 |
| 35.00 | | 365.6 | 910.5 | | | | | 0.0 | 367.4 | 365.6 | 1,277.8 | 0.0 | 0.0 |
| 40.00 | | 314.8 | 881.8 | | | | | 0.0 | 367.4 | 314.8 | 1,249.2 | 0.0 | 0.0 |
| 43.36 | Bot - Section 2 | 193.4 | 576.4 | | | | | 0.0 | 246.8 | 193.4 | 823.2 | 0.0 | 0.0 |
| 45.00 | | 199.2 | 512.0 | | | | | 0.0 | 120.5 | 199.2 | 632.6 | 0.0 | 0.0 |
| 48.35 | Top - Section 1 | 200.2 | 1,028.5 | | | | | 0.0 | 246.3 | 200.2 | 1,274.7 | 0.0 | 0.0 |
| 50.00 | | 349.6 | 228.5 | | | | | 0.0 | 121.1 | 349.6 | 349.6 | 0.0 | 0.0 |
| 55.00 | | 564.7 | 677.2 | | | | | 117.5 | 367.4 | 682.2 | 1,044.6 | 0.0 | 0.0 |
| 60.00 | | 558.4 | 653.4 | | | | | 122.5 | 367.4 | 680.9 | 1,020.7 | 0.0 | 0.0 |
| 65.00 | | 550.3 | 629.5 | | | | | 126.0 | 367.4 | 676.2 | 996.9 | 0.0 | 0.0 |
| 70.00 | | 540.6 | 605.6 | | | | | 129.2 | 367.4 | 669.8 | 973.0 | 0.0 | 0.0 |
| 75.00 | | 529.4 | 581.8 | | | | | 132.2 | 367.4 | 661.6 | 949.2 | 0.0 | 0.0 |
| 80.00 | | 516.9 | 557.9 | | | | | 135.1 | 367.4 | 652.0 | 925.3 | 0.0 | 0.0 |
| 85.00 | | 404.0 | 534.1 | | | | | 137.7 | 367.4 | 541.7 | 901.4 | 0.0 | 0.0 |
| 87.98 | Bot - Section 3 | 149.7 | 307.1 | | | | | 83.3 | 219.1 | 233.0 | 526.2 | 0.0 | 0.0 |
| 88.00 | Appurtenance(s) | 101.2 | 3.4 | 258.6 | 0.0 | 0.0 | 186.0 | 0.5 | 1.3 | 360.3 | 190.7 | 0.0 | 0.0 |
| 90.00 | | 186.0 | 365.8 | | | | | 56.3 | 146.6 | 242.3 | 512.4 | 0.0 | 0.0 |
| 91.73 | Top - Section 2 | 245.3 | 310.8 | | | | | 49.0 | 126.7 | 294.3 | 437.5 | 0.0 | 0.0 |
| 95.00 | | 302.9 | 258.3 | | | | | 93.4 | 239.7 | 396.3 | 498.1 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 237.2 | 229.8 | 281.2 | 0.0 | 843.5 | 67.0 | 86.4 | 219.9 | 604.8 | 516.6 | 0.0 | 0.0 |
| 100.00 | | 322.6 | 149.4 | | | | | 48.5 | 134.6 | 371.0 | 283.9 | 0.0 | 0.0 |
| 105.00 | | 273.3 | 360.0 | | | | | 122.7 | 336.5 | 396.1 | 696.5 | 0.0 | 0.0 |
| 106.00 | Appurtenance(s) | 139.4 | 69.7 | 3,547.4 | 0.0 | 0.0 | 4,533.4 | 24.8 | 67.3 | 3,711.6 | 4,670.4 | 0.0 | 0.0 |
| 110.00 | | 208.6 | 271.2 | | | | | 0.0 | 148.8 | 208.6 | 420.0 | 0.0 | 0.0 |
| 115.00 | | 136.0 | 321.9 | | | | | 0.0 | 186.0 | 136.0 | 507.9 | 0.0 | 0.0 |
| 116.00 | Appurtenance(s) | 108.5 | 62.1 | 3,339.5 | 0.0 | 9,753.6 | 3,753.0 | 0.0 | 37.2 | 3,448.0 | 3,852.3 | 0.0 | 0.0 |
| 120.00 | | 189.4 | 240.7 | | | | | 0.0 | 60.1 | 189.4 | 300.8 | 0.0 | 0.0 |
| 125.00 | Appurtenance(s) | 117.6 | 283.7 | 2,816.5 | 0.0 | 12,567.7 | 2,409.4 | 0.0 | 75.2 | 2,934.1 | 2,768.2 | 0.0 | 0.0 |
| 125.73 | | 14.6 | 39.8 | | | | | 0.0 | 11.0 | 14.6 | 50.8 | 0.0 | 0.0 |
| | | | | | | | | Totals: | | 22,097.5 | 36,918.8 | 0.00 | 0.00 |

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Load Case: 1.2D + 1.6W 97 mph with No Ice 24 Iterations

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

## Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -36.88 | -21.98 | 0.00 | -2,045.09 | 0.00 | 2,045.09 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.595 |
| 5.00 | -35.35 | -21.73 | 0.00 | -1,935.21 | 0.00 | 1,935.21 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.11 | -0.20 | 0.589 |
| 10.00 | -33.85 | -21.47 | 0.00 | -1,826.59 | 0.00 | 1,826.59 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.44 | -0.41 | 0.582 |
| 15.00 | -32.38 | -21.22 | 0.00 | -1,719.23 | 0.00 | 1,719.23 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.99 | -0.63 | 0.575 |
| 20.00 | -30.94 | -20.96 | 0.00 | -1,613.14 | 0.00 | 1,613.14 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 1.76 | -0.85 | 0.566 |
| 25.00 | -29.53 | -20.70 | 0.00 | -1,508.35 | 0.00 | 1,508.35 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 2.77 | -1.07 | 0.558 |
| 30.00 | -28.15 | -20.43 | 0.00 | -1,404.85 | 0.00 | 1,404.85 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 4.02 | -1.30 | 0.548 |
| 35.00 | -26.80 | -20.14 | 0.00 | -1,302.70 | 0.00 | 1,302.70 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 5.50 | -1.53 | 0.537 |
| 40.00 | -25.49 | -19.88 | 0.00 | -1,201.99 | 0.00 | 1,201.99 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 7.23 | -1.77 | 0.528 |
| 43.36 | -24.64 | -19.71 | 0.00 | -1,135.20 | 0.00 | 1,135.20 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 8.54 | -1.93 | 0.522 |
| 45.00 | -23.97 | -19.54 | 0.00 | -1,102.86 | 0.00 | 1,102.86 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 9.21 | -2.01 | 0.518 |
| 48.35 | -22.66 | -19.35 | 0.00 | -1,037.35 | 0.00 | 1,037.35 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 10.69 | -2.18 | 0.606 |
| 50.00 | -22.26 | -19.05 | 0.00 | -1,005.46 | 0.00 | 1,005.46 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 11.45 | -2.26 | 0.599 |
| 55.00 | -21.16 | -18.43 | 0.00 | -910.19 | 0.00 | 910.19 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 13.97 | -2.54 | 0.577 |
| 60.00 | -20.09 | -17.80 | 0.00 | -818.03 | 0.00 | 818.03 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 16.78 | -2.81 | 0.552 |
| 65.00 | -19.04 | -17.17 | 0.00 | -729.03 | 0.00 | 729.03 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 19.87 | -3.09 | 0.527 |
| 70.00 | -18.03 | -16.53 | 0.00 | -643.20 | 0.00 | 643.20 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 23.25 | -3.36 | 0.503 |
| 75.00 | -17.05 | -15.89 | 0.00 | -560.56 | 0.00 | 560.56 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 26.92 | -3.64 | 0.477 |
| 80.00 | -16.10 | -15.25 | 0.00 | -481.11 | 0.00 | 481.11 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 30.87 | -3.90 | 0.446 |
| 85.00 | -15.19 | -14.70 | 0.00 | -404.85 | 0.00 | 404.85 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 35.09 | -4.16 | 0.412 |
| 87.98 | -14.66 | -14.45 | 0.00 | -361.02 | 0.00 | 361.02 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 37.74 | -4.31 | 0.388 |
| 88.00 | -14.49 | -14.09 | 0.00 | -360.75 | 0.00 | 360.75 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 37.75 | -4.31 | 0.388 |
| 90.00 | -13.97 | -13.83 | 0.00 | -332.58 | 0.00 | 332.58 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 39.58 | -4.41 | 0.372 |
| 91.73 | -13.53 | -13.53 | 0.00 | -308.66 | 0.00 | 308.66 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 41.19 | -4.49 | 0.427 |
| 95.00 | -13.03 | -13.13 | 0.00 | -264.40 | 0.00 | 264.40 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 44.32 | -4.64 | 0.389 |
| 98.00 | -12.54 | -12.51 | 0.00 | -224.16 | 0.00 | 224.16 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 47.29 | -4.80 | 0.351 |
| 100.00 | -12.25 | -12.15 | 0.00 | -199.14 | 0.00 | 199.14 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 49.31 | -4.89 | 0.326 |
| 105.00 | -11.57 | -11.72 | 0.00 | -138.38 | 0.00 | 138.38 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 54.54 | -5.09 | 0.254 |
| 106.00 | -7.24 | -7.62 | 0.00 | -126.66 | 0.00 | 126.66 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 55.61 | -5.13 | 0.235 |
| 110.00 | -6.82 | -7.39 | 0.00 | -96.19 | 0.00 | 96.19 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 59.96 | -5.26 | 0.196 |
| 115.00 | -6.32 | -7.21 | 0.00 | -59.25 | 0.00 | 59.25 | 1,136.47 | 568.24 | 895.71 | 448.52 | 65.53 | -5.39 | 0.138 |
| 116.00 | -2.81 | -3.42 | 0.00 | -42.28 | 0.00 | 42.28 | 1,122.58 | 561.29 | 873.81 | 437.56 | 66.66 | -5.41 | 0.099 |
| 120.00 | -2.52 | -3.20 | 0.00 | -28.61 | 0.00 | 28.61 | 1,067.02 | 533.51 | 788.92 | 395.05 | 71.21 | -5.47 | 0.075 |
| 125.00 | -0.05 | -0.02 | 0.00 | -0.01 | 0.00 | 0.01 | 997.57 | 498.78 | 688.91 | 344.97 | 76.96 | -5.52 | 0.000 |
| 125.73 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 77.80 | -5.52 | 0.000 |

Site Number: 302469 Code: ANSI/TIA-222-G © 2007 - 2020 by ATC IP LLC. All rights reserved.

Site Name: Bridgeport CT 2, CT Engineering Number:13202054_C3_03 4/27/2020 3:36:27 PM

Customer: AT&T MOBILITY

**Load Case:** 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

## Applied Segment Forces Summary

| | | Shaft Forces | | Discrete Forces | | | | Linear Forces | | Sum of Forces | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Seg Elev (ft) | Description | Wind FX (lb) | Dead Load (lb) | Wind FX (lb) | Torsion MY (lb-ft) | Moment MZ (lb-ft) | Dead Load (lb) | Wind FX (lb) | Dead Load (lb) | Wind FX (lb) | Dead Load (lb) | Torsion MY (lb-ft) | Moment MZ (lb) |
| 0.00 | | 174.1 | 0.0 | | | | | 0.0 | 0.0 | 174.1 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 343.6 | 811.7 | | | | | 0.0 | 275.5 | 343.6 | 1,087.2 | 0.0 | 0.0 |
| 10.00 | | 334.5 | 790.2 | | | | | 0.0 | 275.5 | 334.5 | 1,065.7 | 0.0 | 0.0 |
| 15.00 | | 325.4 | 768.7 | | | | | 0.0 | 275.5 | 325.4 | 1,044.3 | 0.0 | 0.0 |
| 20.00 | | 316.2 | 747.3 | | | | | 0.0 | 275.5 | 316.2 | 1,022.8 | 0.0 | 0.0 |
| 25.00 | | 307.1 | 725.8 | | | | | 0.0 | 275.5 | 307.1 | 1,001.3 | 0.0 | 0.0 |
| 30.00 | | 301.5 | 704.3 | | | | | 0.0 | 275.5 | 301.5 | 979.8 | 0.0 | 0.0 |
| 35.00 | | 301.8 | 682.8 | | | | | 0.0 | 275.5 | 301.8 | 958.4 | 0.0 | 0.0 |
| 40.00 | | 253.8 | 661.4 | | | | | 0.0 | 275.5 | 253.8 | 936.9 | 0.0 | 0.0 |
| 43.36 | Bot - Section 2 | 153.0 | 432.3 | | | | | 0.0 | 185.1 | 153.0 | 617.4 | 0.0 | 0.0 |
| 45.00 | | 154.4 | 384.0 | | | | | 0.0 | 90.4 | 154.4 | 474.4 | 0.0 | 0.0 |
| 48.35 | Top - Section 1 | 154.5 | 771.3 | | | | | 0.0 | 184.7 | 154.5 | 956.0 | 0.0 | 0.0 |
| 50.00 | | 334.6 | 171.4 | | | | | 0.0 | 90.8 | 334.6 | 262.2 | 0.0 | 0.0 |
| 55.00 | | 564.7 | 507.9 | | | | | 117.5 | 275.5 | 682.2 | 783.4 | 0.0 | 0.0 |
| 60.00 | | 558.4 | 490.0 | | | | | 122.5 | 275.5 | 680.9 | 765.5 | 0.0 | 0.0 |
| 65.00 | | 550.3 | 472.1 | | | | | 126.0 | 275.5 | 676.2 | 747.7 | 0.0 | 0.0 |
| 70.00 | | 540.6 | 454.2 | | | | | 129.2 | 275.5 | 669.8 | 729.8 | 0.0 | 0.0 |
| 75.00 | | 529.4 | 436.3 | | | | | 132.2 | 275.5 | 661.6 | 711.9 | 0.0 | 0.0 |
| 80.00 | | 516.9 | 418.4 | | | | | 135.1 | 275.5 | 652.0 | 694.0 | 0.0 | 0.0 |
| 85.00 | | 404.0 | 400.5 | | | | | 137.7 | 275.5 | 541.7 | 676.1 | 0.0 | 0.0 |
| 87.98 | Bot - Section 3 | 149.7 | 230.4 | | | | | 83.3 | 164.3 | 233.0 | 394.7 | 0.0 | 0.0 |
| 88.00 | Appurtenance(s) | 101.2 | 2.5 | 258.6 | 0.0 | 0.0 | 139.5 | 0.5 | 1.0 | 360.3 | 143.0 | 0.0 | 0.0 |
| 90.00 | | 186.0 | 274.4 | | | | | 56.3 | 109.9 | 242.3 | 384.3 | 0.0 | 0.0 |
| 91.73 | Top - Section 2 | 245.3 | 233.1 | | | | | 49.0 | 95.1 | 294.3 | 328.1 | 0.0 | 0.0 |
| 95.00 | | 302.9 | 193.7 | | | | | 93.4 | 179.8 | 396.3 | 373.5 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 237.2 | 172.3 | 281.2 | 0.0 | 843.5 | 50.2 | 86.4 | 164.9 | 604.8 | 387.5 | 0.0 | 0.0 |
| 100.00 | | 322.6 | 112.0 | | | | | 48.5 | 100.9 | 371.0 | 213.0 | 0.0 | 0.0 |
| 105.00 | | 273.3 | 270.0 | | | | | 122.7 | 252.4 | 396.1 | 522.4 | 0.0 | 0.0 |
| 106.00 | Appurtenance(s) | 139.4 | 52.3 | 3,547.4 | 0.0 | 0.0 | 3,400.0 | 24.8 | 50.5 | 3,711.6 | 3,502.8 | 0.0 | 0.0 |
| 110.00 | | 208.6 | 203.4 | | | | | 0.0 | 111.6 | 208.6 | 315.0 | 0.0 | 0.0 |
| 115.00 | | 136.0 | 241.4 | | | | | 0.0 | 139.5 | 136.0 | 380.9 | 0.0 | 0.0 |
| 116.00 | Appurtenance(s) | 108.5 | 46.6 | 3,339.5 | 0.0 | 9,753.6 | 2,814.7 | 0.0 | 27.9 | 3,448.0 | 2,889.2 | 0.0 | 0.0 |
| 120.00 | | 189.4 | 180.5 | | | | | 0.0 | 45.1 | 189.4 | 225.6 | 0.0 | 0.0 |
| 125.00 | Appurtenance(s) | 117.6 | 212.8 | 2,816.5 | 0.0 | 12,567.7 | 1,807.0 | 0.0 | 56.4 | 2,934.1 | 2,076.2 | 0.0 | 0.0 |
| 125.73 | | 14.6 | 29.9 | | | | | 0.0 | 8.2 | 14.6 | 38.1 | 0.0 | 0.0 |
| | | | | | | | | Totals: | | 21,559.2 | 27,689.1 | 0.00 | 0.00 |

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Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 24 Iterations

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

## Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -27.65 | -21.43 | 0.00 | -2,002.57 | 0.00 | 2,002.57 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.581 |
| 5.00 | -26.49 | -21.18 | 0.00 | -1,895.40 | 0.00 | 1,895.40 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.11 | -0.20 | 0.575 |
| 10.00 | -25.35 | -20.93 | 0.00 | -1,789.49 | 0.00 | 1,789.49 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.43 | -0.41 | 0.568 |
| 15.00 | -24.23 | -20.69 | 0.00 | -1,684.82 | 0.00 | 1,684.82 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.97 | -0.62 | 0.561 |
| 20.00 | -23.14 | -20.45 | 0.00 | -1,581.38 | 0.00 | 1,581.38 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 1.73 | -0.83 | 0.553 |
| 25.00 | -22.06 | -20.21 | 0.00 | -1,479.13 | 0.00 | 1,479.13 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 2.71 | -1.05 | 0.545 |
| 30.00 | -21.01 | -19.97 | 0.00 | -1,378.08 | 0.00 | 1,378.08 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 3.93 | -1.27 | 0.535 |
| 35.00 | -19.98 | -19.73 | 0.00 | -1,278.22 | 0.00 | 1,278.22 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 5.39 | -1.50 | 0.525 |
| 40.00 | -18.98 | -19.51 | 0.00 | -1,179.59 | 0.00 | 1,179.59 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 7.09 | -1.73 | 0.516 |
| 43.36 | -18.33 | -19.38 | 0.00 | -1,114.04 | 0.00 | 1,114.04 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 8.37 | -1.89 | 0.510 |
| 45.00 | -17.82 | -19.25 | 0.00 | -1,082.25 | 0.00 | 1,082.25 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 9.03 | -1.97 | 0.507 |
| 48.35 | -16.83 | -19.09 | 0.00 | -1,017.75 | 0.00 | 1,017.75 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 10.47 | -2.14 | 0.592 |
| 50.00 | -16.52 | -18.80 | 0.00 | -986.27 | 0.00 | 986.27 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 11.23 | -2.22 | 0.585 |
| 55.00 | -15.68 | -18.16 | 0.00 | -892.28 | 0.00 | 892.28 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 13.69 | -2.49 | 0.563 |
| 60.00 | -14.87 | -17.52 | 0.00 | -801.48 | 0.00 | 801.48 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 16.45 | -2.76 | 0.539 |
| 65.00 | -14.08 | -16.87 | 0.00 | -713.90 | 0.00 | 713.90 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 19.48 | -3.03 | 0.514 |
| 70.00 | -13.31 | -16.22 | 0.00 | -629.56 | 0.00 | 629.56 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 22.80 | -3.30 | 0.491 |
| 75.00 | -12.57 | -15.58 | 0.00 | -548.45 | 0.00 | 548.45 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 26.39 | -3.56 | 0.465 |
| 80.00 | -11.85 | -14.93 | 0.00 | -470.57 | 0.00 | 470.57 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 30.26 | -3.82 | 0.435 |
| 85.00 | -11.16 | -14.39 | 0.00 | -395.90 | 0.00 | 395.90 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 34.40 | -4.07 | 0.401 |
| 87.98 | -10.77 | -14.14 | 0.00 | -353.01 | 0.00 | 353.01 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 36.99 | -4.22 | 0.378 |
| 88.00 | -10.64 | -13.78 | 0.00 | -352.75 | 0.00 | 352.75 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 37.01 | -4.22 | 0.378 |
| 90.00 | -10.25 | -13.52 | 0.00 | -325.19 | 0.00 | 325.19 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 38.80 | -4.32 | 0.362 |
| 91.73 | -9.92 | -13.23 | 0.00 | -301.81 | 0.00 | 301.81 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 40.38 | -4.40 | 0.415 |
| 95.00 | -9.55 | -12.83 | 0.00 | -258.55 | 0.00 | 258.55 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 43.44 | -4.55 | 0.378 |
| 98.00 | -9.18 | -12.21 | 0.00 | -219.23 | 0.00 | 219.23 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 46.35 | -4.70 | 0.341 |
| 100.00 | -8.97 | -11.85 | 0.00 | -194.81 | 0.00 | 194.81 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 48.33 | -4.79 | 0.317 |
| 105.00 | -8.46 | -11.42 | 0.00 | -135.57 | 0.00 | 135.57 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 53.46 | -4.99 | 0.247 |
| 106.00 | -5.29 | -7.43 | 0.00 | -124.15 | 0.00 | 124.15 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 54.50 | -5.02 | 0.229 |
| 110.00 | -4.98 | -7.20 | 0.00 | -94.43 | 0.00 | 94.43 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 58.76 | -5.15 | 0.191 |
| 115.00 | -4.60 | -7.04 | 0.00 | -58.41 | 0.00 | 58.41 | 1,136.47 | 568.24 | 895.71 | 448.52 | 64.22 | -5.28 | 0.134 |
| 116.00 | -2.04 | -3.34 | 0.00 | -41.62 | 0.00 | 41.62 | 1,122.58 | 561.29 | 873.81 | 437.56 | 65.33 | -5.30 | 0.097 |
| 120.00 | -1.83 | -3.13 | 0.00 | -28.25 | 0.00 | 28.25 | 1,067.02 | 533.51 | 788.92 | 395.05 | 69.79 | -5.36 | 0.073 |
| 125.00 | -0.04 | -0.02 | 0.00 | -0.01 | 0.00 | 0.01 | 997.57 | 498.78 | 688.91 | 344.97 | 75.42 | -5.41 | 0.000 |
| 125.73 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 76.25 | -5.41 | 0.000 |

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**Load Case:** 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 25 Iterations

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

## Applied Segment Forces Summary

| Seg Elev (ft) | Description | Shaft Forces Wind FX (lb) | Shaft Forces Dead Load (lb) | Discrete Forces Wind FX (lb) | Discrete Forces Torsion MY (lb-ft) | Discrete Forces Moment MZ (lb-ft) | Discrete Forces Dead Load (lb) | Linear Forces Wind FX (lb) | Linear Forces Dead Load (lb) | Sum of Forces Wind FX (lb) | Sum of Forces Dead Load (lb) | Sum of Forces Torsion MY (lb-ft) | Sum of Forces Moment MZ (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 56.1 | 0.0 | | | | | 0.0 | 0.0 | 56.1 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 111.1 | 1,412.4 | | | | | 417.2 | 647.8 | 528.3 | 2,060.2 | 0.0 | 0.0 |
| 10.00 | | 108.8 | 1,413.6 | | | | | 412.6 | 674.1 | 521.4 | 2,087.8 | 0.0 | 0.0 |
| 15.00 | | 106.2 | 1,394.4 | | | | | 406.2 | 687.7 | 512.4 | 2,082.1 | 0.0 | 0.0 |
| 20.00 | | 103.6 | 1,368.4 | | | | | 399.1 | 697.1 | 502.8 | 2,065.5 | 0.0 | 0.0 |
| 25.00 | | 101.0 | 1,338.9 | | | | | 391.8 | 704.4 | 492.8 | 2,043.3 | 0.0 | 0.0 |
| 30.00 | | 99.5 | 1,307.2 | | | | | 384.3 | 710.4 | 483.8 | 2,017.6 | 0.0 | 0.0 |
| 35.00 | | 99.9 | 1,273.9 | | | | | 385.8 | 715.6 | 485.7 | 1,989.5 | 0.0 | 0.0 |
| 40.00 | | 84.3 | 1,239.5 | | | | | 393.6 | 720.1 | 477.9 | 1,959.6 | 0.0 | 0.0 |
| 43.36 | Bot - Section 2 | 50.9 | 814.3 | | | | | 267.8 | 486.1 | 318.7 | 1,300.3 | 0.0 | 0.0 |
| 45.00 | | 51.4 | 629.7 | | | | | 131.5 | 238.0 | 183.0 | 867.6 | 0.0 | 0.0 |
| 48.35 | Top - Section 1 | 51.5 | 1,265.0 | | | | | 270.0 | 487.4 | 321.5 | 1,752.4 | 0.0 | 0.0 |
| 50.00 | | 68.4 | 344.2 | | | | | 135.0 | 240.3 | 203.4 | 584.5 | 0.0 | 0.0 |
| 55.00 | | 102.6 | 1,019.0 | | | | | 411.0 | 731.0 | 513.6 | 1,750.0 | 0.0 | 0.0 |
| 60.00 | | 101.8 | 986.7 | | | | | 412.3 | 734.0 | 514.1 | 1,720.7 | 0.0 | 0.0 |
| 65.00 | | 100.8 | 954.0 | | | | | 412.4 | 736.8 | 513.2 | 1,690.8 | 0.0 | 0.0 |
| 70.00 | | 99.4 | 920.9 | | | | | 411.6 | 739.4 | 511.0 | 1,660.3 | 0.0 | 0.0 |
| 75.00 | | 97.8 | 887.4 | | | | | 409.8 | 741.9 | 507.6 | 1,629.3 | 0.0 | 0.0 |
| 80.00 | | 96.0 | 853.6 | | | | | 407.2 | 744.2 | 503.2 | 1,597.8 | 0.0 | 0.0 |
| 85.00 | | 75.4 | 819.6 | | | | | 403.9 | 746.4 | 479.2 | 1,566.0 | 0.0 | 0.0 |
| 87.98 | Bot - Section 3 | 28.0 | 473.9 | | | | | 239.0 | 446.1 | 267.0 | 920.0 | 0.0 | 0.0 |
| 88.00 | Appurtenance(s) | 18.9 | 4.4 | 65.5 | 0.0 | 0.0 | 195.6 | 1.5 | 2.7 | 85.9 | 202.7 | 0.0 | 0.0 |
| 90.00 | | 34.9 | 478.2 | | | | | 159.4 | 296.3 | 194.3 | 774.5 | 0.0 | 0.0 |
| 91.73 | Top - Section 2 | 46.1 | 406.6 | | | | | 137.2 | 256.4 | 183.3 | 663.1 | 0.0 | 0.0 |
| 95.00 | | 57.1 | 434.9 | | | | | 261.1 | 485.7 | 318.2 | 920.6 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 44.9 | 387.8 | 75.9 | 0.0 | 227.8 | 319.3 | 237.5 | 446.2 | 358.4 | 1,153.3 | 0.0 | 0.0 |
| 100.00 | | 61.4 | 253.1 | | | | | 105.1 | 240.1 | 166.4 | 493.1 | 0.0 | 0.0 |
| 105.00 | | 52.1 | 607.8 | | | | | 260.6 | 601.0 | 312.7 | 1,208.8 | 0.0 | 0.0 |
| 106.00 | Appurtenance(s) | 42.2 | 118.9 | 876.8 | 0.0 | 0.0 | 12,650.7 | 51.7 | 120.3 | 970.7 | 12,890.0 | 0.0 | 0.0 |
| 110.00 | | 74.3 | 460.6 | | | | | 87.9 | 176.4 | 162.2 | 637.0 | 0.0 | 0.0 |
| 115.00 | | 48.7 | 547.1 | | | | | 106.6 | 220.7 | 155.3 | 767.8 | 0.0 | 0.0 |
| 116.00 | Appurtenance(s) | 39.2 | 106.8 | 789.5 | 0.0 | 2,042.7 | 17,316.2 | 20.9 | 44.2 | 849.6 | 17,467.1 | 0.0 | 0.0 |
| 120.00 | | 68.8 | 411.8 | | | | | 0.0 | 60.1 | 68.8 | 471.9 | 0.0 | 0.0 |
| 125.00 | Appurtenance(s) | 42.9 | 485.8 | 654.0 | 0.0 | 2,747.1 | 7,367.3 | 0.0 | 75.2 | 696.9 | 7,928.2 | 0.0 | 0.0 |
| 125.73 | | 5.3 | 69.1 | | | | | 0.0 | 11.0 | 5.3 | 80.1 | 0.0 | 0.0 |
| | | | | | | | | | Totals: | 13,424.5 | 79,003.6 | 0.00 | 0.00 |

Site Number: 302469 Code: ANSI/TIA-222-G © 2007 - 2020 by ATC IP LLC. All rights reserved.

Site Name: Bridgeport CT 2, CT Engineering Number:13202054_C3_03 4/27/2020 3:36:33 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 25 Iterations

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

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

## Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -78.99 | -13.44 | 0.00 | -1,025.26 | 0.00 | 1,025.26 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.314 |
| 5.00 | -76.91 | -13.05 | 0.00 | -958.06 | 0.00 | 958.06 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.06 | -0.10 | 0.308 |
| 10.00 | -74.80 | -12.66 | 0.00 | -892.82 | 0.00 | 892.82 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.22 | -0.21 | 0.301 |
| 15.00 | -72.70 | -12.27 | 0.00 | -829.54 | 0.00 | 829.54 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.49 | -0.31 | 0.293 |
| 20.00 | -70.61 | -11.88 | 0.00 | -768.20 | 0.00 | 768.20 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 0.87 | -0.41 | 0.286 |
| 25.00 | -68.55 | -11.50 | 0.00 | -708.80 | 0.00 | 708.80 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 1.36 | -0.52 | 0.278 |
| 30.00 | -66.52 | -11.12 | 0.00 | -651.30 | 0.00 | 651.30 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 1.96 | -0.63 | 0.270 |
| 35.00 | -64.52 | -10.73 | 0.00 | -595.71 | 0.00 | 595.71 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 2.68 | -0.73 | 0.261 |
| 40.00 | -62.55 | -10.32 | 0.00 | -542.06 | 0.00 | 542.06 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 3.50 | -0.84 | 0.254 |
| 43.36 | -61.24 | -10.04 | 0.00 | -507.37 | 0.00 | 507.37 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 4.12 | -0.91 | 0.249 |
| 45.00 | -60.37 | -9.90 | 0.00 | -490.90 | 0.00 | 490.90 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 4.44 | -0.95 | 0.247 |
| 48.35 | -58.61 | -9.61 | 0.00 | -457.70 | 0.00 | 457.70 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 5.14 | -1.02 | 0.287 |
| 50.00 | -58.02 | -9.48 | 0.00 | -441.86 | 0.00 | 441.86 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 5.50 | -1.06 | 0.283 |
| 55.00 | -56.26 | -9.05 | 0.00 | -394.49 | 0.00 | 394.49 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 6.67 | -1.18 | 0.270 |
| 60.00 | -54.53 | -8.61 | 0.00 | -349.26 | 0.00 | 349.26 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 7.97 | -1.30 | 0.256 |
| 65.00 | -52.84 | -8.16 | 0.00 | -306.23 | 0.00 | 306.23 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 9.40 | -1.42 | 0.241 |
| 70.00 | -51.18 | -7.71 | 0.00 | -265.44 | 0.00 | 265.44 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 10.94 | -1.53 | 0.228 |
| 75.00 | -49.55 | -7.25 | 0.00 | -226.90 | 0.00 | 226.90 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 12.61 | -1.64 | 0.214 |
| 80.00 | -47.95 | -6.78 | 0.00 | -190.66 | 0.00 | 190.66 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 14.39 | -1.75 | 0.198 |
| 85.00 | -46.40 | -6.32 | 0.00 | -156.74 | 0.00 | 156.74 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 16.27 | -1.85 | 0.181 |
| 87.98 | -45.48 | -6.05 | 0.00 | -137.89 | 0.00 | 137.89 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 17.45 | -1.91 | 0.170 |
| 88.00 | -45.28 | -5.97 | 0.00 | -137.78 | 0.00 | 137.78 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 17.45 | -1.91 | 0.170 |
| 90.00 | -44.51 | -5.78 | 0.00 | -125.85 | 0.00 | 125.85 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 18.26 | -1.95 | 0.162 |
| 91.73 | -43.85 | -5.60 | 0.00 | -115.86 | 0.00 | 115.86 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 18.97 | -1.98 | 0.187 |
| 95.00 | -42.93 | -5.30 | 0.00 | -97.53 | 0.00 | 97.53 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 20.35 | -2.03 | 0.170 |
| 98.00 | -41.79 | -4.93 | 0.00 | -81.42 | 0.00 | 81.42 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 21.64 | -2.09 | 0.155 |
| 100.00 | -41.30 | -4.78 | 0.00 | -71.57 | 0.00 | 71.57 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 22.53 | -2.12 | 0.144 |
| 105.00 | -40.10 | -4.45 | 0.00 | -47.65 | 0.00 | 47.65 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 24.79 | -2.19 | 0.116 |
| 106.00 | -27.26 | -3.00 | 0.00 | -43.20 | 0.00 | 43.20 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 25.25 | -2.21 | 0.100 |
| 110.00 | -26.62 | -2.83 | 0.00 | -31.20 | 0.00 | 31.20 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 27.12 | -2.25 | 0.084 |
| 115.00 | -25.86 | -2.66 | 0.00 | -17.03 | 0.00 | 17.03 | 1,136.47 | 568.24 | 895.71 | 448.52 | 29.50 | -2.29 | 0.061 |
| 116.00 | -8.44 | -1.11 | 0.00 | -12.33 | 0.00 | 12.33 | 1,122.58 | 561.29 | 873.81 | 437.56 | 29.98 | -2.30 | 0.036 |
| 120.00 | -7.97 | -1.03 | 0.00 | -7.88 | 0.00 | 7.88 | 1,067.02 | 533.51 | 788.92 | 395.05 | 31.91 | -2.31 | 0.027 |
| 125.00 | -0.08 | -0.01 | 0.00 | -0.01 | 0.00 | 0.01 | 997.57 | 498.78 | 688.91 | 344.97 | 34.34 | -2.33 | 0.000 |
| 125.73 | 0.00 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 34.69 | -2.33 | 0.000 |

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Load Case: 1.0D + 1.0W Serviceability 60 mph 23 Iterations

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

## Applied Segment Forces Summary

| Seg Elev (ft) | Description | Shaft Forces Wind FX (lb) | Shaft Forces Dead Load (lb) | Discrete Forces Wind FX (lb) | Discrete Forces Torsion MY (lb-ft) | Discrete Forces Moment MZ (lb-ft) | Discrete Forces Dead Load (lb) | Linear Forces Wind FX (lb) | Linear Forces Dead Load (lb) | Sum of Forces Wind FX (lb) | Sum of Forces Dead Load (lb) | Sum of Forces Torsion MY (lb-ft) | Sum of Forces Moment MZ (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 37.2 | 0.0 | | | | | 0.0 | 0.0 | 37.2 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 73.5 | 901.9 | | | | | 0.0 | 306.2 | 73.5 | 1,208.0 | 0.0 | 0.0 |
| 10.00 | | 71.6 | 878.0 | | | | | 0.0 | 306.2 | 71.6 | 1,184.1 | 0.0 | 0.0 |
| 15.00 | | 69.6 | 854.1 | | | | | 0.0 | 306.2 | 69.6 | 1,160.3 | 0.0 | 0.0 |
| 20.00 | | 67.7 | 830.3 | | | | | 0.0 | 306.2 | 67.7 | 1,136.4 | 0.0 | 0.0 |
| 25.00 | | 65.7 | 806.4 | | | | | 0.0 | 306.2 | 65.7 | 1,112.6 | 0.0 | 0.0 |
| 30.00 | | 64.5 | 782.6 | | | | | 0.0 | 306.2 | 64.5 | 1,088.7 | 0.0 | 0.0 |
| 35.00 | | 64.6 | 758.7 | | | | | 0.0 | 306.2 | 64.6 | 1,064.9 | 0.0 | 0.0 |
| 40.00 | | 54.3 | 734.9 | | | | | 0.0 | 306.2 | 54.3 | 1,041.0 | 0.0 | 0.0 |
| 43.36 | Bot - Section 2 | 32.7 | 480.3 | | | | | 0.0 | 205.7 | 32.7 | 686.0 | 0.0 | 0.0 |
| 45.00 | | 33.0 | 426.7 | | | | | 0.0 | 100.5 | 33.0 | 527.1 | 0.0 | 0.0 |
| 48.35 | Top - Section 1 | 33.1 | 857.1 | | | | | 0.0 | 205.2 | 33.1 | 1,062.3 | 0.0 | 0.0 |
| 50.00 | | 71.6 | 190.4 | | | | | 0.0 | 100.9 | 71.6 | 291.3 | 0.0 | 0.0 |
| 55.00 | | 120.8 | 564.3 | | | | | 25.1 | 306.2 | 146.0 | 870.5 | 0.0 | 0.0 |
| 60.00 | | 119.5 | 544.5 | | | | | 26.2 | 306.2 | 145.7 | 850.6 | 0.0 | 0.0 |
| 65.00 | | 117.7 | 524.6 | | | | | 27.0 | 306.2 | 144.7 | 830.7 | 0.0 | 0.0 |
| 70.00 | | 115.7 | 504.7 | | | | | 27.6 | 306.2 | 143.3 | 810.8 | 0.0 | 0.0 |
| 75.00 | | 113.3 | 484.8 | | | | | 28.3 | 306.2 | 141.6 | 791.0 | 0.0 | 0.0 |
| 80.00 | | 110.6 | 464.9 | | | | | 28.9 | 306.2 | 139.5 | 771.1 | 0.0 | 0.0 |
| 85.00 | | 86.4 | 445.1 | | | | | 29.5 | 306.2 | 115.9 | 751.2 | 0.0 | 0.0 |
| 87.98 | Bot - Section 3 | 32.0 | 255.9 | | | | | 17.8 | 182.6 | 49.9 | 438.5 | 0.0 | 0.0 |
| 88.00 | Appurtenance(s) | 21.7 | 2.8 | 55.3 | 0.0 | 0.0 | 155.0 | 0.1 | 1.1 | 77.1 | 158.9 | 0.0 | 0.0 |
| 90.00 | | 39.8 | 304.9 | | | | | 12.0 | 122.2 | 51.8 | 427.0 | 0.0 | 0.0 |
| 91.73 | Top - Section 2 | 52.5 | 259.0 | | | | | 10.5 | 105.6 | 63.0 | 364.6 | 0.0 | 0.0 |
| 95.00 | | 64.8 | 215.3 | | | | | 20.0 | 199.8 | 84.8 | 415.0 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 50.8 | 191.5 | 60.2 | 0.0 | 180.5 | 55.8 | 18.5 | 183.2 | 129.4 | 430.5 | 0.0 | 0.0 |
| 100.00 | | 69.0 | 124.5 | | | | | 10.4 | 112.2 | 79.4 | 236.6 | 0.0 | 0.0 |
| 105.00 | | 58.5 | 300.0 | | | | | 26.3 | 280.4 | 84.7 | 580.4 | 0.0 | 0.0 |
| 106.00 | Appurtenance(s) | 29.8 | 58.1 | 759.0 | 0.0 | 0.0 | 3,777.8 | 5.3 | 56.1 | 794.1 | 3,892.0 | 0.0 | 0.0 |
| 110.00 | | 44.6 | 226.0 | | | | | 0.0 | 124.0 | 44.6 | 350.0 | 0.0 | 0.0 |
| 115.00 | | 29.1 | 268.2 | | | | | 0.0 | 155.0 | 29.1 | 423.2 | 0.0 | 0.0 |
| 116.00 | Appurtenance(s) | 23.2 | 51.7 | 714.5 | 0.0 | 2,086.9 | 3,127.5 | 0.0 | 31.0 | 737.7 | 3,210.2 | 0.0 | 0.0 |
| 120.00 | | 40.5 | 200.6 | | | | | 0.0 | 50.1 | 40.5 | 250.7 | 0.0 | 0.0 |
| 125.00 | Appurtenance(s) | 25.2 | 236.4 | 602.6 | 0.0 | 2,689.0 | 2,007.8 | 0.0 | 62.6 | 627.8 | 2,306.9 | 0.0 | 0.0 |
| 125.73 | | 3.1 | 33.2 | | | | | 0.0 | 9.1 | 3.1 | 42.3 | 0.0 | 0.0 |
| | | | | | | | | Totals: | | 4,612.84 | 30,765.7 | 0.00 | 0.00 |

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Load Case: 1.0D + 1.0W Serviceability 60 mph 23 Iterations

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

## Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -30.76 | -4.59 | 0.00 | -430.79 | 0.00 | 430.79 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.131 |
| 5.00 | -29.55 | -4.54 | 0.00 | -407.86 | 0.00 | 407.86 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.02 | -0.04 | 0.130 |
| 10.00 | -28.36 | -4.48 | 0.00 | -385.18 | 0.00 | 385.18 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.09 | -0.09 | 0.129 |
| 15.00 | -27.20 | -4.43 | 0.00 | -362.76 | 0.00 | 362.76 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.21 | -0.13 | 0.127 |
| 20.00 | -26.06 | -4.39 | 0.00 | -340.58 | 0.00 | 340.58 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 0.37 | -0.18 | 0.125 |
| 25.00 | -24.95 | -4.34 | 0.00 | -318.66 | 0.00 | 318.66 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 0.58 | -0.23 | 0.123 |
| 30.00 | -23.85 | -4.29 | 0.00 | -296.98 | 0.00 | 296.98 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 0.85 | -0.27 | 0.121 |
| 35.00 | -22.79 | -4.24 | 0.00 | -275.54 | 0.00 | 275.54 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 1.16 | -0.32 | 0.119 |
| 40.00 | -21.74 | -4.19 | 0.00 | -254.36 | 0.00 | 254.36 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 1.53 | -0.37 | 0.117 |
| 43.36 | -21.05 | -4.16 | 0.00 | -240.27 | 0.00 | 240.27 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 1.80 | -0.41 | 0.116 |
| 45.00 | -20.53 | -4.14 | 0.00 | -233.44 | 0.00 | 233.44 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 1.94 | -0.43 | 0.115 |
| 48.35 | -19.46 | -4.10 | 0.00 | -219.58 | 0.00 | 219.58 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 2.26 | -0.46 | 0.134 |
| 50.00 | -19.17 | -4.04 | 0.00 | -212.81 | 0.00 | 212.81 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 2.42 | -0.48 | 0.133 |
| 55.00 | -18.29 | -3.91 | 0.00 | -192.59 | 0.00 | 192.59 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 2.95 | -0.54 | 0.128 |
| 60.00 | -17.44 | -3.77 | 0.00 | -173.05 | 0.00 | 173.05 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 3.54 | -0.59 | 0.123 |
| 65.00 | -16.61 | -3.64 | 0.00 | -154.19 | 0.00 | 154.19 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 4.20 | -0.65 | 0.117 |
| 70.00 | -15.80 | -3.50 | 0.00 | -136.02 | 0.00 | 136.02 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 4.91 | -0.71 | 0.112 |
| 75.00 | -15.00 | -3.36 | 0.00 | -118.53 | 0.00 | 118.53 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 5.69 | -0.77 | 0.106 |
| 80.00 | -14.23 | -3.22 | 0.00 | -101.72 | 0.00 | 101.72 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 6.52 | -0.82 | 0.100 |
| 85.00 | -13.48 | -3.11 | 0.00 | -85.60 | 0.00 | 85.60 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 7.42 | -0.88 | 0.092 |
| 87.98 | -13.04 | -3.05 | 0.00 | -76.33 | 0.00 | 76.33 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 7.98 | -0.91 | 0.087 |
| 88.00 | -12.88 | -2.98 | 0.00 | -76.27 | 0.00 | 76.27 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 7.98 | -0.91 | 0.087 |
| 90.00 | -12.46 | -2.92 | 0.00 | -70.32 | 0.00 | 70.32 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 8.37 | -0.93 | 0.084 |
| 91.73 | -12.09 | -2.86 | 0.00 | -65.26 | 0.00 | 65.26 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 8.71 | -0.95 | 0.097 |
| 95.00 | -11.68 | -2.77 | 0.00 | -55.91 | 0.00 | 55.91 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 9.37 | -0.98 | 0.089 |
| 98.00 | -11.25 | -2.64 | 0.00 | -47.41 | 0.00 | 47.41 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 10.00 | -1.01 | 0.081 |
| 100.00 | -11.01 | -2.57 | 0.00 | -42.12 | 0.00 | 42.12 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 10.43 | -1.03 | 0.075 |
| 105.00 | -10.43 | -2.47 | 0.00 | -29.30 | 0.00 | 29.30 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 11.53 | -1.08 | 0.060 |
| 106.00 | -6.55 | -1.61 | 0.00 | -26.83 | 0.00 | 26.83 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 11.76 | -1.08 | 0.054 |
| 110.00 | -6.20 | -1.56 | 0.00 | -20.39 | 0.00 | 20.39 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 12.68 | -1.11 | 0.045 |
| 115.00 | -5.78 | -1.52 | 0.00 | -12.59 | 0.00 | 12.59 | 1,136.47 | 568.24 | 895.71 | 448.52 | 13.86 | -1.14 | 0.033 |
| 116.00 | -2.59 | -0.72 | 0.00 | -8.98 | 0.00 | 8.98 | 1,122.58 | 561.29 | 873.81 | 437.56 | 14.10 | -1.14 | 0.023 |
| 120.00 | -2.34 | -0.68 | 0.00 | -6.08 | 0.00 | 6.08 | 1,067.02 | 533.51 | 788.92 | 395.05 | 15.06 | -1.16 | 0.018 |
| 125.00 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 997.57 | 498.78 | 688.91 | 344.97 | 16.28 | -1.17 | 0.000 |
| 125.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 16.46 | -1.17 | 0.000 |

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## Equivalent Lateral Forces Method Analysis

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

| | | |
|---|---|---|
| Spectral Response Acceleration for Short Period ($S_s$): | 0.20 | |
| Spectral Response Acceleration at 1.0 Second Period ($S_1$): | 0.06 | |
| Long-Period Transition Period ($T_L$): | 6 | |
| Importance Factor ($I_E$): | 1.00 | |
| Site Coefficient $F_a$: | 1.60 | |
| Site Coeffiecient $F_v$: | 2.40 | |
| Response Modification Coefficient (R): | 1.50 | |
| Design Spectral Response Acceleration at Short Period ($S_{ds}$): | 0.22 | |
| Design Spectral Response Acceleration at 1.0 Second Period ($S_{d1}$): | 0.10 | |
| Seismic Response Coefficient ($C_s$): | 0.03 | |
| Upper Limit $C_s$ | 0.03 | |
| Lower Limit $C_s$ | 0.03 | |
| Period based on Rayleigh Method (sec): | 2.29 | |
| Redundancy Factor (p): | 1.00 | |
| Seismic Force Distribution Exponent (k): | 1.90 | |
| Total Unfactored Dead Load: | 30.77 | k |
| Seismic Base Shear (E): | 0.92 | k |

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

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|
| 34 | 125.37 | 42 | 405 | 0.003 | 3 | 53 |
| 33 | 122.50 | 299 | 2,739 | 0.022 | 20 | 372 |
| 32 | 118.00 | 251 | 2,139 | 0.017 | 16 | 312 |
| 31 | 115.50 | 83 | 678 | 0.005 | 5 | 103 |
| 30 | 112.50 | 423 | 3,298 | 0.027 | 24 | 526 |
| 29 | 108.00 | 350 | 2,524 | 0.020 | 19 | 435 |
| 28 | 105.50 | 114 | 788 | 0.006 | 6 | 142 |
| 27 | 102.50 | 580 | 3,791 | 0.030 | 28 | 722 |
| 26 | 99.00 | 237 | 1,447 | 0.012 | 11 | 294 |
| 25 | 96.50 | 375 | 2,183 | 0.018 | 16 | 466 |
| 24 | 93.36 | 415 | 2,271 | 0.018 | 17 | 516 |
| 23 | 90.86 | 365 | 1,895 | 0.015 | 14 | 453 |
| 22 | 89.00 | 427 | 2,133 | 0.017 | 16 | 531 |
| 21 | 87.99 | 4 | 19 | 0.000 | 0 | 5 |
| 20 | 86.49 | 439 | 2,075 | 0.017 | 15 | 545 |
| 19 | 82.50 | 751 | 3,250 | 0.026 | 24 | 934 |
| 18 | 77.50 | 771 | 2,963 | 0.024 | 22 | 959 |
| 17 | 72.50 | 791 | 2,678 | 0.022 | 20 | 984 |
| 16 | 67.50 | 811 | 2,397 | 0.019 | 18 | 1,008 |
| 15 | 62.50 | 831 | 2,122 | 0.017 | 16 | 1,033 |
| 14 | 57.50 | 851 | 1,855 | 0.015 | 14 | 1,058 |
| 13 | 52.50 | 870 | 1,598 | 0.013 | 12 | 1,082 |
| 12 | 49.18 | 291 | 472 | 0.004 | 4 | 362 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | 46.68 | 1,062 | 1,560 | 0.013 | 12 | 1,321 |
| 10 | 44.18 | 527 | 697 | 0.006 | 5 | 656 |
| 9 | 41.68 | 686 | 813 | 0.007 | 6 | 853 |
| 8 | 37.50 | 1,041 | 1,009 | 0.008 | 7 | 1,295 |
| 7 | 32.50 | 1,065 | 787 | 0.006 | 6 | 1,324 |
| 6 | 27.50 | 1,089 | 586 | 0.005 | 4 | 1,354 |
| 5 | 22.50 | 1,113 | 409 | 0.003 | 3 | 1,384 |
| 4 | 17.50 | 1,136 | 259 | 0.002 | 2 | 1,413 |
| 3 | 12.50 | 1,160 | 140 | 0.001 | 1 | 1,443 |
| 2 | 7.50 | 1,184 | 54 | 0.000 | 0 | 1,473 |
| 1 | 2.50 | 1,208 | 7 | 0.000 | 0 | 1,502 |
| DragonWave Horizon C | 125.00 | 21 | 202 | 0.002 | 1 | 26 |
| DragonWave A-ANT-23G | 125.00 | 15 | 143 | 0.001 | 1 | 19 |
| Alcatel-Lucent RRH2x | 125.00 | 317 | 3,021 | 0.024 | 22 | 395 |
| Alcatel-Lucent 1900 | 125.00 | 180 | 1,713 | 0.014 | 13 | 224 |
| Alcatel-Lucent TD-RR | 125.00 | 198 | 1,887 | 0.015 | 14 | 247 |
| Nokia 2.5G MAA - AAH | 125.00 | 311 | 2,958 | 0.024 | 22 | 386 |
| Argus LLPX310R | 125.00 | 86 | 817 | 0.007 | 6 | 107 |
| DragonWave A-ANT-18G | 125.00 | 27 | 258 | 0.002 | 2 | 34 |
| Generic 24" x 24" Ju | 125.00 | 20 | 190 | 0.002 | 1 | 25 |
| Small T-Arms | 125.00 | 600 | 5,711 | 0.046 | 42 | 746 |
| Commscope NNVV-65B-R | 125.00 | 232 | 2,210 | 0.018 | 16 | 289 |
| Kathrein Scala Smart | 116.00 | 10 | 82 | 0.001 | 1 | 12 |
| Ericsson KRY 112 144 | 116.00 | 29 | 240 | 0.002 | 2 | 36 |
| Ericsson KRY 112 489 | 116.00 | 46 | 382 | 0.003 | 3 | 57 |
| Ericsson Radio 4449 | 116.00 | 222 | 1,834 | 0.015 | 14 | 276 |
| Ericsson AIR-32 B2A/ | 116.00 | 397 | 3,276 | 0.026 | 24 | 493 |
| Ericsson Air 3246 B6 | 116.00 | 540 | 4,460 | 0.036 | 33 | 672 |
| RFS APXVAARR24_43-U- | 116.00 | 384 | 3,169 | 0.025 | 24 | 477 |
| Round Low Profile Pl | 116.00 | 1,500 | 12,389 | 0.100 | 92 | 1,865 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 443 | 0.004 | 3 | 79 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 443 | 0.004 | 3 | 79 |
| Ericsson Radio 8843 | 106.00 | 216 | 1,501 | 0.012 | 11 | 268 |
| Ericsson RRUS 4478 B | 106.00 | 180 | 1,251 | 0.010 | 9 | 223 |
| Ericsson RRUS 4449 B | 106.00 | 213 | 1,483 | 0.012 | 11 | 265 |
| Ericsson RRUS 32 B30 | 106.00 | 159 | 1,107 | 0.009 | 8 | 198 |
| Ericsson RRUS E2 B29 | 106.00 | 180 | 1,253 | 0.010 | 9 | 224 |
| CCI OPA-65R-LCUU-H4 | 106.00 | 342 | 2,381 | 0.019 | 18 | 425 |
| CCI DMP65R-BU4D | 106.00 | 204 | 1,418 | 0.011 | 11 | 253 |
| CCI OPA65R-BU4DA-K | 106.00 | 157 | 1,096 | 0.009 | 8 | 196 |
| Round Platform w/ Ha | 106.00 | 2,000 | 13,922 | 0.112 | 103 | 2,487 |
| Generic RCU (Remote | 98.00 | 3 | 18 | 0.000 | 0 | 4 |
| Kathrein Scala 800 1 | 98.00 | 53 | 317 | 0.003 | 2 | 66 |
| Procom CXL 900-3LW | 88.00 | 2 | 7 | 0.000 | 0 | 2 |
| Generic 5" x 3" x 2" | 88.00 | 2 | 7 | 0.000 | 0 | 2 |
| Generic Low Noise Am | 88.00 | 2 | 10 | 0.000 | 0 | 2 |
| Flat Side Arm | 88.00 | 150 | 734 | 0.006 | 5 | 187 |
| | | 30,766 | 124,373 | 1.000 | 923 | 38,258 |

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

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|
| 34 | 125.37 | 42 | 405 | 0.003 | 3 | 36 |
| 33 | 122.50 | 299 | 2,739 | 0.022 | 20 | 256 |
| 32 | 118.00 | 251 | 2,139 | 0.017 | 16 | 215 |
| 31 | 115.50 | 83 | 678 | 0.005 | 5 | 71 |
| 30 | 112.50 | 423 | 3,298 | 0.027 | 24 | 362 |
| 29 | 108.00 | 350 | 2,524 | 0.020 | 19 | 300 |
| 28 | 105.50 | 114 | 788 | 0.006 | 6 | 98 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 27 | 102.50 | 580 | 3,791 | 0.030 | 28 | 497 |
| 26 | 99.00 | 237 | 1,447 | 0.012 | 11 | 203 |
| 25 | 96.50 | 375 | 2,183 | 0.018 | 16 | 321 |
| 24 | 93.36 | 415 | 2,271 | 0.018 | 17 | 355 |
| 23 | 90.86 | 365 | 1,895 | 0.015 | 14 | 312 |
| 22 | 89.00 | 427 | 2,133 | 0.017 | 16 | 366 |
| 21 | 87.99 | 4 | 19 | 0.000 | 0 | 3 |
| 20 | 86.49 | 439 | 2,075 | 0.017 | 15 | 376 |
| 19 | 82.50 | 751 | 3,250 | 0.026 | 24 | 643 |
| 18 | 77.50 | 771 | 2,963 | 0.024 | 22 | 660 |
| 17 | 72.50 | 791 | 2,678 | 0.022 | 20 | 677 |
| 16 | 67.50 | 811 | 2,397 | 0.019 | 18 | 694 |
| 15 | 62.50 | 831 | 2,122 | 0.017 | 16 | 712 |
| 14 | 57.50 | 851 | 1,855 | 0.015 | 14 | 729 |
| 13 | 52.50 | 870 | 1,598 | 0.013 | 12 | 746 |
| 12 | 49.18 | 291 | 472 | 0.004 | 4 | 250 |
| 11 | 46.68 | 1,062 | 1,560 | 0.013 | 12 | 910 |
| 10 | 44.18 | 527 | 697 | 0.006 | 5 | 451 |
| 9 | 41.68 | 686 | 813 | 0.007 | 6 | 588 |
| 8 | 37.50 | 1,041 | 1,009 | 0.008 | 7 | 892 |
| 7 | 32.50 | 1,065 | 787 | 0.006 | 6 | 912 |
| 6 | 27.50 | 1,089 | 586 | 0.005 | 4 | 932 |
| 5 | 22.50 | 1,113 | 409 | 0.003 | 3 | 953 |
| 4 | 17.50 | 1,136 | 259 | 0.002 | 2 | 973 |
| 3 | 12.50 | 1,160 | 140 | 0.001 | 1 | 994 |
| 2 | 7.50 | 1,184 | 54 | 0.000 | 0 | 1,014 |
| 1 | 2.50 | 1,208 | 7 | 0.000 | 0 | 1,035 |
| DragonWave Horizon C | 125.00 | 21 | 202 | 0.002 | 1 | 18 |
| DragonWave A-ANT-23G | 125.00 | 15 | 143 | 0.001 | 1 | 13 |
| Alcatel-Lucent RRH2x | 125.00 | 317 | 3,021 | 0.024 | 22 | 272 |
| Alcatel-Lucent 1900 | 125.00 | 180 | 1,713 | 0.014 | 13 | 154 |
| Alcatel-Lucent TD-RR | 125.00 | 198 | 1,887 | 0.015 | 14 | 170 |
| Nokia 2.5G MAA - AAH | 125.00 | 311 | 2,958 | 0.024 | 22 | 266 |
| Argus LLPX310R | 125.00 | 86 | 817 | 0.007 | 6 | 73 |
| DragonWave A-ANT-18G | 125.00 | 27 | 258 | 0.002 | 2 | 23 |
| Generic 24" x 24" Ju | 125.00 | 20 | 190 | 0.002 | 1 | 17 |
| Small T-Arms | 125.00 | 600 | 5,711 | 0.046 | 42 | 514 |
| Commscope NNVV-65B-R | 125.00 | 232 | 2,210 | 0.018 | 16 | 199 |
| Kathrein Scala Smart | 116.00 | 10 | 82 | 0.001 | 1 | 8 |
| Ericsson KRY 112 144 | 116.00 | 29 | 240 | 0.002 | 2 | 25 |
| Ericsson KRY 112 489 | 116.00 | 46 | 382 | 0.003 | 3 | 40 |
| Ericsson Radio 4449 | 116.00 | 222 | 1,834 | 0.015 | 14 | 190 |
| Ericsson AIR-32 B2A/ | 116.00 | 397 | 3,276 | 0.026 | 24 | 340 |
| Ericsson Air 3246 B6 | 116.00 | 540 | 4,460 | 0.036 | 33 | 462 |
| RFS APXVAARR24_43-U- | 116.00 | 384 | 3,169 | 0.025 | 24 | 329 |
| Round Low Profile Pl | 116.00 | 1,500 | 12,389 | 0.100 | 92 | 1,285 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 443 | 0.004 | 3 | 54 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 443 | 0.004 | 3 | 54 |
| Ericsson Radio 8843 | 106.00 | 216 | 1,501 | 0.012 | 11 | 185 |
| Ericsson RRUS 4478 B | 106.00 | 180 | 1,251 | 0.010 | 9 | 154 |
| Ericsson RRUS 4449 B | 106.00 | 213 | 1,483 | 0.012 | 11 | 182 |
| Ericsson RRUS 32 B30 | 106.00 | 159 | 1,107 | 0.009 | 8 | 136 |
| Ericsson RRUS E2 B29 | 106.00 | 180 | 1,253 | 0.010 | 9 | 154 |
| CCI OPA-65R-LCUU-H4 | 106.00 | 342 | 2,381 | 0.019 | 18 | 293 |
| CCI DMP65R-BU4D | 106.00 | 204 | 1,418 | 0.011 | 11 | 174 |
| CCI OPA65R-BU4DA-K | 106.00 | 157 | 1,096 | 0.009 | 8 | 135 |
| Round Platform w/ Ha | 106.00 | 2,000 | 13,922 | 0.112 | 103 | 1,713 |
| Generic RCU (Remote | 98.00 | 3 | 18 | 0.000 | 0 | 3 |
| Kathrein Scala 800 1 | 98.00 | 53 | 317 | 0.003 | 2 | 45 |
| Procom CXL 900-3LW | 88.00 | 2 | 7 | 0.000 | 0 | 1 |
| Generic 5" x 3" x 2" | 88.00 | 2 | 7 | 0.000 | 0 | 1 |
| Generic Low Noise Am | 88.00 | 2 | 10 | 0.000 | 0 | 2 |
| Flat Side Arm | 88.00 | 150 | 734 | 0.006 | 5 | 128 |

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| | | | | | |
|---|---|---|---|---|---|
| 30,766 | 124,373 | 1.000 | | 923 | 26,350 |

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -36.76 | -0.93 | 0.00 | -97.88 | 0.00 | 97.88 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.038 |
| 5.00 | -35.28 | -0.93 | 0.00 | -93.25 | 0.00 | 93.25 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.01 | -0.01 | 0.037 |
| 10.00 | -33.84 | -0.94 | 0.00 | -88.60 | 0.00 | 88.60 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.02 | -0.02 | 0.037 |
| 15.00 | -32.43 | -0.94 | 0.00 | -83.92 | 0.00 | 83.92 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.05 | -0.03 | 0.037 |
| 20.00 | -31.04 | -0.94 | 0.00 | -79.23 | 0.00 | 79.23 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 0.09 | -0.04 | 0.036 |
| 25.00 | -29.69 | -0.94 | 0.00 | -74.53 | 0.00 | 74.53 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 0.13 | -0.05 | 0.036 |
| 30.00 | -28.36 | -0.94 | 0.00 | -69.82 | 0.00 | 69.82 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 0.19 | -0.06 | 0.035 |
| 35.00 | -27.07 | -0.94 | 0.00 | -65.12 | 0.00 | 65.12 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 0.27 | -0.08 | 0.035 |
| 40.00 | -26.22 | -0.93 | 0.00 | -60.44 | 0.00 | 60.44 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 0.35 | -0.09 | 0.034 |
| 43.36 | -25.56 | -0.93 | 0.00 | -57.31 | 0.00 | 57.31 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 0.42 | -0.10 | 0.034 |
| 45.00 | -24.24 | -0.92 | 0.00 | -55.78 | 0.00 | 55.78 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 0.45 | -0.10 | 0.034 |
| 48.35 | -23.88 | -0.92 | 0.00 | -52.70 | 0.00 | 52.70 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 0.52 | -0.11 | 0.040 |
| 50.00 | -22.79 | -0.91 | 0.00 | -51.19 | 0.00 | 51.19 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 0.56 | -0.11 | 0.039 |
| 55.00 | -21.74 | -0.90 | 0.00 | -46.66 | 0.00 | 46.66 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 0.69 | -0.13 | 0.038 |
| 60.00 | -20.70 | -0.88 | 0.00 | -42.17 | 0.00 | 42.17 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 0.82 | -0.14 | 0.037 |
| 65.00 | -19.70 | -0.87 | 0.00 | -37.76 | 0.00 | 37.76 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 0.98 | -0.15 | 0.036 |
| 70.00 | -18.71 | -0.85 | 0.00 | -33.42 | 0.00 | 33.42 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 1.15 | -0.17 | 0.034 |
| 75.00 | -17.75 | -0.83 | 0.00 | -29.17 | 0.00 | 29.17 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 1.33 | -0.18 | 0.033 |
| 80.00 | -16.82 | -0.81 | 0.00 | -25.02 | 0.00 | 25.02 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 1.53 | -0.20 | 0.031 |
| 85.00 | -16.27 | -0.79 | 0.00 | -20.99 | 0.00 | 20.99 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 1.74 | -0.21 | 0.029 |
| 87.98 | -16.27 | -0.79 | 0.00 | -18.63 | 0.00 | 18.63 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 1.88 | -0.22 | 0.028 |
| 88.00 | -15.54 | -0.77 | 0.00 | -18.61 | 0.00 | 18.61 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 1.88 | -0.22 | 0.028 |
| 90.00 | -15.09 | -0.75 | 0.00 | -17.07 | 0.00 | 17.07 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 1.97 | -0.22 | 0.027 |
| 91.73 | -14.57 | -0.74 | 0.00 | -15.77 | 0.00 | 15.77 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 2.05 | -0.23 | 0.031 |
| 95.00 | -14.11 | -0.72 | 0.00 | -13.36 | 0.00 | 13.36 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 2.21 | -0.23 | 0.029 |
| 98.00 | -13.75 | -0.71 | 0.00 | -11.19 | 0.00 | 11.19 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 2.36 | -0.24 | 0.027 |
| 100.00 | -13.02 | -0.68 | 0.00 | -9.78 | 0.00 | 9.78 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 2.46 | -0.25 | 0.025 |
| 105.00 | -12.88 | -0.67 | 0.00 | -6.38 | 0.00 | 6.38 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 2.73 | -0.26 | 0.021 |
| 106.00 | -7.75 | -0.44 | 0.00 | -5.71 | 0.00 | 5.71 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 2.78 | -0.26 | 0.016 |
| 110.00 | -7.22 | -0.41 | 0.00 | -3.96 | 0.00 | 3.96 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 3.00 | -0.26 | 0.014 |
| 115.00 | -7.12 | -0.41 | 0.00 | -1.90 | 0.00 | 1.90 | 1,136.47 | 568.24 | 895.71 | 448.52 | 3.28 | -0.27 | 0.011 |
| 116.00 | -2.92 | -0.18 | 0.00 | -1.50 | 0.00 | 1.50 | 1,122.58 | 561.29 | 873.81 | 437.56 | 3.34 | -0.27 | 0.006 |
| 120.00 | -2.55 | -0.16 | 0.00 | -0.78 | 0.00 | 0.78 | 1,067.02 | 533.51 | 788.92 | 395.05 | 3.56 | -0.27 | 0.004 |
| 125.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 997.57 | 498.78 | 688.91 | 344.97 | 3.85 | -0.27 | 0.000 |
| 125.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 3.89 | -0.27 | 0.000 |

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -25.32 | -0.92 | 0.00 | -96.29 | 0.00 | 96.29 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.034 |
| 5.00 | -24.30 | -0.93 | 0.00 | -91.67 | 0.00 | 91.67 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.01 | -0.01 | 0.034 |
| 10.00 | -23.31 | -0.93 | 0.00 | -87.03 | 0.00 | 87.03 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.02 | -0.02 | 0.034 |
| 15.00 | -22.33 | -0.93 | 0.00 | -82.37 | 0.00 | 82.37 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.05 | -0.03 | 0.033 |
| 20.00 | -21.38 | -0.93 | 0.00 | -77.71 | 0.00 | 77.71 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 0.08 | -0.04 | 0.033 |
| 25.00 | -20.45 | -0.93 | 0.00 | -73.05 | 0.00 | 73.05 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 0.13 | -0.05 | 0.033 |
| 30.00 | -19.54 | -0.93 | 0.00 | -68.39 | 0.00 | 68.39 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 0.19 | -0.06 | 0.032 |
| 35.00 | -18.64 | -0.92 | 0.00 | -63.75 | 0.00 | 63.75 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 0.26 | -0.07 | 0.032 |
| 40.00 | -18.06 | -0.92 | 0.00 | -59.13 | 0.00 | 59.13 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 0.35 | -0.09 | 0.031 |
| 43.36 | -17.60 | -0.92 | 0.00 | -56.04 | 0.00 | 56.04 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 0.41 | -0.09 | 0.031 |
| 45.00 | -16.69 | -0.90 | 0.00 | -54.54 | 0.00 | 54.54 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 0.44 | -0.10 | 0.031 |
| 48.35 | -16.45 | -0.90 | 0.00 | -51.51 | 0.00 | 51.51 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 0.51 | -0.11 | 0.036 |
| 50.00 | -15.70 | -0.89 | 0.00 | -50.02 | 0.00 | 50.02 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 0.55 | -0.11 | 0.036 |
| 55.00 | -14.97 | -0.88 | 0.00 | -45.56 | 0.00 | 45.56 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 0.67 | -0.12 | 0.035 |
| 60.00 | -14.26 | -0.87 | 0.00 | -41.16 | 0.00 | 41.16 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 0.81 | -0.14 | 0.034 |
| 65.00 | -13.56 | -0.85 | 0.00 | -36.83 | 0.00 | 36.83 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 0.96 | -0.15 | 0.032 |
| 70.00 | -12.89 | -0.83 | 0.00 | -32.58 | 0.00 | 32.58 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 1.13 | -0.17 | 0.031 |
| 75.00 | -12.23 | -0.81 | 0.00 | -28.42 | 0.00 | 28.42 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 1.31 | -0.18 | 0.030 |
| 80.00 | -11.58 | -0.79 | 0.00 | -24.37 | 0.00 | 24.37 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 1.50 | -0.19 | 0.028 |
| 85.00 | -11.21 | -0.77 | 0.00 | -20.44 | 0.00 | 20.44 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 1.71 | -0.21 | 0.026 |
| 87.98 | -11.20 | -0.77 | 0.00 | -18.13 | 0.00 | 18.13 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 1.84 | -0.21 | 0.025 |
| 88.00 | -10.71 | -0.75 | 0.00 | -18.12 | 0.00 | 18.12 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 1.84 | -0.21 | 0.025 |
| 90.00 | -10.39 | -0.74 | 0.00 | -16.62 | 0.00 | 16.62 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 1.93 | -0.22 | 0.024 |
| 91.73 | -10.04 | -0.72 | 0.00 | -15.35 | 0.00 | 15.35 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 2.01 | -0.22 | 0.028 |
| 95.00 | -9.72 | -0.70 | 0.00 | -13.00 | 0.00 | 13.00 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 2.17 | -0.23 | 0.026 |
| 98.00 | -9.47 | -0.69 | 0.00 | -10.89 | 0.00 | 10.89 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 2.31 | -0.24 | 0.024 |
| 100.00 | -8.97 | -0.66 | 0.00 | -9.51 | 0.00 | 9.51 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 2.41 | -0.24 | 0.022 |
| 105.00 | -8.87 | -0.65 | 0.00 | -6.21 | 0.00 | 6.21 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 2.67 | -0.25 | 0.018 |
| 106.00 | -5.34 | -0.43 | 0.00 | -5.56 | 0.00 | 5.56 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 2.72 | -0.25 | 0.014 |
| 110.00 | -4.97 | -0.40 | 0.00 | -3.86 | 0.00 | 3.86 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 2.94 | -0.26 | 0.012 |
| 115.00 | -4.90 | -0.39 | 0.00 | -1.86 | 0.00 | 1.86 | 1,136.47 | 568.24 | 895.71 | 448.52 | 3.21 | -0.26 | 0.008 |
| 116.00 | -2.01 | -0.17 | 0.00 | -1.46 | 0.00 | 1.46 | 1,122.58 | 561.29 | 873.81 | 437.56 | 3.27 | -0.26 | 0.005 |
| 120.00 | -1.76 | -0.15 | 0.00 | -0.76 | 0.00 | 0.76 | 1,067.02 | 533.51 | 788.92 | 395.05 | 3.49 | -0.27 | 0.004 |
| 125.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 997.57 | 498.78 | 688.91 | 344.97 | 3.77 | -0.27 | 0.000 |
| 125.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 3.81 | -0.27 | 0.000 |

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## Equivalent Modal Analysis Method

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

| | |
|---|---|
| Spectral Response Acceleration for Short Period ($S_s$): | 0.20 |
| Spectral Response Acceleration at 1.0 Second Period ($S_1$): | 0.06 |
| Importance Factor ($I_E$): | 1.00 |
| Site Coefficient $F_a$: | 1.60 |
| Site Coefficient $F_v$ | 2.40 |
| Response Modification Coefficient (R): | 1.50 |
| Design Spectral Response Acceleration at Short Period ($S_{ds}$): | 0.22 |
| Desing Spectral Response Acceleration at 1.0 Second Period ($S_{d1}$): | 0.10 |
| Period Based on Rayleigh Method (sec): | 2.29 |
| Redundancy Factor (p): | 1.00 |

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

| Segment | Height Above Base (ft) | Weight (lb) | a | b | c | Saz | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|---|---|
| 34 | 125.37 | 42 | 1.879 | 1.923 | 1.119 | 0.404 | 11 | 53 |
| 33 | 122.50 | 299 | 1.794 | 1.512 | 0.967 | 0.344 | 69 | 372 |
| 32 | 118.00 | 251 | 1.665 | 0.993 | 0.762 | 0.258 | 43 | 312 |
| 31 | 115.50 | 83 | 1.595 | 0.763 | 0.663 | 0.215 | 12 | 103 |
| 30 | 112.50 | 423 | 1.513 | 0.534 | 0.559 | 0.168 | 47 | 526 |
| 29 | 108.00 | 350 | 1.395 | 0.274 | 0.426 | 0.106 | 25 | 435 |
| 28 | 105.50 | 114 | 1.331 | 0.165 | 0.364 | 0.076 | 6 | 142 |
| 27 | 102.50 | 580 | 1.256 | 0.064 | 0.299 | 0.044 | 17 | 722 |
| 26 | 99.00 | 237 | 1.172 | -0.020 | 0.234 | 0.012 | 2 | 294 |
| 25 | 96.50 | 375 | 1.113 | -0.062 | 0.195 | -0.007 | -2 | 466 |
| 24 | 93.36 | 415 | 1.042 | -0.097 | 0.153 | -0.026 | -7 | 516 |
| 23 | 90.86 | 365 | 0.987 | -0.113 | 0.125 | -0.038 | -9 | 453 |
| 22 | 89.00 | 427 | 0.947 | -0.119 | 0.107 | -0.045 | -13 | 531 |
| 21 | 87.99 | 4 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 5 |
| 20 | 86.49 | 439 | 0.894 | -0.122 | 0.085 | -0.051 | -15 | 545 |
| 19 | 82.50 | 751 | 0.814 | -0.114 | 0.058 | -0.055 | -28 | 934 |
| 18 | 77.50 | 771 | 0.718 | -0.092 | 0.034 | -0.049 | -25 | 959 |
| 17 | 72.50 | 791 | 0.628 | -0.063 | 0.018 | -0.033 | -17 | 984 |
| 16 | 67.50 | 811 | 0.545 | -0.033 | 0.009 | -0.009 | -5 | 1,008 |
| 15 | 62.50 | 831 | 0.467 | -0.004 | 0.006 | 0.015 | 8 | 1,033 |
| 14 | 57.50 | 851 | 0.395 | 0.020 | 0.007 | 0.036 | 20 | 1,058 |
| 13 | 52.50 | 870 | 0.330 | 0.038 | 0.010 | 0.050 | 29 | 1,082 |
| 12 | 49.18 | 291 | 0.289 | 0.048 | 0.013 | 0.055 | 11 | 362 |
| 11 | 46.68 | 1,062 | 0.260 | 0.053 | 0.016 | 0.058 | 41 | 1,321 |
| 10 | 44.18 | 527 | 0.233 | 0.058 | 0.019 | 0.060 | 21 | 656 |
| 9 | 41.68 | 686 | 0.208 | 0.062 | 0.022 | 0.061 | 28 | 853 |
| 8 | 37.50 | 1,041 | 0.168 | 0.066 | 0.028 | 0.061 | 42 | 1,295 |
| 7 | 32.50 | 1,065 | 0.126 | 0.070 | 0.034 | 0.059 | 42 | 1,324 |
| 6 | 27.50 | 1,089 | 0.090 | 0.071 | 0.038 | 0.058 | 42 | 1,354 |
| 5 | 22.50 | 1,113 | 0.061 | 0.072 | 0.041 | 0.056 | 41 | 1,384 |
| 4 | 17.50 | 1,136 | 0.037 | 0.070 | 0.041 | 0.054 | 41 | 1,413 |
| 3 | 12.50 | 1,160 | 0.019 | 0.063 | 0.037 | 0.049 | 38 | 1,443 |
| 2 | 7.50 | 1,184 | 0.007 | 0.049 | 0.028 | 0.041 | 32 | 1,473 |
| 1 | 2.50 | 1,208 | 0.001 | 0.021 | 0.011 | 0.020 | 16 | 1,502 |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DragonWave Horizon C | 125.00 | 21 | 1.868 | 1.867 | 1.099 | 0.396 | 6 | 26 |
| DragonWave A-ANT-23G | 125.00 | 15 | 1.868 | 1.867 | 1.099 | 0.396 | 4 | 19 |
| Alcatel-Lucent RRH2x | 125.00 | 317 | 1.868 | 1.867 | 1.099 | 0.396 | 84 | 395 |
| Alcatel-Lucent 1900 | 125.00 | 180 | 1.868 | 1.867 | 1.099 | 0.396 | 48 | 224 |
| Alcatel-Lucent TD-RR | 125.00 | 198 | 1.868 | 1.867 | 1.099 | 0.396 | 52 | 247 |
| Nokia 2.5G MAA - AAH | 125.00 | 311 | 1.868 | 1.867 | 1.099 | 0.396 | 82 | 386 |
| Argus LLPX310R | 125.00 | 86 | 1.868 | 1.867 | 1.099 | 0.396 | 23 | 107 |
| DragonWave A-ANT-18G | 125.00 | 27 | 1.868 | 1.867 | 1.099 | 0.396 | 7 | 34 |
| Generic 24" x 24" Ju | 125.00 | 20 | 1.868 | 1.867 | 1.099 | 0.396 | 5 | 25 |
| Small T-Arms | 125.00 | 600 | 1.868 | 1.867 | 1.099 | 0.396 | 158 | 746 |
| Commscope NNVV- | 125.00 | 232 | 1.868 | 1.867 | 1.099 | 0.396 | 61 | 289 |
| Kathrein Scala Smart | 116.00 | 10 | 1.609 | 0.806 | 0.682 | 0.223 | 1 | 12 |
| Ericsson KRY 112 144 | 116.00 | 29 | 1.609 | 0.806 | 0.682 | 0.223 | 4 | 36 |
| Ericsson KRY 112 489 | 116.00 | 46 | 1.609 | 0.806 | 0.682 | 0.223 | 7 | 57 |
| Ericsson Radio 4449 | 116.00 | 222 | 1.609 | 0.806 | 0.682 | 0.223 | 33 | 276 |
| Ericsson AIR-32 B2A/ | 116.00 | 397 | 1.609 | 0.806 | 0.682 | 0.223 | 59 | 493 |
| Ericsson Air 3246 B6 | 116.00 | 540 | 1.609 | 0.806 | 0.682 | 0.223 | 80 | 672 |
| RFS APXVAARR24_43-U- | 116.00 | 384 | 1.609 | 0.806 | 0.682 | 0.223 | 57 | 477 |
| Round Low Profile Pl | 116.00 | 1,500 | 1.609 | 0.806 | 0.682 | 0.223 | 223 | 1,865 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 1.343 | 0.185 | 0.376 | 0.081 | 3 | 79 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 1.343 | 0.185 | 0.376 | 0.081 | 3 | 79 |
| Ericsson Radio 8843 | 106.00 | 216 | 1.343 | 0.185 | 0.376 | 0.081 | 12 | 268 |
| Ericsson RRUS 4478 B | 106.00 | 180 | 1.343 | 0.185 | 0.376 | 0.081 | 10 | 223 |
| Ericsson RRUS 4449 B | 106.00 | 213 | 1.343 | 0.185 | 0.376 | 0.081 | 12 | 265 |
| Ericsson RRUS 32 B30 | 106.00 | 159 | 1.343 | 0.185 | 0.376 | 0.081 | 9 | 198 |
| Ericsson RRUS E2 B29 | 106.00 | 180 | 1.343 | 0.185 | 0.376 | 0.081 | 10 | 224 |
| CCI OPA-65R-LCUU-H4 | 106.00 | 342 | 1.343 | 0.185 | 0.376 | 0.081 | 19 | 425 |
| CCI DMP65R-BU4D | 106.00 | 204 | 1.343 | 0.185 | 0.376 | 0.081 | 11 | 253 |
| CCI OPA65R-BU4DA-K | 106.00 | 157 | 1.343 | 0.185 | 0.376 | 0.081 | 9 | 196 |
| Round Platform w/ Ha | 106.00 | 2,000 | 1.343 | 0.185 | 0.376 | 0.081 | 108 | 2,487 |
| Generic RCU (Remote | 98.00 | 3 | 1.148 | -0.039 | 0.218 | 0.004 | 0 | 4 |
| Kathrein Scala 800 1 | 98.00 | 53 | 1.148 | -0.039 | 0.218 | 0.004 | 0 | 66 |
| Procom CXL 900-3LW | 88.00 | 2 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 2 |
| Generic 5" x 3" x 2" | 88.00 | 2 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 2 |
| Generic Low Noise Am | 88.00 | 2 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 2 |
| Flat Side Arm | 88.00 | 150 | 0.926 | -0.121 | 0.098 | -0.048 | -5 | 187 |
| | | 30,766 | 79.101 | 34.483 | 29.132 | 8.854 | 1,759 | 38,258 |

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

| Segment | Height Above Base (ft) | Weight (lb) | a | b | c | Saz | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|---|---|
| 34 | 125.37 | 42 | 1.879 | 1.923 | 1.119 | 0.404 | 11 | 36 |
| 33 | 122.50 | 299 | 1.794 | 1.512 | 0.967 | 0.344 | 69 | 256 |
| 32 | 118.00 | 251 | 1.665 | 0.993 | 0.762 | 0.258 | 43 | 215 |
| 31 | 115.50 | 83 | 1.595 | 0.763 | 0.663 | 0.215 | 12 | 71 |
| 30 | 112.50 | 423 | 1.513 | 0.534 | 0.559 | 0.168 | 47 | 362 |
| 29 | 108.00 | 350 | 1.395 | 0.274 | 0.426 | 0.106 | 25 | 300 |
| 28 | 105.50 | 114 | 1.331 | 0.165 | 0.364 | 0.076 | 6 | 98 |
| 27 | 102.50 | 580 | 1.256 | 0.064 | 0.299 | 0.044 | 17 | 497 |
| 26 | 99.00 | 237 | 1.172 | -0.020 | 0.234 | 0.012 | 2 | 203 |
| 25 | 96.50 | 375 | 1.113 | -0.062 | 0.195 | -0.007 | -2 | 321 |
| 24 | 93.36 | 415 | 1.042 | -0.097 | 0.153 | -0.026 | -7 | 355 |
| 23 | 90.86 | 365 | 0.987 | -0.113 | 0.125 | -0.038 | -9 | 312 |
| 22 | 89.00 | 427 | 0.947 | -0.119 | 0.107 | -0.045 | -13 | 366 |
| 21 | 87.99 | 4 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 3 |
| 20 | 86.49 | 439 | 0.894 | -0.122 | 0.085 | -0.051 | -15 | 376 |
| 19 | 82.50 | 751 | 0.814 | -0.114 | 0.058 | -0.055 | -28 | 643 |
| 18 | 77.50 | 771 | 0.718 | -0.092 | 0.034 | -0.049 | -25 | 660 |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 17 | 72.50 | 791 | 0.628 | -0.063 | 0.018 | -0.033 | -17 | 677 |
| 16 | 67.50 | 811 | 0.545 | -0.033 | 0.009 | -0.009 | -5 | 694 |
| 15 | 62.50 | 831 | 0.467 | -0.004 | 0.006 | 0.015 | 8 | 712 |
| 14 | 57.50 | 851 | 0.395 | 0.020 | 0.007 | 0.036 | 20 | 729 |
| 13 | 52.50 | 870 | 0.330 | 0.038 | 0.010 | 0.050 | 29 | 746 |
| 12 | 49.18 | 291 | 0.289 | 0.048 | 0.013 | 0.055 | 11 | 250 |
| 11 | 46.68 | 1,062 | 0.260 | 0.053 | 0.016 | 0.058 | 41 | 910 |
| 10 | 44.18 | 527 | 0.233 | 0.058 | 0.019 | 0.060 | 21 | 451 |
| 9 | 41.68 | 686 | 0.208 | 0.062 | 0.022 | 0.061 | 28 | 588 |
| 8 | 37.50 | 1,041 | 0.168 | 0.066 | 0.028 | 0.061 | 42 | 892 |
| 7 | 32.50 | 1,065 | 0.126 | 0.070 | 0.034 | 0.059 | 42 | 912 |
| 6 | 27.50 | 1,089 | 0.090 | 0.071 | 0.038 | 0.058 | 42 | 932 |
| 5 | 22.50 | 1,113 | 0.061 | 0.072 | 0.041 | 0.056 | 41 | 953 |
| 4 | 17.50 | 1,136 | 0.037 | 0.070 | 0.041 | 0.054 | 41 | 973 |
| 3 | 12.50 | 1,160 | 0.019 | 0.063 | 0.037 | 0.049 | 38 | 994 |
| 2 | 7.50 | 1,184 | 0.007 | 0.049 | 0.028 | 0.041 | 32 | 1,014 |
| 1 | 2.50 | 1,208 | 0.001 | 0.021 | 0.011 | 0.020 | 16 | 1,035 |
| DragonWave Horizon C | 125.00 | 21 | 1.868 | 1.867 | 1.099 | 0.396 | 6 | 18 |
| DragonWave A-ANT-23G | 125.00 | 15 | 1.868 | 1.867 | 1.099 | 0.396 | 4 | 13 |
| Alcatel-Lucent RRH2x | 125.00 | 317 | 1.868 | 1.867 | 1.099 | 0.396 | 84 | 272 |
| Alcatel-Lucent 1900 | 125.00 | 180 | 1.868 | 1.867 | 1.099 | 0.396 | 48 | 154 |
| Alcatel-Lucent TD-RR | 125.00 | 198 | 1.868 | 1.867 | 1.099 | 0.396 | 52 | 170 |
| Nokia 2.5G MAA - AAH | 125.00 | 311 | 1.868 | 1.867 | 1.099 | 0.396 | 82 | 266 |
| Argus LLPX310R | 125.00 | 86 | 1.868 | 1.867 | 1.099 | 0.396 | 23 | 73 |
| DragonWave A-ANT-18G | 125.00 | 27 | 1.868 | 1.867 | 1.099 | 0.396 | 7 | 23 |
| Generic 24" x 24" Ju | 125.00 | 20 | 1.868 | 1.867 | 1.099 | 0.396 | 5 | 17 |
| Small T-Arms | 125.00 | 600 | 1.868 | 1.867 | 1.099 | 0.396 | 158 | 514 |
| Commscope NNVV- | 125.00 | 232 | 1.868 | 1.867 | 1.099 | 0.396 | 61 | 199 |
| Kathrein Scala Smart | 116.00 | 10 | 1.609 | 0.806 | 0.682 | 0.223 | 1 | 8 |
| Ericsson KRY 112 144 | 116.00 | 29 | 1.609 | 0.806 | 0.682 | 0.223 | 4 | 25 |
| Ericsson KRY 112 489 | 116.00 | 46 | 1.609 | 0.806 | 0.682 | 0.223 | 7 | 40 |
| Ericsson Radio 4449 | 116.00 | 222 | 1.609 | 0.806 | 0.682 | 0.223 | 33 | 190 |
| Ericsson AIR-32 B2A/ | 116.00 | 397 | 1.609 | 0.806 | 0.682 | 0.223 | 59 | 340 |
| Ericsson Air 3246 B6 | 116.00 | 540 | 1.609 | 0.806 | 0.682 | 0.223 | 80 | 462 |
| RFS APXVAARR24_43-U- | 116.00 | 384 | 1.609 | 0.806 | 0.682 | 0.223 | 57 | 329 |
| Round Low Profile Pl | 116.00 | 1,500 | 1.609 | 0.806 | 0.682 | 0.223 | 223 | 1,285 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 1.343 | 0.185 | 0.376 | 0.081 | 3 | 54 |
| Raycap DC6-48-60-18- | 106.00 | 64 | 1.343 | 0.185 | 0.376 | 0.081 | 3 | 54 |
| Ericsson Radio 8843 | 106.00 | 216 | 1.343 | 0.185 | 0.376 | 0.081 | 12 | 185 |
| Ericsson RRUS 4478 B | 106.00 | 180 | 1.343 | 0.185 | 0.376 | 0.081 | 10 | 154 |
| Ericsson RRUS 4449 B | 106.00 | 213 | 1.343 | 0.185 | 0.376 | 0.081 | 12 | 182 |
| Ericsson RRUS 32 B30 | 106.00 | 159 | 1.343 | 0.185 | 0.376 | 0.081 | 9 | 136 |
| Ericsson RRUS E2 B29 | 106.00 | 180 | 1.343 | 0.185 | 0.376 | 0.081 | 10 | 154 |
| CCI OPA-65R-LCUU-H4 | 106.00 | 342 | 1.343 | 0.185 | 0.376 | 0.081 | 19 | 293 |
| CCI DMP65R-BU4D | 106.00 | 204 | 1.343 | 0.185 | 0.376 | 0.081 | 11 | 174 |
| CCI OPA65R-BU4DA-K | 106.00 | 157 | 1.343 | 0.185 | 0.376 | 0.081 | 9 | 135 |
| Round Platform w/ Ha | 106.00 | 2,000 | 1.343 | 0.185 | 0.376 | 0.081 | 108 | 1,713 |
| Generic RCU (Remote | 98.00 | 3 | 1.148 | -0.039 | 0.218 | 0.004 | 0 | 3 |
| Kathrein Scala 800 1 | 98.00 | 53 | 1.148 | -0.039 | 0.218 | 0.004 | 0 | 45 |
| Procom CXL 900-3LW | 88.00 | 2 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 1 |
| Generic 5" x 3" x 2" | 88.00 | 2 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 1 |
| Generic Low Noise Am | 88.00 | 2 | 0.926 | -0.121 | 0.098 | -0.048 | 0 | 2 |
| Flat Side Arm | 88.00 | 150 | 0.926 | -0.121 | 0.098 | -0.048 | -5 | 128 |
| | | 30,766 | 79.101 | 34.483 | 29.132 | 8.854 | 1,759 | 26,350 |

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -36.76 | -1.75 | 0.00 | -181.04 | 0.00 | 181.04 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.062 |
| 5.00 | -35.28 | -1.73 | 0.00 | -172.30 | 0.00 | 172.30 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.01 | -0.02 | 0.061 |
| 10.00 | -33.84 | -1.70 | 0.00 | -163.66 | 0.00 | 163.66 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.04 | -0.04 | 0.061 |
| 15.00 | -32.43 | -1.67 | 0.00 | -155.16 | 0.00 | 155.16 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.09 | -0.06 | 0.060 |
| 20.00 | -31.04 | -1.64 | 0.00 | -146.82 | 0.00 | 146.82 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 0.16 | -0.08 | 0.060 |
| 25.00 | -29.69 | -1.60 | 0.00 | -138.63 | 0.00 | 138.63 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 0.25 | -0.10 | 0.059 |
| 30.00 | -28.36 | -1.57 | 0.00 | -130.62 | 0.00 | 130.62 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 0.36 | -0.12 | 0.059 |
| 35.00 | -27.07 | -1.54 | 0.00 | -122.77 | 0.00 | 122.77 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 0.49 | -0.14 | 0.058 |
| 40.00 | -26.21 | -1.51 | 0.00 | -115.09 | 0.00 | 115.09 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 0.65 | -0.16 | 0.058 |
| 43.36 | -25.56 | -1.50 | 0.00 | -110.01 | 0.00 | 110.01 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 0.77 | -0.18 | 0.058 |
| 45.00 | -24.24 | -1.46 | 0.00 | -107.55 | 0.00 | 107.55 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 0.83 | -0.19 | 0.058 |
| 48.35 | -23.87 | -1.45 | 0.00 | -102.67 | 0.00 | 102.67 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 0.97 | -0.20 | 0.069 |
| 50.00 | -22.79 | -1.42 | 0.00 | -100.28 | 0.00 | 100.28 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 1.04 | -0.21 | 0.068 |
| 55.00 | -21.73 | -1.41 | 0.00 | -93.16 | 0.00 | 93.16 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 1.28 | -0.24 | 0.067 |
| 60.00 | -20.70 | -1.41 | 0.00 | -86.11 | 0.00 | 86.11 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 1.54 | -0.27 | 0.066 |
| 65.00 | -19.69 | -1.42 | 0.00 | -79.08 | 0.00 | 79.08 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 1.84 | -0.30 | 0.065 |
| 70.00 | -18.71 | -1.44 | 0.00 | -71.99 | 0.00 | 71.99 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 2.16 | -0.33 | 0.064 |
| 75.00 | -17.75 | -1.47 | 0.00 | -64.79 | 0.00 | 64.79 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 2.52 | -0.36 | 0.063 |
| 80.00 | -16.81 | -1.50 | 0.00 | -57.44 | 0.00 | 57.44 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 2.91 | -0.39 | 0.061 |
| 85.00 | -16.26 | -1.52 | 0.00 | -49.94 | 0.00 | 49.94 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 3.33 | -0.42 | 0.058 |
| 87.98 | -16.26 | -1.52 | 0.00 | -45.42 | 0.00 | 45.42 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 3.60 | -0.44 | 0.057 |
| 88.00 | -15.54 | -1.53 | 0.00 | -45.39 | 0.00 | 45.39 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 3.60 | -0.44 | 0.056 |
| 90.00 | -15.08 | -1.54 | 0.00 | -42.32 | 0.00 | 42.32 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 3.79 | -0.45 | 0.055 |
| 91.73 | -14.57 | -1.55 | 0.00 | -39.65 | 0.00 | 39.65 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 3.96 | -0.46 | 0.064 |
| 95.00 | -14.10 | -1.55 | 0.00 | -34.58 | 0.00 | 34.58 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 4.28 | -0.48 | 0.060 |
| 98.00 | -13.73 | -1.55 | 0.00 | -29.92 | 0.00 | 29.92 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 4.59 | -0.50 | 0.056 |
| 100.00 | -13.01 | -1.53 | 0.00 | -26.82 | 0.00 | 26.82 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 4.80 | -0.51 | 0.052 |
| 105.00 | -12.87 | -1.53 | 0.00 | -19.15 | 0.00 | 19.15 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 5.35 | -0.54 | 0.044 |
| 106.00 | -7.74 | -1.25 | 0.00 | -17.62 | 0.00 | 17.62 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 5.47 | -0.55 | 0.038 |
| 110.00 | -7.21 | -1.20 | 0.00 | -12.61 | 0.00 | 12.61 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 5.93 | -0.56 | 0.031 |
| 115.00 | -7.11 | -1.19 | 0.00 | -6.59 | 0.00 | 6.59 | 1,136.47 | 568.24 | 895.71 | 448.52 | 6.53 | -0.58 | 0.021 |
| 116.00 | -2.91 | -0.64 | 0.00 | -5.40 | 0.00 | 5.40 | 1,122.58 | 561.29 | 873.81 | 437.56 | 6.65 | -0.58 | 0.015 |
| 120.00 | -2.54 | -0.57 | 0.00 | -2.84 | 0.00 | 2.84 | 1,067.02 | 533.51 | 788.92 | 395.05 | 7.15 | -0.59 | 0.010 |
| 125.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 997.57 | 498.78 | 688.91 | 344.97 | 7.76 | -0.59 | 0.000 |
| 125.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 7.85 | -0.59 | 0.000 |

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

Calculated Forces

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | phi Pn (kips) | phi Vn (kips) | phi Tn (ft-kips) | phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -25.32 | -1.75 | 0.00 | -177.90 | 0.00 | 177.90 | 3,765.29 | 1,882.65 | 6,978.46 | 3,494.42 | 0.00 | 0.00 | 0.058 |
| 5.00 | -24.30 | -1.72 | 0.00 | -169.17 | 0.00 | 169.17 | 3,697.66 | 1,848.83 | 6,672.72 | 3,341.32 | 0.01 | -0.02 | 0.057 |
| 10.00 | -23.31 | -1.69 | 0.00 | -160.56 | 0.00 | 160.56 | 3,628.38 | 1,814.19 | 6,370.69 | 3,190.08 | 0.04 | -0.04 | 0.057 |
| 15.00 | -22.33 | -1.66 | 0.00 | -152.10 | 0.00 | 152.10 | 3,557.46 | 1,778.73 | 6,072.61 | 3,040.82 | 0.09 | -0.06 | 0.056 |
| 20.00 | -21.38 | -1.62 | 0.00 | -143.82 | 0.00 | 143.82 | 3,484.89 | 1,742.45 | 5,778.73 | 2,893.66 | 0.15 | -0.07 | 0.056 |
| 25.00 | -20.45 | -1.59 | 0.00 | -135.71 | 0.00 | 135.71 | 3,410.68 | 1,705.34 | 5,489.28 | 2,748.72 | 0.24 | -0.09 | 0.055 |
| 30.00 | -19.53 | -1.55 | 0.00 | -127.78 | 0.00 | 127.78 | 3,334.83 | 1,667.41 | 5,204.51 | 2,606.12 | 0.35 | -0.12 | 0.055 |
| 35.00 | -18.64 | -1.51 | 0.00 | -120.04 | 0.00 | 120.04 | 3,257.33 | 1,628.66 | 4,924.65 | 2,465.98 | 0.49 | -0.14 | 0.054 |
| 40.00 | -18.05 | -1.49 | 0.00 | -112.48 | 0.00 | 112.48 | 3,156.83 | 1,578.41 | 4,618.70 | 2,312.78 | 0.64 | -0.16 | 0.054 |
| 43.36 | -17.60 | -1.47 | 0.00 | -107.48 | 0.00 | 107.48 | 3,086.83 | 1,543.42 | 4,415.11 | 2,210.84 | 0.76 | -0.17 | 0.054 |
| 45.00 | -16.69 | -1.43 | 0.00 | -105.06 | 0.00 | 105.06 | 3,052.65 | 1,526.33 | 4,317.36 | 2,161.89 | 0.82 | -0.18 | 0.054 |
| 48.35 | -16.44 | -1.42 | 0.00 | -100.27 | 0.00 | 100.27 | 2,458.29 | 1,229.14 | 3,472.58 | 1,738.87 | 0.95 | -0.20 | 0.064 |
| 50.00 | -15.70 | -1.39 | 0.00 | -97.93 | 0.00 | 97.93 | 2,438.38 | 1,219.19 | 3,405.24 | 1,705.15 | 1.02 | -0.21 | 0.064 |
| 55.00 | -14.97 | -1.38 | 0.00 | -90.96 | 0.00 | 90.96 | 2,376.89 | 1,188.45 | 3,203.42 | 1,604.09 | 1.25 | -0.23 | 0.063 |
| 60.00 | -14.25 | -1.37 | 0.00 | -84.06 | 0.00 | 84.06 | 2,313.76 | 1,156.88 | 3,005.46 | 1,504.96 | 1.51 | -0.26 | 0.062 |
| 65.00 | -13.56 | -1.38 | 0.00 | -77.19 | 0.00 | 77.19 | 2,247.28 | 1,123.64 | 2,809.47 | 1,406.82 | 1.80 | -0.29 | 0.061 |
| 70.00 | -12.88 | -1.40 | 0.00 | -70.27 | 0.00 | 70.27 | 2,160.47 | 1,080.23 | 2,595.54 | 1,299.70 | 2.12 | -0.32 | 0.060 |
| 75.00 | -12.22 | -1.43 | 0.00 | -63.26 | 0.00 | 63.26 | 2,073.65 | 1,036.83 | 2,390.08 | 1,196.82 | 2.47 | -0.35 | 0.059 |
| 80.00 | -11.58 | -1.46 | 0.00 | -56.10 | 0.00 | 56.10 | 1,986.84 | 993.42 | 2,193.10 | 1,098.18 | 2.85 | -0.38 | 0.057 |
| 85.00 | -11.20 | -1.48 | 0.00 | -48.79 | 0.00 | 48.79 | 1,900.02 | 950.01 | 2,004.58 | 1,003.78 | 3.26 | -0.41 | 0.055 |
| 87.98 | -11.20 | -1.48 | 0.00 | -44.39 | 0.00 | 44.39 | 1,848.25 | 924.13 | 1,896.19 | 949.50 | 3.52 | -0.43 | 0.053 |
| 88.00 | -10.70 | -1.50 | 0.00 | -44.36 | 0.00 | 44.36 | 1,847.94 | 923.97 | 1,895.54 | 949.18 | 3.53 | -0.43 | 0.053 |
| 90.00 | -10.38 | -1.50 | 0.00 | -41.37 | 0.00 | 41.37 | 1,813.21 | 906.60 | 1,824.54 | 913.62 | 3.71 | -0.44 | 0.051 |
| 91.73 | -10.03 | -1.51 | 0.00 | -38.77 | 0.00 | 38.77 | 1,455.48 | 727.74 | 1,477.60 | 739.90 | 3.87 | -0.45 | 0.059 |
| 95.00 | -9.71 | -1.51 | 0.00 | -33.83 | 0.00 | 33.83 | 1,414.28 | 707.14 | 1,390.64 | 696.35 | 4.19 | -0.47 | 0.055 |
| 98.00 | -9.46 | -1.51 | 0.00 | -29.28 | 0.00 | 29.28 | 1,372.61 | 686.30 | 1,309.49 | 655.72 | 4.49 | -0.49 | 0.052 |
| 100.00 | -8.96 | -1.49 | 0.00 | -26.26 | 0.00 | 26.26 | 1,344.82 | 672.41 | 1,256.74 | 629.30 | 4.70 | -0.50 | 0.048 |
| 105.00 | -8.86 | -1.49 | 0.00 | -18.79 | 0.00 | 18.79 | 1,275.37 | 637.69 | 1,129.62 | 565.65 | 5.24 | -0.53 | 0.040 |
| 106.00 | -5.33 | -1.23 | 0.00 | -17.30 | 0.00 | 17.30 | 1,261.48 | 630.74 | 1,105.01 | 553.33 | 5.35 | -0.53 | 0.035 |
| 110.00 | -4.96 | -1.18 | 0.00 | -12.38 | 0.00 | 12.38 | 1,205.92 | 602.96 | 1,009.28 | 505.39 | 5.80 | -0.55 | 0.029 |
| 115.00 | -4.89 | -1.17 | 0.00 | -6.49 | 0.00 | 6.49 | 1,136.47 | 568.24 | 895.71 | 448.52 | 6.39 | -0.57 | 0.019 |
| 116.00 | -2.01 | -0.63 | 0.00 | -5.32 | 0.00 | 5.32 | 1,122.58 | 561.29 | 873.81 | 437.56 | 6.51 | -0.57 | 0.014 |
| 120.00 | -1.75 | -0.56 | 0.00 | -2.80 | 0.00 | 2.80 | 1,067.02 | 533.51 | 788.92 | 395.05 | 6.99 | -0.58 | 0.009 |
| 125.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 997.57 | 498.78 | 688.91 | 344.97 | 7.60 | -0.58 | 0.000 |
| 125.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 987.43 | 493.71 | 674.88 | 337.94 | 7.68 | -0.58 | 0.000 |

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## Analysis Summary

| | Reactions | | | | | | Max Usage | |
|---|---|---|---|---|---|---|---|---|
| Load Case | Shear FX (kips) | Shear FZ (kips) | Axial FY (kips) | Moment MX (ft-kips) | Moment MY (ft-kips) | Moment MZ (ft-kips) | Elev (ft) | Interaction Ratio |
| 1.2D + 1.6W | 21.98 | 0.00 | 36.88 | 0.00 | 0.00 | 2045.09 | 48.35 | 0.61 |
| 0.9D + 1.6W | 21.43 | 0.00 | 27.65 | 0.00 | 0.00 | 2002.57 | 48.35 | 0.59 |
| 1.2D + 1.0Di + 1.0Wi | 13.44 | 0.00 | 78.99 | 0.00 | 0.00 | 1025.26 | 0.00 | 0.31 |
| (1.2 + 0.2Sds) * DL + E ELFM | 0.93 | 0.00 | 36.76 | 0.00 | 0.00 | 97.88 | 48.35 | 0.04 |
| (1.2 + 0.2Sds) * DL + E EMAM | 1.75 | 0.00 | 36.76 | 0.00 | 0.00 | 181.04 | 48.35 | 0.07 |
| (0.9 - 0.2Sds) * DL + E ELFM | 0.92 | 0.00 | 25.32 | 0.00 | 0.00 | 96.29 | 48.35 | 0.04 |
| (0.9 - 0.2Sds) * DL + E EMAM | 1.75 | 0.00 | 25.32 | 0.00 | 0.00 | 177.90 | 48.35 | 0.06 |
| 1.0D + 1.0W | 4.59 | 0.00 | 30.76 | 0.00 | 0.00 | 430.79 | 48.35 | 0.13 |

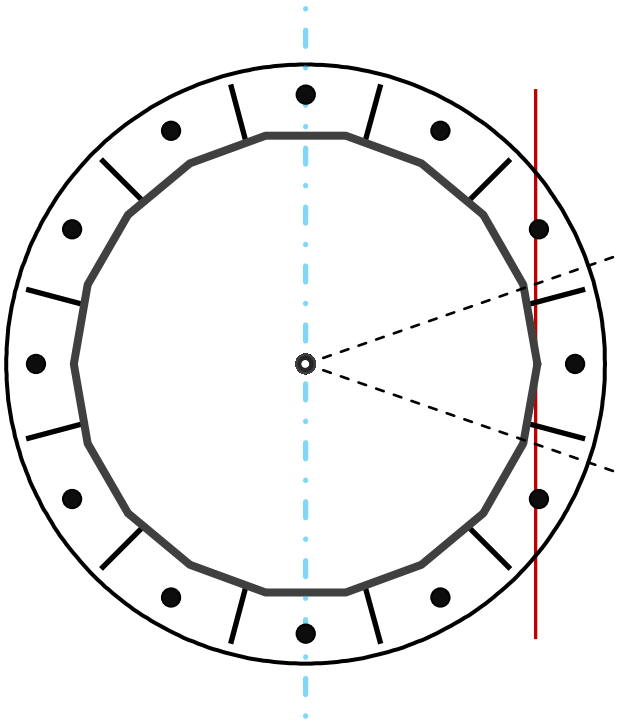
# Base Plate & Anchor Rod Analysis

| Pole Dimensions | | |
|---|---|---|
| Number of Sides | 18 | - |
| Diameter | 45.5 | in |
| Thickness | 3/8 | in |
| Orientation Offset | 0 | ° |

| Base Reactions | | |
|---|---|---|
| Moment, Mu | 2045.1 | k-ft |
| Axial, Pu | 36.9 | k |
| Shear, Vu | 22.0 | k |
| Neutral Axis | 270 | ° |

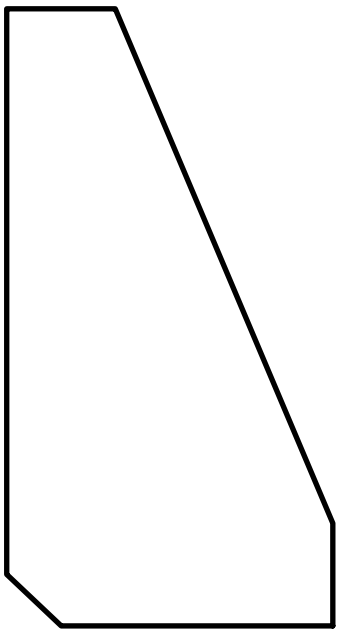
| Report Capacities | | |
|---|---|---|
| Component | Capacity | Result |
| Base Plate | 27% | Pass |
| Anchor Rods | 63% | Pass |
| Dwyidag | - | - |

| Base Plate | | |
|---|---|---|
| Shape | Round | - |
| Diameter, ø | 60 | in |
| Thickness | 1 3/4 | in |
| Grade | A871-60 | |
| Yield Strength, Fy | 60 | ksi |
| Tensile Strength, Fu | 75 | ksi |
| Clip | N/A | in |
| Orientation Offset | 0 | ° |
| Anchor Rod Detail | d | η=0.5 |
| Clear Distance | 3 | in |
| Applied Moment, Mu | 474.1 | k |
| Bending Stress, ϕMn | 1782.4 | k |



| Original Anchor Rods | | |
|---|---|---|
| Arrangement | Radial | - |
| Quantity | 12 | - |
| Diameter, ø | 2 1/4 | in |
| Bolt Circle | 54 | in |
| Grade | A615-75 | |
| Yield Strength, Fy | 75 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Spacing | 14.1 | in |
| Orientation Offset | 0 | ° |
| Applied Force, Pu | 161.4 | k |
| Anchor Rods, ϕPn | 259.8 | k |

| Stiffeners | | |
|---|---|---|
| Arrangement | Radial | - |
| Quantity | 12 | - |
| Height | 12 | in |
| Width | 6 | in |
| Effective Width | 6.000 | in |
| Thickness | 1/2 | in |
| Effective Thickness | 0.500 | in |
| Notch | 1 | in |
| Flat Edge | 2 | in |
| Grade | A572-50 | - |
| Yield Strength, Fy | 50 | ksi |
| Tensile Strength, Fu | 65 | ksi |
| Horizontal Weld | Bevel+Fillet | |
| Horizontal Fillet Size | 1/2 | in |
| Bevel Depth | 1/2 | in |
| Vertical Weld | Fillet | |
| Vertical Fillet Size | 3/8 | in |
| Weld Strength | 70 | ksi |
| Electrode Coefficient | 1 | - |
| Orientation Offset | | ° |
| Vertical Weld, ϕRn | 198.2 | k |
| Horz. Weld, ϕRn | 222.5 | k |
| Ten. Capacity, ϕTn | 109.7 | k |
| Comp. Capacity, ϕPn | 227.0 | k |



| Individual Capacity Summary | | |
|---|---|---|
| Component | Capacity | - |
| Base Plate | 27% | Pass |
| Anchor Rods | 63% | Pass |
| Dwyidag | - | - |
| Bolt Group 1 | - | - |
| Bolt Group 2 | - | - |
| Stiffener Weld (V) | 32% | Pass |
| Stiffener Weld (H) | 30% | Pass |
| Stiffener Tension | 28% | Pass |
| Stiffener Comp. | 14% | Pass |

# Calculations for Monopole Base Plate & Anchor Rod Analysis

**Reaction Distribution**

| Reaction | Shear Vu | Moment Mu | Factor |
|---|---|---|---|
| - | k | k-ft | - |
| Base Forces | 22.0 | 2045.1 | 1.00 |
| Anchor Rod Forces | 22.0 | 2045.1 | 1.00 |
| Additional Bolt (Grp1) Forces | 0.0 | 0.0 | 0.00 |
| Additional Bolt (Grp2) Forces | 0.0 | 0.0 | 0.00 |
| Dywidag Forces | 0.0 | 0.0 | 0.00 |
| Stiffener Forces | 8.8 | 819.6 | 0.40 |

**Geometric Properties**

| Section | Gross Area | Net Area | Individual Inertia | Threads per Inch | Moment of Inertia |
|---|---|---|---|---|---|
| - | $in^2$ | $in^2$ | $in^4$ | # | $in^4$ |
| Pole | 52.8921 | 2.9385 | 0.1383 | | 13465.30 |
| Bolt | 3.9761 | 3.2477 | 0.8393 | 4.5 | 12993.40 |
| Bolt1 | 0.0000 | 0.0000 | 0.0000 | 0 | 0.00 |
| Bolt2 | 0.0000 | 0.0000 | 0.0000 | 0 | 0.00 |
| Dywidag | 0.0000 | 0.0000 | 0.0000 | | 0.00 |
| Stiffener | 2.5000 | 2.2500 | 36.0000 | | 9005.72 |

| Base Plate | | |
|---|---|---|
| Shape | Round | - |
| Diameter, D | 60 | in |
| Thickness, t | 1.75 | in |
| Yield Strength, Fy | 60 | ksi |
| Tensile Strength, Fu | 75 | ksi |
| Base Plate Chord | 39.112 | in |
| Detail Type | d | - |
| Detail Factor | 0.50 | - |
| Clear Distance | 3 | - |

| External Base Plate | | |
|---|---|---|
| Chord Length AA | 33.154 | in |
| Additional AA | 9.957 | in |
| Section Modulus, Z | 33.007 | $in^3$ |
| Applied Moment, Mu | 474.1 | k-ft |
| Bending Capacity, ϕMn | 1782.4 | k-ft |
| Capacity, Mu/ϕMn | 0.266 | OK |
| | | |
| Chord Length AB | 32.158 | in |
| Additional AB | 8.993 | in |
| Section Modulus, Z | 31.506 | $in^3$ |
| Applied Moment, Mu | 417.2 | k-ft |
| Bending Capacity, ϕMn | 1701.3 | k-ft |
| Capacity, Mu/ϕMn | 0.245 | OK |
| | | |
| Bend Line Length | 21.476 | in |
| Additional Bend Line | 55.175 | in |
| Section Modulus, Z | 58.686 | $in^3$ |
| Applied Moment, Mu | 474.1 | k-ft |
| Bending Capacity, ϕMn | 3169.0 | k-ft |
| Capacity, Mu/ϕMn | 0.150 | OK |

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

| Anchor Rods | | |
|---|---|---|
| Anchor Rod Quantity, N | 12 | - |
| Rod Diameter, d | 2.25 | in |
| Bolt Circle, BC | 54 | in |
| Yield Strength, Fy | 75 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Applied Axial, Pu | 161.4 | k |
| Applied Shear, Vu | 1.5 | k |
| Compressive Capacity, ϕPn | 259.8 | k |
| Tensile Capacity, ϕRnt | 0.621 | OK |
| Interaction Capacity | 0.633 | OK |

| Base Plate Stiffeners | | |
|---|---|---|
| Applied Axial Force, Pu | 62.4 | k |
| Applied Horizontal Force, Vu | 0.37 | k |

| Vertical Weld | | |
|---|---|---|
| Vert.-to-Stiffener a=$e_x$/l | 0.167 | - |
| Spacing Ratio, k | 0.042 | - |
| Weld Coefficient, C | 3.670 | - |
| Compressive Capacity, ϕPn | 198.2 | k |
| Vert.-to-Plate a=$e_x$/l | 0.333 | - |
| Spacing Ratio, k | 0.042 | - |
| Weld Coefficient, C | 2.940 | - |
| Shear Capacity, ϕVn | 158.8 | k |
| $P_u/\phi_P P_n + V_u/\phi_V V_n$ | 0.317 | OK |

| Horizontal Weld | | |
|---|---|---|
| Horz.-to-Stiffener a=$e_x$/l | 0.167 | - |
| Spacing Ratio, k | 0.083 | - |
| Weld Coefficient, C | 2.940 | - |
| Effective Fillet | 1.000 | in |
| Compressive Capacity, ϕPn | 211.7 | k |
| Horz.-to-Pole a=$e_x$/l | 0.333 | - |
| Spacing Ratio, k | 0.083 | - |
| Weld Coefficient, C | 3.090 | - |
| Shear Capacity, ϕVn | 222.5 | k |
| $P_u/\phi_P P_n + V_u/\phi_V V_n$ | 0.296 | OK |

| Plate Tension | | |
|---|---|---|
| Gross Cross Section | 2.500 | $in^2$ |
| Net Cross Section | 2.250 | $in^2$ |
| Tensile Capacity, ϕTn | 109.7 | k |
| Capacity, Tu/ϕTn | 0.284 | OK |

| Plate Compression | | |
|---|---|---|
| Radius of Gyration | 0.144 | $in^3$ |
| kl/r | 49.88 | - |
| 4.71 $\sqrt{(E/Fy)}$ | 113.43 | - |
| Buckling Stress(Fe) | 115.0 | - |
| Crit. Buckling Stress(Fcr) | 100.9 | ksi |
| Compressive Capacity, ϕPn | 227.0 | k |
| Capacity, Pu/ϕPn | 0.137 | OK |

# EXHIBIT 4

AMERICAN TOWER®
CORPORATION

# Antenna Mount Analysis Report

| | | |
|---|---|---|
| **ATC Site Name** | : | **Bridgeport CT 2, CT** |
| **ATC Site Number** | : | **302469** |
| **Engineering Number** | : | **13202054_C8_01** |
| **Mount Elevation** | : | **106 ft** |
| **Carrier** | : | **AT&T Mobility** |
| **Carrier Site Name** | : | **MRCTB045164** |
| **Carrier Site Number** | : | **CTL02252** |
| **Site Location** | : | **1069 Connecticut Avenue**<br>**Bridgeport, CT 06607-1226**<br>**41.18361667 , -73.15838333** |
| **County** | : | **Fairfield** |
| **Date** | : | **May 4, 2020** |
| **Max Usage** | : | **51%** |
| **Result** | : | **Pass** |


Prepared By:
Rohith Koduru
Structural Engineer

Reviewed By:

**COA: PEC.0001553**

AMERICAN TOWER®
CORPORATION

**Table of Contents**

## Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for AT&T Mobility at 106 ft.

## Supporting Documents

| | |
|---|---|
| **Mount Mapping** | Mastec Project #10084453, dated April 17, 2020 |
| **Radio Frequency Data Sheet** | RFDS ID #10084453, dated March 3, 2020 |
| **Reference Photos** | Site photos from 2020 |

## Analysis

This antenna mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

| | |
|---|---|
| **Basic Wind Speed:** | 119 mph (3-Second Gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-Second Gust) w/ 1'' radial ice concurrent |
| **Codes:** | ANSI/TIA-222-H |
| **Exposure Category:** | B |
| **Risk Category:** | II |
| **Topographic Factor Procedure:** | Method 2 |
| **Feature:** | Flat |
| **Crest Height (H):** | 0 ft |
| **Crest Length (L):** | 0 ft |
| **Spectral Response:** | Ss = 0.208, S1 = 0.054 |
| **Site Class:** | D - Stiff Soil |
| **Live Loads: *** | Lm = 500 lbs |

*** Based on experience it has been determined that the maintenance load cases do not control over rigging load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

## Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount 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.

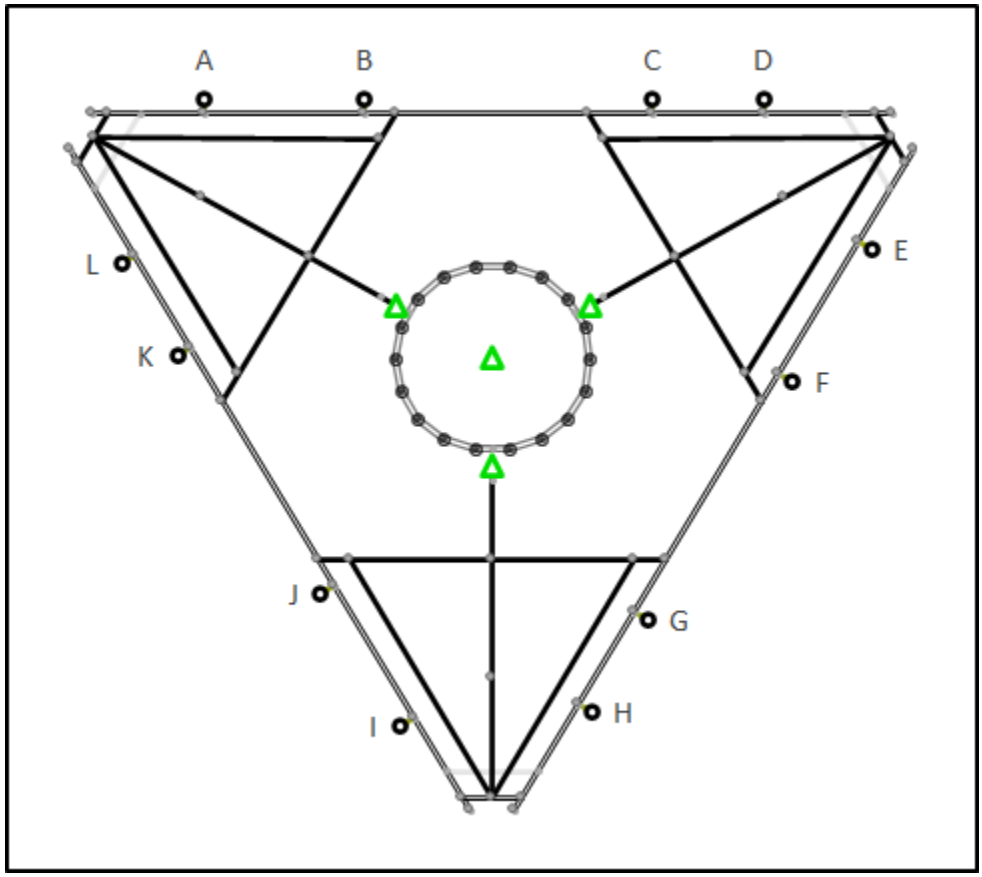
## Application Loading

| Mount Centerline (ft) | Antenna Centerline (ft) | Qty | Antenna Model |
|---|---|---|---|
| 106.0 | 106.0 | 3 | CCI OPA65R-BU4DA-K |
| | | 6 | CCI OPA-65R-LCUU-H4 |
| | | 3 | CCI DMP65R-BU4D |
| | | 2 | Raycap DC6-48-60-18-8F ("Squid") |
| | | 2 | Raycap DC6-48-60-18-8F ("Squid") |
| | | 3 | Ericsson RRUS E2 B29 |
| | | 3 | Ericsson RRUS 4478 B14 |
| | | 3 | Ericsson RRUS 4449 B5, B12 |
| | | 3 | Ericsson Radio 8843 - B2 + B66A |
| | | 3 | Ericsson RRUS 32 B30 (53 lbs) |

## Structure Usages

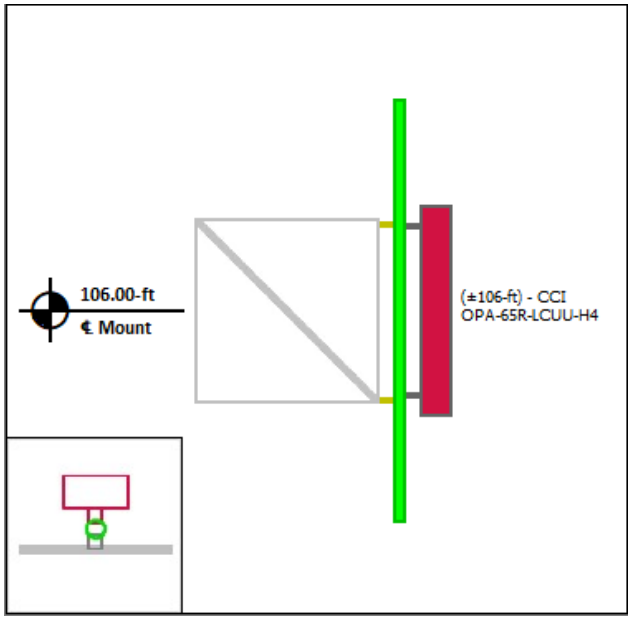
| Structural Component | Controlling Usage | Pass/Fail |
|---|---|---|
| Horizontals | 51% | Pass |
| Tie-Backs | 10% | Pass |
| Mount Pipes | 22% | Pass |
| Handrail | 30% | Pass |

## Mount Layout

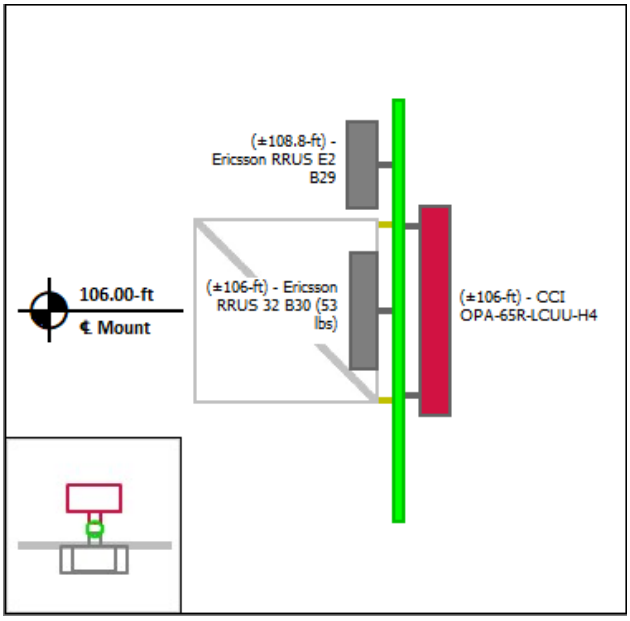


## Equipment Layout

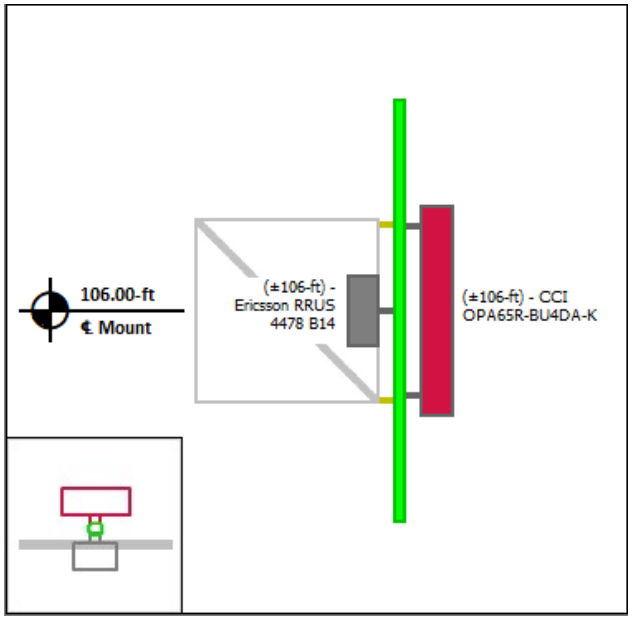
### Mount Pipe A



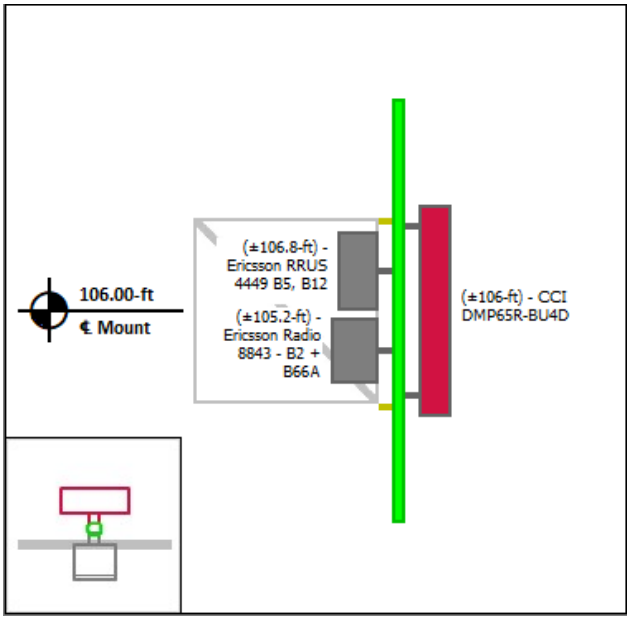

### Mount Pipe B




### Mount Pipe C

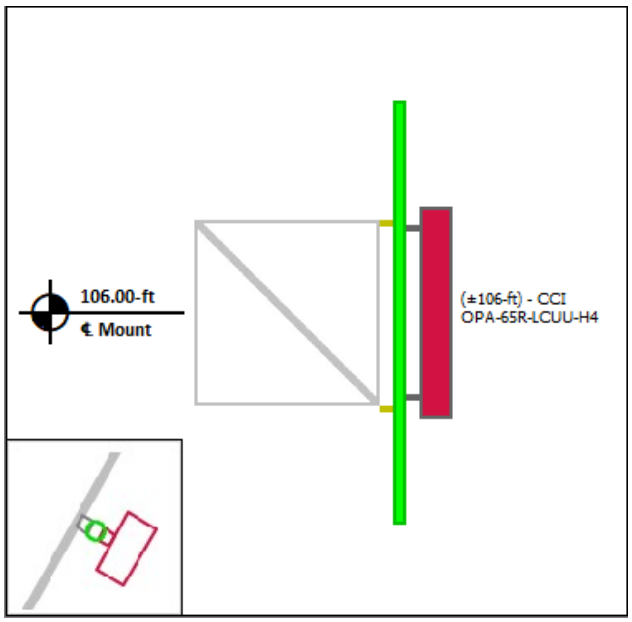



### Mount Pipe D

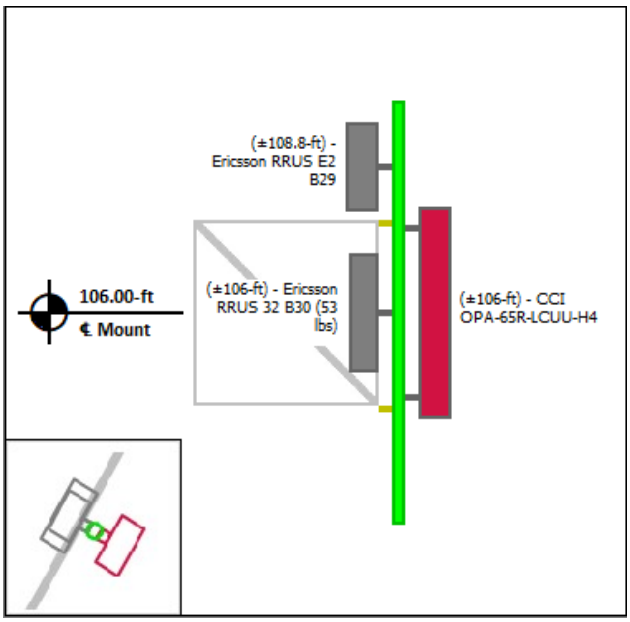


## Equipment Layout Cont'd.

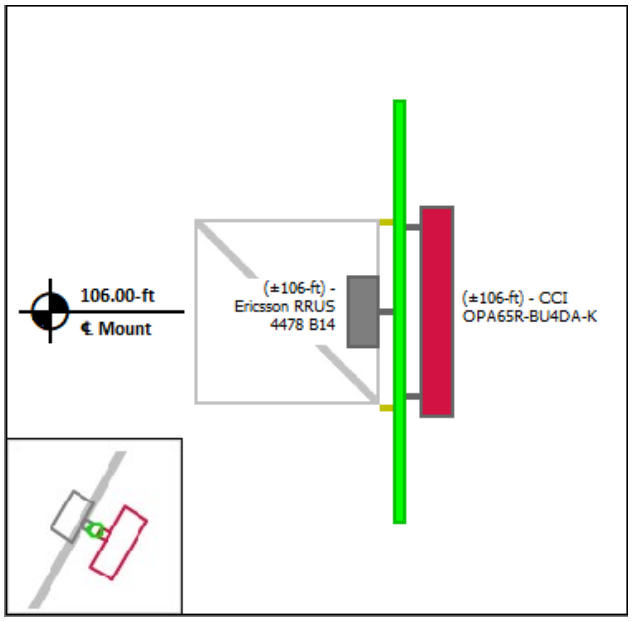
### Mount Pipe E



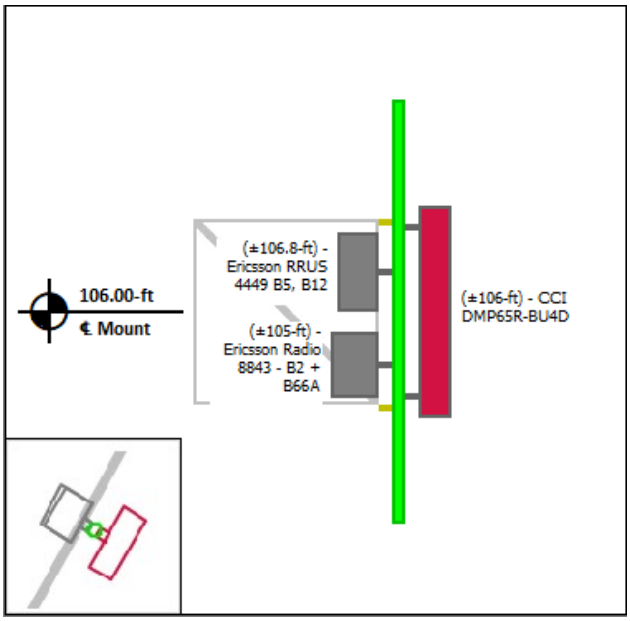

### Mount Pipe F




### Mount Pipe G

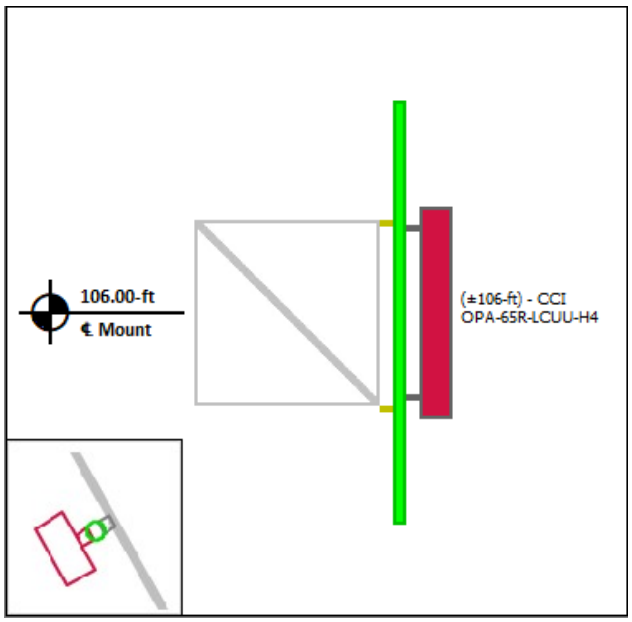



### Mount Pipe H

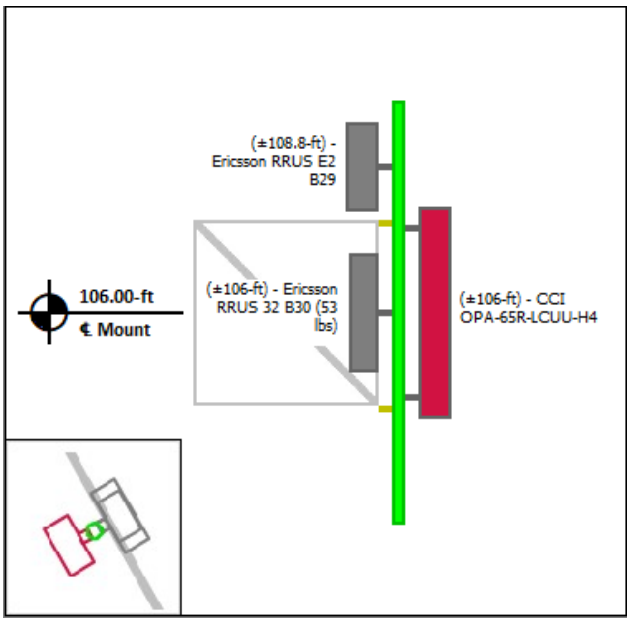


## Equipment Layout Cont'd.

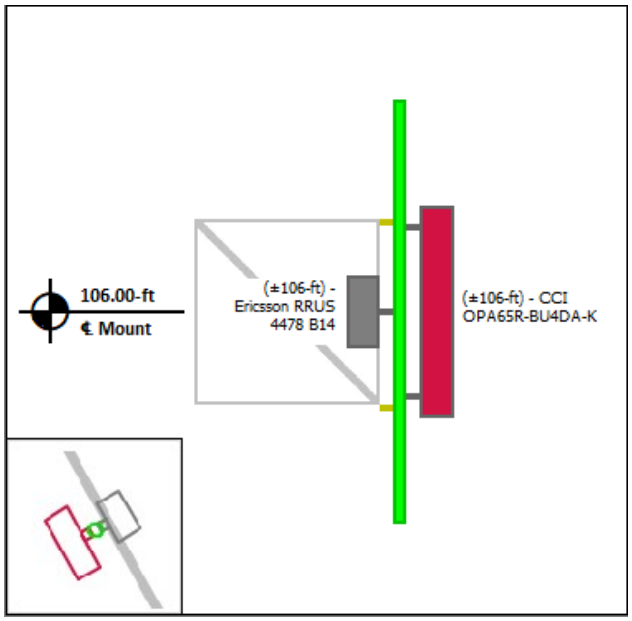
### Mount Pipe I



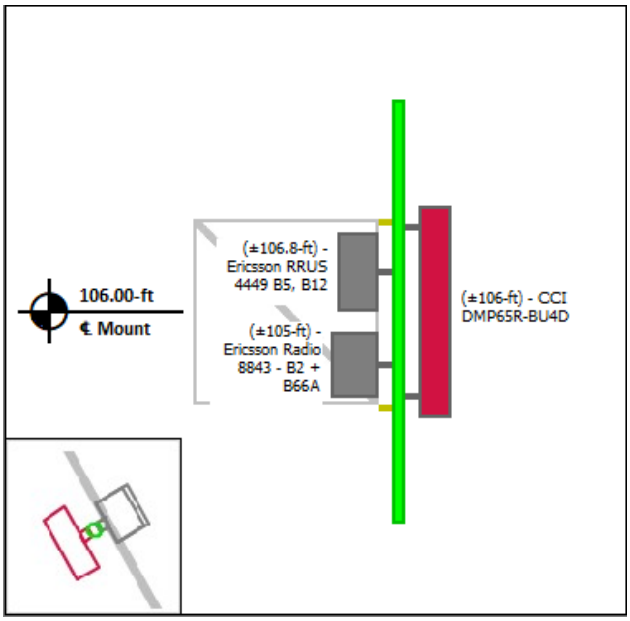

### Mount Pipe J




### Mount Pipe K




### Mount Pipe L



## Standard Conditions

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

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

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

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

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

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

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

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| | |
|---|---|
| **Site Number:** | *302469* |
| **Project Number:** | *13202054_C8_01* |
| **Carrier:** | *AT&T Mobility* |
| **Mount Elevation:** | *106 ft* |
| **Date:** | 5/4/2020 |

# Mount Analysis Force Calculations

| Wind & Ice Load Calculations | | | |
|---|---|---|---|
| Velocity Pressure Coefficient | $K_z$ | 1.00 | |
| Topographic Factor | $K_{zt}$ | 1.00 | |
| Rooftop Wind Speed-up Factor | $K_s$ | 1.00 | |
| Shielding Factor | $K_a$ | 0.90 | |
| Ground Elevation Factor | $K_e$ | 1.00 | |
| Wind Direction Probability Factor | $K_d$ | 0.95 | |
| Basic Wind Speed | V | 119 | mph |
| Velocity Pressure | $q_z$ | 34.6 | psf |
| Height Escalation Factor | $K_{iz}$ | 1.12 | |
| Thickness of Radial Glaze Ice | $T_{iz}$ | 1.12 | in |

| Seismic Load Calculations | | | |
|---|---|---|---|
| Short Period DSRAP | $S_{DS}$ | 0.222 | |
| 1 Second DSRAP | $S_{D1}$ | 0.086 | |
| Importance Factor | I | 1.0 | |
| Response Modification Coefficient | R | 2.0 | |
| Seismic Response Coefficient | $C_S$ | 0.111 | |
| Amplification Factor | A | 1.0 | |
| Total Weight | W | 3194.0 | lbs |
| Total Shear Force | $V_S$ | 354.3 | lbs |
| Horizontal Seismic Load | Eh | 354.3 | lbs |
| Vertical Seismic Load | Ev | 141.7 | lbs |

**Antenna Calculations**

| Equipment | Height | Width | Depth | Weight | $EPA_N$ | $EPA_T$ | $EPA_{Ni}$ | $EPA_{Ti}$ |
|---|---|---|---|---|---|---|---|---|
| Model # | in | in | in | lbs | sqft | sqft | sqft | sqft |
| CCI OPA65R-BU4DA-K | 48.2 | 21.0 | 7.8 | 52.5 | 8.44 | 1.52 | 9.77 | 2.05 |
| CCI OPA-65R-LCUU-H4 | 48.0 | 14.8 | 7.4 | 57.0 | 6.08 | 1.49 | 7.33 | 2.03 |
| CCI DMP65R-BU4D | 48.0 | 20.7 | 7.7 | 67.9 | 8.28 | 1.51 | 9.61 | 2.04 |
| Raycap DC6-48-60-18-8F ("Squid") | 24.0 | 11.0 | 11.0 | 31.8 | N/A | N/A | | |
| Raycap DC6-48-60-18-8F ("Squid") | 24.0 | 11.0 | 11.0 | 31.8 | N/A | N/A | | |
| Ericsson RRUS E2 B29 | 20.4 | 18.5 | 7.5 | 60.0 | 3.15 | 1.29 | 3.92 | 1.85 |
| Ericsson RRUS 4478 B14 | 16.5 | 13.4 | 7.7 | 59.9 | 1.84 | 1.06 | 2.44 | 1.55 |
| Ericsson RRUS 4449 B5, B12 | 17.9 | 13.2 | 9.4 | 71.0 | 1.97 | 1.40 | 2.59 | 1.96 |
| Ericsson Radio 8843 - B2 + B66A | 15.0 | 13.2 | 10.9 | 71.9 | 1.65 | 1.36 | 2.22 | 1.89 |
| Ericsson RRUS 32 B30 (53 lbs) | 27.2 | 12.1 | 7.0 | 53.0 | 2.74 | 1.67 | 3.52 | 2.39 |

## Joint Coordinates and Temperatures

| | Label | X [in] | Y [in] | Z [in] | Temp [F] | Detach From Diap... |
|---|---|---|---|---|---|---|
| 1 | N001 | 84 | 84 | 96 | 0 | |
| 2 | N002 | 159 | 84 | 144 | 0 | |
| 3 | N003 | 88.069219 | 84 | 7.048095 | 0 | |
| 4 | N004 | 4.930781 | 84 | 136.951905 | 0 | |
| 5 | N005 | 9 | 84 | 144 | 0 | |
| 6 | N006 | 163.069219 | 84 | 136.951905 | 0 | |
| 7 | N007 | 79.930781 | 84 | 7.048095 | 0 | |
| 8 | N008 | 156 | 84 | 144 | 0 | |
| 9 | N009 | 89.569219 | 84 | 9.646171 | 0 | |
| 10 | N010 | 6.430781 | 84 | 134.353829 | 0 | |
| 11 | N011 | 12 | 84 | 144 | 0 | |
| 12 | N012 | 161.569219 | 84 | 134.353829 | 0 | |
| 13 | N013 | 78.430781 | 84 | 9.646171 | 0 | |
| 14 | N014 | 84 | 84 | 9.646171 | 0 | |
| 15 | N015 | 9.21539 | 84 | 139.176915 | 0 | |
| 16 | N016 | 158.78461 | 84 | 139.176915 | 0 | |
| 17 | N017 | 159 | 126 | 144 | 0 | |
| 18 | N018 | 88.069219 | 126 | 7.048095 | 0 | |
| 19 | N019 | 9 | 126 | 144 | 0 | |
| 20 | N020 | 163.069219 | 126 | 136.951905 | 0 | |
| 21 | N021 | 4.930781 | 126 | 136.951905 | 0 | |
| 22 | N022 | 79.930781 | 126 | 7.048095 | 0 | |
| 23 | N023 | 84 | 84 | 75 | 0 | |
| 24 | N024 | 65.813467 | 84 | 106.5 | 0 | |
| 25 | N025 | 102.186533 | 84 | 106.5 | 0 | |
| 26 | N026 | 102 | 84 | 144 | 0 | |
| 27 | N027 | 116.569219 | 84 | 56.411543 | 0 | |
| 28 | N028 | 33.430781 | 84 | 87.588457 | 0 | |
| 29 | N029 | 66 | 84 | 144 | 0 | |
| 30 | N030 | 134.569219 | 84 | 87.588457 | 0 | |
| 31 | N031 | 51.430781 | 84 | 56.411543 | 0 | |
| 32 | N032 | 104.978461 | 84 | 138.841154 | 0 | |
| 33 | N033 | 63.021539 | 84 | 138.841154 | 0 | |
| 34 | N034 | 84 | 84 | 56.411543 | 0 | |
| 35 | N035 | 49.71539 | 84 | 115.794229 | 0 | |
| 36 | N036 | 118.28461 | 84 | 115.794229 | 0 | |
| 37 | N037 | 110.612297 | 84 | 56.411543 | 0 | |
| 38 | N038 | 36.409242 | 84 | 92.747303 | 0 | |
| 39 | N039 | 131.590758 | 84 | 92.747303 | 0 | |
| 40 | N040 | 57.387703 | 84 | 56.411543 | 0 | |
| 41 | N041 | 150 | 126 | 144 | 0 | |
| 42 | N042 | 92.569219 | 126 | 14.842323 | 0 | |
| 43 | N043 | 9.430781 | 126 | 129.157677 | 0 | |
| 44 | N044 | 18 | 126 | 144 | 0 | |
| 45 | N045 | 158.569219 | 126 | 129.157677 | 0 | |
| 46 | N046 | 75.430781 | 126 | 14.842323 | 0 | |

## Joint Coordinates and Temperatures (Continued)

| | Label | X [in] | Y [in] | Z [in] | Temp [F] | Detach From Diap... |
|---|---|---|---|---|---|---|
| 47 | N047 | 84 | 72 | 78 | 0 | |
| 48 | N048 | 68.411543 | 72 | 105 | 0 | |
| 49 | N049 | 99.588457 | 72 | 105 | 0 | |
| 50 | N050 | 84 | 72 | 72 | 0 | |
| 51 | N051 | 63.21539 | 72 | 108 | 0 | |
| 52 | N052 | 104.78461 | 72 | 108 | 0 | |
| 53 | N053 | 84 | 84 | 33 | 0 | |
| 54 | N054 | 29.4404 | 84 | 127.5 | 0 | |
| 55 | N055 | 138.5596 | 84 | 127.5 | 0 | |
| 56 | N056 | 138 | 84 | 147 | 0 | |
| 57 | N057 | 108 | 84 | 147 | 0 | |
| 58 | N058 | 54 | 84 | 147 | 0 | |
| 59 | N059 | 33 | 84 | 147 | 0 | |
| 60 | N060 | 101.167296 | 84 | 23.734628 | 0 | |
| 61 | N061 | 12.832704 | 84 | 117.265372 | 0 | |
| 62 | N062 | 116.167296 | 84 | 49.71539 | 0 | |
| 63 | N063 | 27.832704 | 84 | 91.28461 | 0 | |
| 64 | N064 | 143.167296 | 84 | 96.480762 | 0 | |
| 65 | N065 | 54.832704 | 84 | 44.519238 | 0 | |
| 66 | N066 | 153.667296 | 84 | 114.667296 | 0 | |
| 67 | N067 | 65.332704 | 84 | 26.332704 | 0 | |
| 68 | N068 | 138 | 84 | 144 | 0 | |
| 69 | N069 | 138 | 126 | 147 | 0 | |
| 70 | N070 | 138 | 126 | 144 | 0 | |
| 71 | N071 | 108 | 84 | 144 | 0 | |
| 72 | N072 | 108 | 126 | 147 | 0 | |
| 73 | N073 | 108 | 126 | 144 | 0 | |
| 74 | N074 | 54 | 84 | 144 | 0 | |
| 75 | N075 | 54 | 126 | 147 | 0 | |
| 76 | N076 | 54 | 126 | 144 | 0 | |
| 77 | N077 | 33 | 84 | 144 | 0 | |
| 78 | N078 | 33 | 126 | 147 | 0 | |
| 79 | N079 | 33 | 126 | 144 | 0 | |
| 80 | N080 | 15.430781 | 84 | 118.765372 | 0 | |
| 81 | N081 | 12.832704 | 126 | 117.265372 | 0 | |
| 82 | N082 | 15.430781 | 126 | 118.765372 | 0 | |
| 83 | N083 | 30.430781 | 84 | 92.78461 | 0 | |
| 84 | N084 | 27.832704 | 126 | 91.28461 | 0 | |
| 85 | N085 | 30.430781 | 126 | 92.78461 | 0 | |
| 86 | N086 | 57.430781 | 84 | 46.019238 | 0 | |
| 87 | N087 | 54.832704 | 126 | 44.519238 | 0 | |
| 88 | N088 | 57.430781 | 126 | 46.019238 | 0 | |
| 89 | N089 | 67.930781 | 84 | 27.832704 | 0 | |
| 90 | N090 | 65.332704 | 126 | 26.332704 | 0 | |
| 91 | N091 | 67.930781 | 126 | 27.832704 | 0 | |
| 92 | N092 | 98.569219 | 84 | 25.234628 | 0 | |
| 93 | N093 | 101.167296 | 126 | 23.734628 | 0 | |
| 94 | N094 | 98.569219 | 126 | 25.234628 | 0 | |
| 95 | N095 | 113.569219 | 84 | 51.21539 | 0 | |
| 96 | N096 | 116.167296 | 126 | 49.71539 | 0 | |
| 97 | N097 | 113.569219 | 126 | 51.21539 | 0 | |
| 98 | N098 | 140.569219 | 84 | 97.980762 | 0 | |

## Joint Coordinates and Temperatures (Continued)

| | Label | X [in] | Y [in] | Z [in] | Temp [F] | Detach From Diap... |
|---|---|---|---|---|---|---|
| 99 | N099 | 143.167296 | 126 | 96.480762 | 0 | |
| 100 | N100 | 140.569219 | 126 | 97.980762 | 0 | |
| 101 | N101 | 151.069219 | 84 | 116.167296 | 0 | |
| 102 | N102 | 153.667296 | 126 | 114.667296 | 0 | |
| 103 | N103 | 151.069219 | 126 | 116.167296 | 0 | |
| 104 | MP1t | 138 | 153.75 | 147 | 0 | |
| 105 | MP1b | 138 | 57.75 | 147 | 0 | |
| 106 | MP2t | 108 | 153.75 | 147 | 0 | |
| 107 | MP2b | 108 | 57.75 | 147 | 0 | |
| 108 | MP3t | 54 | 153.75 | 147 | 0 | |
| 109 | MP3b | 54 | 57.75 | 147 | 0 | |
| 110 | MP4t | 33 | 153 | 147 | 0 | |
| 111 | MP4b | 33 | 57 | 147 | 0 | |
| 112 | MP5t | 101.167296 | 153 | 23.734628 | 0 | |
| 113 | MP5b | 101.167296 | 57 | 23.734628 | 0 | |
| 114 | MP6t | 12.832704 | 153 | 117.265372 | 0 | |
| 115 | MP6b | 12.832704 | 57 | 117.265372 | 0 | |
| 116 | MP7t | 116.167296 | 153 | 49.71539 | 0 | |
| 117 | MP7b | 116.167296 | 57 | 49.71539 | 0 | |
| 118 | MP8t | 27.832704 | 153 | 91.28461 | 0 | |
| 119 | MP8b | 27.832704 | 57 | 91.28461 | 0 | |
| 120 | MP9t | 143.167296 | 153 | 96.480762 | 0 | |
| 121 | MP9b | 143.167296 | 57 | 96.480762 | 0 | |
| 122 | MP10t | 54.832704 | 153 | 44.519238 | 0 | |
| 123 | MP10b | 54.832704 | 57 | 44.519238 | 0 | |
| 124 | MP11t | 153.667296 | 153 | 114.667296 | 0 | |
| 125 | MP11b | 153.667296 | 57 | 114.667296 | 0 | |
| 126 | MP12t | 65.332704 | 153 | 26.332704 | 0 | |
| 127 | MP12b | 65.332704 | 57 | 26.332704 | 0 | |
| 128 | NAL1 | -1.069219 | 177.75 | 171 | 0 | |
| 129 | NAL2 | -1.069219 | 51 | 171 | 0 | |
| 130 | NAL3 | 169.069219 | 177.75 | 171 | 0 | |
| 131 | NAL4 | 169.069219 | 51 | 171 | 0 | |
| 132 | NAL5 | 169.069219 | 177.75 | -16.951905 | 0 | |
| 133 | NAL6 | 169.069219 | 51 | -16.951905 | 0 | |

## Joint Boundary Conditions

| | Joint Label | X [lb/in] | Y [lb/in] | Z [lb/in] | X Rot.[k-in/rad] | Y Rot.[k-in/rad] | Z Rot.[k-in/rad] |
|---|---|---|---|---|---|---|---|
| 1 | N001 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 2 | N023 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 3 | N024 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 4 | N025 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 5 | N047 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 6 | N048 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 7 | N049 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |

## Member Primary Data

| | Label | I Joint | J Joint | K Joint | Rotate(de... | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | H001 | N002 | N005 | | | HSS3.500X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 2 | H002 | N003 | N006 | | | HSS3.500X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 3 | H003 | N009 | N013 | | | PL6x0.375 | Beam | None | A572-50 | Typical |
| 4 | H004 | N010 | N011 | | | PL6x0.375 | Beam | None | A572-50 | Typical |
| 5 | H005 | N008 | N012 | | | PL6x0.375 | Beam | None | A572-50 | Typical |
| 6 | H006 | N007 | N004 | | | HSS3.500X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 7 | H007 | N017 | N019 | | | HSS2.375X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 8 | H008 | N018 | N020 | | | HSS2.375X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 9 | H009 | N022 | N021 | | | HSS2.375X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 10 | H010 | N023 | N014 | | | HSS3.500X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 11 | H011 | N024 | N015 | | | HSS3.500X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 12 | H012 | N025 | N016 | | | HSS3.500X0.... | Beam | None | A500 Gr. B [RND] | Typical |
| 13 | H013 | N026 | N030 | | | C3x6 | Beam | None | A36 | Typical |
| 14 | H014 | N027 | N031 | | | C3x6 | Beam | None | A36 | Typical |
| 15 | H015 | N028 | N029 | | | C3x6 | Beam | None | A36 | Typical |
| 16 | H016 | N032 | N016 | | 270 | L2x2x5 | Beam | None | A36 | Typical |
| 17 | H017 | N037 | N014 | | 270 | L2x2x5 | Beam | None | A36 | Typical |
| 18 | H018 | N038 | N015 | | 270 | L2x2x5 | Beam | None | A36 | Typical |
| 19 | H019 | N033 | N015 | | | L2x2x5 | Beam | None | A36 | Typical |
| 20 | H020 | N039 | N016 | | | L2x2x5 | Beam | None | A36 | Typical |
| 21 | H021 | N040 | N014 | | | L2x2x5 | Beam | None | A36 | Typical |
| 22 | H022 | N041 | N045 | | 180 | L2.5x2.5x4 | Beam | None | A36 | Typical |
| 23 | H023 | N042 | N046 | | 180 | L2.5x2.5x4 | Beam | None | A36 | Typical |
| 24 | H024 | N043 | N044 | | 180 | L2.5x2.5x4 | Beam | None | A36 | Typical |
| 25 | H025 | N047 | N050 | | | HSS4x4x4 | Beam | None | A500 Gr. B [SQR] | Typical |
| 26 | H026 | N048 | N051 | | | HSS4x4x4 | Beam | None | A500 Gr. B [SQR] | Typical |
| 27 | H027 | N049 | N052 | | | HSS4x4x4 | Beam | None | A500 Gr. B [SQR] | Typical |
| 28 | D028 | N053 | N050 | | | LL3x3x4x6 | Column | None | A36 | Typical |
| 29 | D029 | N054 | N051 | | | LL3x3x4x6 | Column | None | A36 | Typical |
| 30 | D030 | N055 | N052 | | | LL3x3x4x6 | Column | None | A36 | Typical |
| 31 | U031 | N056 | N068 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 32 | U032 | N069 | N070 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 33 | U033 | N057 | N071 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 34 | U034 | N072 | N073 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 35 | U035 | N058 | N074 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 36 | U036 | N075 | N076 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 37 | U037 | N059 | N077 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 38 | U038 | N078 | N079 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 39 | U039 | N061 | N080 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 40 | U040 | N081 | N082 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 41 | U041 | N063 | N083 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 42 | U042 | N084 | N085 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 43 | U043 | N065 | N086 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 44 | U044 | N087 | N088 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 45 | U045 | N067 | N089 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 46 | U046 | N090 | N091 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 47 | U047 | N060 | N092 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 48 | U048 | N093 | N094 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 49 | U049 | N062 | N095 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 50 | U050 | N096 | N097 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 51 | U051 | N064 | N098 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(de... | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 52 | U052 | N099 | N100 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 53 | U053 | N066 | N101 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 54 | U054 | N102 | N103 | | | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 55 | MP1 | MP1t | MP1b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 56 | MP2 | MP2t | MP2b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 57 | MP3 | MP3t | MP3b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 58 | MP4 | MP4t | MP4b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 59 | MP5 | MP5t | MP5b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 60 | MP6 | MP6t | MP6b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 61 | MP7 | MP7t | MP7b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 62 | MP8 | MP8t | MP8b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 63 | MP9 | MP9t | MP9b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 64 | MP10 | MP10t | MP10b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 65 | MP11 | MP11t | MP11b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |
| 66 | MP12 | MP12t | MP12b | | | HSS2.875X0.... | Column | None | A500 Gr. B [RND] | Typical |

## Member Advanced Data

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | H001 | | | | | | Yes | | | | None |
| 2 | H002 | | | | | | Yes | | | | None |
| 3 | H003 | BenPIN | BenPIN | | | | Yes | | | | None |
| 4 | H004 | BenPIN | BenPIN | | | | Yes | | | | None |
| 5 | H005 | BenPIN | BenPIN | | | | Yes | | | | None |
| 6 | H006 | | | | | | Yes | | | | None |
| 7 | H007 | | | | | | Yes | | | | None |
| 8 | H008 | | | | | | Yes | | | | None |
| 9 | H009 | | | | | | Yes | | | | None |
| 10 | H010 | | BenPIN | | | | Yes | | | | None |
| 11 | H011 | | BenPIN | | | | Yes | | | | None |
| 12 | H012 | | BenPIN | | | | Yes | | | | None |
| 13 | H013 | BenPIN | BenPIN | | | | Yes | | | | None |
| 14 | H014 | BenPIN | BenPIN | | | | Yes | | | | None |
| 15 | H015 | BenPIN | BenPIN | | | | Yes | | | | None |
| 16 | H016 | BenPIN | BenPIN | | | | Yes | | | | None |
| 17 | H017 | BenPIN | BenPIN | | | | Yes | | | | None |
| 18 | H018 | BenPIN | BenPIN | | | | Yes | | | | None |
| 19 | H019 | BenPIN | BenPIN | | | | Yes | | | | None |
| 20 | H020 | BenPIN | BenPIN | | | | Yes | | | | None |
| 21 | H021 | BenPIN | BenPIN | | | | Yes | | | | None |
| 22 | H022 | | | | | | Yes | | | | None |
| 23 | H023 | | | | | | Yes | | | | None |
| 24 | H024 | | | | | | Yes | | | | None |
| 25 | H025 | | | | | | Yes | | | | None |
| 26 | H026 | | | | | | Yes | | | | None |
| 27 | H027 | | | | | | Yes | | | | None |
| 28 | D028 | BenPIN | BenPIN | | | | Yes | ** NA ** | | | None |
| 29 | D029 | BenPIN | BenPIN | | | | Yes | ** NA ** | | | None |
| 30 | D030 | BenPIN | BenPIN | | | | Yes | ** NA ** | | | None |
| 31 | U031 | | | | | | Yes | | | Exclude | None |
| 32 | U032 | | | | | | Yes | | | Exclude | None |

## Member Advanced Data (Continued)

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | U033 | | | | | | Yes | | | Exclude | None |
| 34 | U034 | | | | | | Yes | | | Exclude | None |
| 35 | U035 | | | | | | Yes | | | Exclude | None |
| 36 | U036 | | | | | | Yes | | | Exclude | None |
| 37 | U037 | | | | | | Yes | | | Exclude | None |
| 38 | U038 | | | | | | Yes | | | Exclude | None |
| 39 | U039 | | | | | | Yes | | | Exclude | None |
| 40 | U040 | | | | | | Yes | | | Exclude | None |
| 41 | U041 | | | | | | Yes | | | Exclude | None |
| 42 | U042 | | | | | | Yes | | | Exclude | None |
| 43 | U043 | | | | | | Yes | | | Exclude | None |
| 44 | U044 | | | | | | Yes | | | Exclude | None |
| 45 | U045 | | | | | | Yes | | | Exclude | None |
| 46 | U046 | | | | | | Yes | | | Exclude | None |
| 47 | U047 | | | | | | Yes | | | Exclude | None |
| 48 | U048 | | | | | | Yes | | | Exclude | None |
| 49 | U049 | | | | | | Yes | | | Exclude | None |
| 50 | U050 | | | | | | Yes | | | Exclude | None |
| 51 | U051 | | | | | | Yes | | | Exclude | None |
| 52 | U052 | | | | | | Yes | | | Exclude | None |
| 53 | U053 | | | | | | Yes | | | Exclude | None |
| 54 | U054 | | | | | | Yes | | | Exclude | None |
| 55 | MP1 | | | | | | Yes | ** NA ** | | | None |
| 56 | MP2 | | | | | | Yes | ** NA ** | | | None |
| 57 | MP3 | | | | | | Yes | ** NA ** | | | None |
| 58 | MP4 | | | | | | Yes | ** NA ** | | | None |
| 59 | MP5 | | | | | | Yes | ** NA ** | | | None |
| 60 | MP6 | | | | | | Yes | ** NA ** | | | None |
| 61 | MP7 | | | | | | Yes | ** NA ** | | | None |
| 62 | MP8 | | | | | | Yes | ** NA ** | | | None |
| 63 | MP9 | | | | | | Yes | ** NA ** | | | None |
| 64 | MP10 | | | | | | Yes | ** NA ** | | | None |
| 65 | MP11 | | | | | | Yes | ** NA ** | | | None |
| 66 | MP12 | | | | | | Yes | ** NA ** | | | None |

## Hot Rolled Steel Design Parameters

| | Label | Shape | Length[in] | Lbyy[in] | Lbzz[in] | Lcomp top[in] | Lcomp bot[in] | L-torqu... | Kyy | Kzz | Cb | Function |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | H001 | HSS3.500X... | 150 | | | | | | 1 | 1 | | Lateral |
| 2 | H002 | HSS3.500X... | 150 | | | | | | 1 | 1 | | Lateral |
| 3 | H003 | PL6x0.375 | 11.138 | | | | | | 1 | 1 | | Lateral |
| 4 | H004 | PL6x0.375 | 11.138 | | | | | | 1 | 1 | | Lateral |
| 5 | H005 | PL6x0.375 | 11.138 | | | | | | 1 | 1 | | Lateral |
| 6 | H006 | HSS3.500X... | 150 | | | | | | 1 | 1 | | Lateral |
| 7 | H007 | HSS2.375X... | 150 | | | | | | 1 | 1 | | Lateral |
| 8 | H008 | HSS2.375X... | 150 | | | | | | 1 | 1 | | Lateral |
| 9 | H009 | HSS2.375X... | 150 | | | | | | 1 | 1 | | Lateral |
| 10 | H010 | HSS3.500X... | 65.354 | | | | | | 1 | 1 | | Lateral |
| 11 | H011 | HSS3.500X... | 65.354 | | | | | | 1 | 1 | | Lateral |
| 12 | H012 | HSS3.500X... | 65.354 | | | | | | 1 | 1 | | Lateral |
| 13 | H013 | C3x6 | 65.138 | | | | | | 1 | 1 | | Lateral |

## Hot Rolled Steel Design Parameters (Continued)

| | Label | Shape | Length[in] | Lbyy[in] | Lbzz[in] | Lcomp top[in] | Lcomp bot[in] | L-torqu... | Kyy | Kzz | Cb | Function |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | H014 | C3x6 | 65.138 | | | | | | 1 | 1 | | Lateral |
| 15 | H015 | C3x6 | 65.138 | | | | | | 1 | 1 | | Lateral |
| 16 | H016 | L2x2x5 | 53.807 | | | | | | 1 | 1 | | Lateral |
| 17 | H017 | L2x2x5 | 53.807 | | | | | | 1 | 1 | | Lateral |
| 18 | H018 | L2x2x5 | 53.807 | | | | | | 1 | 1 | | Lateral |
| 19 | H019 | L2x2x5 | 53.807 | | | | | | 1 | 1 | | Lateral |
| 20 | H020 | L2x2x5 | 53.807 | | | | | | 1 | 1 | | Lateral |
| 21 | H021 | L2x2x5 | 53.807 | | | | | | 1 | 1 | | Lateral |
| 22 | H022 | L2.5x2.5x4 | 17.138 | | | | | | .65 | .65 | | Lateral |
| 23 | H023 | L2.5x2.5x4 | 17.138 | | | | | | .65 | .65 | | Lateral |
| 24 | H024 | L2.5x2.5x4 | 17.138 | | | | | | .65 | .65 | | Lateral |
| 25 | H025 | HSS4x4x4 | 6 | | | | | | 1 | 1 | | Lateral |
| 26 | H026 | HSS4x4x4 | 6 | | | | | | 1 | 1 | | Lateral |
| 27 | H027 | HSS4x4x4 | 6 | | | | | | 1 | 1 | | Lateral |
| 28 | D028 | LL3x3x4x6 | 40.804 | | | | | | 1 | 1 | | Lateral |
| 29 | D029 | LL3x3x4x6 | 40.804 | | | | | | 1 | 1 | | Lateral |
| 30 | D030 | LL3x3x4x6 | 40.804 | | | | | | 1 | 1 | | Lateral |
| 31 | U031 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 32 | U032 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 33 | U033 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 34 | U034 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 35 | U035 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 36 | U036 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 37 | U037 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 38 | U038 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 39 | U039 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 40 | U040 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 41 | U041 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 42 | U042 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 43 | U043 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 44 | U044 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 45 | U045 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 46 | U046 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 47 | U047 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 48 | U048 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 49 | U049 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 50 | U050 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 51 | U051 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 52 | U052 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 53 | U053 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 54 | U054 | (2) 1/2 U-B... | 3 | | | | | | .5 | .5 | | Lateral |
| 55 | MP1 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 56 | MP2 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 57 | MP3 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 58 | MP4 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 59 | MP5 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 60 | MP6 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 61 | MP7 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 62 | MP8 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 63 | MP9 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 64 | MP10 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |
| 65 | MP11 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |

## Hot Rolled Steel Design Parameters (Continued)

| | Label | Shape | Length[in] | Lbyy[in] | Lbzz[in] | Lcomp top[in] | Lcomp bot[in] | L-torqu... | Kyy | Kzz | Cb | Function |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 66 | MP12 | HSS2.875X... | 96 | | | | | | 2.1 | 2.1 | | Lateral |

## Hot Rolled Steel Properties

| | Label | E [psi] | G [psi] | Nu | Therm (/1E... | Density[lb/f... | Yield[psi] | Ry | Fu[psi] | Rt |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A36 | 2.9e+7 | 1.115e+7 | .3 | .65 | 490 | 36000 | 1.5 | 58000 | 1.2 |
| 2 | A572-50 | 2.9e+7 | 1.115e+7 | .3 | .65 | 490 | 50000 | 1.1 | 65000 | 1.1 |
| 3 | A500 Gr. B [RND] | 2.9e+7 | 1.115e+7 | .3 | .65 | 527 | 42000 | 1.4 | 58000 | 1.3 |
| 4 | A500 Gr. B [SQR] | 2.9e+7 | 1.115e+7 | .3 | .65 | 527 | 46000 | 1.4 | 58000 | 1.3 |
| 5 | A500 Gr. C | 2.9e+7 | 1.115e+7 | .3 | .65 | 190 | 46000 | 1.4 | 62000 | 1.3 |
| 6 | A1085 | 2.9e+7 | 1.115e+7 | .3 | .65 | 490 | 50000 | 1.1 | 65000 | 1.1 |
| 7 | A53 Gr. B | 2.9e+7 | 1.115e+7 | .3 | .65 | 490 | 35000 | 1.6 | 60000 | 1.2 |
| 8 | A992 | 2.9e+7 | 1.115e+7 | .3 | .65 | 490 | 50000 | 1.1 | 65000 | 1.1 |
| 9 | SAE J429 Gr. 2 | 2.9e+7 | 1.115e+7 | .3 | .65 | 490 | 57000 | 1.1 | 74000 | 1.1 |

## Joint Loads and Enforced Displacements (BLC 12 : Lm (1))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP1t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 13 : Lm (2))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP2t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 14 : Lm (3))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP3t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 15 : Lm (4))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP4t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 16 : Lm (5))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP5t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 17 : Lm (6))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP6t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 18 : Lm (7))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP7t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 19 : Lm (8))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP8t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 20 : Lm (9))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP9t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 21 : Lm (10))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP10t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 22 : Lm (11))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP11t | L | Y | -500 |

## Joint Loads and Enforced Displacements (BLC 23 : Lm (12))

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | MP12t | L | Y | -500 |

## Member Point Loads (BLC 1 : Dead)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | Y | -28.5 | 28.05 |
| 2 | MP1 | Y | -28.5 | 66.45 |
| 3 | MP2 | Y | -28.5 | 28.05 |
| 4 | MP2 | Y | -28.5 | 66.45 |
| 5 | MP2 | Y | -60 | 14.25 |
| 6 | MP2 | Y | -53 | 47.25 |
| 7 | MP3 | Y | -26.25 | 28 |
| 8 | MP3 | Y | -26.25 | 66.55 |
| 9 | MP3 | Y | -59.9 | 47.25 |
| 10 | MP4 | Y | -33.95 | 28.05 |
| 11 | MP4 | Y | -33.95 | 66.45 |
| 12 | MP4 | Y | -71 | 38.25 |
| 13 | MP4 | Y | -71.9 | 56.25 |
| 14 | MP5 | Y | -28.5 | 28.05 |
| 15 | MP5 | Y | -28.5 | 66.45 |
| 16 | MP6 | Y | -28.5 | 28.05 |
| 17 | MP6 | Y | -28.5 | 66.45 |
| 18 | MP7 | Y | -28.5 | 28.05 |
| 19 | MP7 | Y | -28.5 | 66.45 |
| 20 | MP7 | Y | -53 | 47.25 |
| 21 | MP7 | Y | -60 | 14.25 |
| 22 | MP8 | Y | -28.5 | 28.05 |
| 23 | MP8 | Y | -28.5 | 66.45 |
| 24 | MP8 | Y | -60 | 14.25 |
| 25 | MP8 | Y | -53 | 47.25 |
| 26 | MP9 | Y | -26.25 | 28 |
| 27 | MP9 | Y | -26.25 | 66.55 |
| 28 | MP9 | Y | -59.9 | 47.25 |
| 29 | MP10 | Y | -26.25 | 28 |
| 30 | MP10 | Y | -26.25 | 66.55 |
| 31 | MP10 | Y | -59.9 | 47.25 |
| 32 | MP11 | Y | -33.95 | 28.05 |
| 33 | MP11 | Y | -33.95 | 66.45 |

## Member Point Loads (BLC 1 : Dead) (Continued)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 34 | MP11 | Y | -71 | 38.25 |
| 35 | MP11 | Y | -71.9 | 59.25 |
| 36 | MP12 | Y | -33.95 | 28.05 |
| 37 | MP12 | Y | -33.95 | 66.45 |
| 38 | MP12 | Y | -71 | 38.25 |
| 39 | MP12 | Y | -71.9 | 59.25 |

## Member Point Loads (BLC 2 : Ice)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | Y | -49.77 | 28.05 |
| 2 | MP1 | Y | -49.77 | 66.45 |
| 3 | MP2 | Y | -49.77 | 28.05 |
| 4 | MP2 | Y | -49.77 | 66.45 |
| 5 | MP2 | Y | -57.918 | 14.25 |
| 6 | MP2 | Y | -53.071 | 47.25 |
| 7 | MP3 | Y | -64.357 | 28 |
| 8 | MP3 | Y | -64.357 | 66.55 |
| 9 | MP3 | Y | -40.241 | 47.25 |
| 10 | MP4 | Y | -63.214 | 28.05 |
| 11 | MP4 | Y | -63.214 | 66.45 |
| 12 | MP4 | Y | -46.476 | 38.25 |
| 13 | MP4 | Y | -44.513 | 56.25 |
| 14 | MP5 | Y | -49.77 | 28.05 |
| 15 | MP5 | Y | -49.77 | 66.45 |
| 16 | MP6 | Y | -49.77 | 28.05 |
| 17 | MP6 | Y | -49.77 | 66.45 |
| 18 | MP7 | Y | -49.77 | 28.05 |
| 19 | MP7 | Y | -49.77 | 66.45 |
| 20 | MP7 | Y | -53.071 | 47.25 |
| 21 | MP7 | Y | -57.918 | 14.25 |
| 22 | MP8 | Y | -49.77 | 28.05 |
| 23 | MP8 | Y | -49.77 | 66.45 |
| 24 | MP8 | Y | -57.918 | 14.25 |
| 25 | MP8 | Y | -53.071 | 47.25 |
| 26 | MP9 | Y | -64.357 | 28 |
| 27 | MP9 | Y | -64.357 | 66.55 |
| 28 | MP9 | Y | -40.241 | 47.25 |
| 29 | MP10 | Y | -64.357 | 28 |
| 30 | MP10 | Y | -64.357 | 66.55 |
| 31 | MP10 | Y | -40.241 | 47.25 |
| 32 | MP11 | Y | -63.214 | 28.05 |
| 33 | MP11 | Y | -63.214 | 66.45 |
| 34 | MP11 | Y | -46.476 | 38.25 |
| 35 | MP11 | Y | -44.513 | 59.25 |
| 36 | MP12 | Y | -63.214 | 28.05 |
| 37 | MP12 | Y | -63.214 | 66.45 |
| 38 | MP12 | Y | -46.476 | 38.25 |
| 39 | MP12 | Y | -44.513 | 59.25 |

## Member Point Loads (BLC 3 : Wind -Z)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|

## Member Point Loads (BLC 3 : Wind -Z) (Continued)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | Z | -94.624 | 28.05 |
| 2 | MP1 | Z | -94.624 | 66.45 |
| 3 | MP2 | Z | -94.624 | 28.05 |
| 4 | MP2 | Z | -94.624 | 66.45 |
| 5 | MP2 | Z | -48.922 | 14.25 |
| 6 | MP2 | Z | -42.664 | 47.25 |
| 7 | MP3 | Z | -131.382 | 28 |
| 8 | MP3 | Z | -131.041 | 66.55 |
| 9 | MP3 | Z | -28.661 | 47.25 |
| 10 | MP4 | Z | -128.8 | 28.05 |
| 11 | MP4 | Z | -128.801 | 66.45 |
| 12 | MP4 | Z | -30.629 | 38.25 |
| 13 | MP4 | Z | -25.667 | 56.25 |
| 14 | MP5 | Z | -67.371 | 28.05 |
| 15 | MP5 | Z | -67.371 | 66.45 |
| 16 | MP6 | Z | -67.371 | 28.05 |
| 17 | MP6 | Z | -67.371 | 66.45 |
| 18 | MP7 | Z | -67.371 | 28.05 |
| 19 | MP7 | Z | -67.371 | 66.45 |
| 20 | MP7 | Z | -43.804 | 47.25 |
| 21 | MP7 | Z | -41.777 | 14.25 |
| 22 | MP8 | Z | -67.371 | 28.05 |
| 23 | MP8 | Z | -67.371 | 66.45 |
| 24 | MP8 | Z | -41.777 | 14.25 |
| 25 | MP8 | Z | -43.804 | 47.25 |
| 26 | MP9 | Z | -86.243 | 28 |
| 27 | MP9 | Z | -86.02 | 66.55 |
| 28 | MP9 | Z | -28.594 | 47.25 |
| 29 | MP10 | Z | -86.243 | 28 |
| 30 | MP10 | Z | -86.02 | 66.55 |
| 31 | MP10 | Z | -28.594 | 47.25 |
| 32 | MP11 | Z | -84.732 | 28.05 |
| 33 | MP11 | Z | -84.732 | 66.45 |
| 34 | MP11 | Z | -34.204 | 38.25 |
| 35 | MP11 | Z | -31.188 | 59.25 |
| 36 | MP12 | Z | -84.732 | 28.05 |
| 37 | MP12 | Z | -84.732 | 66.45 |
| 38 | MP12 | Z | -34.204 | 38.25 |
| 39 | MP12 | Z | -31.188 | 59.25 |

## Member Point Loads (BLC 4 : Wind -X)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -23.162 | 28.05 |
| 2 | MP1 | X | -23.162 | 66.45 |
| 3 | MP2 | X | -23.162 | 28.05 |
| 4 | MP2 | X | -23.162 | 66.45 |
| 5 | MP2 | X | -39.99 | 14.25 |
| 6 | MP2 | X | -51.897 | 47.25 |
| 7 | MP3 | X | -23.732 | 28 |
| 8 | MP3 | X | -23.67 | 66.55 |
| 9 | MP3 | X | -32.939 | 47.25 |

## Member Point Loads (BLC 4 : Wind -X) (Continued)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 10 | MP4 | X | -23.477 | 28.05 |
| 11 | MP4 | X | -23.477 | 66.45 |
| 12 | MP4 | X | -43.623 | 38.25 |
| 13 | MP4 | X | -42.389 | 56.25 |
| 14 | MP5 | X | -93.528 | 28.05 |
| 15 | MP5 | X | -93.528 | 66.45 |
| 16 | MP6 | X | -93.528 | 28.05 |
| 17 | MP6 | X | -93.528 | 66.45 |
| 18 | MP7 | X | -93.528 | 28.05 |
| 19 | MP7 | X | -93.528 | 66.45 |
| 20 | MP7 | X | -99.844 | 47.25 |
| 21 | MP7 | X | -104.731 | 14.25 |
| 22 | MP8 | X | -93.528 | 28.05 |
| 23 | MP8 | X | -93.528 | 66.45 |
| 24 | MP8 | X | -104.731 | 14.25 |
| 25 | MP8 | X | -99.844 | 47.25 |
| 26 | MP9 | X | -125.646 | 28 |
| 27 | MP9 | X | -125.32 | 66.55 |
| 28 | MP9 | X | -66.112 | 47.25 |
| 29 | MP10 | X | -125.646 | 28 |
| 30 | MP10 | X | -125.32 | 66.55 |
| 31 | MP10 | X | -66.112 | 47.25 |
| 32 | MP11 | X | -123.283 | 28.05 |
| 33 | MP11 | X | -123.283 | 66.45 |
| 34 | MP11 | X | -74.863 | 38.25 |
| 35 | MP11 | X | -65.651 | 59.25 |
| 36 | MP12 | X | -123.283 | 28.05 |
| 37 | MP12 | X | -123.283 | 66.45 |
| 38 | MP12 | X | -74.863 | 38.25 |
| 39 | MP12 | X | -65.651 | 59.25 |

## Member Point Loads (BLC 5 : Wind -Z (Ice))

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | Z | -19.473 | 28.05 |
| 2 | MP1 | Z | -19.473 | 66.45 |
| 3 | MP2 | Z | -19.473 | 28.05 |
| 4 | MP2 | Z | -19.473 | 66.45 |
| 5 | MP2 | Z | -11.988 | 14.25 |
| 6 | MP2 | Z | -12.105 | 47.25 |
| 7 | MP3 | Z | -20.843 | 28 |
| 8 | MP3 | Z | -20.789 | 66.55 |
| 9 | MP3 | Z | -9.366 | 47.25 |
| 10 | MP4 | Z | -20.671 | 28.05 |
| 11 | MP4 | Z | -20.671 | 66.45 |
| 12 | MP4 | Z | -9.716 | 38.25 |
| 13 | MP4 | Z | -8.871 | 56.25 |
| 14 | MP5 | Z | -17.054 | 28.05 |
| 15 | MP5 | Z | -17.054 | 66.45 |
| 16 | MP6 | Z | -17.054 | 28.05 |
| 17 | MP6 | Z | -17.054 | 66.45 |
| 18 | MP7 | Z | -17.054 | 28.05 |

## Member Point Loads (BLC 5 : Wind -Z (Ice)) (Continued)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 19 | MP7 | Z | -17.054 | 66.45 |
| 20 | MP7 | Z | -15.721 | 47.25 |
| 21 | MP7 | Z | -13.663 | 14.25 |
| 22 | MP8 | Z | -17.054 | 28.05 |
| 23 | MP8 | Z | -17.054 | 66.45 |
| 24 | MP8 | Z | -13.663 | 14.25 |
| 25 | MP8 | Z | -15.721 | 47.25 |
| 26 | MP9 | Z | -17.578 | 28 |
| 27 | MP9 | Z | -17.533 | 66.55 |
| 28 | MP9 | Z | -11.356 | 47.25 |
| 29 | MP10 | Z | -17.578 | 28 |
| 30 | MP10 | Z | -17.533 | 66.55 |
| 31 | MP10 | Z | -11.356 | 47.25 |
| 32 | MP11 | Z | -17.5 | 28.05 |
| 33 | MP11 | Z | -17.5 | 66.45 |
| 34 | MP11 | Z | -12.313 | 38.25 |
| 35 | MP11 | Z | -11.538 | 59.25 |
| 36 | MP12 | Z | -17.5 | 28.05 |
| 37 | MP12 | Z | -17.5 | 66.45 |
| 38 | MP12 | Z | -12.313 | 38.25 |
| 39 | MP12 | Z | -11.538 | 59.25 |

## Member Point Loads (BLC 6 : Wind -X (Ice))

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -8.449 | 28.05 |
| 2 | MP1 | X | -8.449 | 66.45 |
| 3 | MP2 | X | -8.449 | 28.05 |
| 4 | MP2 | X | -8.449 | 66.45 |
| 5 | MP2 | X | -17.71 | 14.25 |
| 6 | MP2 | X | -22.328 | 47.25 |
| 7 | MP3 | X | -8.264 | 28 |
| 8 | MP3 | X | -8.242 | 66.55 |
| 9 | MP3 | X | -15.411 | 47.25 |
| 10 | MP4 | X | -8.273 | 28.05 |
| 11 | MP4 | X | -8.273 | 66.45 |
| 12 | MP4 | X | -17.217 | 38.25 |
| 13 | MP4 | X | -16.402 | 56.25 |
| 14 | MP5 | X | -21.089 | 28.05 |
| 15 | MP5 | X | -21.089 | 66.45 |
| 16 | MP6 | X | -21.089 | 28.05 |
| 17 | MP6 | X | -21.089 | 66.45 |
| 18 | MP7 | X | -21.089 | 28.05 |
| 19 | MP7 | X | -21.089 | 66.45 |
| 20 | MP7 | X | -32.13 | 47.25 |
| 21 | MP7 | X | -29.619 | 14.25 |
| 22 | MP8 | X | -21.089 | 28.05 |
| 23 | MP8 | X | -21.089 | 66.45 |
| 24 | MP8 | X | -29.619 | 14.25 |
| 25 | MP8 | X | -32.13 | 47.25 |
| 26 | MP9 | X | -22.183 | 28 |
| 27 | MP9 | X | -22.125 | 66.55 |

## Member Point Loads (BLC 6 : Wind -X (Ice)) (Continued)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 28 | MP9 | X | -23.928 | 47.25 |
| 29 | MP10 | X | -22.183 | 28 |
| 30 | MP10 | X | -22.125 | 66.55 |
| 31 | MP10 | X | -23.928 | 47.25 |
| 32 | MP11 | X | -22.038 | 28.05 |
| 33 | MP11 | X | -22.038 | 66.45 |
| 34 | MP11 | X | -25.437 | 38.25 |
| 35 | MP11 | X | -23.566 | 59.25 |
| 36 | MP12 | X | -22.038 | 28.05 |
| 37 | MP12 | X | -22.038 | 66.45 |
| 38 | MP12 | X | -25.437 | 38.25 |
| 39 | MP12 | X | -23.566 | 59.25 |

## Member Point Loads (BLC 7 : Wind -Z (Working))

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | Z | -6.014 | 28.05 |
| 2 | MP1 | Z | -6.014 | 66.45 |
| 3 | MP2 | Z | -6.014 | 28.05 |
| 4 | MP2 | Z | -6.014 | 66.45 |
| 5 | MP2 | Z | -3.109 | 14.25 |
| 6 | MP2 | Z | -2.711 | 47.25 |
| 7 | MP3 | Z | -8.35 | 28 |
| 8 | MP3 | Z | -8.328 | 66.55 |
| 9 | MP3 | Z | -1.822 | 47.25 |
| 10 | MP4 | Z | -8.186 | 28.05 |
| 11 | MP4 | Z | -8.186 | 66.45 |
| 12 | MP4 | Z | -1.947 | 38.25 |
| 13 | MP4 | Z | -1.631 | 56.25 |
| 14 | MP5 | Z | -4.282 | 28.05 |
| 15 | MP5 | Z | -4.282 | 66.45 |
| 16 | MP6 | Z | -4.282 | 28.05 |
| 17 | MP6 | Z | -4.282 | 66.45 |
| 18 | MP7 | Z | -4.282 | 28.05 |
| 19 | MP7 | Z | -4.282 | 66.45 |
| 20 | MP7 | Z | -2.784 | 47.25 |
| 21 | MP7 | Z | -2.655 | 14.25 |
| 22 | MP8 | Z | -4.282 | 28.05 |
| 23 | MP8 | Z | -4.282 | 66.45 |
| 24 | MP8 | Z | -2.655 | 14.25 |
| 25 | MP8 | Z | -2.784 | 47.25 |
| 26 | MP9 | Z | -5.481 | 28 |
| 27 | MP9 | Z | -5.467 | 66.55 |
| 28 | MP9 | Z | -1.817 | 47.25 |
| 29 | MP10 | Z | -5.481 | 28 |
| 30 | MP10 | Z | -5.467 | 66.55 |
| 31 | MP10 | Z | -1.817 | 47.25 |
| 32 | MP11 | Z | -5.385 | 28.05 |
| 33 | MP11 | Z | -5.385 | 66.45 |
| 34 | MP11 | Z | -2.174 | 38.25 |
| 35 | MP11 | Z | -1.982 | 59.25 |
| 36 | MP12 | Z | -5.385 | 28.05 |

## Member Point Loads (BLC 7 : Wind -Z (Working)) (Continued)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 37 | MP12 | Z | -5.385 | 66.45 |
| 38 | MP12 | Z | -2.174 | 38.25 |
| 39 | MP12 | Z | -1.982 | 59.25 |

## Member Point Loads (BLC 8 : Wind -X (Working))

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -1.472 | 28.05 |
| 2 | MP1 | X | -1.472 | 66.45 |
| 3 | MP2 | X | -1.472 | 28.05 |
| 4 | MP2 | X | -1.472 | 66.45 |
| 5 | MP2 | X | -2.542 | 14.25 |
| 6 | MP2 | X | -3.298 | 47.25 |
| 7 | MP3 | X | -1.508 | 28 |
| 8 | MP3 | X | -1.504 | 66.55 |
| 9 | MP3 | X | -2.093 | 47.25 |
| 10 | MP4 | X | -1.492 | 28.05 |
| 11 | MP4 | X | -1.492 | 66.45 |
| 12 | MP4 | X | -2.772 | 38.25 |
| 13 | MP4 | X | -2.694 | 56.25 |
| 14 | MP5 | X | -5.944 | 28.05 |
| 15 | MP5 | X | -5.944 | 66.45 |
| 16 | MP6 | X | -5.944 | 28.05 |
| 17 | MP6 | X | -5.944 | 66.45 |
| 18 | MP7 | X | -5.944 | 28.05 |
| 19 | MP7 | X | -5.944 | 66.45 |
| 20 | MP7 | X | -6.346 | 47.25 |
| 21 | MP7 | X | -6.656 | 14.25 |
| 22 | MP8 | X | -5.944 | 28.05 |
| 23 | MP8 | X | -5.944 | 66.45 |
| 24 | MP8 | X | -6.656 | 14.25 |
| 25 | MP8 | X | -6.346 | 47.25 |
| 26 | MP9 | X | -7.985 | 28 |
| 27 | MP9 | X | -7.965 | 66.55 |
| 28 | MP9 | X | -4.202 | 47.25 |
| 29 | MP10 | X | -7.985 | 28 |
| 30 | MP10 | X | -7.965 | 66.55 |
| 31 | MP10 | X | -4.202 | 47.25 |
| 32 | MP11 | X | -7.835 | 28.05 |
| 33 | MP11 | X | -7.835 | 66.45 |
| 34 | MP11 | X | -4.758 | 38.25 |
| 35 | MP11 | X | -4.172 | 59.25 |
| 36 | MP12 | X | -7.835 | 28.05 |
| 37 | MP12 | X | -7.835 | 66.45 |
| 38 | MP12 | X | -4.758 | 38.25 |
| 39 | MP12 | X | -4.172 | 59.25 |

## Member Distributed Loads (BLC 2 : Ice)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | Y | -6.507 | -6.507 | 0 | %100 |
| 2 | H002 | Y | -6.507 | -6.507 | 0 | %100 |

## Member Distributed Loads (BLC 2 : Ice) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 3 | H003 | Y | -2.287 | -2.287 | 0 | %100 |
| 4 | H004 | Y | -2.287 | -2.287 | 0 | %100 |
| 5 | H005 | Y | -2.287 | -2.287 | 0 | %100 |
| 6 | H006 | Y | -6.507 | -6.507 | 0 | %100 |
| 7 | H007 | Y | -4.924 | -4.924 | 0 | %100 |
| 8 | H008 | Y | -4.924 | -4.924 | 0 | %100 |
| 9 | H009 | Y | -4.924 | -4.924 | 0 | %100 |
| 10 | H010 | Y | -6.507 | -6.507 | 0 | %100 |
| 11 | H011 | Y | -6.507 | -6.507 | 0 | %100 |
| 12 | H012 | Y | -6.507 | -6.507 | 0 | %100 |
| 13 | H013 | Y | -6.366 | -6.366 | 0 | %100 |
| 14 | H014 | Y | -6.366 | -6.366 | 0 | %100 |
| 15 | H015 | Y | -6.366 | -6.366 | 0 | %100 |
| 16 | H016 | Y | -1.913 | -1.913 | 0 | %100 |
| 17 | H017 | Y | -1.913 | -1.913 | 0 | %100 |
| 18 | H018 | Y | -1.913 | -1.913 | 0 | %100 |
| 19 | H019 | Y | -1.913 | -1.913 | 0 | %100 |
| 20 | H020 | Y | -1.913 | -1.913 | 0 | %100 |
| 21 | H021 | Y | -1.913 | -1.913 | 0 | %100 |
| 22 | H022 | Y | -1.996 | -1.996 | 0 | %100 |
| 23 | H023 | Y | -1.996 | -1.996 | 0 | %100 |
| 24 | H024 | Y | -1.996 | -1.996 | 0 | %100 |
| 25 | H025 | Y | -9.542 | -9.542 | 0 | %100 |
| 26 | H026 | Y | -9.542 | -9.542 | 0 | %100 |
| 27 | H027 | Y | -9.542 | -9.542 | 0 | %100 |
| 28 | D028 | Y | -2.329 | -2.329 | 0 | %100 |
| 29 | D029 | Y | -2.329 | -2.329 | 0 | %100 |
| 30 | D030 | Y | -2.329 | -2.329 | 0 | %100 |
| 31 | MP1 | Y | -5.627 | -5.627 | 0 | %100 |
| 32 | MP2 | Y | -5.627 | -5.627 | 0 | %100 |
| 33 | MP3 | Y | -5.627 | -5.627 | 0 | %100 |
| 34 | MP4 | Y | -5.627 | -5.627 | 0 | %100 |
| 35 | MP5 | Y | -5.627 | -5.627 | 0 | %100 |
| 36 | MP6 | Y | -5.627 | -5.627 | 0 | %100 |
| 37 | MP7 | Y | -5.627 | -5.627 | 0 | %100 |
| 38 | MP8 | Y | -5.627 | -5.627 | 0 | %100 |
| 39 | MP9 | Y | -5.627 | -5.627 | 0 | %100 |
| 40 | MP10 | Y | -5.627 | -5.627 | 0 | %100 |
| 41 | MP11 | Y | -5.627 | -5.627 | 0 | %100 |
| 42 | MP12 | Y | -5.627 | -5.627 | 0 | %100 |

## Member Distributed Loads (BLC 5 : Wind -Z (Ice))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | Z | -1.372 | -1.372 | 0 | %100 |
| 2 | H002 | Z | -1.372 | -1.372 | 0 | %100 |
| 3 | H003 | Z | -1.372 | -1.372 | 0 | %100 |
| 4 | H004 | Z | -1.372 | -1.372 | 0 | %100 |
| 5 | H005 | Z | -1.372 | -1.372 | 0 | %100 |
| 6 | H006 | Z | -1.372 | -1.372 | 0 | %100 |
| 7 | H007 | Z | -1.372 | -1.372 | 0 | %100 |
| 8 | H008 | Z | -1.372 | -1.372 | 0 | %100 |

## Member Distributed Loads (BLC 5 : Wind -Z (Ice)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 9 | H009 | Z | -1.372 | -1.372 | 0 | %100 |
| 10 | H010 | Z | -1.372 | -1.372 | 0 | %100 |
| 11 | H011 | Z | -1.372 | -1.372 | 0 | %100 |
| 12 | H012 | Z | -1.372 | -1.372 | 0 | %100 |
| 13 | H013 | Z | -1.372 | -1.372 | 0 | %100 |
| 14 | H014 | Z | -1.372 | -1.372 | 0 | %100 |
| 15 | H015 | Z | -1.372 | -1.372 | 0 | %100 |
| 16 | H016 | Z | -1.372 | -1.372 | 0 | %100 |
| 17 | H017 | Z | -1.372 | -1.372 | 0 | %100 |
| 18 | H018 | Z | -1.372 | -1.372 | 0 | %100 |
| 19 | H019 | Z | -1.372 | -1.372 | 0 | %100 |
| 20 | H020 | Z | -1.372 | -1.372 | 0 | %100 |
| 21 | H021 | Z | -1.372 | -1.372 | 0 | %100 |
| 22 | H022 | Z | -1.372 | -1.372 | 0 | %100 |
| 23 | H023 | Z | -1.372 | -1.372 | 0 | %100 |
| 24 | H024 | Z | -1.372 | -1.372 | 0 | %100 |
| 25 | H025 | Z | -1.372 | -1.372 | 0 | %100 |
| 26 | H026 | Z | -1.372 | -1.372 | 0 | %100 |
| 27 | H027 | Z | -1.372 | -1.372 | 0 | %100 |
| 28 | D028 | Z | -1.372 | -1.372 | 0 | %100 |
| 29 | D029 | Z | -1.372 | -1.372 | 0 | %100 |
| 30 | D030 | Z | -1.372 | -1.372 | 0 | %100 |
| 31 | MP1 | Z | -1.372 | -1.372 | 0 | %100 |
| 32 | MP2 | Z | -1.372 | -1.372 | 0 | %100 |
| 33 | MP3 | Z | -1.372 | -1.372 | 0 | %100 |
| 34 | MP4 | Z | -1.372 | -1.372 | 0 | %100 |
| 35 | MP5 | Z | -1.372 | -1.372 | 0 | %100 |
| 36 | MP6 | Z | -1.372 | -1.372 | 0 | %100 |
| 37 | MP7 | Z | -1.372 | -1.372 | 0 | %100 |
| 38 | MP8 | Z | -1.372 | -1.372 | 0 | %100 |
| 39 | MP9 | Z | -1.372 | -1.372 | 0 | %100 |
| 40 | MP10 | Z | -1.372 | -1.372 | 0 | %100 |
| 41 | MP11 | Z | -1.372 | -1.372 | 0 | %100 |
| 42 | MP12 | Z | -1.372 | -1.372 | 0 | %100 |

## Member Distributed Loads (BLC 6 : Wind -X (Ice))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | X | -1.372 | -1.372 | 0 | %100 |
| 2 | H002 | X | -1.372 | -1.372 | 0 | %100 |
| 3 | H003 | X | -1.372 | -1.372 | 0 | %100 |
| 4 | H004 | X | -1.372 | -1.372 | 0 | %100 |
| 5 | H005 | X | -1.372 | -1.372 | 0 | %100 |
| 6 | H006 | X | -1.372 | -1.372 | 0 | %100 |
| 7 | H007 | X | -1.372 | -1.372 | 0 | %100 |
| 8 | H008 | X | -1.372 | -1.372 | 0 | %100 |
| 9 | H009 | X | -1.372 | -1.372 | 0 | %100 |
| 10 | H010 | X | -1.372 | -1.372 | 0 | %100 |
| 11 | H011 | X | -1.372 | -1.372 | 0 | %100 |
| 12 | H012 | X | -1.372 | -1.372 | 0 | %100 |
| 13 | H013 | X | -1.372 | -1.372 | 0 | %100 |
| 14 | H014 | X | -1.372 | -1.372 | 0 | %100 |

## Member Distributed Loads (BLC 6 : Wind -X (Ice)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 15 | H015 | X | -1.372 | -1.372 | 0 | %100 |
| 16 | H016 | X | -1.372 | -1.372 | 0 | %100 |
| 17 | H017 | X | -1.372 | -1.372 | 0 | %100 |
| 18 | H018 | X | -1.372 | -1.372 | 0 | %100 |
| 19 | H019 | X | -1.372 | -1.372 | 0 | %100 |
| 20 | H020 | X | -1.372 | -1.372 | 0 | %100 |
| 21 | H021 | X | -1.372 | -1.372 | 0 | %100 |
| 22 | H022 | X | -1.372 | -1.372 | 0 | %100 |
| 23 | H023 | X | -1.372 | -1.372 | 0 | %100 |
| 24 | H024 | X | -1.372 | -1.372 | 0 | %100 |
| 25 | H025 | X | -1.372 | -1.372 | 0 | %100 |
| 26 | H026 | X | -1.372 | -1.372 | 0 | %100 |
| 27 | H027 | X | -1.372 | -1.372 | 0 | %100 |
| 28 | D028 | X | -1.372 | -1.372 | 0 | %100 |
| 29 | D029 | X | -1.372 | -1.372 | 0 | %100 |
| 30 | D030 | X | -1.372 | -1.372 | 0 | %100 |
| 31 | MP1 | X | -1.372 | -1.372 | 0 | %100 |
| 32 | MP2 | X | -1.372 | -1.372 | 0 | %100 |
| 33 | MP3 | X | -1.372 | -1.372 | 0 | %100 |
| 34 | MP4 | X | -1.372 | -1.372 | 0 | %100 |
| 35 | MP5 | X | -1.372 | -1.372 | 0 | %100 |
| 36 | MP6 | X | -1.372 | -1.372 | 0 | %100 |
| 37 | MP7 | X | -1.372 | -1.372 | 0 | %100 |
| 38 | MP8 | X | -1.372 | -1.372 | 0 | %100 |
| 39 | MP9 | X | -1.372 | -1.372 | 0 | %100 |
| 40 | MP10 | X | -1.372 | -1.372 | 0 | %100 |
| 41 | MP11 | X | -1.372 | -1.372 | 0 | %100 |
| 42 | MP12 | X | -1.372 | -1.372 | 0 | %100 |

## Member Distributed Loads (BLC 9 : Ev -Y (Seismic))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | Y | -.555 | -.555 | 0 | %100 |
| 2 | H002 | Y | -.555 | -.555 | 0 | %100 |
| 3 | H003 | Y | -.555 | -.555 | 0 | %100 |
| 4 | H004 | Y | -.555 | -.555 | 0 | %100 |
| 5 | H005 | Y | -.555 | -.555 | 0 | %100 |
| 6 | H006 | Y | -.555 | -.555 | 0 | %100 |
| 7 | H007 | Y | -.555 | -.555 | 0 | %100 |
| 8 | H008 | Y | -.555 | -.555 | 0 | %100 |
| 9 | H009 | Y | -.555 | -.555 | 0 | %100 |
| 10 | H010 | Y | -.555 | -.555 | 0 | %100 |
| 11 | H011 | Y | -.555 | -.555 | 0 | %100 |
| 12 | H012 | Y | -.555 | -.555 | 0 | %100 |
| 13 | H013 | Y | -.555 | -.555 | 0 | %100 |
| 14 | H014 | Y | -.555 | -.555 | 0 | %100 |
| 15 | H015 | Y | -.555 | -.555 | 0 | %100 |
| 16 | H016 | Y | -.555 | -.555 | 0 | %100 |
| 17 | H017 | Y | -.555 | -.555 | 0 | %100 |
| 18 | H018 | Y | -.555 | -.555 | 0 | %100 |
| 19 | H019 | Y | -.555 | -.555 | 0 | %100 |
| 20 | H020 | Y | -.555 | -.555 | 0 | %100 |

## Member Distributed Loads (BLC 9 : Ev -Y (Seismic)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 21 | H021 | Y | -.555 | -.555 | 0 | %100 |
| 22 | H022 | Y | -.555 | -.555 | 0 | %100 |
| 23 | H023 | Y | -.555 | -.555 | 0 | %100 |
| 24 | H024 | Y | -.555 | -.555 | 0 | %100 |
| 25 | H025 | Y | -.555 | -.555 | 0 | %100 |
| 26 | H026 | Y | -.555 | -.555 | 0 | %100 |
| 27 | H027 | Y | -.555 | -.555 | 0 | %100 |
| 28 | D028 | Y | -.555 | -.555 | 0 | %100 |
| 29 | D029 | Y | -.555 | -.555 | 0 | %100 |
| 30 | D030 | Y | -.555 | -.555 | 0 | %100 |
| 31 | MP1 | Y | -.555 | -.555 | 0 | %100 |
| 32 | MP2 | Y | -.555 | -.555 | 0 | %100 |
| 33 | MP3 | Y | -.555 | -.555 | 0 | %100 |
| 34 | MP4 | Y | -.555 | -.555 | 0 | %100 |
| 35 | MP5 | Y | -.555 | -.555 | 0 | %100 |
| 36 | MP6 | Y | -.555 | -.555 | 0 | %100 |
| 37 | MP7 | Y | -.555 | -.555 | 0 | %100 |
| 38 | MP8 | Y | -.555 | -.555 | 0 | %100 |
| 39 | MP9 | Y | -.555 | -.555 | 0 | %100 |
| 40 | MP10 | Y | -.555 | -.555 | 0 | %100 |
| 41 | MP11 | Y | -.555 | -.555 | 0 | %100 |
| 42 | MP12 | Y | -.555 | -.555 | 0 | %100 |

## Member Distributed Loads (BLC 10 : Eh -Z (Seismic))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | Z | -1.388 | -1.388 | 0 | %100 |
| 2 | H002 | Z | -1.388 | -1.388 | 0 | %100 |
| 3 | H003 | Z | -1.388 | -1.388 | 0 | %100 |
| 4 | H004 | Z | -1.388 | -1.388 | 0 | %100 |
| 5 | H005 | Z | -1.388 | -1.388 | 0 | %100 |
| 6 | H006 | Z | -1.388 | -1.388 | 0 | %100 |
| 7 | H007 | Z | -1.388 | -1.388 | 0 | %100 |
| 8 | H008 | Z | -1.388 | -1.388 | 0 | %100 |
| 9 | H009 | Z | -1.388 | -1.388 | 0 | %100 |
| 10 | H010 | Z | -1.388 | -1.388 | 0 | %100 |
| 11 | H011 | Z | -1.388 | -1.388 | 0 | %100 |
| 12 | H012 | Z | -1.388 | -1.388 | 0 | %100 |
| 13 | H013 | Z | -1.388 | -1.388 | 0 | %100 |
| 14 | H014 | Z | -1.388 | -1.388 | 0 | %100 |
| 15 | H015 | Z | -1.388 | -1.388 | 0 | %100 |
| 16 | H016 | Z | -1.388 | -1.388 | 0 | %100 |
| 17 | H017 | Z | -1.388 | -1.388 | 0 | %100 |
| 18 | H018 | Z | -1.388 | -1.388 | 0 | %100 |
| 19 | H019 | Z | -1.388 | -1.388 | 0 | %100 |
| 20 | H020 | Z | -1.388 | -1.388 | 0 | %100 |
| 21 | H021 | Z | -1.388 | -1.388 | 0 | %100 |
| 22 | H022 | Z | -1.388 | -1.388 | 0 | %100 |
| 23 | H023 | Z | -1.388 | -1.388 | 0 | %100 |
| 24 | H024 | Z | -1.388 | -1.388 | 0 | %100 |
| 25 | H025 | Z | -1.388 | -1.388 | 0 | %100 |
| 26 | H026 | Z | -1.388 | -1.388 | 0 | %100 |

## Member Distributed Loads (BLC 10 : Eh -Z (Seismic)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 27 | H027 | Z | -1.388 | -1.388 | 0 | %100 |
| 28 | D028 | Z | -1.388 | -1.388 | 0 | %100 |
| 29 | D029 | Z | -1.388 | -1.388 | 0 | %100 |
| 30 | D030 | Z | -1.388 | -1.388 | 0 | %100 |
| 31 | MP1 | Z | -1.388 | -1.388 | 0 | %100 |
| 32 | MP2 | Z | -1.388 | -1.388 | 0 | %100 |
| 33 | MP3 | Z | -1.388 | -1.388 | 0 | %100 |
| 34 | MP4 | Z | -1.388 | -1.388 | 0 | %100 |
| 35 | MP5 | Z | -1.388 | -1.388 | 0 | %100 |
| 36 | MP6 | Z | -1.388 | -1.388 | 0 | %100 |
| 37 | MP7 | Z | -1.388 | -1.388 | 0 | %100 |
| 38 | MP8 | Z | -1.388 | -1.388 | 0 | %100 |
| 39 | MP9 | Z | -1.388 | -1.388 | 0 | %100 |
| 40 | MP10 | Z | -1.388 | -1.388 | 0 | %100 |
| 41 | MP11 | Z | -1.388 | -1.388 | 0 | %100 |
| 42 | MP12 | Z | -1.388 | -1.388 | 0 | %100 |

## Member Distributed Loads (BLC 11 : Eh -X (Seismic))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | X | -1.388 | -1.388 | 0 | %100 |
| 2 | H002 | X | -1.388 | -1.388 | 0 | %100 |
| 3 | H003 | X | -1.388 | -1.388 | 0 | %100 |
| 4 | H004 | X | -1.388 | -1.388 | 0 | %100 |
| 5 | H005 | X | -1.388 | -1.388 | 0 | %100 |
| 6 | H006 | X | -1.388 | -1.388 | 0 | %100 |
| 7 | H007 | X | -1.388 | -1.388 | 0 | %100 |
| 8 | H008 | X | -1.388 | -1.388 | 0 | %100 |
| 9 | H009 | X | -1.388 | -1.388 | 0 | %100 |
| 10 | H010 | X | -1.388 | -1.388 | 0 | %100 |
| 11 | H011 | X | -1.388 | -1.388 | 0 | %100 |
| 12 | H012 | X | -1.388 | -1.388 | 0 | %100 |
| 13 | H013 | X | -1.388 | -1.388 | 0 | %100 |
| 14 | H014 | X | -1.388 | -1.388 | 0 | %100 |
| 15 | H015 | X | -1.388 | -1.388 | 0 | %100 |
| 16 | H016 | X | -1.388 | -1.388 | 0 | %100 |
| 17 | H017 | X | -1.388 | -1.388 | 0 | %100 |
| 18 | H018 | X | -1.388 | -1.388 | 0 | %100 |
| 19 | H019 | X | -1.388 | -1.388 | 0 | %100 |
| 20 | H020 | X | -1.388 | -1.388 | 0 | %100 |
| 21 | H021 | X | -1.388 | -1.388 | 0 | %100 |
| 22 | H022 | X | -1.388 | -1.388 | 0 | %100 |
| 23 | H023 | X | -1.388 | -1.388 | 0 | %100 |
| 24 | H024 | X | -1.388 | -1.388 | 0 | %100 |
| 25 | H025 | X | -1.388 | -1.388 | 0 | %100 |
| 26 | H026 | X | -1.388 | -1.388 | 0 | %100 |
| 27 | H027 | X | -1.388 | -1.388 | 0 | %100 |
| 28 | D028 | X | -1.388 | -1.388 | 0 | %100 |
| 29 | D029 | X | -1.388 | -1.388 | 0 | %100 |
| 30 | D030 | X | -1.388 | -1.388 | 0 | %100 |
| 31 | MP1 | X | -1.388 | -1.388 | 0 | %100 |
| 32 | MP2 | X | -1.388 | -1.388 | 0 | %100 |

## Member Distributed Loads (BLC 11 : Eh -X (Seismic)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 33 | MP3 | X | -1.388 | -1.388 | 0 | %100 |
| 34 | MP4 | X | -1.388 | -1.388 | 0 | %100 |
| 35 | MP5 | X | -1.388 | -1.388 | 0 | %100 |
| 36 | MP6 | X | -1.388 | -1.388 | 0 | %100 |
| 37 | MP7 | X | -1.388 | -1.388 | 0 | %100 |
| 38 | MP8 | X | -1.388 | -1.388 | 0 | %100 |
| 39 | MP9 | X | -1.388 | -1.388 | 0 | %100 |
| 40 | MP10 | X | -1.388 | -1.388 | 0 | %100 |
| 41 | MP11 | X | -1.388 | -1.388 | 0 | %100 |
| 42 | MP12 | X | -1.388 | -1.388 | 0 | %100 |

## Member Distributed Loads (BLC 24 : BLC 3 Transient Area Loads)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | Z | -10.889 | -10.889 | 0 | 150 |
| 2 | H002 | Z | -5.444 | -5.444 | 0 | 150 |
| 3 | H003 | Z | -18.667 | -18.667 | 0 | 11.138 |
| 4 | H004 | Z | -9.333 | -9.333 | 0 | 11.138 |
| 5 | H005 | Z | -9.333 | -9.333 | 0 | 11.138 |
| 6 | H006 | Z | -5.444 | -5.444 | 0 | 150 |
| 7 | H007 | Z | -7.404 | -7.404 | 0 | 150 |
| 8 | H008 | Z | -3.702 | -3.702 | 0 | 150 |
| 9 | H009 | Z | -3.702 | -3.702 | 0 | 150 |
| 10 | H011 | Z | -9.43 | -9.43 | 0 | 65.354 |
| 11 | H012 | Z | -9.43 | -9.43 | 0 | 65.354 |
| 12 | H013 | Z | -4.667 | -4.667 | 0 | 65.138 |
| 13 | H014 | Z | -9.333 | -9.333 | 0 | 65.138 |
| 14 | H015 | Z | -4.667 | -4.667 | 0 | 65.138 |
| 15 | H016 | Z | -6.222 | -6.222 | 0 | 53.807 |
| 16 | H017 | Z | -3.077 | -3.077 | 0 | 53.807 |
| 17 | H018 | Z | -3.145 | -3.145 | 0 | 53.807 |
| 18 | H019 | Z | -6.222 | -6.222 | 0 | 53.807 |
| 19 | H020 | Z | -3.145 | -3.145 | 0 | 53.807 |
| 20 | H021 | Z | -3.077 | -3.077 | 0 | 53.807 |
| 21 | H022 | Z | -3.889 | -3.889 | 0 | 17.138 |
| 22 | H023 | Z | -7.778 | -7.778 | 0 | 17.138 |
| 23 | H024 | Z | -3.889 | -3.889 | 0 | 17.138 |
| 24 | H026 | Z | -10.777 | -10.777 | 0 | 6 |
| 25 | H027 | Z | -10.777 | -10.777 | 0 | 6 |
| 26 | D028 | Z | -5.49 | -5.49 | 0 | 40.804 |
| 27 | D029 | Z | -9.455 | -9.455 | 0 | 40.804 |
| 28 | D030 | Z | -9.455 | -9.455 | 0 | 40.804 |
| 29 | U039 | Z | -2.694 | -2.694 | 0 | 3 |
| 30 | U040 | Z | -2.694 | -2.694 | 0 | 3 |
| 31 | U041 | Z | -2.694 | -2.694 | 0 | 3 |
| 32 | U042 | Z | -2.694 | -2.694 | 0 | 3 |
| 33 | U043 | Z | -2.694 | -2.694 | 0 | 3 |
| 34 | U044 | Z | -2.694 | -2.694 | 0 | 3 |
| 35 | U045 | Z | -2.694 | -2.694 | 0 | 3 |
| 36 | U046 | Z | -2.694 | -2.694 | 0 | 3 |
| 37 | U047 | Z | -2.694 | -2.694 | 0 | 3 |
| 38 | U048 | Z | -2.694 | -2.694 | 0 | 3 |

## Member Distributed Loads (BLC 24 : BLC 3 Transient Area Loads) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 39 | U049 | Z | -2.694 | -2.694 | 0 | 3 |
| 40 | U050 | Z | -2.694 | -2.694 | 0 | 3 |
| 41 | U051 | Z | -2.694 | -2.694 | 0 | 3 |
| 42 | U052 | Z | -2.694 | -2.694 | 0 | 3 |
| 43 | U053 | Z | -2.694 | -2.694 | 0 | 3 |
| 44 | U054 | Z | -2.694 | -2.694 | 0 | 3 |
| 45 | MP1 | Z | -8.96 | -8.96 | 0 | 96 |
| 46 | MP2 | Z | -8.96 | -8.96 | 0 | 96 |
| 47 | MP3 | Z | -8.96 | -8.96 | 0 | 96 |
| 48 | MP4 | Z | -8.96 | -8.96 | 0 | 96 |
| 49 | MP5 | Z | -8.96 | -8.96 | 0 | 96 |
| 50 | MP6 | Z | -8.96 | -8.96 | 0 | 96 |
| 51 | MP7 | Z | -8.96 | -8.96 | 0 | 96 |
| 52 | MP8 | Z | -8.96 | -8.96 | 0 | 96 |
| 53 | MP9 | Z | -8.96 | -8.96 | 0 | 96 |
| 54 | MP10 | Z | -8.96 | -8.96 | 0 | 96 |
| 55 | MP11 | Z | -8.96 | -8.96 | 0 | 96 |
| 56 | MP12 | Z | -8.96 | -8.96 | 0 | 96 |

## Member Distributed Loads (BLC 25 : BLC 4 Transient Area Loads)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H002 | X | -9.43 | -9.43 | 0 | 150 |
| 2 | H004 | X | -16.166 | -16.166 | 0 | 11.138 |
| 3 | H005 | X | -16.166 | -16.166 | 0 | 11.138 |
| 4 | H006 | X | -9.43 | -9.43 | 0 | 150 |
| 5 | H008 | X | -6.412 | -6.412 | 0 | 150 |
| 6 | H009 | X | -6.412 | -6.412 | 0 | 150 |
| 7 | H010 | X | -10.889 | -10.889 | 0 | 65.354 |
| 8 | H011 | X | -5.444 | -5.444 | 0 | 65.354 |
| 9 | H012 | X | -5.444 | -5.444 | 0 | 65.354 |
| 10 | H013 | X | -8.083 | -8.083 | 0 | 65.138 |
| 11 | H015 | X | -8.083 | -8.083 | 0 | 65.138 |
| 12 | H016 | X | -.039 | -.039 | 0 | 53.807 |
| 13 | H017 | X | -5.408 | -5.408 | 0 | 53.807 |
| 14 | H018 | X | -5.369 | -5.369 | 0 | 53.807 |
| 15 | H019 | X | -.039 | -.039 | 0 | 53.807 |
| 16 | H020 | X | -5.369 | -5.369 | 0 | 53.807 |
| 17 | H021 | X | -5.408 | -5.408 | 0 | 53.807 |
| 18 | H022 | X | -6.736 | -6.736 | 0 | 17.138 |
| 19 | H024 | X | -6.736 | -6.736 | 0 | 17.138 |
| 20 | H025 | X | -12.444 | -12.444 | 0 | 6 |
| 21 | H026 | X | -6.222 | -6.222 | 0 | 6 |
| 22 | H027 | X | -6.222 | -6.222 | 0 | 6 |
| 23 | D028 | X | -9.333 | -9.333 | 0 | 40.804 |
| 24 | D029 | X | -7.044 | -7.044 | 0 | 40.804 |
| 25 | D030 | X | -7.044 | -7.044 | 0 | 40.804 |
| 26 | U031 | X | -3.111 | -3.111 | 0 | 3 |
| 27 | U032 | X | -3.111 | -3.111 | 0 | 3 |
| 28 | U033 | X | -3.111 | -3.111 | 0 | 3 |
| 29 | U034 | X | -3.111 | -3.111 | 0 | 3 |
| 30 | U035 | X | -3.111 | -3.111 | 0 | 3 |

## Member Distributed Loads (BLC 25 : BLC 4 Transient Area Loads) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 31 | U036 | X | -3.111 | -3.111 | 0 | 3 |
| 32 | U037 | X | -3.111 | -3.111 | 0 | 3 |
| 33 | U038 | X | -3.111 | -3.111 | 0 | 3 |
| 34 | U039 | X | -1.556 | -1.556 | 0 | 3 |
| 35 | U040 | X | -1.556 | -1.556 | 0 | 3 |
| 36 | U041 | X | -1.556 | -1.556 | 0 | 3 |
| 37 | U042 | X | -1.556 | -1.556 | 0 | 3 |
| 38 | U043 | X | -1.556 | -1.556 | 0 | 3 |
| 39 | U044 | X | -1.556 | -1.556 | 0 | 3 |
| 40 | U045 | X | -1.556 | -1.556 | 0 | 3 |
| 41 | U046 | X | -1.556 | -1.556 | 0 | 3 |
| 42 | U047 | X | -1.556 | -1.556 | 0 | 3 |
| 43 | U048 | X | -1.556 | -1.556 | 0 | 3 |
| 44 | U049 | X | -1.556 | -1.556 | 0 | 3 |
| 45 | U050 | X | -1.556 | -1.556 | 0 | 3 |
| 46 | U051 | X | -1.556 | -1.556 | 0 | 3 |
| 47 | U052 | X | -1.556 | -1.556 | 0 | 3 |
| 48 | U053 | X | -1.556 | -1.556 | 0 | 3 |
| 49 | U054 | X | -1.556 | -1.556 | 0 | 3 |
| 50 | MP1 | X | -8.96 | -8.96 | 0 | 96 |
| 51 | MP2 | X | -8.96 | -8.96 | 0 | 96 |
| 52 | MP3 | X | -8.96 | -8.96 | 0 | 96 |
| 53 | MP4 | X | -8.96 | -8.96 | 0 | 96 |
| 54 | MP5 | X | -8.96 | -8.96 | 0 | 96 |
| 55 | MP6 | X | -8.96 | -8.96 | 0 | 96 |
| 56 | MP7 | X | -8.96 | -8.96 | 0 | 96 |
| 57 | MP8 | X | -8.96 | -8.96 | 0 | 96 |
| 58 | MP9 | X | -8.96 | -8.96 | 0 | 96 |
| 59 | MP10 | X | -8.96 | -8.96 | 0 | 96 |
| 60 | MP11 | X | -8.96 | -8.96 | 0 | 96 |
| 61 | MP12 | X | -8.96 | -8.96 | 0 | 96 |

## Member Distributed Loads (BLC 26 : BLC 5 Transient Area Loads)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | Z | -1.922 | -1.922 | 0 | 150 |
| 2 | H002 | Z | -.961 | -.961 | 0 | 150 |
| 3 | H003 | Z | -3.296 | -3.296 | 0 | 11.138 |
| 4 | H004 | Z | -1.648 | -1.648 | 0 | 11.138 |
| 5 | H005 | Z | -1.648 | -1.648 | 0 | 11.138 |
| 6 | H006 | Z | -.961 | -.961 | 0 | 150 |
| 7 | H007 | Z | -1.307 | -1.307 | 0 | 150 |
| 8 | H008 | Z | -.654 | -.654 | 0 | 150 |
| 9 | H009 | Z | -.654 | -.654 | 0 | 150 |
| 10 | H011 | Z | -1.665 | -1.665 | 0 | 65.354 |
| 11 | H012 | Z | -1.665 | -1.665 | 0 | 65.354 |
| 12 | H013 | Z | -.824 | -.824 | 0 | 65.138 |
| 13 | H014 | Z | -1.648 | -1.648 | 0 | 65.138 |
| 14 | H015 | Z | -.824 | -.824 | 0 | 65.138 |
| 15 | H016 | Z | -1.099 | -1.099 | 0 | 53.807 |
| 16 | H017 | Z | -.543 | -.543 | 0 | 53.807 |
| 17 | H018 | Z | -.555 | -.555 | 0 | 53.807 |

## Member Distributed Loads (BLC 26 : BLC 5 Transient Area Loads) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 18 | H019 | Z | -1.099 | -1.099 | 0 | 53.807 |
| 19 | H020 | Z | -.555 | -.555 | 0 | 53.807 |
| 20 | H021 | Z | -.543 | -.543 | 0 | 53.807 |
| 21 | H022 | Z | -.687 | -.687 | 0 | 17.138 |
| 22 | H023 | Z | -1.373 | -1.373 | 0 | 17.138 |
| 23 | H024 | Z | -.687 | -.687 | 0 | 17.138 |
| 24 | H026 | Z | -1.903 | -1.903 | 0 | 6 |
| 25 | H027 | Z | -1.903 | -1.903 | 0 | 6 |
| 26 | D028 | Z | -.969 | -.969 | 0 | 40.804 |
| 27 | D029 | Z | -1.669 | -1.669 | 0 | 40.804 |
| 28 | D030 | Z | -1.669 | -1.669 | 0 | 40.804 |
| 29 | U039 | Z | -.476 | -.476 | 0 | 3 |
| 30 | U040 | Z | -.476 | -.476 | 0 | 3 |
| 31 | U041 | Z | -.476 | -.476 | 0 | 3 |
| 32 | U042 | Z | -.476 | -.476 | 0 | 3 |
| 33 | U043 | Z | -.476 | -.476 | 0 | 3 |
| 34 | U044 | Z | -.476 | -.476 | 0 | 3 |
| 35 | U045 | Z | -.476 | -.476 | 0 | 3 |
| 36 | U046 | Z | -.476 | -.476 | 0 | 3 |
| 37 | U047 | Z | -.476 | -.476 | 0 | 3 |
| 38 | U048 | Z | -.476 | -.476 | 0 | 3 |
| 39 | U049 | Z | -.476 | -.476 | 0 | 3 |
| 40 | U050 | Z | -.476 | -.476 | 0 | 3 |
| 41 | U051 | Z | -.476 | -.476 | 0 | 3 |
| 42 | U052 | Z | -.476 | -.476 | 0 | 3 |
| 43 | U053 | Z | -.476 | -.476 | 0 | 3 |
| 44 | U054 | Z | -.476 | -.476 | 0 | 3 |
| 45 | MP1 | Z | -1.582 | -1.582 | 0 | 96 |
| 46 | MP2 | Z | -1.582 | -1.582 | 0 | 96 |
| 47 | MP3 | Z | -1.582 | -1.582 | 0 | 96 |
| 48 | MP4 | Z | -1.582 | -1.582 | 0 | 96 |
| 49 | MP5 | Z | -1.582 | -1.582 | 0 | 96 |
| 50 | MP6 | Z | -1.582 | -1.582 | 0 | 96 |
| 51 | MP7 | Z | -1.582 | -1.582 | 0 | 96 |
| 52 | MP8 | Z | -1.582 | -1.582 | 0 | 96 |
| 53 | MP9 | Z | -1.582 | -1.582 | 0 | 96 |
| 54 | MP10 | Z | -1.582 | -1.582 | 0 | 96 |
| 55 | MP11 | Z | -1.582 | -1.582 | 0 | 96 |
| 56 | MP12 | Z | -1.582 | -1.582 | 0 | 96 |

## Member Distributed Loads (BLC 27 : BLC 6 Transient Area Loads)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H002 | X | -1.665 | -1.665 | 0 | 150 |
| 2 | H004 | X | -2.854 | -2.854 | 0 | 11.138 |
| 3 | H005 | X | -2.854 | -2.854 | 0 | 11.138 |
| 4 | H006 | X | -1.665 | -1.665 | 0 | 150 |
| 5 | H008 | X | -1.132 | -1.132 | 0 | 150 |
| 6 | H009 | X | -1.132 | -1.132 | 0 | 150 |
| 7 | H010 | X | -1.922 | -1.922 | 0 | 65.354 |
| 8 | H011 | X | -.961 | -.961 | 0 | 65.354 |
| 9 | H012 | X | -.961 | -.961 | 0 | 65.354 |

## Member Distributed Loads (BLC 27 : BLC 6 Transient Area Loads) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 10 | H013 | X | -1.427 | -1.427 | 0 | 65.138 |
| 11 | H015 | X | -1.427 | -1.427 | 0 | 65.138 |
| 12 | H016 | X | -.007 | -.007 | 0 | 53.807 |
| 13 | H017 | X | -.955 | -.955 | 0 | 53.807 |
| 14 | H018 | X | -.948 | -.948 | 0 | 53.807 |
| 15 | H019 | X | -.007 | -.007 | 0 | 53.807 |
| 16 | H020 | X | -.948 | -.948 | 0 | 53.807 |
| 17 | H021 | X | -.955 | -.955 | 0 | 53.807 |
| 18 | H022 | X | -1.189 | -1.189 | 0 | 17.138 |
| 19 | H024 | X | -1.189 | -1.189 | 0 | 17.138 |
| 20 | H025 | X | -2.197 | -2.197 | 0 | 6 |
| 21 | H026 | X | -1.099 | -1.099 | 0 | 6 |
| 22 | H027 | X | -1.099 | -1.099 | 0 | 6 |
| 23 | D028 | X | -1.648 | -1.648 | 0 | 40.804 |
| 24 | D029 | X | -1.244 | -1.244 | 0 | 40.804 |
| 25 | D030 | X | -1.244 | -1.244 | 0 | 40.804 |
| 26 | U031 | X | -.549 | -.549 | 0 | 3 |
| 27 | U032 | X | -.549 | -.549 | 0 | 3 |
| 28 | U033 | X | -.549 | -.549 | 0 | 3 |
| 29 | U034 | X | -.549 | -.549 | 0 | 3 |
| 30 | U035 | X | -.549 | -.549 | 0 | 3 |
| 31 | U036 | X | -.549 | -.549 | 0 | 3 |
| 32 | U037 | X | -.549 | -.549 | 0 | 3 |
| 33 | U038 | X | -.549 | -.549 | 0 | 3 |
| 34 | U039 | X | -.275 | -.275 | 0 | 3 |
| 35 | U040 | X | -.275 | -.275 | 0 | 3 |
| 36 | U041 | X | -.275 | -.275 | 0 | 3 |
| 37 | U042 | X | -.275 | -.275 | 0 | 3 |
| 38 | U043 | X | -.275 | -.275 | 0 | 3 |
| 39 | U044 | X | -.275 | -.275 | 0 | 3 |
| 40 | U045 | X | -.275 | -.275 | 0 | 3 |
| 41 | U046 | X | -.275 | -.275 | 0 | 3 |
| 42 | U047 | X | -.275 | -.275 | 0 | 3 |
| 43 | U048 | X | -.275 | -.275 | 0 | 3 |
| 44 | U049 | X | -.275 | -.275 | 0 | 3 |
| 45 | U050 | X | -.275 | -.275 | 0 | 3 |
| 46 | U051 | X | -.275 | -.275 | 0 | 3 |
| 47 | U052 | X | -.275 | -.275 | 0 | 3 |
| 48 | U053 | X | -.275 | -.275 | 0 | 3 |
| 49 | U054 | X | -.275 | -.275 | 0 | 3 |
| 50 | MP1 | X | -1.582 | -1.582 | 0 | 96 |
| 51 | MP2 | X | -1.582 | -1.582 | 0 | 96 |
| 52 | MP3 | X | -1.582 | -1.582 | 0 | 96 |
| 53 | MP4 | X | -1.582 | -1.582 | 0 | 96 |
| 54 | MP5 | X | -1.582 | -1.582 | 0 | 96 |
| 55 | MP6 | X | -1.582 | -1.582 | 0 | 96 |
| 56 | MP7 | X | -1.582 | -1.582 | 0 | 96 |
| 57 | MP8 | X | -1.582 | -1.582 | 0 | 96 |
| 58 | MP9 | X | -1.582 | -1.582 | 0 | 96 |
| 59 | MP10 | X | -1.582 | -1.582 | 0 | 96 |
| 60 | MP11 | X | -1.582 | -1.582 | 0 | 96 |
| 61 | MP12 | X | -1.582 | -1.582 | 0 | 96 |

## Member Distributed Loads (BLC 28 : BLC 7 Transient Area Loads)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H001 | Z | -.692 | -.692 | 0 | 150 |
| 2 | H002 | Z | -.346 | -.346 | 0 | 150 |
| 3 | H003 | Z | -1.186 | -1.186 | 0 | 11.138 |
| 4 | H004 | Z | -.593 | -.593 | 0 | 11.138 |
| 5 | H005 | Z | -.593 | -.593 | 0 | 11.138 |
| 6 | H006 | Z | -.346 | -.346 | 0 | 150 |
| 7 | H007 | Z | -.471 | -.471 | 0 | 150 |
| 8 | H008 | Z | -.235 | -.235 | 0 | 150 |
| 9 | H009 | Z | -.235 | -.235 | 0 | 150 |
| 10 | H011 | Z | -.599 | -.599 | 0 | 65.354 |
| 11 | H012 | Z | -.599 | -.599 | 0 | 65.354 |
| 12 | H013 | Z | -.297 | -.297 | 0 | 65.138 |
| 13 | H014 | Z | -.593 | -.593 | 0 | 65.138 |
| 14 | H015 | Z | -.297 | -.297 | 0 | 65.138 |
| 15 | H016 | Z | -.395 | -.395 | 0 | 53.807 |
| 16 | H017 | Z | -.196 | -.196 | 0 | 53.807 |
| 17 | H018 | Z | -.2 | -.2 | 0 | 53.807 |
| 18 | H019 | Z | -.395 | -.395 | 0 | 53.807 |
| 19 | H020 | Z | -.2 | -.2 | 0 | 53.807 |
| 20 | H021 | Z | -.196 | -.196 | 0 | 53.807 |
| 21 | H022 | Z | -.247 | -.247 | 0 | 17.138 |
| 22 | H023 | Z | -.494 | -.494 | 0 | 17.138 |
| 23 | H024 | Z | -.247 | -.247 | 0 | 17.138 |
| 24 | H026 | Z | -.685 | -.685 | 0 | 6 |
| 25 | H027 | Z | -.685 | -.685 | 0 | 6 |
| 26 | D028 | Z | -.349 | -.349 | 0 | 40.804 |
| 27 | D029 | Z | -.601 | -.601 | 0 | 40.804 |
| 28 | D030 | Z | -.601 | -.601 | 0 | 40.804 |
| 29 | U039 | Z | -.171 | -.171 | 0 | 3 |
| 30 | U040 | Z | -.171 | -.171 | 0 | 3 |
| 31 | U041 | Z | -.171 | -.171 | 0 | 3 |
| 32 | U042 | Z | -.171 | -.171 | 0 | 3 |
| 33 | U043 | Z | -.171 | -.171 | 0 | 3 |
| 34 | U044 | Z | -.171 | -.171 | 0 | 3 |
| 35 | U045 | Z | -.171 | -.171 | 0 | 3 |
| 36 | U046 | Z | -.171 | -.171 | 0 | 3 |
| 37 | U047 | Z | -.171 | -.171 | 0 | 3 |
| 38 | U048 | Z | -.171 | -.171 | 0 | 3 |
| 39 | U049 | Z | -.171 | -.171 | 0 | 3 |
| 40 | U050 | Z | -.171 | -.171 | 0 | 3 |
| 41 | U051 | Z | -.171 | -.171 | 0 | 3 |
| 42 | U052 | Z | -.171 | -.171 | 0 | 3 |
| 43 | U053 | Z | -.171 | -.171 | 0 | 3 |
| 44 | U054 | Z | -.171 | -.171 | 0 | 3 |
| 45 | MP1 | Z | -.569 | -.569 | 0 | 96 |
| 46 | MP2 | Z | -.569 | -.569 | 0 | 96 |
| 47 | MP3 | Z | -.569 | -.569 | 0 | 96 |
| 48 | MP4 | Z | -.569 | -.569 | 0 | 96 |
| 49 | MP5 | Z | -.569 | -.569 | 0 | 96 |
| 50 | MP6 | Z | -.569 | -.569 | 0 | 96 |
| 51 | MP7 | Z | -.569 | -.569 | 0 | 96 |
| 52 | MP8 | Z | -.569 | -.569 | 0 | 96 |

## Member Distributed Loads (BLC 28 : BLC 7 Transient Area Loads) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 53 | MP9 | Z | -.569 | -.569 | 0 | 96 |
| 54 | MP10 | Z | -.569 | -.569 | 0 | 96 |
| 55 | MP11 | Z | -.569 | -.569 | 0 | 96 |
| 56 | MP12 | Z | -.569 | -.569 | 0 | 96 |

## Member Distributed Loads (BLC 29 : BLC 8 Transient Area Loads)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 1 | H002 | X | -.599 | -.599 | 0 | 150 |
| 2 | H004 | X | -1.027 | -1.027 | 0 | 11.138 |
| 3 | H005 | X | -1.027 | -1.027 | 0 | 11.138 |
| 4 | H006 | X | -.599 | -.599 | 0 | 150 |
| 5 | H008 | X | -.408 | -.408 | 0 | 150 |
| 6 | H009 | X | -.408 | -.408 | 0 | 150 |
| 7 | H010 | X | -.692 | -.692 | 0 | 65.354 |
| 8 | H011 | X | -.346 | -.346 | 0 | 65.354 |
| 9 | H012 | X | -.346 | -.346 | 0 | 65.354 |
| 10 | H013 | X | -.514 | -.514 | 0 | 65.138 |
| 11 | H015 | X | -.514 | -.514 | 0 | 65.138 |
| 12 | H016 | X | -.002 | -.002 | 0 | 53.807 |
| 13 | H017 | X | -.344 | -.344 | 0 | 53.807 |
| 14 | H018 | X | -.341 | -.341 | 0 | 53.807 |
| 15 | H019 | X | -.002 | -.002 | 0 | 53.807 |
| 16 | H020 | X | -.341 | -.341 | 0 | 53.807 |
| 17 | H021 | X | -.344 | -.344 | 0 | 53.807 |
| 18 | H022 | X | -.428 | -.428 | 0 | 17.138 |
| 19 | H024 | X | -.428 | -.428 | 0 | 17.138 |
| 20 | H025 | X | -.791 | -.791 | 0 | 6 |
| 21 | H026 | X | -.395 | -.395 | 0 | 6 |
| 22 | H027 | X | -.395 | -.395 | 0 | 6 |
| 23 | D028 | X | -.593 | -.593 | 0 | 40.804 |
| 24 | D029 | X | -.448 | -.448 | 0 | 40.804 |
| 25 | D030 | X | -.448 | -.448 | 0 | 40.804 |
| 26 | U031 | X | -.198 | -.198 | 0 | 3 |
| 27 | U032 | X | -.198 | -.198 | 0 | 3 |
| 28 | U033 | X | -.198 | -.198 | 0 | 3 |
| 29 | U034 | X | -.198 | -.198 | 0 | 3 |
| 30 | U035 | X | -.198 | -.198 | 0 | 3 |
| 31 | U036 | X | -.198 | -.198 | 0 | 3 |
| 32 | U037 | X | -.198 | -.198 | 0 | 3 |
| 33 | U038 | X | -.198 | -.198 | 0 | 3 |
| 34 | U039 | X | -.099 | -.099 | 0 | 3 |
| 35 | U040 | X | -.099 | -.099 | 0 | 3 |
| 36 | U041 | X | -.099 | -.099 | 0 | 3 |
| 37 | U042 | X | -.099 | -.099 | 0 | 3 |
| 38 | U043 | X | -.099 | -.099 | 0 | 3 |
| 39 | U044 | X | -.099 | -.099 | 0 | 3 |
| 40 | U045 | X | -.099 | -.099 | 0 | 3 |
| 41 | U046 | X | -.099 | -.099 | 0 | 3 |
| 42 | U047 | X | -.099 | -.099 | 0 | 3 |
| 43 | U048 | X | -.099 | -.099 | 0 | 3 |
| 44 | U049 | X | -.099 | -.099 | 0 | 3 |

## Member Distributed Loads (BLC 29 : BLC 8 Transient Area Loads) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[in,%] | End Location[in,%] |
|---|---|---|---|---|---|---|
| 45 | U050 | X | -.099 | -.099 | 0 | 3 |
| 46 | U051 | X | -.099 | -.099 | 0 | 3 |
| 47 | U052 | X | -.099 | -.099 | 0 | 3 |
| 48 | U053 | X | -.099 | -.099 | 0 | 3 |
| 49 | U054 | X | -.099 | -.099 | 0 | 3 |
| 50 | MP1 | X | -.569 | -.569 | 0 | 96 |
| 51 | MP2 | X | -.569 | -.569 | 0 | 96 |
| 52 | MP3 | X | -.569 | -.569 | 0 | 96 |
| 53 | MP4 | X | -.569 | -.569 | 0 | 96 |
| 54 | MP5 | X | -.569 | -.569 | 0 | 96 |
| 55 | MP6 | X | -.569 | -.569 | 0 | 96 |
| 56 | MP7 | X | -.569 | -.569 | 0 | 96 |
| 57 | MP8 | X | -.569 | -.569 | 0 | 96 |
| 58 | MP9 | X | -.569 | -.569 | 0 | 96 |
| 59 | MP10 | X | -.569 | -.569 | 0 | 96 |
| 60 | MP11 | X | -.569 | -.569 | 0 | 96 |
| 61 | MP12 | X | -.569 | -.569 | 0 | 96 |

## Member Area Loads (BLC 3 : Wind -Z)

| | Joint A | Joint B | Joint C | Joint D | Direction | Distribution | Magnitude[psf] |
|---|---|---|---|---|---|---|---|
| 1 | NAL1 | NAL2 | NAL4 | NAL3 | PZ | Open Structure | -37.333 |

## Member Area Loads (BLC 4 : Wind -X)

| | Joint A | Joint B | Joint C | Joint D | Direction | Distribution | Magnitude[psf] |
|---|---|---|---|---|---|---|---|
| 1 | NAL3 | NAL4 | NAL6 | NAL5 | PX | Open Structure | -37.333 |

## Member Area Loads (BLC 5 : Wind -Z (Ice))

| | Joint A | Joint B | Joint C | Joint D | Direction | Distribution | Magnitude[psf] |
|---|---|---|---|---|---|---|---|
| 1 | NAL1 | NAL2 | NAL4 | NAL3 | PZ | Open Structure | -6.591 |

## Member Area Loads (BLC 6 : Wind -X (Ice))

| | Joint A | Joint B | Joint C | Joint D | Direction | Distribution | Magnitude[psf] |
|---|---|---|---|---|---|---|---|
| 1 | NAL3 | NAL4 | NAL6 | NAL5 | PX | Open Structure | -6.591 |

## Member Area Loads (BLC 7 : Wind -Z (Working))

| | Joint A | Joint B | Joint C | Joint D | Direction | Distribution | Magnitude[psf] |
|---|---|---|---|---|---|---|---|
| 1 | NAL1 | NAL2 | NAL4 | NAL3 | PZ | Open Structure | -2.373 |

## Member Area Loads (BLC 8 : Wind -X (Working))

| | Joint A | Joint B | Joint C | Joint D | Direction | Distribution | Magnitude[psf] |
|---|---|---|---|---|---|---|---|
| 1 | NAL3 | NAL4 | NAL6 | NAL5 | PX | Open Structure | -2.373 |

## Basic Load Cases

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area(Me... | Surface(P... |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dead | DL | | -1 | | | 39 | | | |
| 2 | Ice | IL | | | | | 39 | 42 | | 3 |

## Basic Load Cases (Continued)

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area(Me... | Surface(P... |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Wind -Z | WLZ | | | | | 39 | | 1 | |
| 4 | Wind -X | WLX | | | | | 39 | | 1 | |
| 5 | Wind -Z (Ice) | WL-Z | | | | | 39 | 42 | 1 | |
| 6 | Wind -X (Ice) | WL-X | | | | | 39 | 42 | 1 | |
| 7 | Wind -Z (Working) | WLZP1 | | | | | 39 | | 1 | |
| 8 | Wind -X (Working) | WLXP1 | | | | | 39 | | 1 | |
| 9 | Ev -Y (Seismic) | ELY | | | | | | 42 | | |
| 10 | Eh -Z (Seismic) | ELZ | | | | | | 42 | | |
| 11 | Eh -X (Seismic) | ELX | | | | | | 42 | | |
| 12 | Lm (1) | LL | | | | 1 | | | | |
| 13 | Lm (2) | LL | | | | 1 | | | | |
| 14 | Lm (3) | LL | | | | 1 | | | | |
| 15 | Lm (4) | LL | | | | 1 | | | | |
| 16 | Lm (5) | LL | | | | 1 | | | | |
| 17 | Lm (6) | LL | | | | 1 | | | | |
| 18 | Lm (7) | LL | | | | 1 | | | | |
| 19 | Lm (8) | LL | | | | 1 | | | | |
| 20 | Lm (9) | LL | | | | 1 | | | | |
| 21 | Lm (10) | LL | | | | 1 | | | | |
| 22 | Lm (11) | LL | | | | 1 | | | | |
| 23 | Lm (12) | LL | | | | 1 | | | | |
| 24 | BLC 3 Transient Area... | None | | | | | | 56 | | |
| 25 | BLC 4 Transient Area... | None | | | | | | 61 | | |
| 26 | BLC 5 Transient Area... | None | | | | | | 56 | | |
| 27 | BLC 6 Transient Area... | None | | | | | | 61 | | |
| 28 | BLC 7 Transient Area... | None | | | | | | 56 | | |
| 29 | BLC 8 Transient Area... | None | | | | | | 61 | | |

## Load Combinations

| | Description | Sol.. | PD.. | SR.. | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.4D | Yes | Y | | DL | 1.4 | | | | | | | | | | | | | | | | | | | | |
| 2 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | .001 | W... | 1 | | | | | | | | | | | | | | | | |
| 3 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | .5 | W... | .866 | | | | | | | | | | | | | | | | |
| 4 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | .866 | W... | .5 | | | | | | | | | | | | | | | | |
| 5 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | 1 | W... | .001 | | | | | | | | | | | | | | | | |
| 6 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | | | |
| 7 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | | | |
| 8 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | .001 | W... | -1 | | | | | | | | | | | | | | | | |
| 9 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | | | |
| 10 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | | | |
| 11 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | -1 | W... | .001 | | | | | | | | | | | | | | | | |
| 12 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | | | |
| 13 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | | | |
| 14 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | .001 | W... | 1 | | | | | | | | | | | | | | | | |
| 15 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | .5 | W... | .866 | | | | | | | | | | | | | | | | |
| 16 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | .866 | W... | .5 | | | | | | | | | | | | | | | | |
| 17 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | 1 | W... | .001 | | | | | | | | | | | | | | | | |
| 18 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | | | |
| 19 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | | | |
| 20 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | .001 | W... | -1 | | | | | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | Sol.. | PD.. | SR.. | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | | | |
| 22 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | | | |
| 23 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | -1 | W... | .001 | | | | | | | | | | | | | | | | |
| 24 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | | | |
| 25 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | | | |
| 26 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 27 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 28 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 29 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 30 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 31 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 32 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 33 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 34 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 35 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 36 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 37 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | IL | 1 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 38 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | 1 | ELX | .001 | | | | | | | | | | | | | | |
| 39 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | .866 | ELX | .5 | | | | | | | | | | | | | | |
| 40 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | .5 | ELX | .866 | | | | | | | | | | | | | | |
| 41 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | .001 | ELX | 1 | | | | | | | | | | | | | | |
| 42 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | -.5 | ELX | .866 | | | | | | | | | | | | | | |
| 43 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | -.866 | ELX | .5 | | | | | | | | | | | | | | |
| 44 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | -1 | ELX | .001 | | | | | | | | | | | | | | |
| 45 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | -.866 | ELX | -.5 | | | | | | | | | | | | | | |
| 46 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | -.5 | ELX | -.866 | | | | | | | | | | | | | | |
| 47 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | .001 | ELX | -1 | | | | | | | | | | | | | | |
| 48 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | .5 | ELX | -.866 | | | | | | | | | | | | | | |
| 49 | 1.2D + 1.0.. | Yes | Y | | DL | 1.2 | ELY | 1 | ELZ | .866 | ELX | -.5 | | | | | | | | | | | | | | |
| 50 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | 1 | ELX | .001 | | | | | | | | | | | | | | |
| 51 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | .866 | ELX | .5 | | | | | | | | | | | | | | |
| 52 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | .5 | ELX | .866 | | | | | | | | | | | | | | |
| 53 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | .001 | ELX | 1 | | | | | | | | | | | | | | |
| 54 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | -.5 | ELX | .866 | | | | | | | | | | | | | | |
| 55 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | -.866 | ELX | .5 | | | | | | | | | | | | | | |
| 56 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | -1 | ELX | .001 | | | | | | | | | | | | | | |
| 57 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | -.866 | ELX | -.5 | | | | | | | | | | | | | | |
| 58 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | -.5 | ELX | -.866 | | | | | | | | | | | | | | |
| 59 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | .001 | ELX | -1 | | | | | | | | | | | | | | |
| 60 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | .5 | ELX | -.866 | | | | | | | | | | | | | | |
| 61 | 0.9D + 1.0.. | Yes | Y | | DL | .9 | ELY | 1 | ELZ | .866 | ELX | -.5 | | | | | | | | | | | | | | |
| 62 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 63 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 64 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 65 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 66 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 67 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 68 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 69 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 70 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 71 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 72 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | Sol.. | PD.. | SR.. | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 73 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 12 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 74 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 75 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 76 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 77 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 78 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 79 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 80 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 81 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 82 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 83 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 84 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 85 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 13 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 86 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 87 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 88 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 89 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 90 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 91 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 92 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 93 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 94 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 95 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 96 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 97 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 14 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 98 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 99 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 100 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 101 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 102 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 103 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 104 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 105 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 106 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 107 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 108 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 109 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 15 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 110 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 111 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 112 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 113 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 114 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 115 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 116 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 117 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 118 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 119 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 120 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 121 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 16 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 122 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 123 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 124 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | Sol.. | PD.. | SR.. | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 126 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 127 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 128 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 129 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 130 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 131 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 132 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 133 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 17 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 134 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 135 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 136 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 137 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 138 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 139 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 140 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 141 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 142 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 143 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 144 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 145 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 18 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 146 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 147 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 148 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 149 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 150 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 151 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 152 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 153 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 154 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 155 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 156 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 157 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 19 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 158 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 159 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 160 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 161 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 162 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 163 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 164 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 165 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 166 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 167 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 168 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 169 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 20 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 170 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 171 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 172 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 173 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 174 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 175 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 176 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | Sol.. | PD.. | SR.. | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... | BLC | Fact... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 177 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 178 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 179 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 180 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 181 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 21 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 182 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 183 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 184 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 185 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 186 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 187 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 188 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 189 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 190 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 191 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 192 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 193 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 22 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |
| 194 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | .001 | W... | 1 | | | | | | | | | | | | | | |
| 195 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | .5 | W... | .866 | | | | | | | | | | | | | | |
| 196 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | .866 | W... | .5 | | | | | | | | | | | | | | |
| 197 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | 1 | W... | .001 | | | | | | | | | | | | | | |
| 198 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | .866 | W... | -.5 | | | | | | | | | | | | | | |
| 199 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | .5 | W... | -.866 | | | | | | | | | | | | | | |
| 200 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | .001 | W... | -1 | | | | | | | | | | | | | | |
| 201 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | -.5 | W... | -.866 | | | | | | | | | | | | | | |
| 202 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | -.866 | W... | -.5 | | | | | | | | | | | | | | |
| 203 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | -1 | W... | .001 | | | | | | | | | | | | | | |
| 204 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | -.866 | W... | .5 | | | | | | | | | | | | | | |
| 205 | 1.2D + 1.5.. | Yes | Y | | DL | 1.2 | 23 | 1.5 | W... | -.5 | W... | .866 | | | | | | | | | | | | | | |

## Envelope Joint Reactions

| | Joint | | X [lb] | LC | Y [lb] | LC | Z [lb] | LC | MX [lb-ft] | LC | MY [lb-ft] | LC | MZ [lb-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | N001 | max | 0 | 205 | 0 | 205 | 0 | 205 | 0 | 205 | 0 | 205 | 0 | 205 |
| 2 | | min | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 3 | N023 | max | 1807.941 | 5 | 590.499 | 32 | 8221.085 | 2 | 579.465 | 32 | 2254.695 | 23 | 517.47 | 143 |
| 4 | | min | -1807.694 | 11 | -45.286 | 14 | -2667.266 | 20 | 52.637 | 14 | -2255.406 | 17 | -558.638 | 173 |
| 5 | N024 | max | 7122.066 | 6 | 599.915 | 36 | 1827.903 | 24 | 230.23 | 148 | 1280.111 | 14 | 10.453 | 20 |
| 6 | | min | -2317.656 | 24 | -64.943 | 18 | -4607.035 | 6 | -686.033 | 94 | -1274.91 | 20 | -636.505 | 146 |
| 7 | N025 | max | 2416.714 | 16 | 599.624 | 28 | 1694.266 | 16 | 278.535 | 169 | 1152.286 | 20 | 632.527 | 158 |
| 8 | | min | -7221.393 | 10 | -66.493 | 22 | -4472.429 | 10 | -663.142 | 79 | -1157.948 | 14 | -26.75 | 20 |
| 9 | N047 | max | 17.923 | 18 | 2242.721 | 26 | 806.765 | 20 | 1119.304 | 26 | 7.336 | 22 | 2.023 | 143 |
| 10 | | min | -17.749 | 22 | -230.735 | 20 | -7187.164 | 26 | -116.743 | 20 | -7.271 | 18 | -2.545 | 173 |
| 11 | N048 | max | 909.497 | 24 | 2279.181 | 30 | 3652.796 | 30 | 76.94 | 24 | 7.541 | 15 | 134.615 | 24 |
| 12 | | min | -6326.227 | 30 | -307.366 | 24 | -521.095 | 24 | -569.073 | 30 | -7.53 | 21 | -984.994 | 30 |
| 13 | N049 | max | 6325.789 | 34 | 2278.992 | 34 | 3652.332 | 34 | 77.976 | 16 | 7.661 | 19 | 985.324 | 34 |
| 14 | | min | -914.793 | 16 | -309.27 | 16 | -524.281 | 16 | -568.314 | 34 | -7.481 | 25 | -135.117 | 16 |
| 15 | Totals: | max | 4676.89 | 17 | 7449.679 | 37 | 4451.153 | 14 | | | | | | |
| 16 | | min | -4676.89 | 11 | 2953.238 | 14 | -4451.153 | 8 | | | | | | |

## *Envelope AISC 15th(360-16): LRFD Steel Code Checks*

| | Member | Shape | Code ... | Loc[in] | LC | Shear ... | Loc[in] | Dir | LC | phi*Pnc ... | phi*Pnt [... | phi*Mn y... | phi*Mn z... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | H001 | HSS3.500X0.250 | .141 | 126.... | 103 | .060 | 93.75 | | 11 | 32230.1... | 90342 | 7843.5 | 7843.5 | 2.5 | H1-1b |
| 2 | H002 | HSS3.500X0.250 | .142 | 126.... | 191 | .073 | 56.25 | | 10 | 32230.1... | 90342 | 7843.5 | 7843.5 | 2.... | H1-1b |
| 3 | H003 | PL6x0.375 | .188 | 5.569 | 8 | .255 | 5.569 | y | 11 | 46689.0... | 101250 | 791.016 | 12656.25 | 1.... | H1-1b |
| 4 | H004 | PL6x0.375 | .187 | 5.569 | 12 | .220 | 5.569 | y | 3 | 46689.0... | 101250 | 791.016 | 12656.25 | 1.... | H1-1b |
| 5 | H005 | PL6x0.375 | .188 | 5.569 | 4 | .219 | 5.569 | y | 7 | 46689.0... | 101250 | 791.016 | 12656.25 | 1.... | H1-1b |
| 6 | H006 | HSS3.500X0.250 | .141 | 23.438 | 195 | .074 | 56.25 | | 6 | 32230.1... | 90342 | 7843.5 | 7843.5 | 2.... | H1-1b |
| 7 | H007 | HSS2.375X0.188 | .295 | 126.... | 9 | .161 | 9.375 | | 9 | 7359.72 | 45360 | 2661.75 | 2661.75 | 2.... | H1-1b |
| 8 | H008 | HSS2.375X0.188 | .293 | 126.... | 13 | .177 | 20.313 | | 12 | 7359.72 | 45360 | 2661.75 | 2661.75 | 2.... | H1-1b |
| 9 | H009 | HSS2.375X0.188 | .325 | 23.438 | 5 | .169 | 140.... | | 4 | 7359.72 | 45360 | 2661.75 | 2661.75 | 3.... | H1-1b |
| 10 | H010 | HSS3.500X0.313 | .255 | 0 | 5 | .101 | 0 | | 5 | 90520.4... | 110754 | 9450 | 9450 | 1.... | H1-1b |
| 11 | H011 | HSS3.500X0.313 | .252 | 41.527 | 6 | .079 | 0 | | 94 | 90520.4... | 110754 | 9450 | 9450 | 1.... | H1-1b |
| 12 | H012 | HSS3.500X0.313 | .253 | 41.527 | 10 | .079 | 0 | | 1... | 90520.4... | 110754 | 9450 | 9450 | 1.... | H1-1b |
| 13 | H013 | C3x6 | .455 | 32.569 | 26 | .102 | 59.71 | z | 11 | 15972.9... | 57024 | 1131.878 | 4698 | 1.... | H1-1b |
| 14 | H014 | C3x6 | .461 | 32.569 | 30 | .103 | 59.71 | y | 4 | 15972.9... | 57024 | 1131.878 | 4698 | 1.... | H1-1b |
| 15 | H015 | C3x6 | .454 | 32.569 | 34 | .099 | 5.428 | y | 4 | 15972.9... | 57024 | 1131.878 | 4698 | 1.... | H1-1b |
| 16 | H016 | L2x2x5 | .073 | 26.904 | 9 | .025 | 53.807 | z | 31 | 13486.2... | 37584 | 812.747 | 1793.399 | 1.... | H2-1 |
| 17 | H017 | L2x2x5 | .074 | 27.464 | 2 | .026 | 0 | z | 35 | 13486.2... | 37584 | 812.747 | 1793.399 | 1.... | H2-1 |
| 18 | H018 | L2x2x5 | .075 | 27.464 | 6 | .025 | 0 | z | 27 | 13486.2... | 37584 | 812.747 | 1793.399 | 1.... | H2-1 |
| 19 | H019 | L2x2x5 | .079 | 26.904 | 19 | .024 | 0 | y | 33 | 13486.2... | 37584 | 812.747 | 1793.399 | 1.... | H2-1 |
| 20 | H020 | L2x2x5 | .081 | 27.464 | 11 | .024 | 0 | y | 37 | 13486.2... | 37584 | 812.747 | 1793.399 | 1.... | H2-1 |
| 21 | H021 | L2x2x5 | .075 | 27.464 | 2 | .025 | 0 | y | 29 | 13486.2... | 37584 | 812.747 | 1793.399 | 1.... | H2-1 |
| 22 | H022 | L2.5x2.5x4 | .513 | 0 | 12 | .168 | 0 | z | 7 | 37486.8... | 38556 | 1113.554 | 2537.388 | 1.... | H2-1 |
| 23 | H023 | L2.5x2.5x4 | .456 | 0 | 4 | .195 | 17.138 | z | 11 | 37486.8... | 38556 | 1113.554 | 2537.388 | 1.... | H2-1 |
| 24 | H024 | L2.5x2.5x4 | .475 | 17.138 | 4 | .170 | 17.138 | z | 3 | 37486.8... | 38556 | 1113.554 | 2537.388 | 1.... | H2-1 |
| 25 | H025 | HSS4x4x4 | .095 | 0 | 26 | .059 | 0 | y | 26 | 139372.... | 139518 | 16180.5 | 16180.5 | 1.... | H1-1b |
| 26 | H026 | HSS4x4x4 | .097 | 0 | 30 | .060 | 0 | y | 30 | 139372.... | 139518 | 16180.5 | 16180.5 | 1.... | H1-1b |
| 27 | H027 | HSS4x4x4 | .097 | 0 | 34 | .060 | 0 | y | 34 | 139372.... | 139518 | 16180.5 | 16180.5 | 1.... | H1-1b |
| 28 | D028 | LL3x3x4x6 | .102 | 40.804 | 26 | .006 | 0 | y | 1... | 73758.2... | 93312 | 8512 | 4910.906 | 1.... | H1-1b* |
| 29 | D029 | LL3x3x4x6 | .104 | 40.804 | 30 | .006 | 40.804 | y | 94 | 73758.2... | 93312 | 8512 | 4910.906 | 1.... | H1-1b* |
| 30 | D030 | LL3x3x4x6 | .104 | 40.804 | 34 | .006 | 0 | y | 1... | 73758.2... | 93312 | 8512 | 4910.906 | 1.... | H1-1b* |
| 31 | MP1 | HSS2.875X0.188 | .181 | 69 | 10 | .112 | 69 | | 7 | 7503.995 | 55944 | 4000.5 | 4000.5 | 3.... | H1-1b |
| 32 | MP2 | HSS2.875X0.188 | .180 | 69 | 5 | .075 | 69 | | 9 | 7503.995 | 55944 | 4000.5 | 4000.5 | 4.... | H1-1b |
| 33 | MP3 | HSS2.875X0.188 | .179 | 69 | 11 | .075 | 69 | | 7 | 7503.995 | 55944 | 4000.5 | 4000.5 | 4.... | H1-1b |
| 34 | MP4 | HSS2.875X0.188 | .195 | 69 | 6 | .114 | 27 | | 8 | 7503.995 | 55944 | 4000.5 | 4000.5 | 4.... | H1-1b |
| 35 | MP5 | HSS2.875X0.188 | .184 | 69 | 3 | .127 | 69 | | 11 | 7503.995 | 55944 | 4000.5 | 4000.5 | 3.... | H1-1b |
| 36 | MP6 | HSS2.875X0.188 | .216 | 69 | 6 | .135 | 27 | | 4 | 7503.995 | 55944 | 4000.5 | 4000.5 | 2.... | H1-1b |
| 37 | MP7 | HSS2.875X0.188 | .198 | 69 | 4 | .069 | 69 | | 13 | 7503.995 | 55944 | 4000.5 | 4000.5 | 3.... | H1-1b |
| 38 | MP8 | HSS2.875X0.188 | .195 | 69 | 13 | .098 | 69 | | 5 | 7503.995 | 55944 | 4000.5 | 4000.5 | 3.... | H1-1b |
| 39 | MP9 | HSS2.875X0.188 | .194 | 69 | 3 | .099 | 69 | | 11 | 7503.995 | 55944 | 4000.5 | 4000.5 | 4.... | H1-1b |
| 40 | MP10 | HSS2.875X0.188 | .195 | 69 | 7 | .073 | 69 | | 4 | 7503.995 | 55944 | 4000.5 | 4000.5 | 4.... | H1-1b |
| 41 | MP11 | HSS2.875X0.188 | .223 | 69 | 10 | .135 | 27 | | 12 | 7503.995 | 55944 | 4000.5 | 4000.5 | 2.... | H1-1b |
| 42 | MP12 | HSS2.875X0.188 | .198 | 69 | 13 | .122 | 69 | | 5 | 7503.995 | 55944 | 4000.5 | 4000.5 | 3.... | H1-1b |

# EXHIBIT 5

Lawrence Behr Associates INC
www.lbagroup.com

# NIER Study Report

SITE NAME:

## 302469 Bridgeport CT 2

LOCATION:

Bridgeport, Connecticut

COMPANY:

American Tower Corporation
Woburn, Massachusetts

*July 17th, 2020*

3400 Tupper Drive | Greenville, NC 27834
252-757-0279 | 800-522-4464 | lbagrp@lbagroup.com

# Contents

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LAWRENCE BEHR ASSOCIATES, INC.
GREENVILLE, NORTH CAROLINA

NIER STUDY REPORT

# 302469 Bridgeport CT 2

*Bridgeport, Connecticut*

## INTRODUCTION

Lawrence Behr Associates, Inc. (LBA) has been retained by American Tower Corporation (ATC) of Woburn, Massachusetts to evaluate the RF emissions of an existing tower at this location.

## SITE AND FACILITY CONSIDERATIONS

Site 302469 Bridgeport CT 2 is located at 1069 Connecticut Avenue in Bridgeport, Connecticut at coordinates 41.18361, -73.15838. The support structure is a 129' monopole. The installation consists of five antenna levels with radiation centers of 10, 88', 106', 120', and 131' above ground level. All antennae will have a radiation center as described above. All data used in this study was provided by one or more of the following sources:

1. ATC furnished data
2. Compiled from carrier and manufacturer standard configurations
3. Empirical data collected by LBA

A topographic map of the study area is located in Appendix 1. A satellite view of the study area is located in Appendix 2.

The load list may be seen in Appendix 3.

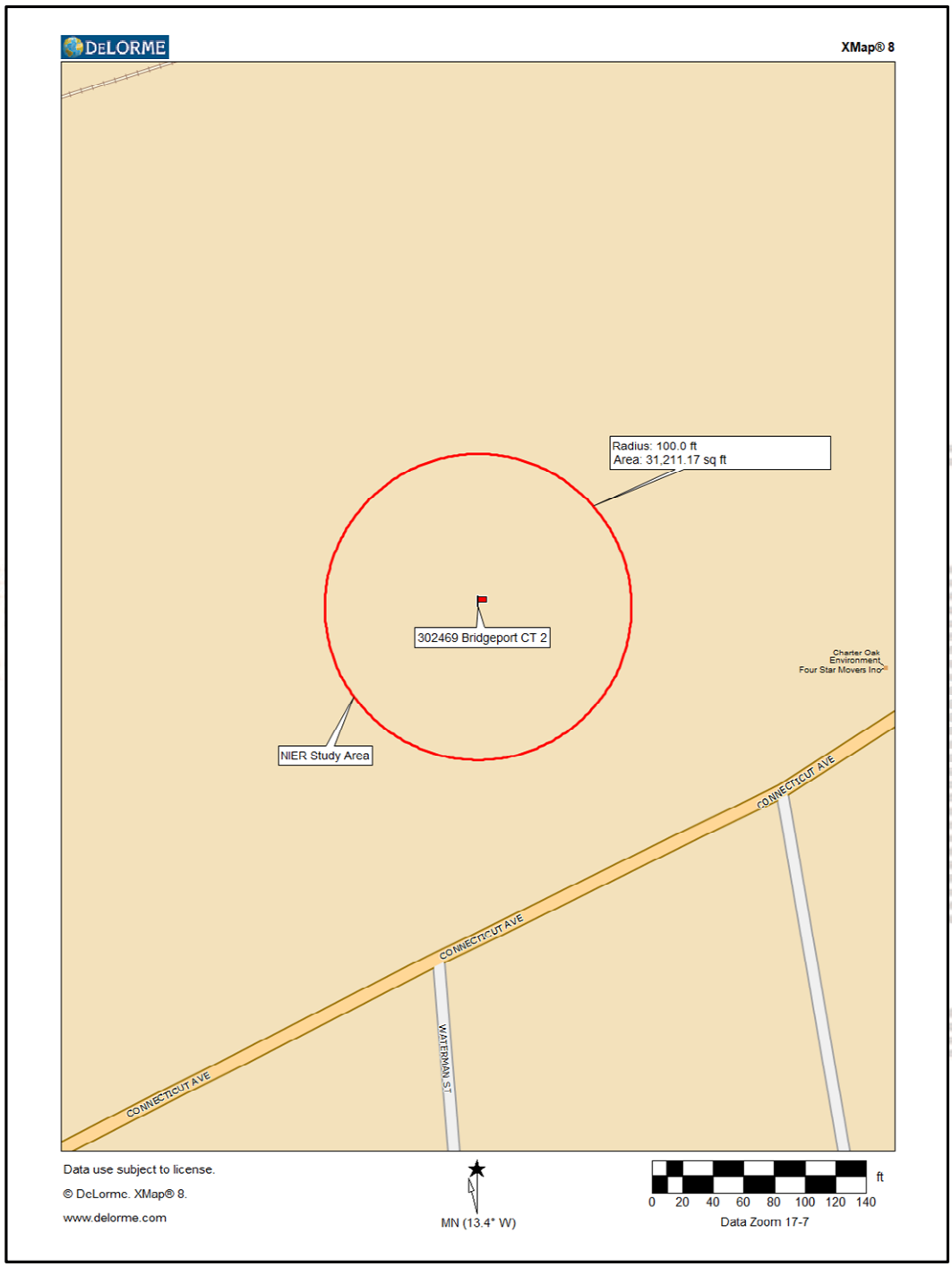
## POWER DENSITY CALCULATIONS

Graphs of the power density at different distances from the transmitter, compared to FCC MPE general population and occupational limits, may be seen in Appendix 4. These limits are based upon the Information Relating to MPE Standards found in Appendix 6. Study methodology may be seen in Appendix 7, which describes the Non-Ionizing Radiation Prediction Models. Approximate radiation patterns may be found in Appendix 5. This site ***IS*** in compliance with FCC OET-65 MPE limits.

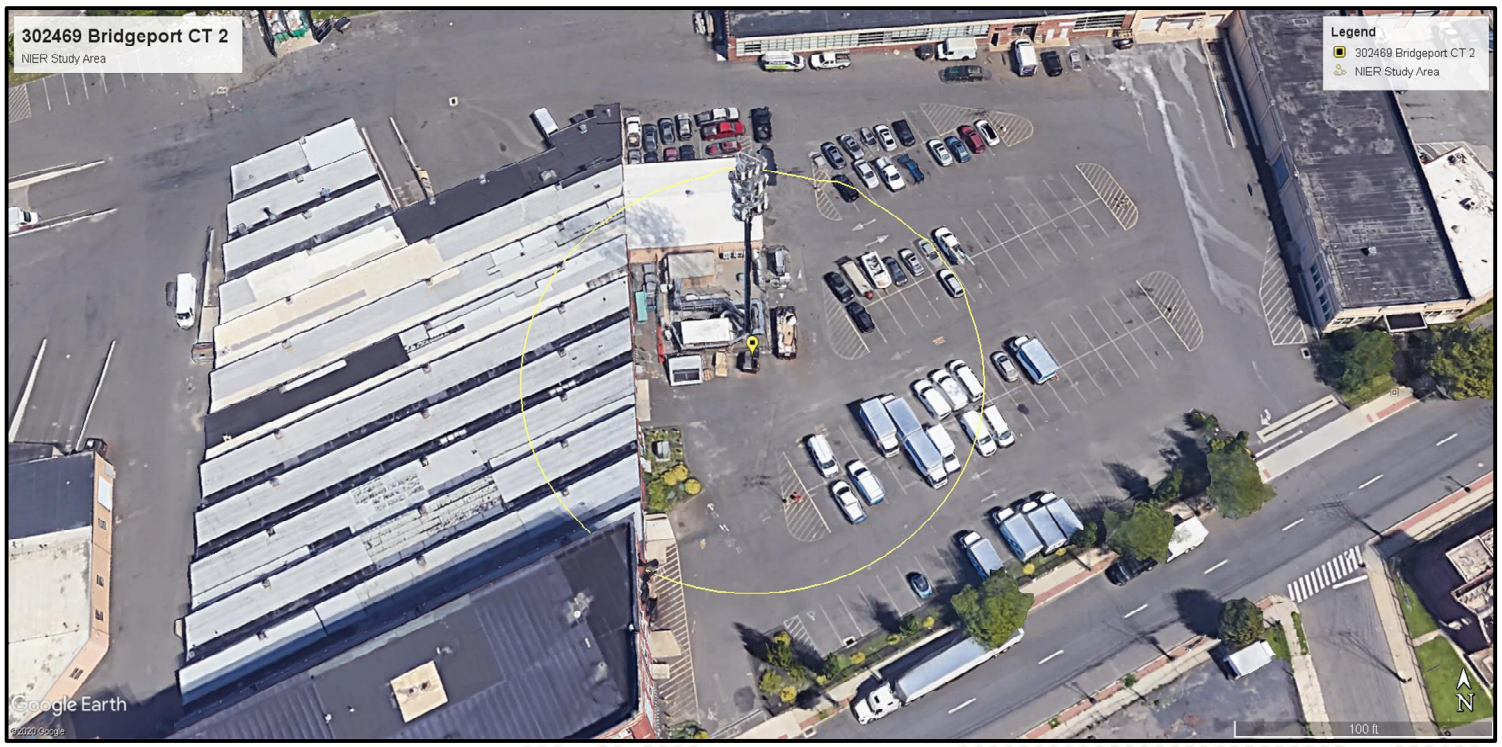
July 17th, 2020

Kathryn G. Tesh
Wireless Services Manager

# APPENDIX 1 *Topographic Map*



# APPENDIX 2 *Satellite Photo*

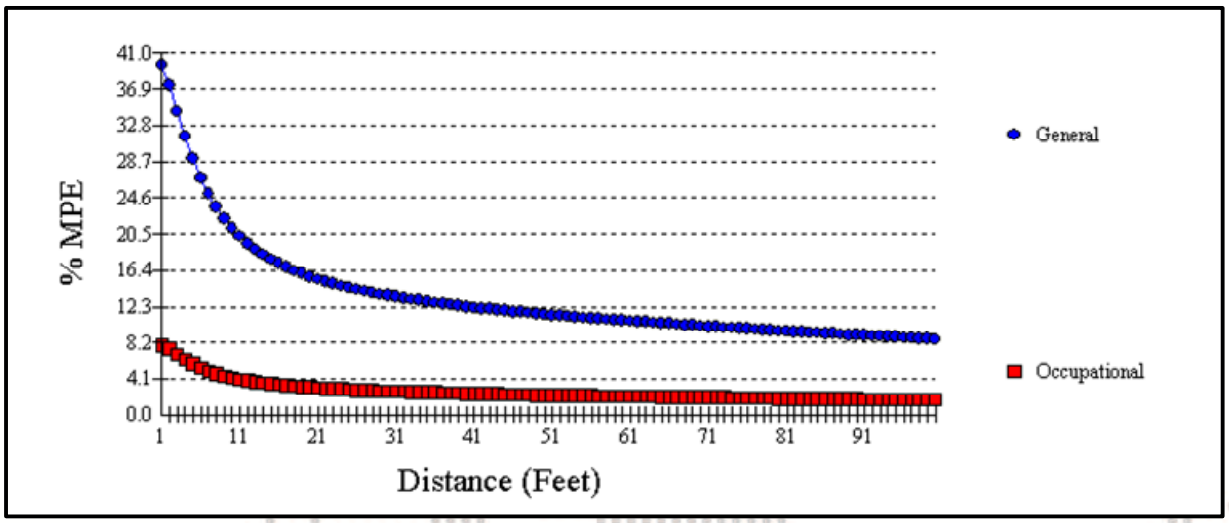


# APPENDIX 3 *Load List*

| Proposed | Customer | RAD Height (ft) | Equipment Quantity | Equipment Type | Manufacturer | Model Number | Line Quantity | Line size | Mount Type | Azimuths | TX Frequency | RX Frequency |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No | CLEARWIRE CORPORATION | 131 | 1 | DISH-HP | DragonWave | A-ANT-23G-1-C | 1 | 1/2" Coax | T-Arm | 125.6787 | 23 | 23 |
| No | CLEARWIRE CORPORATION | 131 | 1 | DISH-HP | DragonWave | A-ANT-18G-2-C | 2 | 1/2" Coax | T-Arm | 255.2791 | 18 | 18 |
| No | CLEARWIRE CORPORATION | 131 | 3 | PANEL | Commscope | NNVV-65B-R4 | | | T-Arm | 25/155/275 | 1850-1995, 806-869 | 1850-1995, 806-869 |
| No | CLEARWIRE CORPORATION | 127 | 3 | PANEL | Argus | LLPX310R | | | T-Arm | 30/150/270 | | |
| No | T-MOBILE | 120 | 3 | PANEL | Ericsson | Air 3246 B66 | 18 | 1 5/8" Coax | Low Profile Platform | 20/120/240 | 2130-2135, 2135-2140, 2140-2145, 2145-2150 | 1730-1735, 1735-1740, 1740-1745, 1745-1750 |
| No | T-MOBILE | 120 | 3 | PANEL | Ericsson | AIR-32 B2A/B66 Aa | 1 | 1 1/4" (1.25" 31.8mm) Fiber | Low Profile Platform | 20/120/240 | 1940-1950 | 1860-1870 |
| No | T-MOBILE | 120 | 3 | PANEL | RFS | APXVAARR24_43-U-NA20 | 1 | 1 5/8" (1.63" 41.3mm) Fiber | Low Profile Platform | 20/120/240 | 1940-1950, 2130-2150, 728-734 | 1730-1750, 1860-1870, 698-704 |
| No | AT&T MOBILITY | 106 | 3 | PANEL | Powerwave Allgon | 7750.00 | 12 | 1 5/8" Coax | Platform with Handrails | 30/150/270 | 1930-1935, 1945-1950, 1965-1970, 891.6-893.8 | 1855, 1865-1870, 1885-1890, 846.6-848.8 |
| No | AT&T MOBILITY | 106 | 6 | PANEL | CCI | OPA-65R-LCUU-H4 | | | Platform with Handrails | 30/150/270 | 1930-1935, 1945-1950, 2130-2135, 734-745, 880-890, 891-894 | 1730-1735, 1850-1855, 1865-1870, 1885-1890, 1902-1910, 703-715, 835-845, 846-849 |
| Yes | SIGFOX S.A. | 88 | 1 | OMNI | | CXL 900-3LW | | | Side Arm | 0 | 905.2, 906 | 905.2, 906 |
| No | SIGFOX S.A. | 88 | 1 | OMNI | | CXL 900-3LW | | | Stand-Off | 0 | 905.2, 906 | 905.2, 906 |
| Yes | SIGFOX S.A. | 10 | 1 | DISH-STANDARD | | Smart LNB | | | | 0 | 12.78 | 29.75 |

# APPENDIX 4

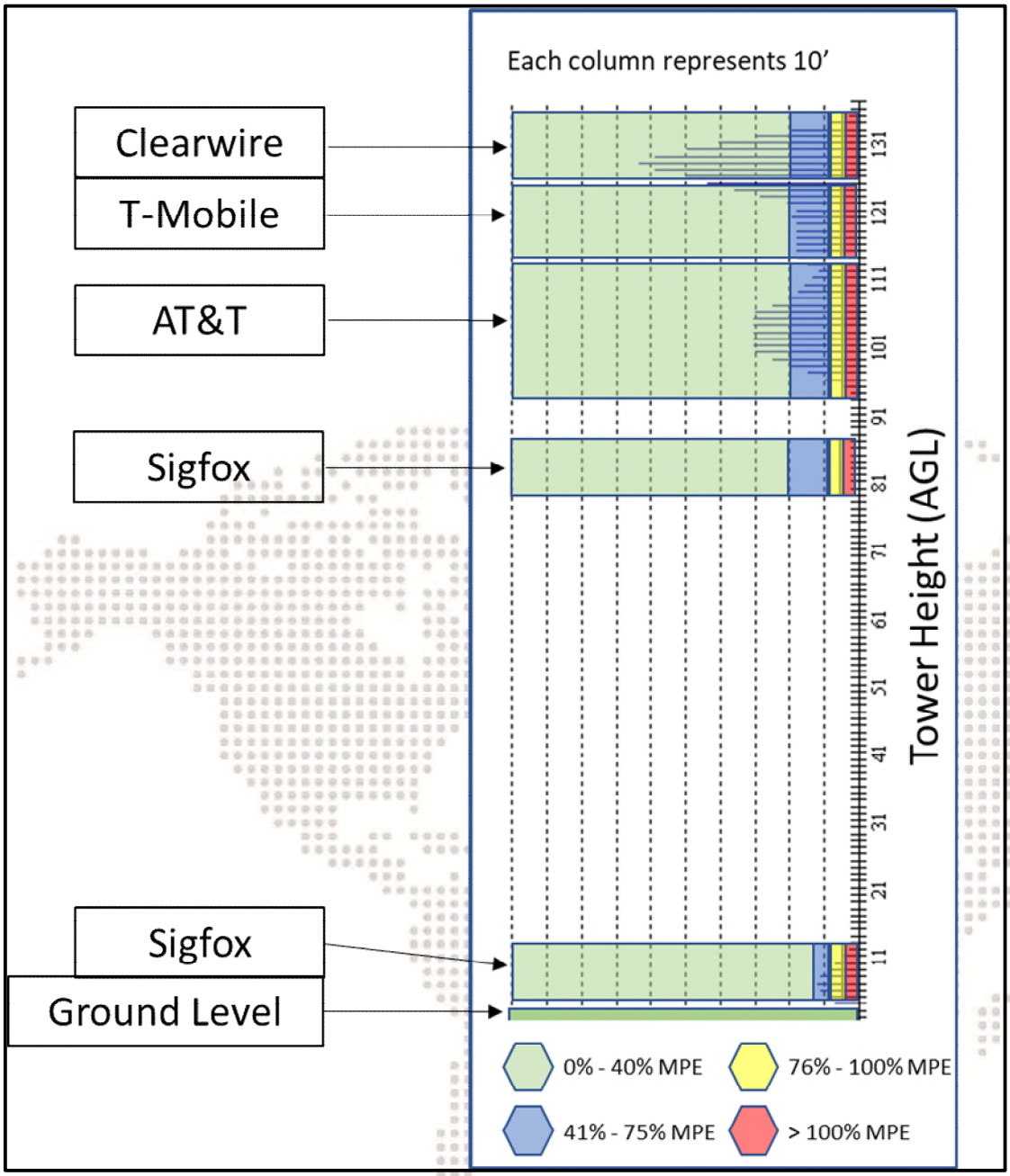
*FCC OET-65 MPE Limit Study*




| | |
|---|---|
| General Population MPE (@1'): | 39.62% |
| Occupational MPE (@1'): | 7.92% |
| Maximum Power Density (@1'): | 0.3874 mW/cm² |

# APPENDIX 5

*Tower Radiation Patterns*



# APPENDIX 6

*Information Pertaining to MPE Studies*

In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.

MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: $mW/cm^2$), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the

magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

**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.

**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. Additional details can be found in FCC OET 65.

# APPENDIX 7 *MPE Standards Methodology*

This study predicts RF field strength and power density levels that emanate from communications system antennae. It considers all transmitter power levels (less filter and line losses) delivered to each active transmitting antenna at the communications site. Calculations are performed to determine power density and MPE levels for each antenna as well as composite levels from all antennas. The calculated levels are based on where a human (Observer) would be standing at various locations at the site. The point of interest where the MPE level is predicted is based on the height of the Observer.

Compliance with the FCC limits on RF emissions are determined by spatially averaging a person's exposure over the projected area of an adult human body, that is approximately six-feet or two-meters, as defined in the ANSI/IEEE C95.1 standard. The MPE limits are specified as time-averaged exposure limits. This means that exposure is averaged over an identifiable time interval. It is 30 minutes for the general population/uncontrolled RF environment and 6 minutes for the occupational/controlled RF environment. However, in the case of the general public, time averaging should not be applied because the general public is typically not aware of RF exposure and they do not have control of their exposure time. Therefore, it should be assumed that any RF exposure to the general public will be continuous.

The FCC's limits for exposure at different frequencies are shown in the following Tables.

| **Limits for Occupational/Controlled Exposure** | | | | |
|---|---|---|---|---|
| **Frequency Range (MHz)** | **Electric Field Strength (E) (V/m)** | **Magnetic Field Strength (H) (A/m)** | **Power Density (S) ($mW/cm^2$)** | **Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)** |
| 0.3 - 3.0 | 614 | 1.63 | 100* | 6 |
| 3.0 - 30 | 1842/f | 4.89/f | $900/F^2$ | 6 |
| 30 - 300 | 61.4 | 0.163 | 1.0 | 6 |
| 300 - 1500 | -- | -- | f/300 | 6 |
| 1500 - 100,000 | -- | -- | 5 | 6 |

f = frequency

* = Plane-wave equivalent power density

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

| Limits for General Population/Uncontrolled Exposure | | | | |
|---|---|---|---|---|
| **Frequency Range (MHz)** | **Electric Field Strength (E) (V/m)** | **Magnetic Field Strength (H) (A/m)** | **Power Density (S) ($mW/cm^2$)** | **Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)** |
| 0.3 - 1.34 | 614 | 1.63 | 100* | 30 |
| 1.34 - 30 | 824/f | 2.19/f | $180/F^2$ | 30 |
| 30 -300 | 27.5 | 0.073 | 0.2 | 30 |
| 300 -1500 | -- | -- | f/1500 | 30 |
| 1500 -100,000 | -- | -- | 1.0 | 30 |

f = frequency
* = Plane-wave equivalent power density

General population/uncontrolled exposures apply in situations in which the general public may be exposed or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

It is important to understand that these limits apply cumulatively to all sources of RF emissions affecting a given area. For example, if several different communications system antennas occupy a shared facility such as a tower or rooftop, then the total exposure from all systems at the facility must be within compliance of the FCC guidelines.

The field strength emanating from an antenna can be estimated based on the characteristics of an antenna radiating in free space. There are basically two field areas associated with a radiating antenna. When close to the antenna, the region is known as the Near Field. Within this region, the characteristics of the RF fields are very complex and the wave front is extremely curved. As you move further from the antenna, the wave front has less curvature and becomes planar. The wave front still has a curvature but it appears to occupy a flat plane in space (plane-wave radiation). This region is known as the Far Field.

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65. As this study is concerned only with Near Field calculations, we will only describe the model used for this study. For additional details, refer to FCC OET Bulletin 65.

**Cylindrical Model (Near Field Predictions)**

Spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation:

$$S = P \div 2\pi RL$$

Where:
S = Power Density
P = Total Power into antenna
R = Distance from the antenna
L = Antenna aperture length

For directional-type antennas, power densities can be estimated by dividing the input power by that portion of a cylindrical surface area corresponding to the angular beam width of the antenna. For example, for the case of a 120-degree azimuthal beam width, the surface area should correspond to 1/3 that of a full cylinder. This would increase the power density near the antenna by a factor of three over that for a purely omni-directional antenna. Mathematically, this can be represented by the following formula:

$$S = (180 / \theta_{BW}) P \div \pi RL$$

Where:
S = Power Density
$\theta_{BW}$ = Beam width of antenna in degrees (3 dB half-power point)
P = Total Power into antenna
R = Distance from the antenna
L = Antenna aperture length

If the antenna is a 360-degree omni-directional antenna, this formula would be equivalent to the previous formula.

**Spherical Model (Far Field Predictions)**

Spatially averaged plane-wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, if the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density.

These additional factors are considered and the Far Field prediction model is determined by the following equation:

$$S = EIRP \times Rc \div 4\pi R^2$$

Where:
S = Power Density
EIRP = Effective Radiated Power from antenna
Rc = Reflection Coefficient (2.56)
R = Distance from the antenna

The EIRP includes the antenna gain. If the antenna pattern is considered, the antenna gain is relative based on the horizontal and vertical pattern gain values at that particular location in space, on a rooftop or on the ground. However, it is recommended that the antenna radiation pattern characteristics not be considered to provide a conservative "worst case" prediction. This is the equation is utilized for the Far Field exposure predictions herein.

# EXHIBIT 6

# BUILDING PERMIT

## BUILDING DEPARTMENT
City of Bridgeport, Connecticut

№ 16778

NOV 4 1999 19

Permission is hereby granted to AMERICAN FABRICS COMPANY

to erect MONOPOLE TOWER - EQUIPMENT SHELTER

Located at No. 1069 CONNECTICUT AVENUE Street

*A CERTIFICATE OF OCCUPANCY MUST BE GRANTED BEFORE BUILDING OR ADDITIONS IS OCCUPIED.*

**CALL OFFICE WHEN WORK IS STARTED - TEL. 576-7225**
**THIS NOTICE MUST BE ON THE WORK AT ALL TIMES.**

BETER J. PAAJANEN Building Official

® 34 Form 2336

---

BUILDING PERMIT

№ 16776

## Building Department
City of Bridgeport, Connecticut

NOV 4 1999 19

Permission is hereby granted to AMERICAN FABRICS COMPANY

to erect MONOPOLE TOWER -- EQUIPMENT SHELTER

Located at No. 1069 CONNECTICUT AVENUE Street

**THIS PERMIT IS GRANTED ON CONDITION THAT ALL CITY, STATE AND FEDERAL RULES REGULATIONS AND LAWS ARE COMPLIED WITH.**

**A CERTIFICATE OF OCCUPANCY MUST BE GRANTED BEFORE BUILDING OR ADDITIONS IS OCCUPIED.**

**THIS PERMIT EXPIRES SIX (6) MONTHS FROM DATE IF WORK IS NOT COMMENCED.**

**CALL OFFICE WHEN WORK IS STARTED, Telephone 576-7225, Building Department.**

Special Conditions:

| | |
|---|---|
| Building fee | $ 1,526 |
| Occupancy fee | $ 10 |
| Total | $ 1,536 |

THOMAS DUDA, *Deputy Building Official*

PETER J. PAAJANEN, *Building Official*

34 Form 1209

ZONING DEPARTMENT

DEVELOPMENT ADMINISTRATION

City of Bridgeport

CT-0906

DATE: August 2, 1999

OUR FILE: # 99-58

Attorney John W. Knuff
Hurwitz & Sagarin, LLC
147 N. Broad Street
Milford, CT 06460

RE: Site Plan Review
1069 Connecticut Avenue
Bridgeport, CT

Dear Attorney Knuff:

At its meeting held on July 26, 1999, the Planning & Zoning Commission voted to approve conditionally the application submitted by you on behalf of your client, Nextel Communications seeking a Site Plan Review under Sec. 14-2 of the Zoning Regulations of the City of Bridgeport pertaining to the installation of a wireless communications tower & antenna structure in an I-LI ZONE.

The Commission stipulated the following conditions for its approval:

1. The development of the subject property shall be in accordance with the plans submitted & held on file in the Zoning Department.
2. The petitioner shall comply with the concerns addressed at the public hearing by Attorney Melanie Howlett of the City Attorney's Office & agreed to by the petitioner's legal representative.

The Commission assigned the following reason for its action:

1. The development, as submitted, complies with the standards of Sec. 14-2-5 for a Site Plan Review of the Zoning Regulations of the City of Bridgeport, CT.

Very truly yours,

William A. Shaw

William A. Shaw, Clerk
Planning & Zoning Commission

WAS:map

cc: Melanie Howlett, Associate City Attorney

File No.. _____

*PETITION TO THE PLANNING & ZONING COMMISSION*
*CITY OF BRIDGEPORT, CONNECTICUT*

NAME OF PETITIONER Nextel Communications of the Mid-Atlantic, Inc.
(Please Print Petitioner's Interest in Property)

Is the Petitioner's name a Trustee of Record? Yes_____ No X.

If yes, a sworn statement disclosing the Beneficiary shall accompany this application upon filing.

Location of Property 1069 Connecticut Avenue
(number) (street)

Assessor's Map Information Block No. 723 Lot No. 3A

Amendments to Zoning Regulations, indicate Article _____ Section _____
Attach copies of Amendment.

Description of Property (Metes & Bounds) Please see attached plans.

Existing Zone Classification I-LI

Zone Classification requested N/A

Describe Proposed Development of Property This site is currently the location of American Fabrics Co. applicant proposes to construct a wireless telecommunications facility, including a monopole.

Approval(s) Requested Site plan review pursuant to §14-2-2. (The Bridgeport Zoning Board of Appeals approved a height variance for this facility on 3/9/99.)

Signature _____ Date 5.25.99
(print same) John W. Knuff

If signed by Agent, state capacity (Lawyer, Developer, etc.) Lawyer

Mailing Address Hurwitz & Sagarin, LLC
147 N. Broad St., Milford, CT 06460 Phone 203-877-8000

_____ Fee received. Date _____ 19____. Clerk _____

*THIS PETITION MUST BE SUBMITTED IN PERSON AND ACCOMPANIED WITH APPROPRIATE PLANS*

**ENDORSEMENT OF APPLICATION**

_____ _____
**Owner's Signature** **Date**

_____ _____
**Owner's Signature** **Date**

SCANNED

# BRIDGEPORT ZONING BOARD OF APPEALS

**Room 206 — 45 Lyon Terrace — Bridgeport, Connecticut 06604**

**At a meeting held in City Hall on** Tuesday, March 9, 1999 **C-1.**

**RE:** 1069 Connecticut Avenue

Petition of Nextel Communications of the Mid-Atlantic, Inc. for a variance of the maximum height requirements of Sec. 7-3-3 to permit the construction of a telecommunications monopole and equipment shelter in an Industrial Light Zone.

PUBLIC HEARING: Tuesday, March 9, and February 9, 1999 to permit the construction of a telecommunications monopole and equipment shelter in an I- LI Zone.

**GRANTED CONDITIONALLY, Subject to the following condition(s):**

The amount of surety for a removal bond shall be determined by the P & Z Commission with review and input from the City Attorney's Office

**The "Board" assigned the following reason(s) for its action:**
Reasonable cause of hardship has been demonstrated by the applicant as it relates to the technical restrictions for cellular coverage in a given area along the I-95 corridor and as required by federal regulations.

**NOTE: Unless acted upon within six months, this grant becomes void. Your failure to comply with any conditions applicable to this action will also void the rights and privileges granted hereby. This is not a Building Permit and any structure or building contemplated by this action can only be started after proper application to and issuance of such permit by the Building Official. Other approvals or permits, required by law, should be sought from the proper authorities before exercising any part of this grant.**

William A. Shaw **Clerk**

BK409 | PG | | |

006030

# NOTICE OF GR_ NT OF VARIANCE OR SI CIAL PERMIT

CT-0906

Pursuant to Chapter 124 (PA-75-317) of the General Statutes of the State of Connecticut, notice is hereby given that on March 9, 1999 the Zoning Board of Appeals/ Planning and Zoning Commission of the City of Bridgeport, Connecticut, ***granted or granted conditionally a variance or special permit for property*** located at 1069 Connecticut Avenue

DESCRIPTION OF PROPERTY (lot size) 668.5' x 481'

Property owned by American Fabrics Co.

## *NATURE OF VARIANCE OR SPECIAL PERMIT*

Section 7-3-3 Section

Section Section

Section Section

## *ZONING REGULATIONS - CITY OF BRIDGEPORT, CONNECTICUT*

USE PERMITTED erect a cellular telecommunication tower in a Light Industrial Zone

Dated and Certified in Bridgeport, Connecticut this 17 th day of March, 19 99

By William A Shaw

Chairman ____ Clerk X Zoning Enforcement Officer ____

BRIDGEPORT, CONN.
LAND RECORDS
REC'D FOR RECORD FILING
ON 3-17-99 AT 9:15AM
ATTEST:
HECTOR DIAZ, TOWN CLERK

# PETITION TO THE BOARD OF APPEALS
## CITY OF BRIDGEPORT, CONNECTICUT

The undersigned presents the following petition for: ( check those which apply ) Variance [X], Special Exception [ ], Appeal From Zoning Officer [ ], Certificate of Approval of Location for Motor Vehicle Licensing [ ], Extension of Time Permit [ ], Request for Re-hearing [ ], under the Zoning Regulations of the City of Bridgeport and / or the General Statues of the State of Connecticut as to the premises located at -

[redacted] Connecticut Avenue (Number / Street) | at Freeman Street (if corner property indicate so)

on the North (North, South, East, West) side of the street about 750 feet East (North, South, East, West) from Union Avenue (Street) Lot No. 3A and Block No. 723 as shown on Tax Assessor's Maps. Dimension of Lot in Question approximately 668.5' x 481'

1. NAME OF PETITIONER Nextel Communications of the Mid-Atlantic, Inc. (PRINT)
2. PETITIONER'S INTEREST IN PROPERTY (OWNER, LESSEE, ETC.) Lessee
3. HAS ANY PREVIOUS PETITION BEEN FILED NO (YES OR NO) IF SO GIVE DATE OF HEARING ____
4. DOES WORK CONSTITUTE AN ALTERATION OR EXTENSION OF AN EXISTING BUILDING OR NEW CONSTRUCTION, DESCRIBE BRIEFLY Construction of wireless telecommunications facility including a 130' monopole and equipment shelter.
5. THIS PETITION RELATES TO: (check those which apply) USE [ ], SETBACK [ ], YARDS [ ], LOT AREA AND WIDTH [ ], FLOOR AREA [ ], HEIGHTS [X], COURTS [ ], LOCATION OF ACCESSORY BUILDING [ ], PARKING SPACE [ ], EXTENSION OR ENLARGEMENT OF NON-CONFORMING USE AND/OR BUILDING [ ], SIZE OF BUILDING [ ], DAMAGE RECONSTRUCTION [ ], LIQUOR CERTIFICATION [ ], COASTAL SITE PLAN REVIEW [ ], FLOOD DAMAGE PREVENTION [ ], WAIVER OF MOTOR VEHICLE HEARING REQUIREMENTS [ ], OTHER [ ] (SPECIFY)
6. USE TO BE MADE OF PROPERTY This property is currently the site of American Fabrics Company. [redacted] applicant proposes to add a telecommunications monopole, and equipment shelter.
7. IS HARDSHIP CLAIMED Yes (YES OR NO) IF SO, WHAT IS THE SPECIFIC HARDSHIP Please see attached.

SIGNATURE [signature] John W. Knuff, Duly Authorized (PRINT SAME) January 7, 1999 (DATE)

If signed by agent, state capacity (Lawyer, Builder, etc.) Lawyer

Mailing Address Hurwitz & Sagarin, LLC, 147 N. Broad Street, Milford, CT 06460 (ZIP CODE) 203/877-8000 (TELEPHONE NUMBER)

Property Owners endorsement Please see Letter of Authorization (DATE)

Subscribed & sworn to before me this ____ day of ____ 19____

____ Notary Public in & for the County of Fairfield, State of Conn.

Applicants Endorsement (If other than owner) [signature] 1.7.99 (DATE)

Subscribed & Sworn to before me this 7th day of January 1999

[signature] Notary Public in & for ~~the County of Fairfield~~ State of Conn.

JOAN S. EDWARDS
NOTARY PUBLIC
MY COMMISSION EXPIRES JUNE 30, 2002

## NOTE: READ CARFULLY BEFORE FILLING OUT THIS PETITION

**The Petitioner or his agent must adhere to the following instructions or it will not be possible for the Zoning Board of Appeals to process or hear this petition.**

**All questions must be answered in detail (use separate sheet if necessary).**

**Attached hereto and made part of this petition must be submitted in duplicate the following:**

1. A PLOT PLAN SHOWING THE PROPOSED OR EXISTING LOT AND BUILDING DIMENSIONS AND THE LOCATION OF THE BUILDING ON THE LOT IN RELATION TO THE STREET LINE, SIDE LOT LINES, AND REAR LOT LINE.
2. A FLOOR PLAN, WHEN PETITION CONCERNS BUILDING AREAS, COURTS OR INTERIOR NON-CONFORMING USES.
3. TYPICAL ELEVATIONS WHERE SUCH VARIATIONS APPLY.

# LETTER OF AUTHORIZATION

Municipality: City of Bridgeport, Connecticut

Tax Assessor's Parcel Number: Block 723, Lot 3-A, Map 7-4

Re: Building Permits and Land Use Approvals

American Fabrics Company, the Owner of 1069 Connecticut Avenue, Bridgeport, CT (the "Property") does hereby appoint Nextel Communications of the Mid-Atlantic, Inc. ("Nextel") and its agents and representatives as Owner's Agent for the purpose of completing, executing, and/or filing any applications, form, map, approval, variance, special permit or other land use approval or building permit ("Approvals") required to provide Nextel with lawful access to, and the ability to use the Property for the purpose of installing, erecting, or otherwise placing antennae, support structures and related equipment on the Property. Owner shall fully cooperate with Nextel and its agents and representatives in obtaining any required Approvals. Nextel shall be responsible for all costs, filing fees, or any expense incurred in the connection with securing any Approvals.

Property Owner: American Fabrics Company

By: [signature]

Name: Robert Ostrover

Its: Vice President

Date: 1-7-99

STATE OF CONNECTICUT:

COUNTY OF :

Signed and Sworn to before me this 7 th day of January, 1999

[signature]
Notary Public

My Commission expires:

MARIA SERRANO
NOTARY PUBLIC
My Commission Expires January 31, 2003

SCANNED

# STATEMENT OF USE AND JUSTIFICATION OF VARIANCE

Nextel Communications of the Mid-Atlantic, Inc. d/b/a Nextel Communications submits this application for a variance to permit the installation of a wireless telecommunication facility on the American Fabrics Company property located at 1069 Connecticut Avenue in a Light Industrial (I-LI) Zone. The proposed facility will be an integral part of Nextel Communications' network of facilities located throughout the state. The FCC requires Nextel, as a provider of enhanced specialized mobile radio ("ESMR") services, to complete the construction and build-out of its wireless network and fill coverage gaps in its federally licensed service area, which includes the City of Bridgeport. This application is consistent with Nextel's efforts to co-locate its facilities in industrial districts.

Nextel Communications seeks to vary § 7-3-3 of the Bridgeport Zoning Regulations, which provides that the maximum permitted height in an I-LI district is 75 feet. The proposed facility will consist of a 130' monopole with a triangular antenna array, and an equipment shelter. The antenna array will be located at the 130 foot level, and will consist of 4 antennas on each side of the triangular array.

The literal enforcement of the provisions of the Regulations in regard to the use proposed by Nextel Communications will result in exceptional difficulty and unusual hardship because, without the proposed facility, Nextel Communications will be unable to provide service to this area of Bridgeport. In addition, and in compliance with sections 14-7-2 (c) and 14-7-4 of the Regulations, please note the following:

1. The hardship is specific to the proposed site because wireless telecommunications facilities must be located at both a particular height and in a particular location to provide coverage throughout a particular area. The monopole proposed for the American Fabric Company property fulfills both of these requirements.
2. The hardship is not the result of any prior action by the applicant at this location.
3. Nextel Communications seeks the minimum deviation from the provisions of the Regulations: the height of the monopole is as low as it can be while still providing the necessary service coverage.
4. Relief can be granted without detriment to the public welfare or impairment to the integrity of the Regulations because the facility will have no impact on the surrounding area, because it is a passive use. The facility will cause no pollution, glare, heat, hazards, noise, or odors. In addition, the facility will be located in an industrial area in close proximity to Metro-North Railroad tracks.

# STATEMENT OF USE AND IMPACT ANALYSIS

Nextel Communications of the Mid-Atlantic, Inc. d/b/a Nextel Communications submits this application for site plan review to permit the installation of a wireless telecommunication facility on the property of American Fabrics Company located at 1069 Connecticut Avenue in an I-LI Zone. Pursuant to § 7-3-2, the proposed use is permitted in an I-LI zone.

The facility consists of a 130 foot monopole, plus a four foot lightning rod, with an antenna platform located at the 130 foot level. A total of twelve antennas may be attached to the antenna platform. An equipment shelter, 10' by 20', will be located adjacent to the proposed monopole. Telephone and electric utilities will be available from existing utility service on the property.

The proposed facility will have no impact of any kind upon storm drainage, sanitary sewerage, traffic, site conditions, or environmental resources. Storm drainage will not be affected: the location of the proposed facility is currently comprised of an impervious surface. There is no need for any connection to the city's sewer system because the facility will be completely unmanned. There will be no traffic impact because a Nextel technician will visit the site only once a month for routine maintenance. The facility will not impact the site or the nearby properties: the equipment does not emit noise; there will be no odor associated with the facility because no gases, liquids or solids are associated with its use; the facility will not vibrate and it will not cause any impact by reflection from lighting. Last, the facility will not impact the environment because it will comply with all applicable federal and

state guidelines for radio frequency emissions. In fact, the facility will operate at less than 1% of the standard set by the Federal Communications Commission's Office of Engineering and Technology Bulletin No. 65.

# EXHIBIT 7

**UPS CampusShip: View/Print Label**

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

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

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

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

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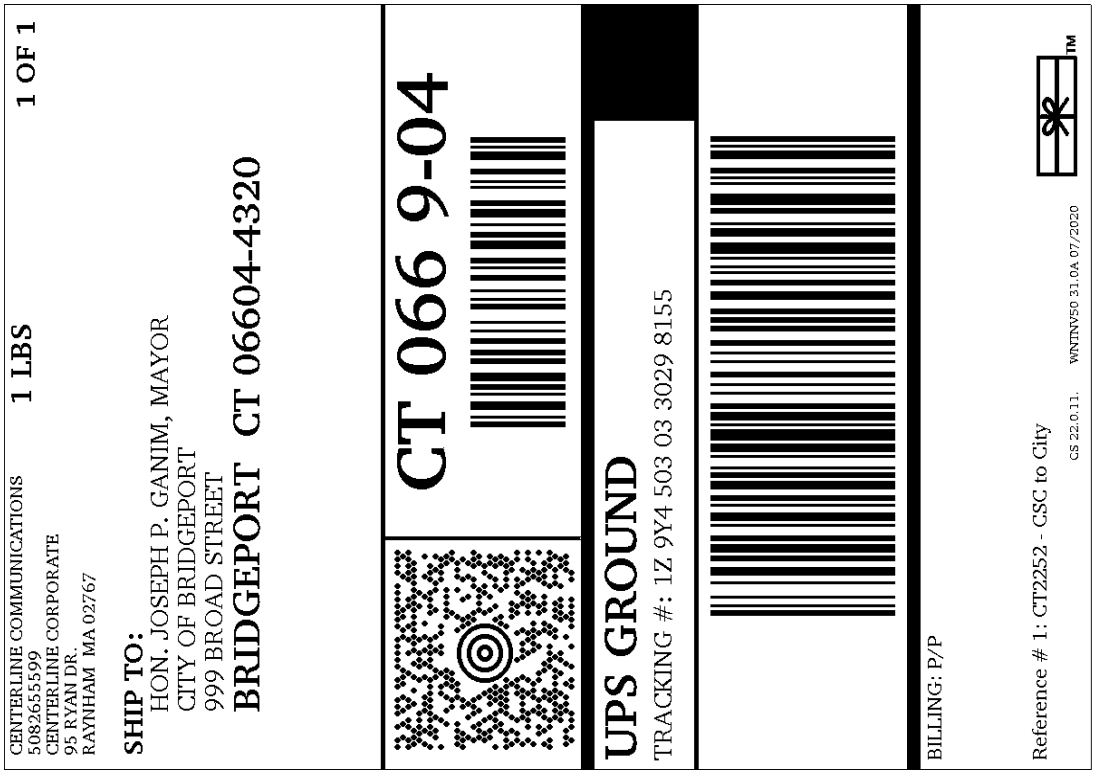
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



## Jennifer Iliades

**From:** UPS Quantum View <pkginfo@ups.com>
**Sent:** Friday, August 7, 2020 11:53 AM
**To:** Jennifer Iliades
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030330298155

**Hello, your package has been delivered.**

**Delivery Date:** Friday, 08/07/2020
**Delivery Time:** 11:52 AM
**Left At:** OFFICE
**Signed by:** BARBA

### CENTERLINE SITE ACQUISITION

| | |
|---|---|
| **Tracking Number:** | 1Z9Y45030330298155 |
| **Ship To:** | CITY OF BRIDGEPORT<br>999 BROAD STREET<br>BRIDGEPORT, CT 066044320<br>US |
| **Number of Packages:** | 1 |
| **UPS Service:** | UPS Ground |
| **Package Weight:** | 0.2 LBS |
| **Reference Number:** | CT2252 - CSC TO CITY |

Download the UPS mobile app

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**For Questions, Visit Our Help and Support Center**

**UPS CampusShip: View/Print Label**

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

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

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

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

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689 DEPOT ST
NORTH EASTON ,MA 02356

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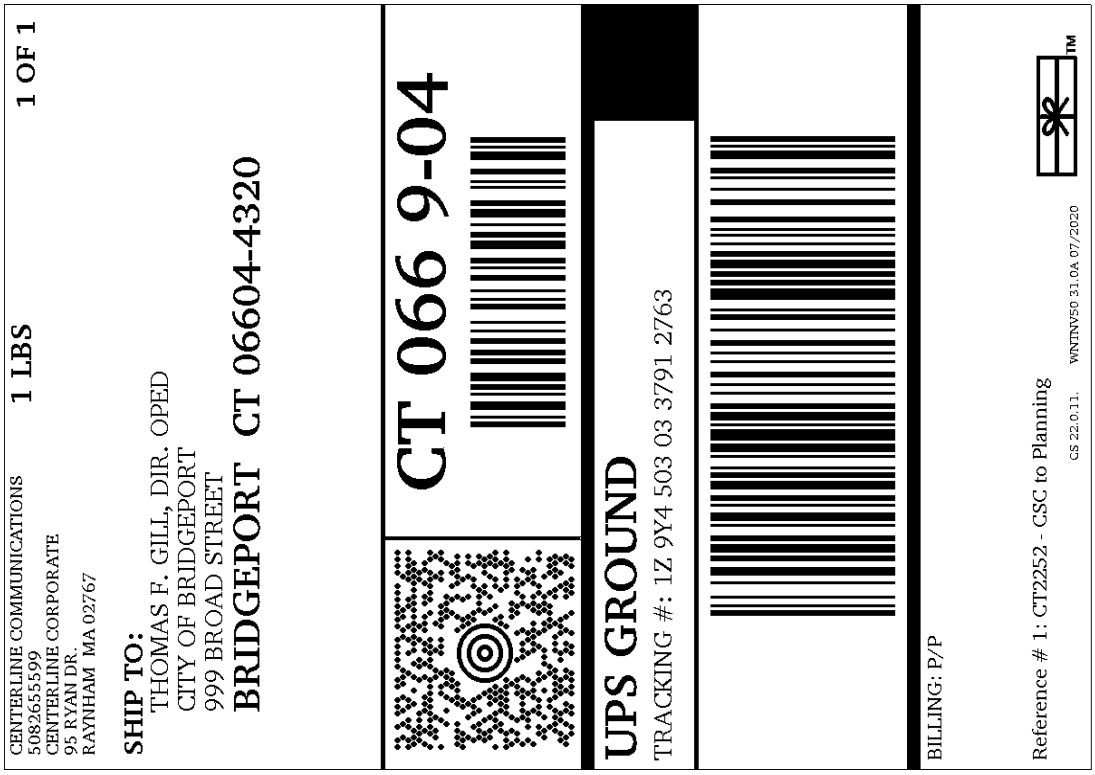
WEST BRIDGEWATER ,MA 02379

FOLD HERE



## Jennifer Iliades

**From:** UPS Quantum View <pkginfo@ups.com>
**Sent:** Friday, August 7, 2020 11:52 AM
**To:** Jennifer Iliades
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030337912763

**Hello, your package has been delivered.**

**Delivery Date:** Friday, 08/07/2020
**Delivery Time:** 11:51 AM
**Left At:** OFFICE
**Signed by:** LIZ

## CENTERLINE SITE ACQUISITION

| | |
|---|---|
| **Tracking Number:** | 1Z9Y45030337912763 |
| **Ship To:** | CITY OF BRIDGEPORT<br>999 BROAD STREET<br>BRIDGEPORT, CT 066044320<br>US |
| **Number of Packages:** | 1 |
| **UPS Service:** | UPS Ground |
| **Package Weight:** | 0.2 LBS |
| **Reference Number:** | CT2252 - CSC TO PLANNING |

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**UPS CampusShip: View/Print Label**

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

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

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

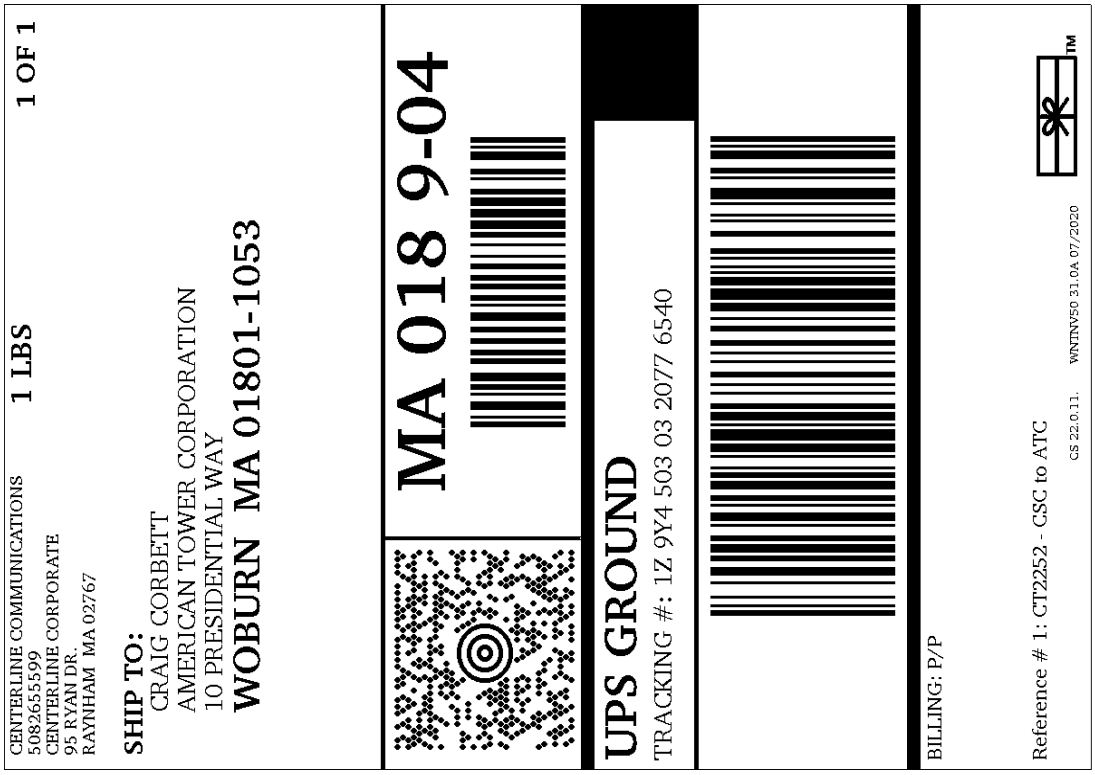
   **Customers without a Daily Pickup**
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes.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

UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



## Jennifer Iliades

**From:** UPS Quantum View <pkginfo@ups.com>
**Sent:** Friday, August 7, 2020 11:19 AM
**To:** Jennifer Iliades
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030320776540

**Hello, your package has been delivered.**

**Delivery Date:** Friday, 08/07/2020
**Delivery Time:** 11:16 AM
**Left At:** FRONT DESK
**Signed by:** ACRI

## CENTERLINE SITE ACQUISITION

| | |
|---|---|
| **Tracking Number:** | 1Z9Y45030320776540 |
| **Ship To:** | AMERICAN TOWER CORPORATION<br>10 PRESIDENTIAL WAY<br>WOBURN, MA 018011053<br>US |
| **Number of Packages:** | 1 |
| **UPS Service:** | UPS Ground |
| **Package Weight:** | 0.2 LBS |
| **Reference Number:** | CT2252 - CSC TO ATC |

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