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.

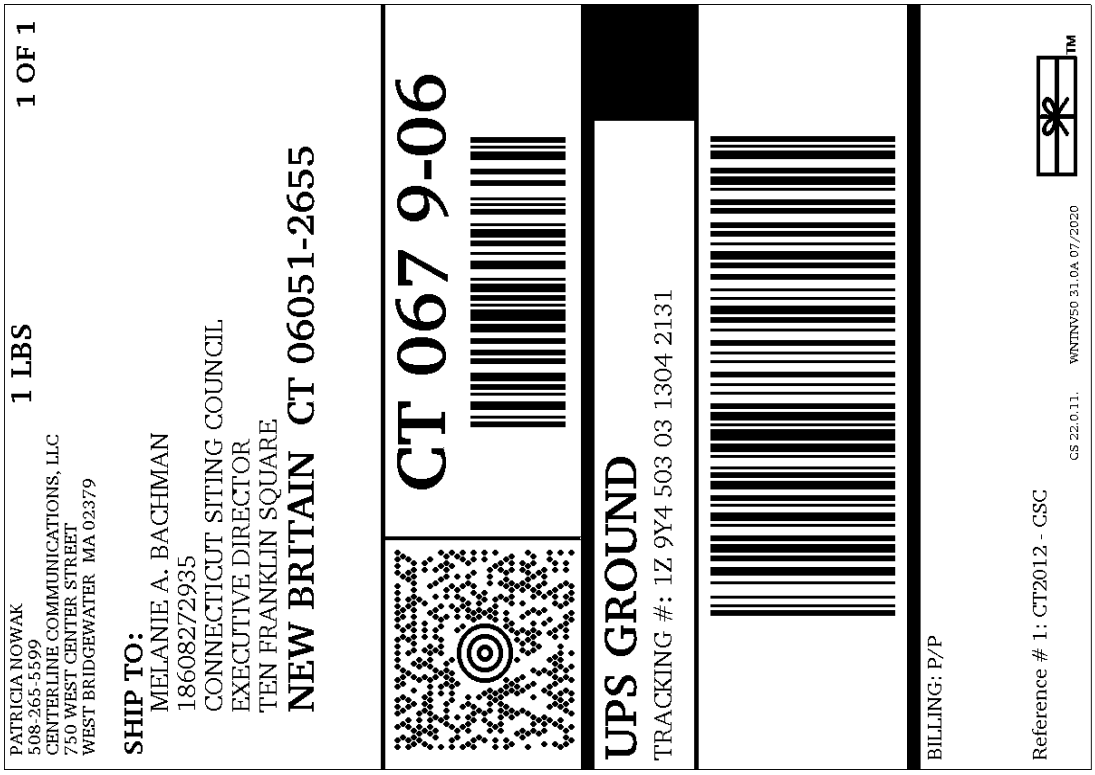
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To 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



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.

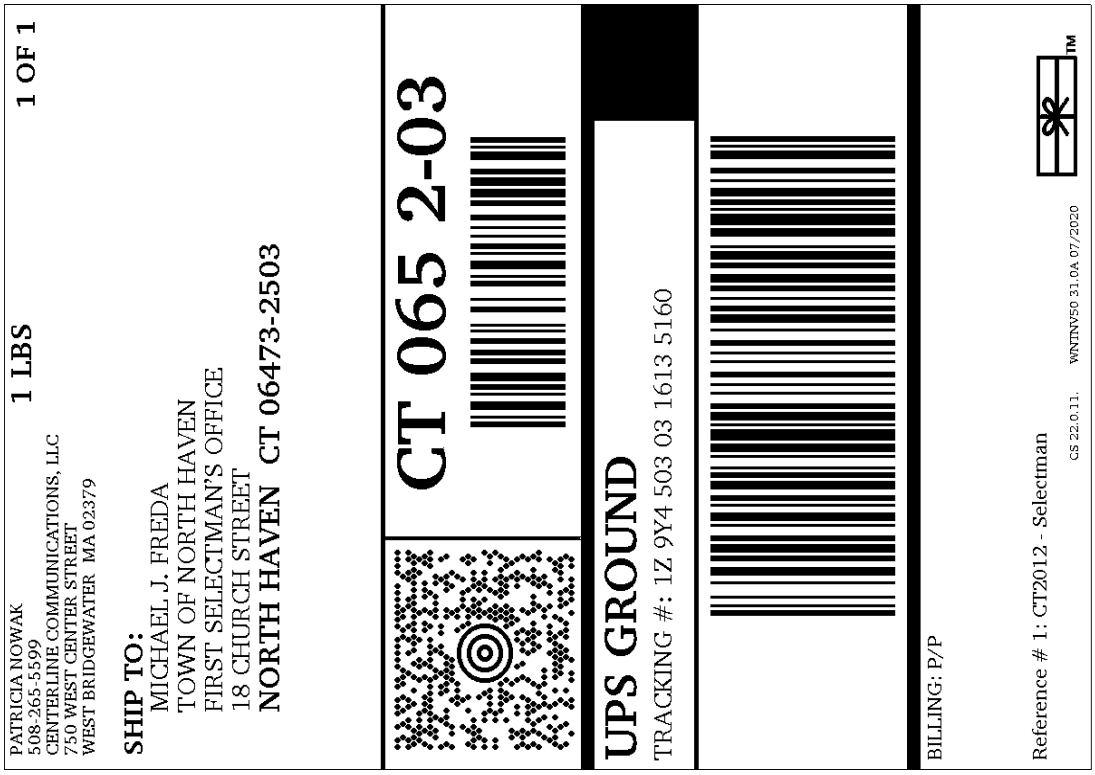
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To 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



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.

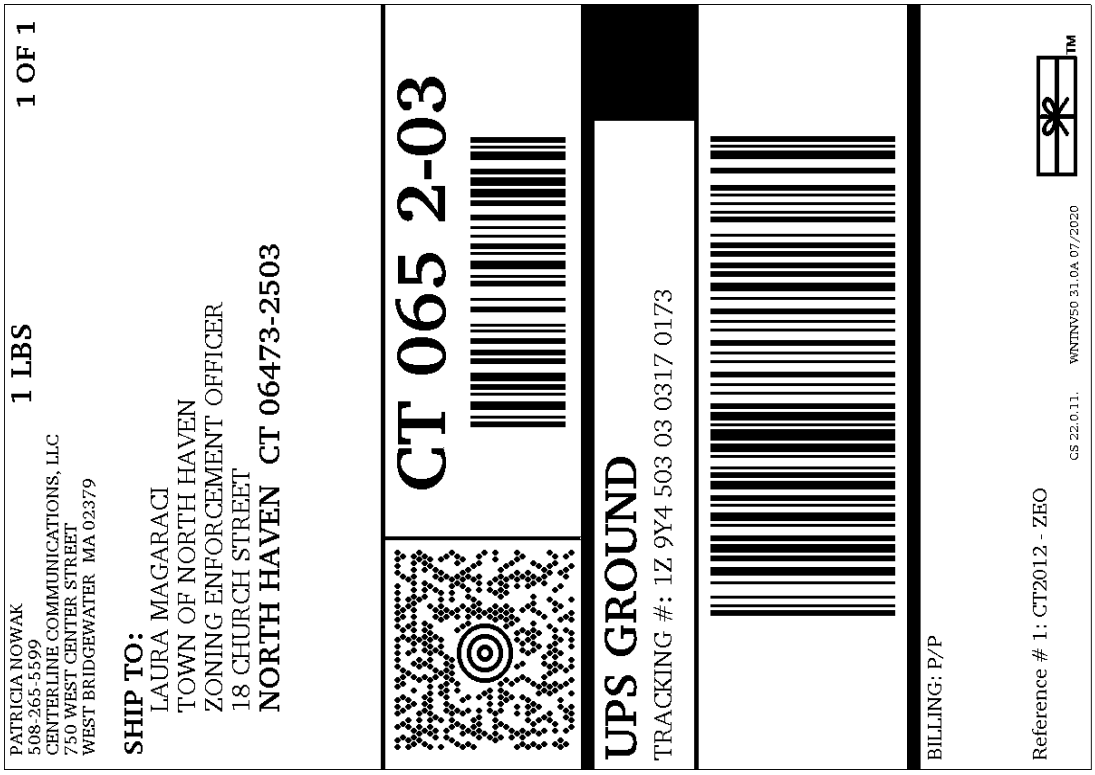
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To 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



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

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.

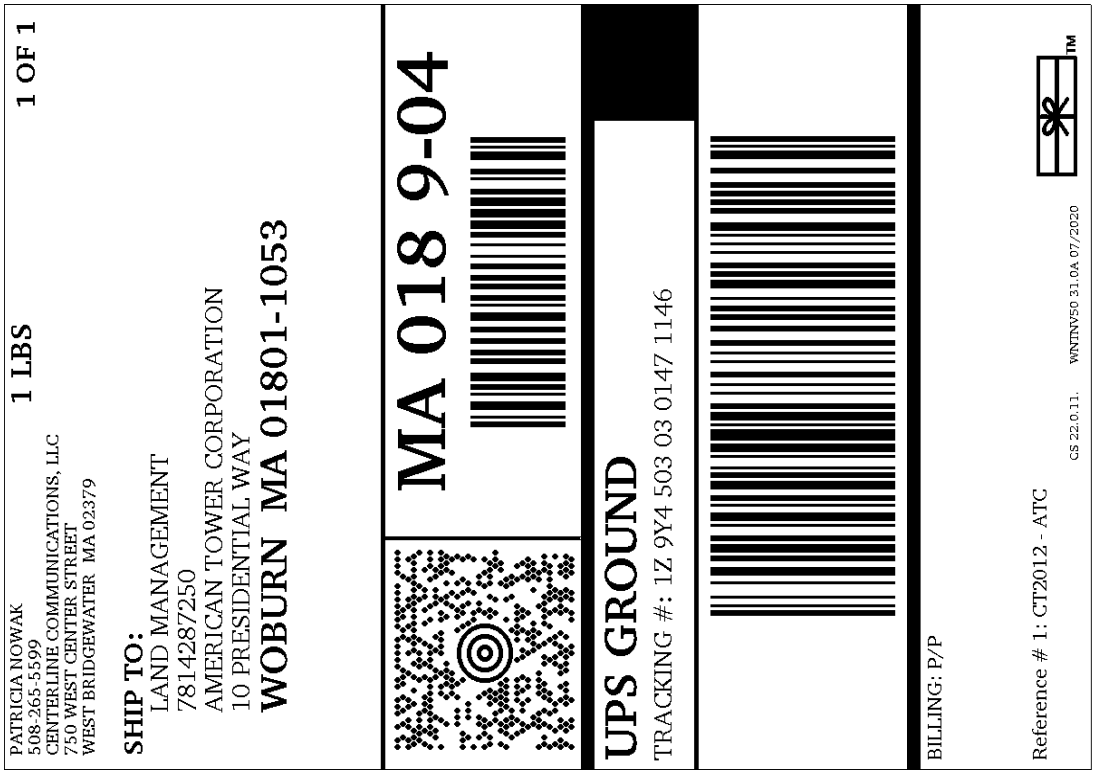
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To 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



July 23, 2020

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

Regarding: Notice of Exempt Modification – AT&T Site CT2012
Address: 15 Dwight Street, North Haven, CT

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (hereinafter "AT&T") currently maintains a wireless telecommunications facility on an existing 150' monopole tower (the "Tower") at the above-referenced address, latitude 41.420800, longitude -72.848800. Said Tower is owned by American Tower Corporation.

AT&T desires to modify its existing telecommunications facility on the Tower by swapping (3) Antennas, swapping (6) Remote Radio Units and adding (1) Surge Arrestor, as well as, other related modifications, as more particularly detailed and described in the enclosed Construction Drawings prepared by SMW Engineering Group, Inc, dated July 10, 2020. Enclosed please also find an Antenna Mount Analysis report prepared by American Tower Corporation dated June 18, 2020. The centerline height of the antennas will be at 153 feet.

The Tower was originally approved by the Connecticut Siting Council on July 24, 1984 under Docket No. 44.

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 Michael J. Freda, First Selectman of the Town of North Haven; Laura Magaraci, Zoning Enforcement Officer of the Town of North Haven; 15 Dwight Street LLC, as the property owner; and American Tower Corporation, as Tower owner. Enclosed please find a property card and a GIS map of the property.

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 NIER Study Report 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 Report dated June 19, 2020 and prepared by American Tower Corporation.*

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).

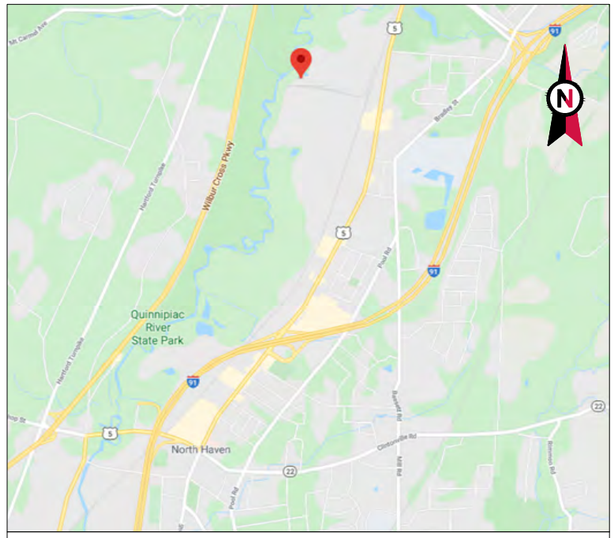
Sincerely,

Patricia Nowak
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
pnowak@clinellc.com

Enclosures:
Exhibit 1 – Construction Drawings
Exhibit 2 - Mount Analysis
Exhibit 3 – Property Cards and GIS Map
Exhibit 4 – NIER Study
Exhibit 5 – Structural Analysis

cc:
The Honorable Michael J. Freda, First Selectman of the Town of North Haven
Laura Magaraci, Zoning Enforcement Officer of the Town of North Haven
15 Dwight Street LLC, as the property owner
American Tower Corporation, as Tower owner

EXHIBIT 1



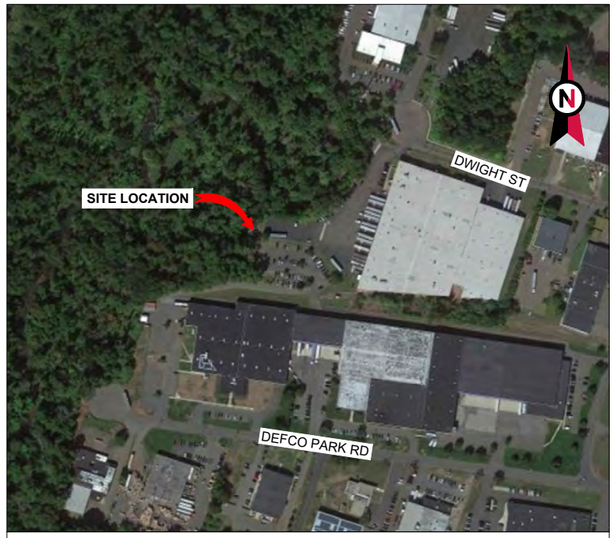
VICINITY MAP

CURRENT PROJECTS:

5C - PACE #: MRCTB046848
4TX4RX - PACE #: MRCTB046681
4TX4RX - PACE #: MRCTB046511
5G NR - PACE #: MRCTB046791

AMERICAN TOWER®

ATC SITE NAME: NORTH HAVEN CT 1
ATC SITE NUMBER: 302482
AT&T SITE ID: CTL02012
AT&T FA CODE:10034972
AT&T SITE NAME: NORTH HAVEN-DWIGHT ST
SITE ADDRESS: 15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198



LOCATION MAP

AT&T MOBILITY
ANTENNA AMENDMENT PLAN

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: UNITED ILLUMINATING
PHONE: (800) 722-5584

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 376-6843

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

PROJECT SUMMARY

SITE ADDRESS:

15 DEWIGHT STREET

NORTH HAVEN, CT 06473-1198

COUNTY: NEW HAVEN

GEOGRAPHIC COORDINATES:

LATITUDE: 41.42080556

LONGITUDE: -72.8488

GROUND ELEVATION: 26' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

JEREMY SHARIT
jsharit@smweng.com
SMW ENGINEERING GROUP INC.
158 BUSINESS CENTER DR.
BIRMINGHAM, AL. 35244
JOB# 20-10277

PROPERTY OWNER:

15 DWIGHT ST LLC
C/O NEIL F CARRANO
11 SAGAMORE TERRACE S.
WESTBROOK, CT 06498

APPLICANT:

AT&T MOBILITY

CONSULTING ENGINEER

JOHN LIU, PE
(423) 541-0561
JOHNLIU@TELECOM.TEAM

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:

REMOVE (3) UMTS ANTENNAS, (6) LTE RRH'S, AND (2) 0.51" HYBRID CABLES

INSTALL (3) LTE ANTENNAS, (6) LTE RRH'S, (1) DC6 SQUID, (2) 0.78" 8AWG6 DC TRUNKS, (2) 0.39" FIBER CABLES, AND MOUNT MODIFICATIONS

EXISTING (6) LTE ANTENNAS, (3) LTE RRH'S, (12) DPLEXERS, (6) TMA'S, (2) DC6 SQUIDS, (4) 0.78" 8AWG6 DC TRUNKS, AND (12) 1-1/4" COAX CABLES TO REMAIN

GROUND WORK:

INSTALL (1) 6630 AND (1) IDLE

EXISTING (2) RRUS-4478 B14 TO REMAIN

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

I-91 TO EXIT 13 TO RT 5 SOUTH. TURN RIGHT ONTO DEFCO PARK ROAD. TAKE FIRST RIGHT ONTO DODGE THEN LEFT ONTO DWIGHT. GO TO END OF STREET AND TURN LEFT INTO GATED PARKING LOT. TOWER IS IN BACK TO THE RIGHT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	COVER SHEET	0	07/10/20	ZDS
G-002	GENERAL NOTES	0	07/10/20	ZDS
C-101	DETAILED SITE PLAN	0	07/10/20	ZDS
C-201	TOWER ELEVATION	0	07/10/20	ZDS
C-401	RF SCHEDULE AND ANTENNA INSTALLATION	0	07/10/20	ZDS
C-501	CONSTRUCTION DETAILS	0	07/10/20	ZDS
C-502	EQUIPMENT SPECIFICATIONS	0	07/10/20	ZDS
E-501	GROUNDING DETAILS	0	07/10/20	ZDS
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			

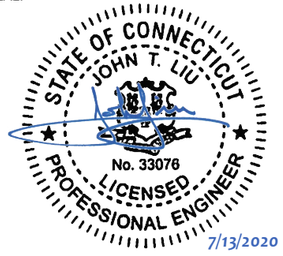
AMERICAN TOWER®

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	07/10/20

ATC SITE NUMBER:
302482
ATC SITE NAME:
NORTH HAVEN CT 1
AT&T MOBILITY SITE NAME:
NORTH HAVEN-DWIGHT ST
SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:



AT&T

DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	A

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.

AMERICAN TOWER®

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	07/10/20

ATC SITE NUMBER:

302482

ATC SITE NAME:

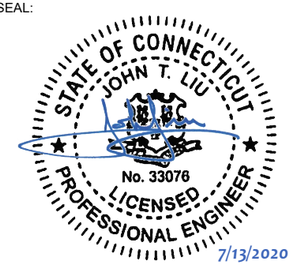
NORTH HAVEN CT 1

AT&T MOBILITY SITE NAME:

NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:



7/13/2020

AT&T

DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	A

SITE PLAN NOTES:

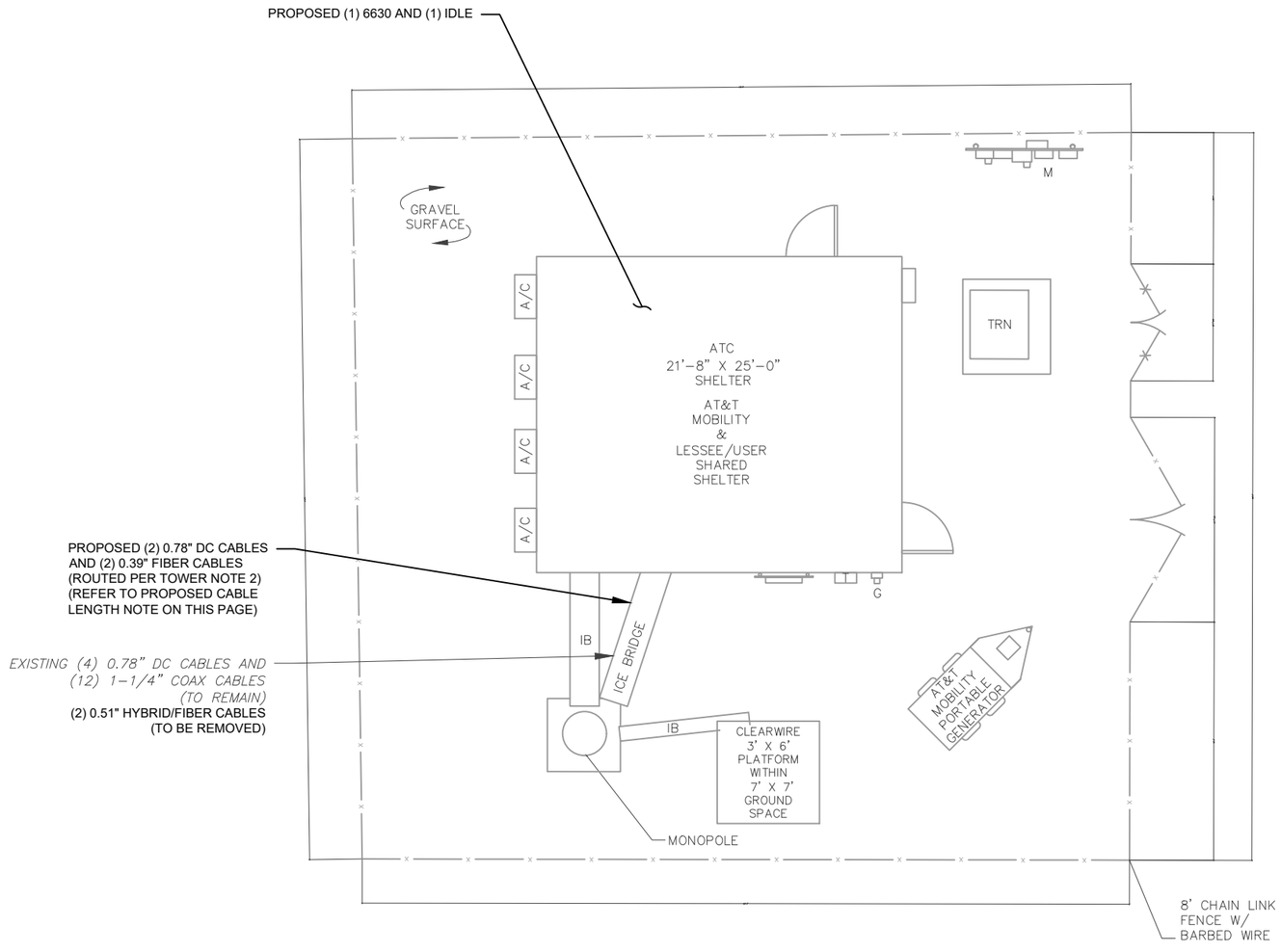
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

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



EXISTING (2) GROUND MOUNTED RRUS-4478 B14 TO REMAIN AND BE RE-USED

1 DETAILED SITE PLAN

0 10' 20'

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

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **185'**. 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. 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.

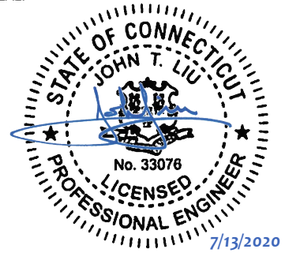
AMERICAN TOWER®

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	07/10/20

ATC SITE NUMBER:
302482
ATC SITE NAME:
NORTH HAVEN CT 1
AT&T MOBILITY SITE NAME:
NORTH HAVEN-DWIGHT ST
SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:



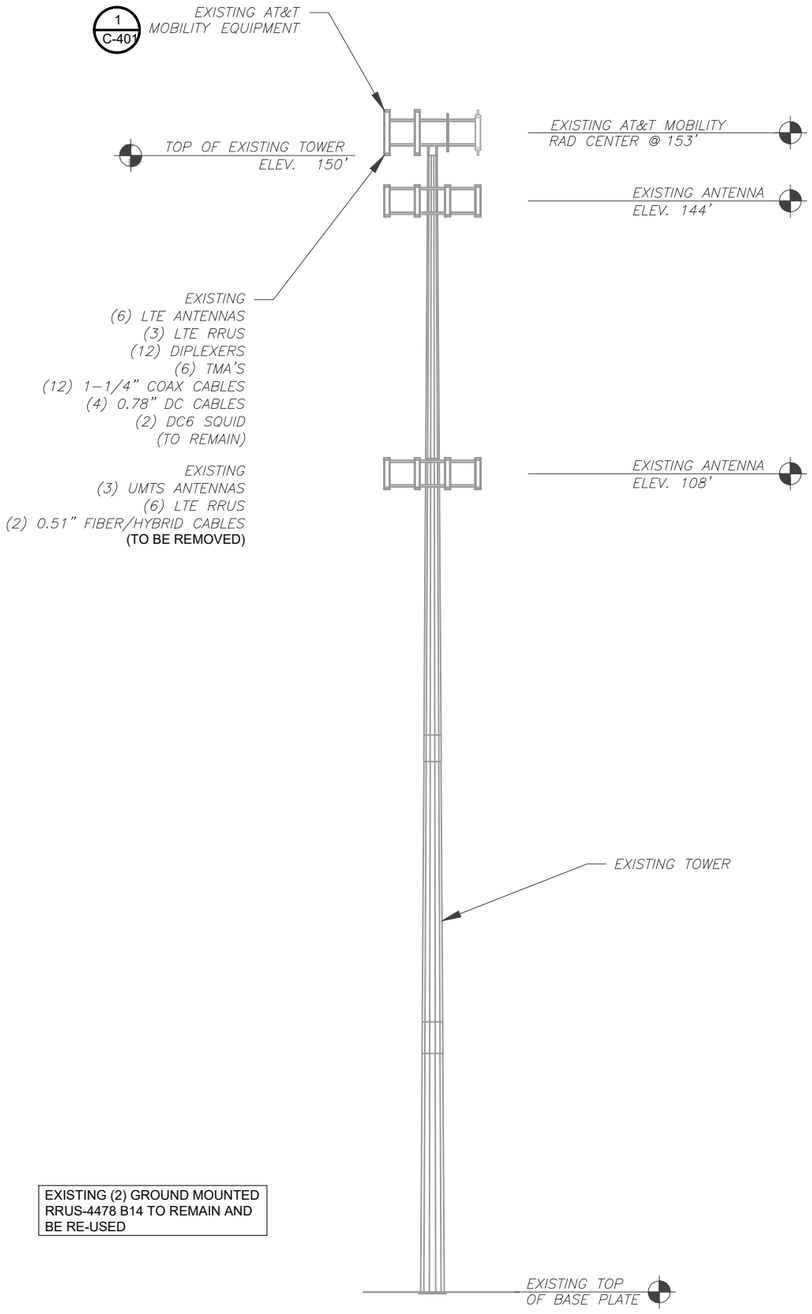
AT&T

DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

DETAILED SITE PLAN

SHEET NUMBER: C-101
REVISION: A

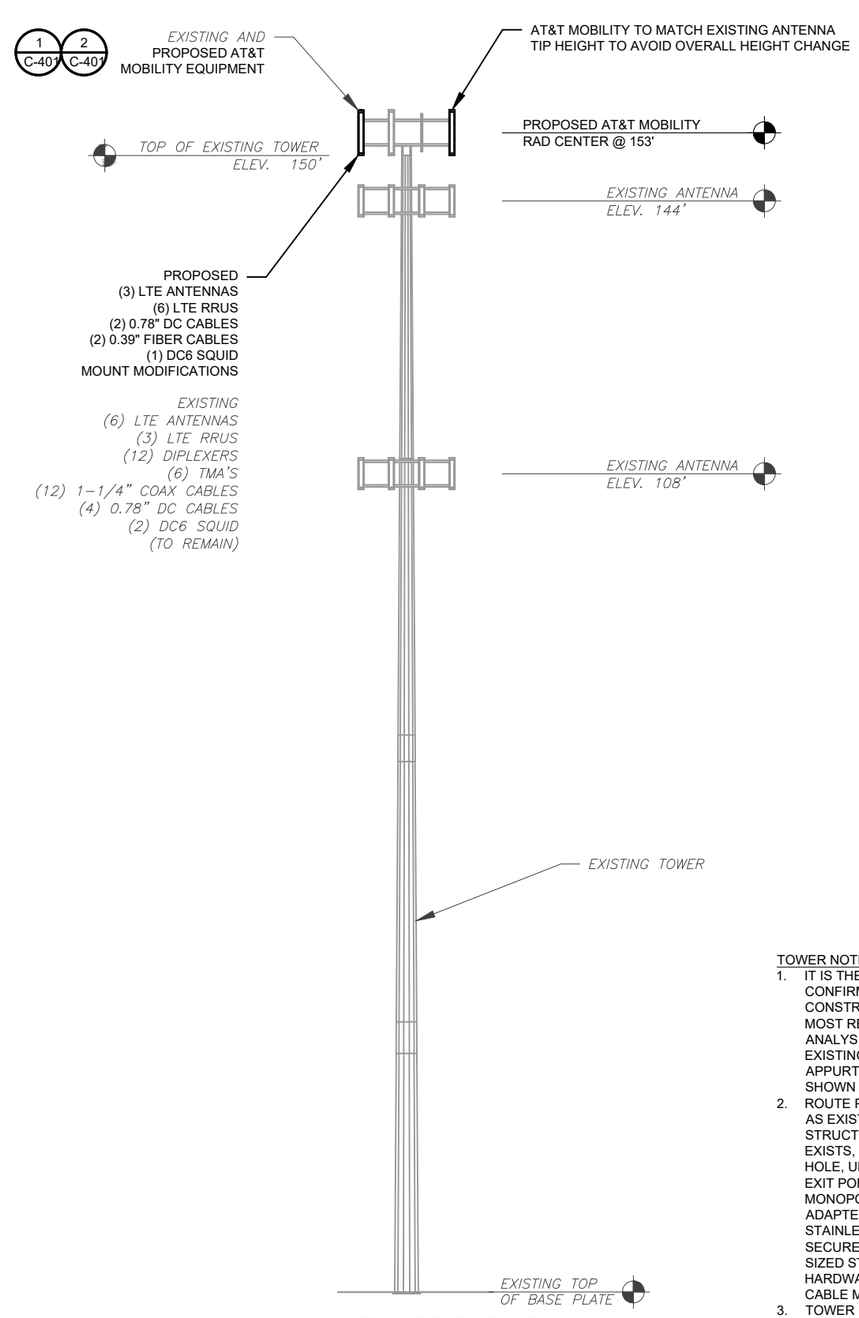
EXISTING AND FINAL CONFIGURATIONS ARE BASED ON RFDS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.



EXISTING (2) GROUND MOUNTED RRUS-4478 B14 TO REMAIN AND BE RE-USED

1 EXISTING TOWER ELEVATION
SCALE: 1" = 20'

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 06/18/20, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



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.)

AMERICAN TOWER®

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	07/10/20

ATC SITE NUMBER:
302482
ATC SITE NAME:
NORTH HAVEN CT 1
AT&T MOBILITY SITE NAME:
NORTH HAVEN-DWIGHT ST
SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:
STATE OF CONNECTICUT JOHN T. LIU No. 33076 LICENSED PROFESSIONAL ENGINEER
7/13/2020

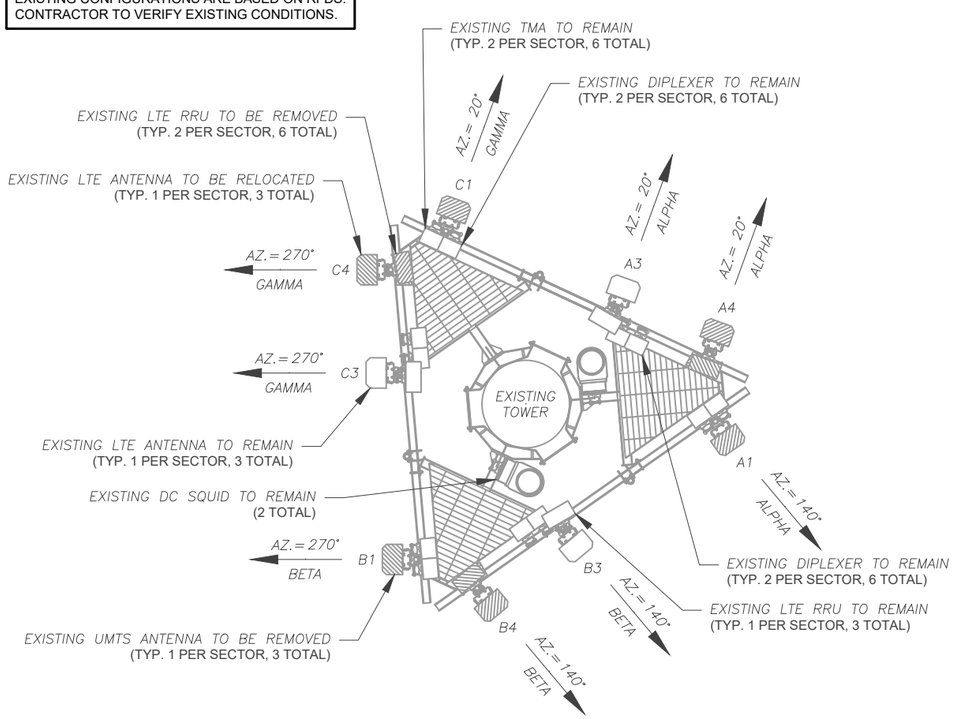
AT&T

DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

TOWER ELEVATION

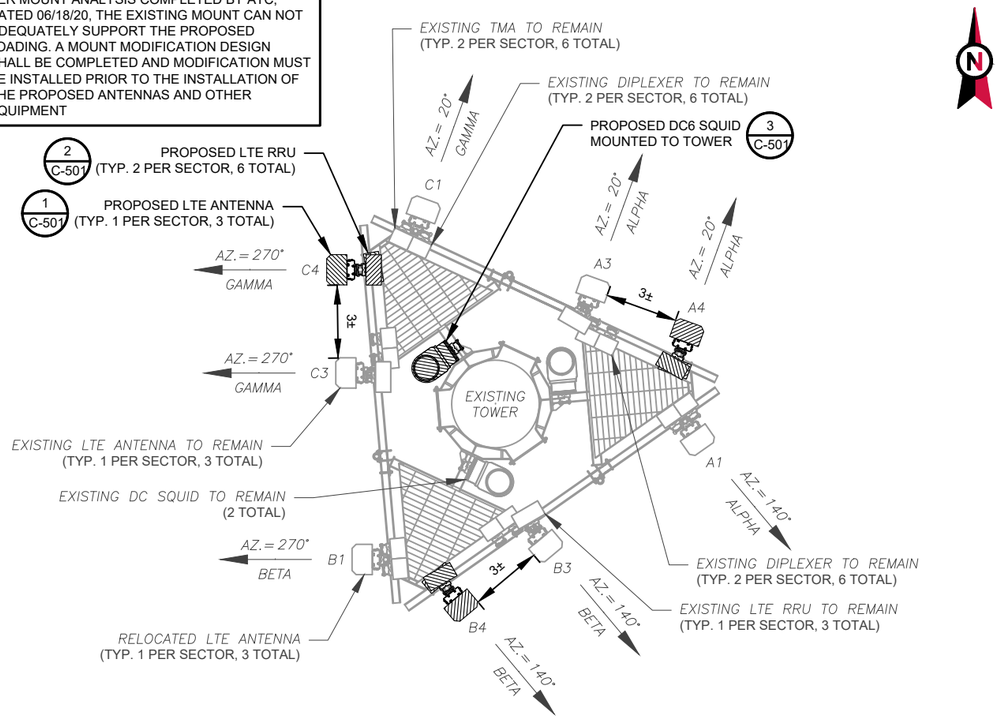
SHEET NUMBER:	REVISION:
C-201	A

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



1 CURRENT ANTENNA PLAN
SCALE: 1" = 5'

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 06/18/20, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. A MOUNT MODIFICATION DESIGN SHALL BE COMPLETED AND MODIFICATION MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT



2 FINAL ANTENNA PLAN
SCALE: 1" = 5'

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

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	153'	140°	A1	POWERWAVE 7770	UMTS	RMV	(2) 782-10250 DIPLEXER	RMN
							(2) LGP 21401 TMA	RMN
		20°	A3	QS66512-2	LTE	RMN	RRUS-32 B30	RMN
							(2) DBC0061F1V51-2 DIPLEXER	RMN
		20°	A4	OPA-65R-LCUU-H6	LTE	REL	RRUS-11 B12	RMV
							RRUS-12 B2	RMV
BETA	153'	270°	B1	POWERWAVE 7770	UMTS	RMV	(2) 782-10250 DIPLEXER	RMN
							(2) LGP 21401 TMA	RMN
		140°	B3	QS66512-2	LTE	RMN	RRUS-32 B30	RMN
							(2) DBC0061F1V51-2 DIPLEXER	RMN
		140°	B4	OPA-65R-LCUU-H6	LTE	REL	RRUS-11 B12	RMV
							RRUS-12 B2	RMV
GAMMA	153'	20°	C1	POWERWAVE 7770	UMTS	RMV	(2) 782-10250 DIPLEXER	RMN
							(2) LGP 21401 TMA	RMN
		270°	C3	QS66512-2	LTE	RMN	RRUS-32 B30	RMN
							(2) DBC0061F1V51-2 DIPLEXER	RMN
		270°	C4	OPA-65R-LCUU-H6	LTE	REL	RRUS-11 B12	RMV
							RRUS-12 B2	RMV

NOTES

1. 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. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
3. THE ANTENNA ORIENTATION PLAN IS A SCHEMATIC. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA AZIMUTHS, MOUNT CONFIGURATIONS AND TOWER ORIENTATION. SCALES SHOWN ARE FOR REFERENCE ONLY AND EXISTING DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION AND NOTIFY ATC OF ANY DISCREPANCIES.
4. CONTRACTOR TO ENSURE PROPER SEPARATION IN ACCORDANCE WITH AT&T'S FIRSTNET REQUIREMENTS (SEE SHEET R-602)

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	153'	140°	A1	OPA-65R-LCUU-H6	LTE	REL	(2) 782-10250 DIPLEXER	RMN
							(2) LGP 21401 TMA	RMN
		20°	A3	QS66512-2	LTE	RMN	RRUS-32 B30	RMN
							(2) DBC0061F1V51-2 DIPLEXER	RMN
		20°	A4	DMP65R-BU6DA	LTE	ADD	RRUS-4449 B5/B12	ADD
							RRUS-8843 B2/B66A	ADD
BETA	153'	270°	B1	OPA-65R-LCUU-H6	LTE	REL	(2) 782-10250 DIPLEXER	RMN
							(2) LGP 21401 TMA	RMN
		140°	B3	QS66512-2	LTE	RMN	RRUS-32 B30	RMN
							(2) DBC0061F1V51-2 DIPLEXER	RMN
		140°	B4	DMP65R-BU6DA	LTE	ADD	RRUS-4449 B5/B12	ADD
							RRUS-8843 B2/B66A	ADD
GAMMA	153'	20°	C1	OPA-65R-LCUU-H6	LTE	REL	(2) 782-10250 DIPLEXER	RMN
							(2) LGP 21401 TMA	RMN
		270°	C3	QS66512-2	LTE	RMN	RRUS-32 B30	RMN
							(2) DBC0061F1V51-2 DIPLEXER	RMN
		270°	C4	DMP65R-BU6DA	LTE	ADD	RRUS-4449 B5/B12	ADD
							RRUS-8843 B2/B66A	ADD

EXISTING FIBER DISTRIBUTION/SQUID

MODEL NUMBER	STATUS
(2) DC6-48-60-18-8F	RMN
–	–

EXISTING CABLING SUMMARY

COAX	DC	FIBER	STATUS
(12) 1-1/4"	(4) 0.78"	(2) 0.39"	RMN
–	–	(2) 0.51"	RMV

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL FIBER DISTRIBUTION/SQUID

MODEL NUMBER	STATUS
(2) DC6-48-60-18-8F	RMN
DC6-48-60-18-8F	ADD

FINAL CABLING SUMMARY

COAX	DC	FIBER	STATUS
(12) 1-1/4"	(4) 0.78"	–	RMN
–	(2) 0.78"	(2) 0.39"	ADD

3 EQUIPMENT SCHEDULES

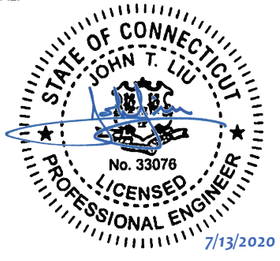
AMERICAN TOWER®

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	07/10/20

ATC SITE NUMBER:
302482
ATC SITE NAME:
NORTH HAVEN CT 1
AT&T MOBILITY SITE NAME:
NORTH HAVEN-DWIGHT ST
SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:

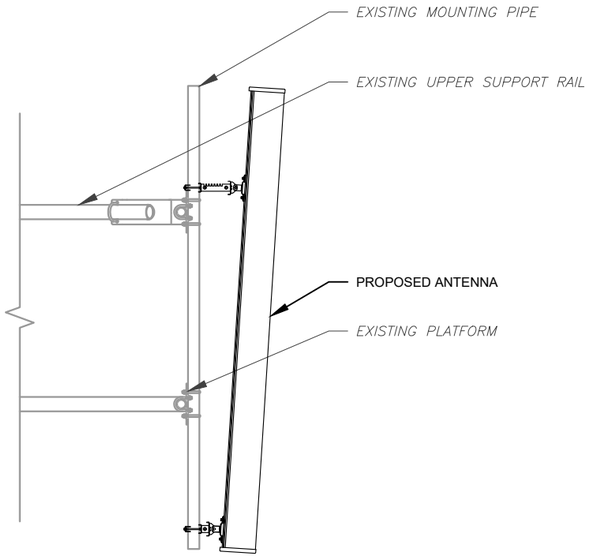


AT&T

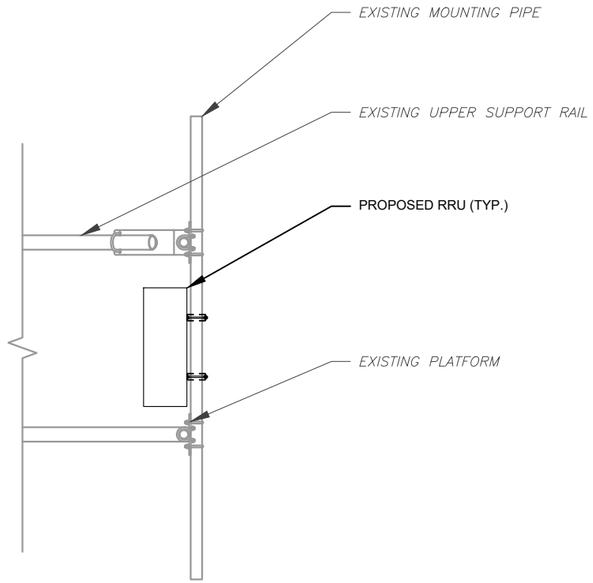
DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

RF SCHEDULE AND ANTENNA INSTALLATION

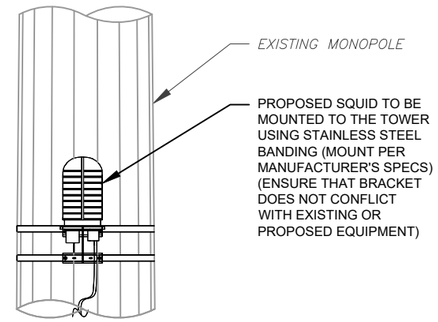
SHEET NUMBER:	REVISION:
C-401	A



1 ANTENNA DETAIL
SCALE: N.T.S.



2 RRU DETAIL
SCALE: N.T.S.



3 PROPOSED SQUID MOUNTING
SCALE: N.T.S.

AMERICAN TOWER®

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	07/10/20

ATC SITE NUMBER:
302482
ATC SITE NAME:
NORTH HAVEN CT 1
AT&T MOBILITY SITE NAME:
NORTH HAVEN-DWIGHT ST
SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

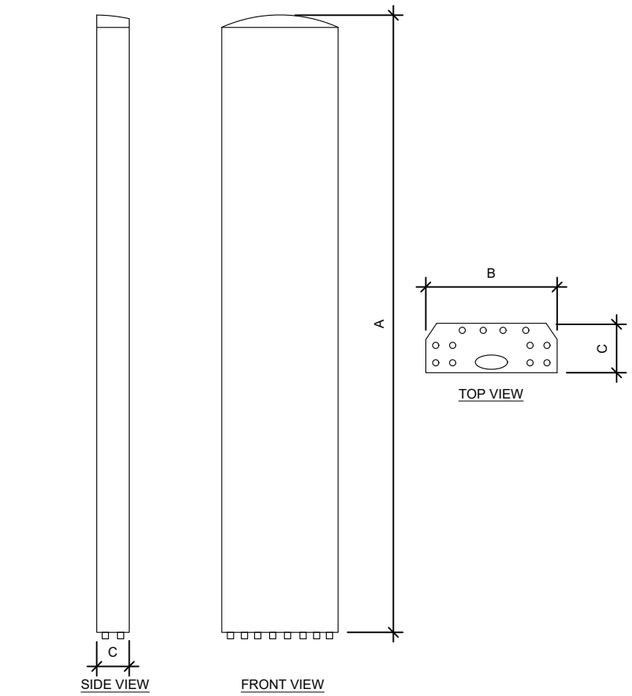
SEAL:
STATE OF CONNECTICUT
JOHN T. LIU
No. 33076
LICENSED PROFESSIONAL ENGINEER
7/13/2020

AT&T

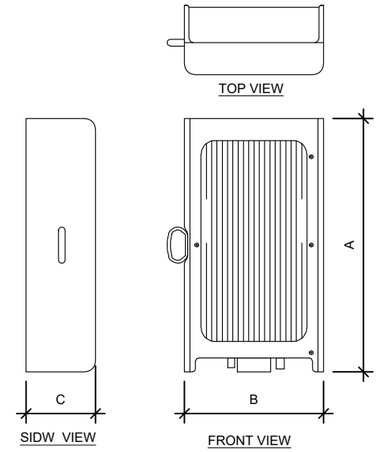
DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

CONSTRUCTION DETAILS

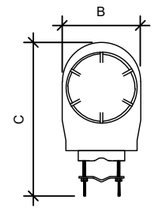
SHEET NUMBER:	REVISION:
C-501	A

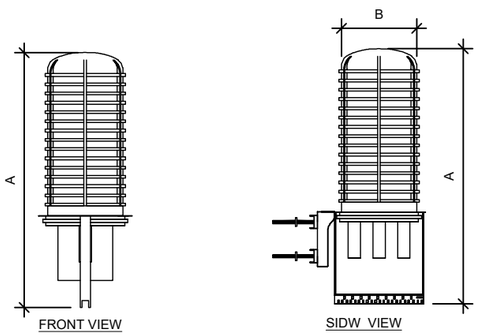


ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
CCI DMP65R-BU6DA	71.2"	20.7"	7.7"	79.4



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
4449 B5, B12	17.9"	13.2"	9.4"	71.0
8843 B2/B66A	18.0"	13.2"	11.3"	75.0





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: N.T.S.

AMERICAN TOWER®

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	07/10/20

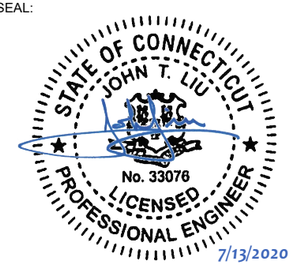
ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

AT&T MOBILITY SITE NAME:
NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:

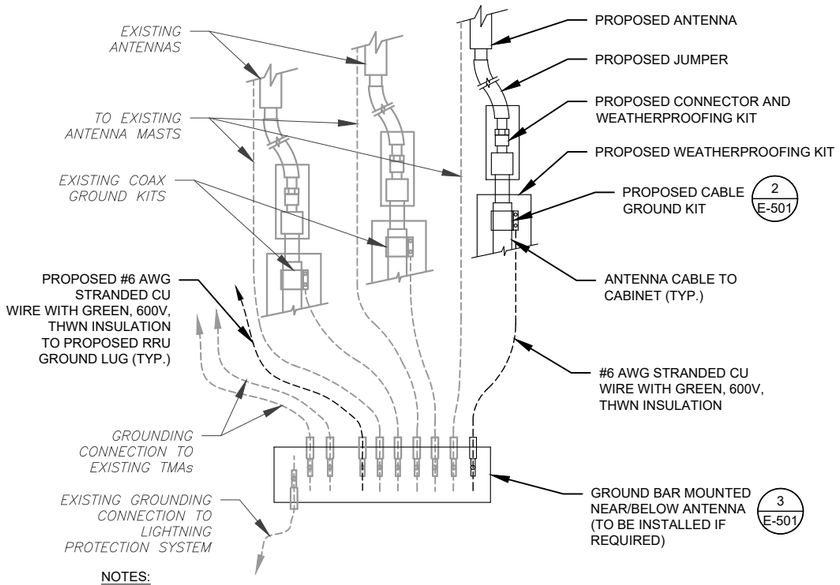


AT&T

DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

EQUIPMENT SPECIFICATIONS

SHEET NUMBER:	REVISION:
C-502	A

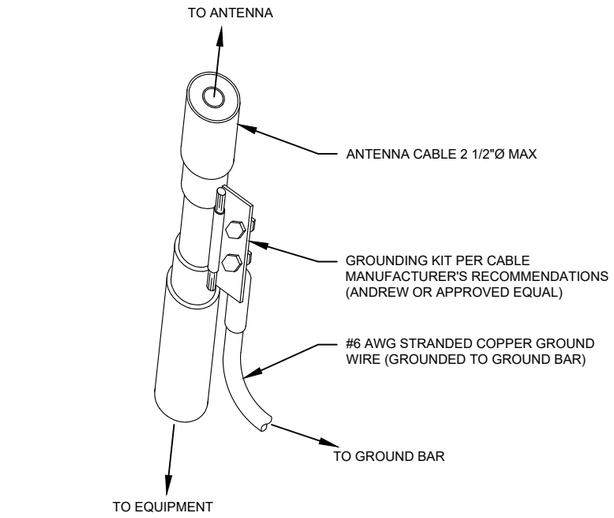


NOTES:

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.

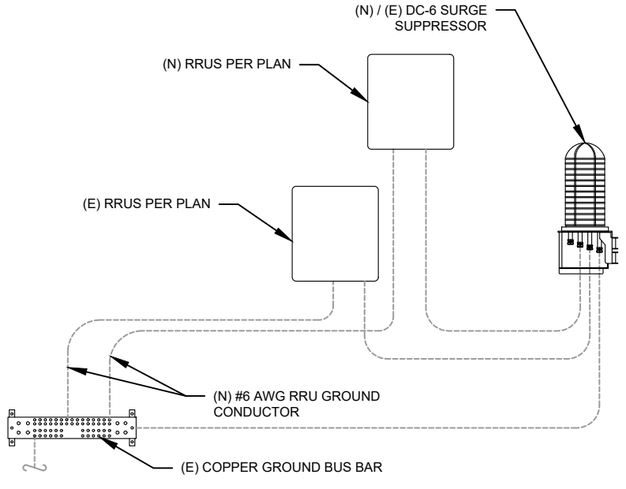


GROUND KIT NOTES:

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.

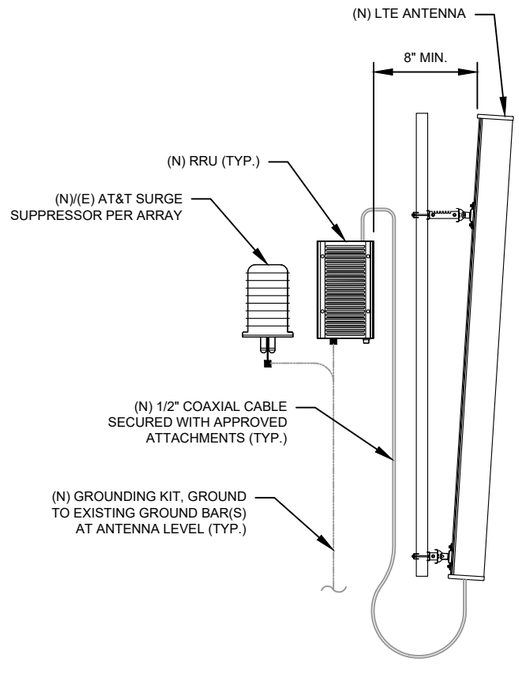
2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.



3 RRU GROUNDING

SCALE: N.T.S.



4 ANTENNA/RRU GROUNDING

SCALE: N.T.S.

AMERICAN TOWER®

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	07/10/20

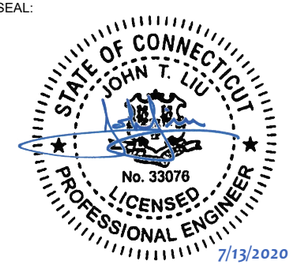
ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

AT&T MOBILITY SITE NAME:
NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:



7/13/2020

AT&T

DATE DRAWN:	06/24/20
ATC JOB NO:	13242626_G3
CUSTOMER ID:	NORTH HAVEN-DWIGHT ST
CUSTOMER #:	10034972

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	A

AMERICAN TOWER®
CORPORATION

Antenna Mount Analysis Report

ATC Site Name	:	**North Haven CT 1, CT**
ATC Site Number	:	**302482**
Engineering Number	:	**13242626_C8_01**
Mount Elevation	:	**152 ft**
Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**MRCTB046848**
Carrier Site Number	:	**CTL02012**
Site Location	:	**15 Dewight Street** **North Haven, CT 06473-1198** **41.42080556 , -72.8488**
County	:	**New Haven**
Date	:	**June 18, 2020**
Max Usage	:	**158%**
Result	:	**Fail**

Prepared By:
Max Carter
Structural Engineer

Max Carter

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
18 Jun 2020 02:34:11 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 152 ft.

Supporting Documents

Radio Frequency Data Sheet	RFDS ID #10034972, dated March 27, 2020
Reference Photos	Site photos from 2019
Previous Mount Analysis	Dewberry Engineers Project #50096232, dated March 9, 2018

Analysis

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

Basic Wind Speed:	120 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 1
Topographic Category:	1
Spectral Response:	Ss = 0.204, 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 does not meet the requirements per the applicable codes listed above. The mount can support the equipment as described in this report after the modifications listed below are completed:

- Reinforce standoff horizontals
- Reinforce connection horizontals

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

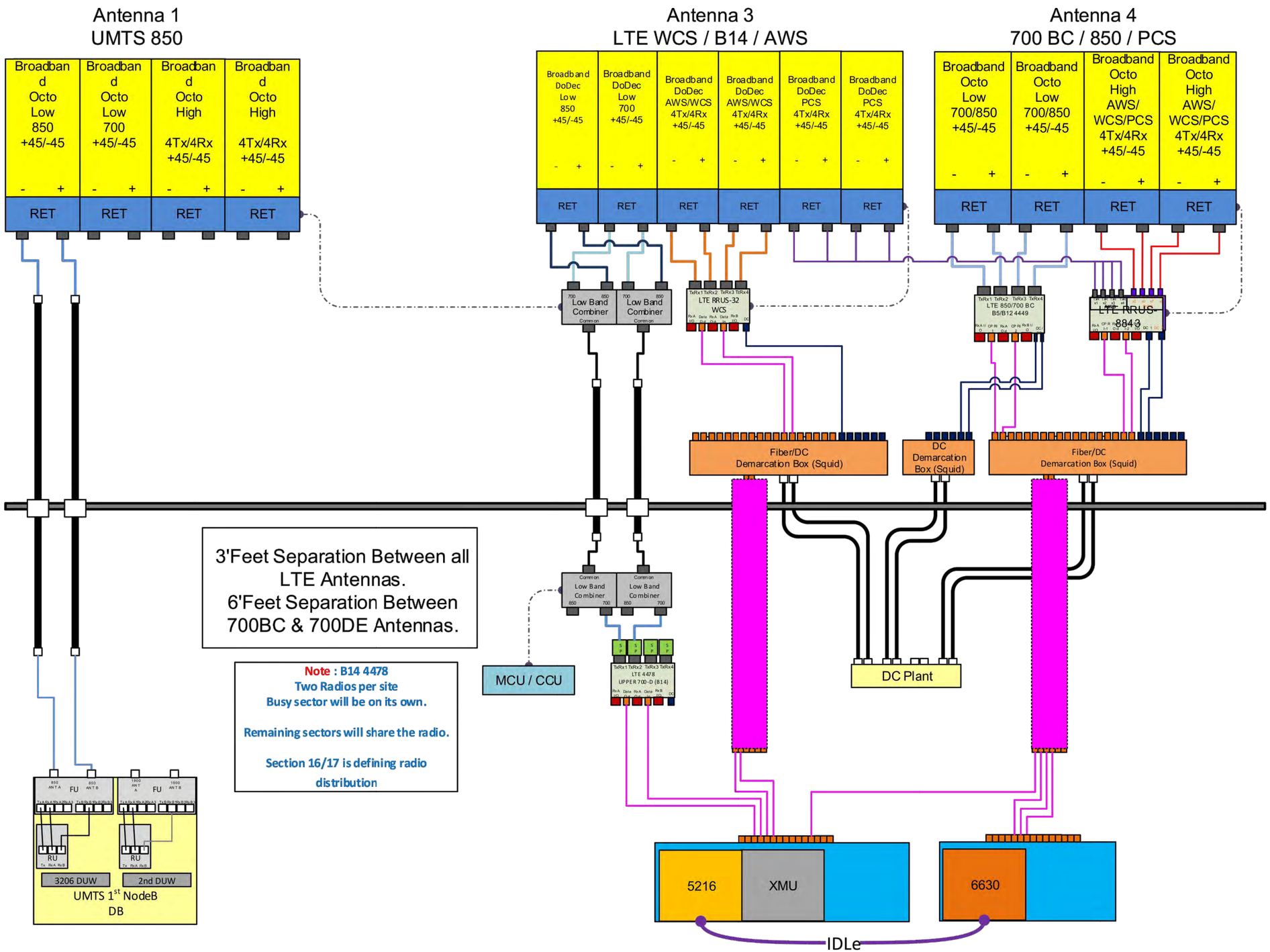
1 MOUNT ANALYSIS

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.

SUPPLEMENTAL

SHEET NUMBER: R-601

REVISION: A



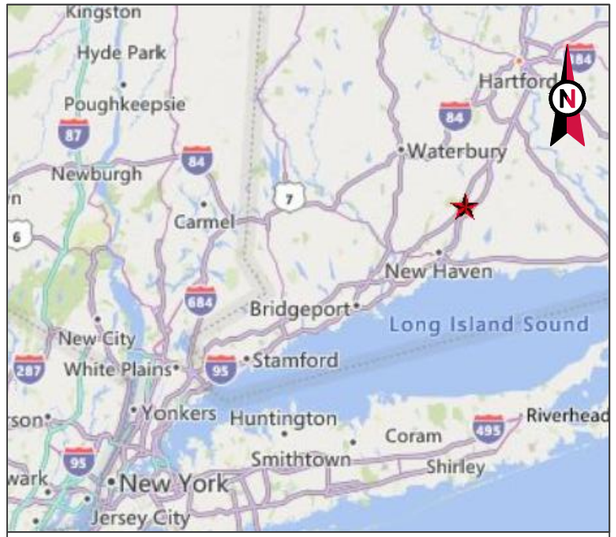
1 RFDS PLUMBING DIAGRAM

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE AT&T MOBILITY CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: A



VICINITY MAP

AMERICAN TOWER®

SITE NAME: NORTH HAVEN CT 1
SITE NUMBER: 302482
ATC PROJECT NUMBER: 13242626_C9_04
SITE ADDRESS: 15 DEWIGHT STREET
NORTH HAVEN, CT 06473

LOCATION MAP

BIRD WATCH SITE:
PLEASE CONTACT BIRD.WATCH@AMERICANTOWER.COM OR AMERICAN TOWER NOC AT 877-518-6937 FOR ASSISTANCE

MOUNT REINFORCEMENT DRAWINGS PREPARED FOR AT&T MOBILITY

PROJECT TEAM

TOWER OWNER

AMERICAN TOWER
10 PRESIDENTAL WAY
WOBURN, MA 01801

ENGINEERED BY

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

CARRIER INFORMATION

CARRIER: AT&T MOBILITY
CARRIER SITE NAME: MRCTB046848
CARRIER SITE NUMBER: CTL02012

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

PROJECT DESCRIPTION

THE MODIFICATIONS PRESENTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE MOUNT ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER 13242626_C8_01 DATED 06/18/20. SATISFACTORY COMPLETION OF THE WORK INDICATED ON THESE DRAWINGS WILL RESULT IN THE MOUNT MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE MOUNT ANALYSIS WAS COMPLETED.

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

PROJECT LOCATION

GEOGRAPHIC COORDINATES

LATITUDE: 41.42080556
LONGITUDE: -72.8488

SHEET	SHEET TITLE	REV.
G-002	IBC GENERAL NOTES AND MOUNT MODIFICATION INSPECTION	0
S-101	MODIFICATION PROFILE	0
R-601	SUPPLEMENTAL	0

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

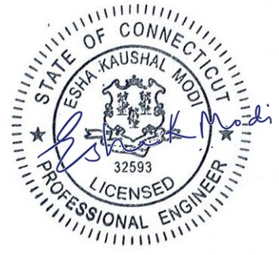
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BJK	07/06/20

ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

CONNECTICUT

SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473



DRAWN BY:	BJK
APPROVED BY:	TCR
DATE DRAWN:	07/06/20
ATC JOB NO:	13242626_C9_04

COVER

SHEET NUMBER: G-001
REVISION: 0

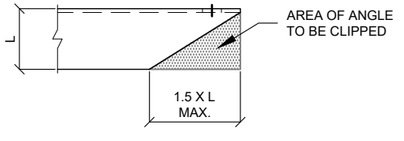
GENERAL

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

STRUCTURAL STEEL

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

MAXIMUM ALLOWABLE ANGLE CLIP



PAINT

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

WELDING

1. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
2. ALL WELDS SHALL BE INSPECTED VISUALLY. IF DIRECTED BY ENGINEER OF RECORD, 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
3. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
4. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER AND/OR BASE METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
5. IN CASES WHERE BASE METAL GRADE IS UNKNOWN, ALL WELDING ON LATTICE TOWERS SHALL BE DONE WITH E70XX ELECTRODES; ALL WELDING ON POLE STRUCTURES SHALL BE DONE WITH E80XX ELECTRODES, UNLESS NOTED OTHERWISE.
6. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

BOLT TIGHTENING PROCEDURE

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

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS

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

BOLT LENGTHS OVER FOUR DIAMETERS BUT NOT EXCEEDING EIGHT DIAMETERS

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

BOLT TIGHTENING PROCEDURE (CONTINUED)

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

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

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

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

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

MODIFICATION INSPECTION NOTES

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

TO ENSURE THAT THE REQUIREMENTS OF THE MMI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR SUBMIT ALL REQUIRED PHOTOGRAPHS AND DRAWINGS TO AMERICAN TOWER CORPORATION (ATC).

GENERAL CONTRACTOR

THE GENERAL CONTRACTOR IS REQUIRED TO:

- REVIEW THE REQUIREMENTS OF THE MMI CHECKLIST.
- UNDERSTAND ALL INSPECTION REQUIREMENTS.

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

MOUNT MODIFICATION INSPECTION CHECKLIST

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY
ON-SITE COLD GALVANIZING VERIFICATION	PHOTOGRAPHIC EVIDENCE OF COLD GALVANIZATION TYPE AND APPLICATION IN ALL APPLICABLE LOCATIONS TO BE INCLUDED WITHIN THE MMI REPORT	✔	GC
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	"AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO MMI FOR APPROVAL/REVIEW AND INCLUSION IN MMI REPORT	✔	GC
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF MOUNT MODIFICATION INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOW UP TO BE INCLUDED WITHIN THE MMI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN MMI REPORT.	✔	GC

TABLE KEY:
MMI - MOUNT MODIFICATION INSPECTION
GC - GENERAL CONTRACTOR
ATC - AMERICAN TOWER CORPORATION

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

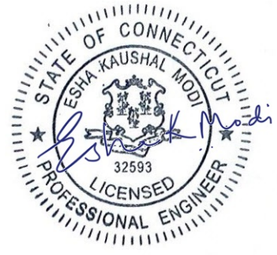
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BJK	07/06/20

ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

CONNECTICUT

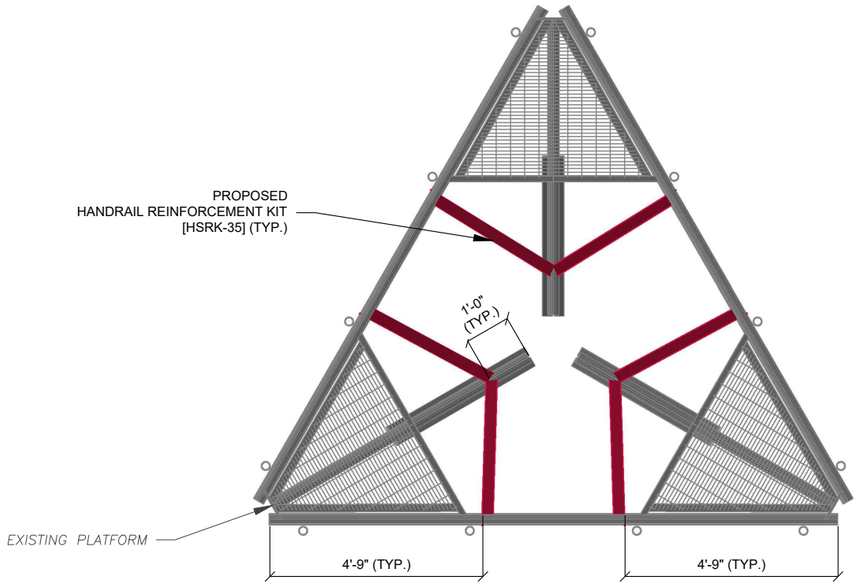
SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473



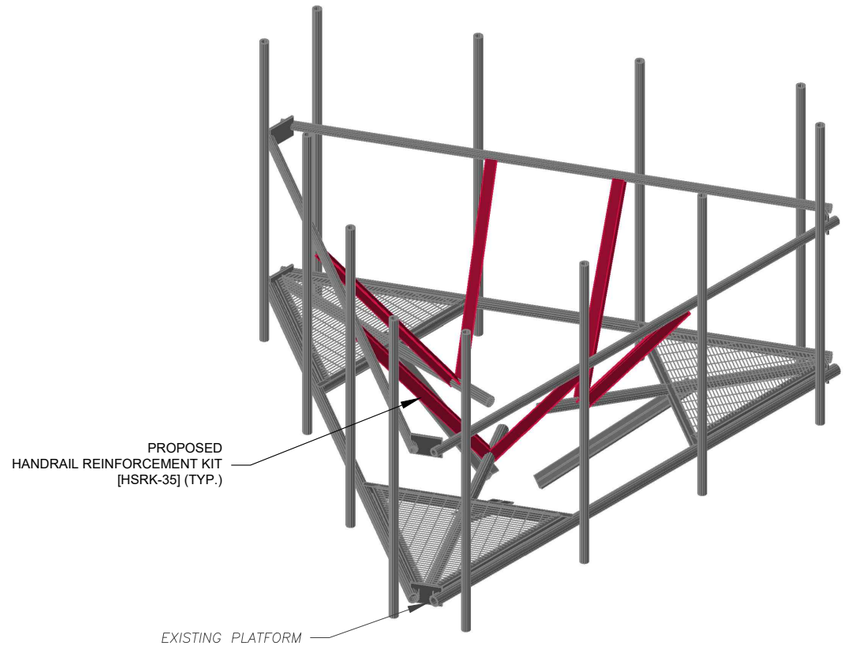
DRAWN BY:	BJK
APPROVED BY:	TCR
DATE DRAWN:	07/06/20
ATC JOB NO:	13242626_C9_04

IBC GENERAL NOTES AND MOUNT MODIFICATION INSPECTION

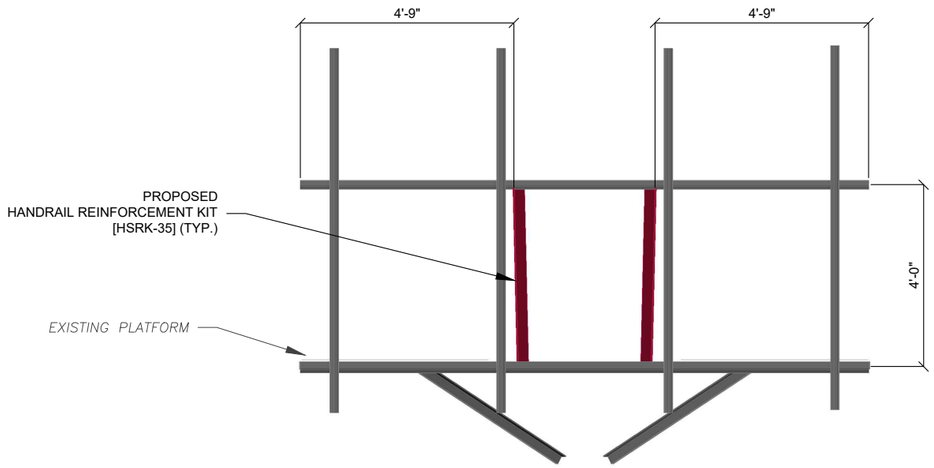
SHEET NUMBER:	REVISION:
G-002	0



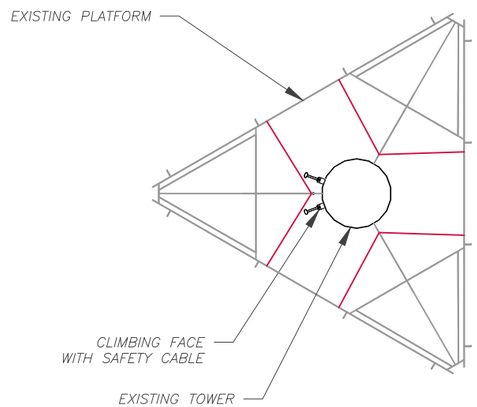
MOUNT MODIFICATION - TOP VIEW



MOUNT MODIFICATION - ISOMETRIC VIEW



MOUNT MODIFICATION - FRONT VIEW



SAFETY CLIMB LOCATION

NOTE:
CONTRACTOR TO INSTALL MOUNT MODIFICATIONS PER THE MANUFACTURERS SPECIFICATION. MODIFICATIONS SHALL NOT OBSTRUCT, INTERFERE, OR BLOCK EXISTING SAFETY CLIMB SYSTEM. IF ANY OF THESE OCCURS DURING INSTALLATION CONTACT THE AMERICAN TOWER PMI INBOX PMI@AMERICANTOWER.COM

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

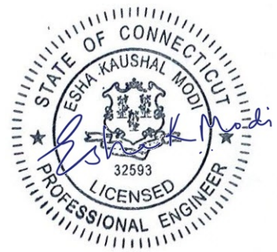
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BJK	07/06/20

ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

CONNECTICUT

SITE ADDRESS:
15 DEWIGHT STREET
NORTH HAVEN, CT 06473

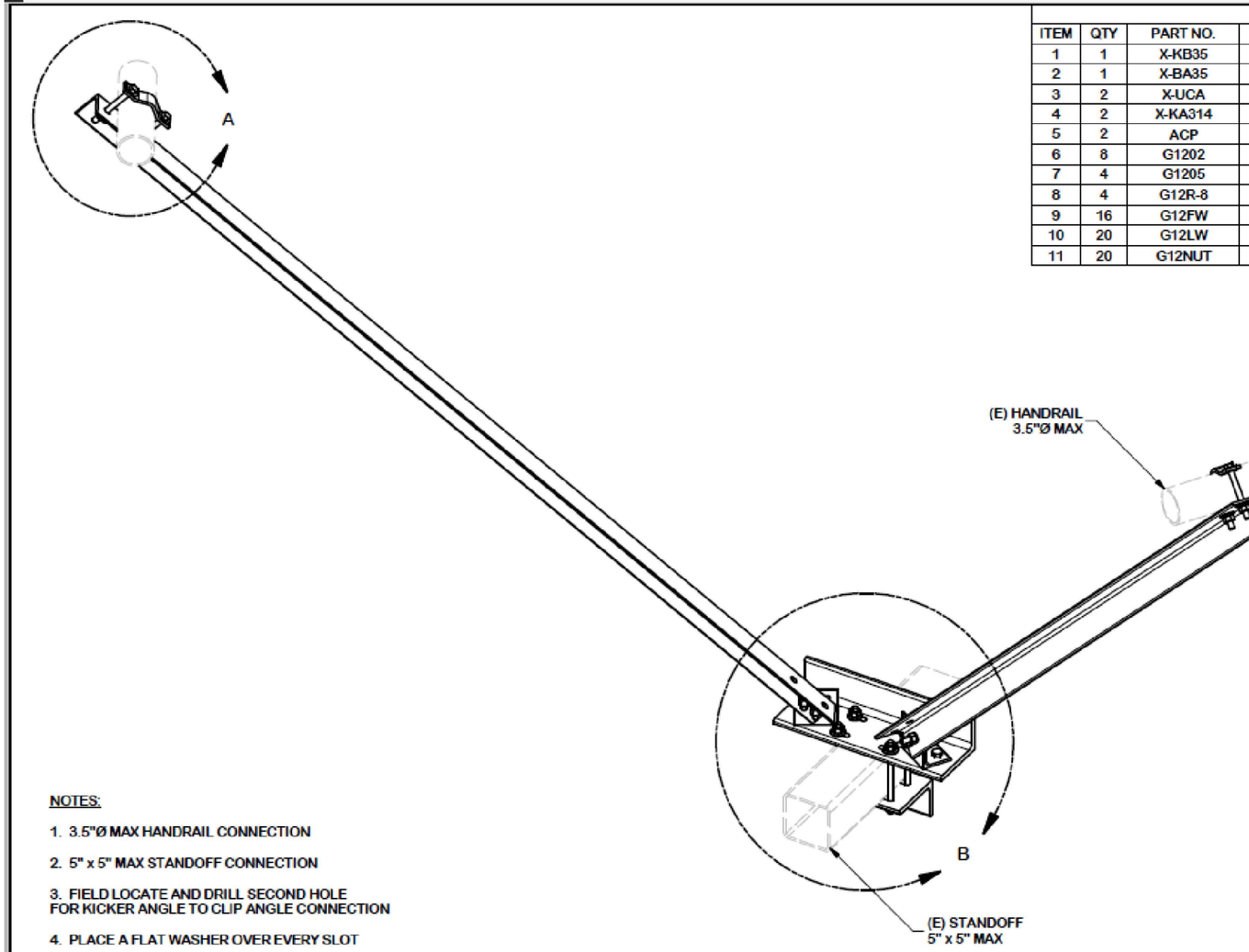


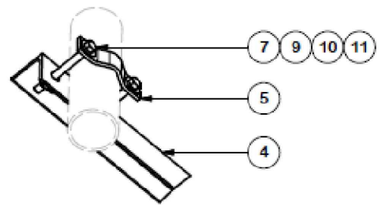
DRAWN BY:	BJK
APPROVED BY:	TCR
DATE DRAWN:	07/06/20
ATC JOB NO:	13242626_C9_04

MODIFICATION PROFILE

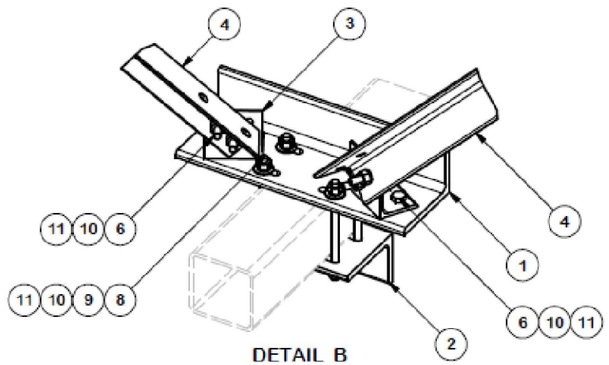
SHEET NUMBER:	REVISION:
S-101	0

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-KB35	KICKER BRACKET	18 in	25.32	25.32
2	1	X-BA35	BACKER ANGLE	9 in	12.45	12.45
3	2	X-UCA	CLIP ANGLE	4 in	1.94	3.89
4	2	X-KA314	KICKER ANGLE	96 in	41.67	83.35
5	2	ACP	CLAMP HALF	5 3/4 in	0.65	1.31
6	8	G1202	1/2" x 2" HDG HEX BOLT GR5	2 in	0.18	1.41
7	4	G1205	1/2" x 5" HDG HEX BOLT GR5 FULL THREAD	5 in	0.33	1.30
8	4	G12R-8	1/2" x 8" THREADED ROD (HDG.)		0.40	1.60
9	16	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.55
10	20	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.28
11	20	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.43
					TOTAL WT. #	141.05





DETAIL A



DETAIL B

NOTES:

1. 3.5"Ø MAX HANDRAIL CONNECTION
2. 5" x 5" MAX STANDOFF CONNECTION
3. FIELD LOCATE AND DRILL SECOND HOLE FOR KICKER ANGLE TO CLIP ANGLE CONNECTION
4. PLACE A FLAT WASHER OVER EVERY SLOT
5. KIT INCLUDES STEEL AND HARDWARE FOR ONE SECTOR ONLY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

DESCRIPTION: HANDRAIL TO STANDOFF REINFORCEMENT KIT (3" - 5" STANDOFF)

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
5822	CSL3 6/29/2017	3RD PARTY	HSRK-35	1 OF 2
CLASS / SUB: 87 / 02	DRAWING USAGE: SHOP	CHECKED BY: KAC 8/3/2017	DWG. NO.: HSRK-35	

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.

SUPPLEMENTAL

SHEET NUMBER: R-601

REVISION: 0

EXHIBIT 2

AMERICAN TOWER®
CORPORATION

Antenna Mount Analysis Report

ATC Site Name	:	**North Haven CT 1, CT**
ATC Site Number	:	**302482**
Engineering Number	:	**13242626_C8_01**
Mount Elevation	:	**152 ft**
Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**MRCTB046848**
Carrier Site Number	:	**CTL02012**
Site Location	:	**15 Dewight Street** **North Haven, CT 06473-1198** **41.42080556 , -72.8488**
County	:	**New Haven**
Date	:	**June 18, 2020**
Max Usage	:	**158%**
Result	:	**Fail**

Prepared By:
Max Carter
Structural Engineer

Max Carter

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 152 ft.

Supporting Documents

Radio Frequency Data Sheet	RFDS ID #10034972, dated March 27, 2020
Reference Photos	Site photos from 2019
Previous Mount Analysis	Dewberry Engineers Project #50096232, dated March 9, 2018

Analysis

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

Basic Wind Speed:	120 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 1
Topographic Category:	1
Spectral Response:	Ss = 0.204, 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 does not meet the requirements per the applicable codes listed above. The mount can support the equipment as described in this report after the modifications listed below are completed:

- Reinforce standoff horizontals
- Reinforce connection horizontals

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.

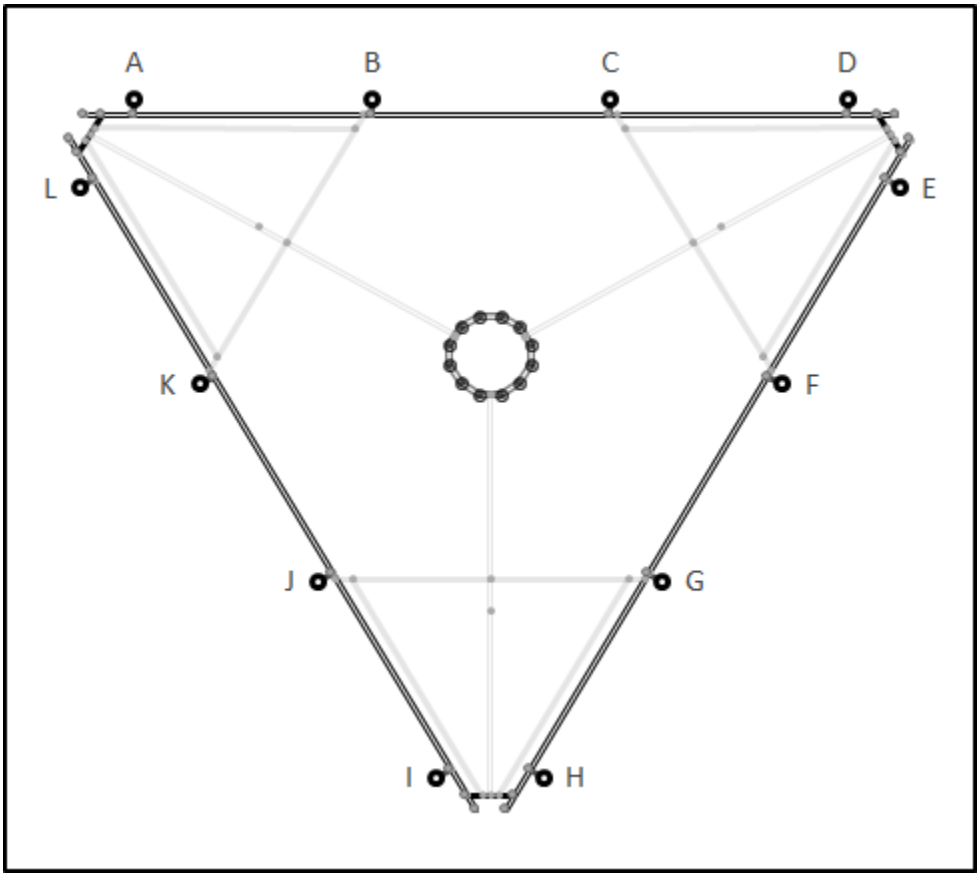
Application Loading

Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
152.0	153.0	3	CCI DMP65R-BU6DA
		3	CCI OPA-65R-LCUU-H6
		3	Quintel QS66512-2
		6	Powerwave Allgon LGP21401
		6	Kaelus DBC0061F1V51-2
		6	Kathrein Scala 782-10250
		3	Raycap DC6-48-60-18-8F
		6	Powerwave Allgon 7020.00 Dual Band RET
		3	Ericsson RRUS 4478 B14
		3	Ericsson RRUS 32 B30
		3	Ericsson RRUS 4449 B5, B12
		3	Ericsson RRUS 8843 B2, B66A

Structure Usages

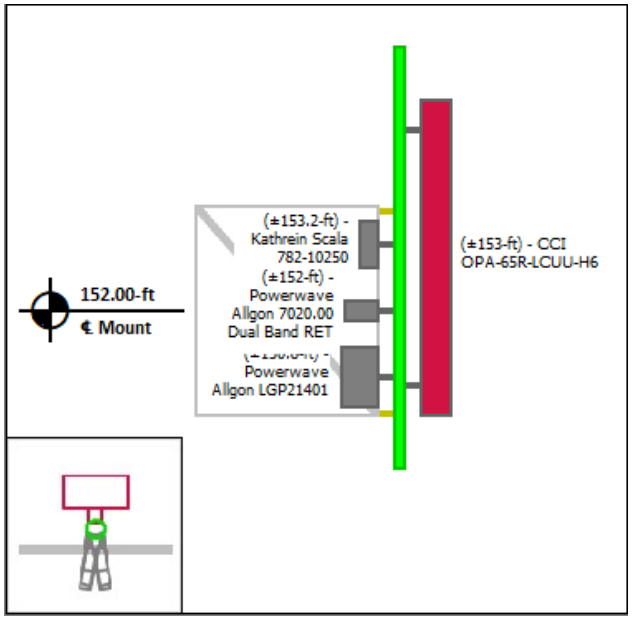
Structural Component	Controlling Usage	Pass/Fail
Horizontals	158%	Fail
Tie-Backs	13%	Pass
Mount Pipes	67%	Pass
Handrail	39%	Pass

Mount Layout

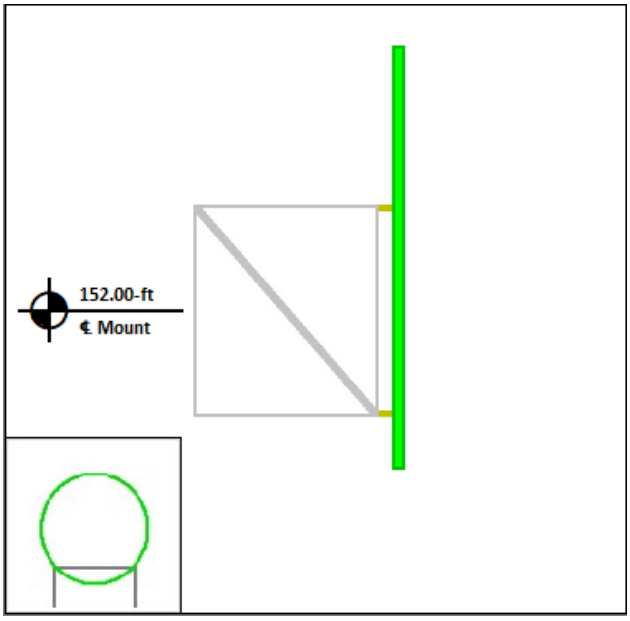


Equipment Layout

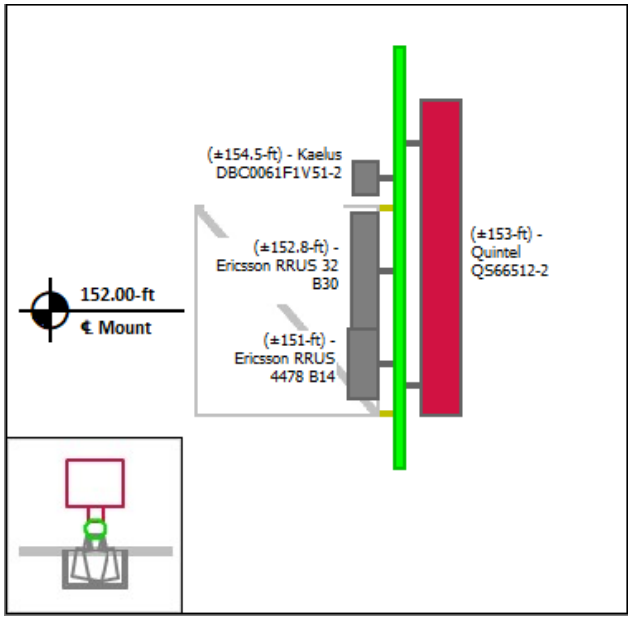
Mount Pipe A



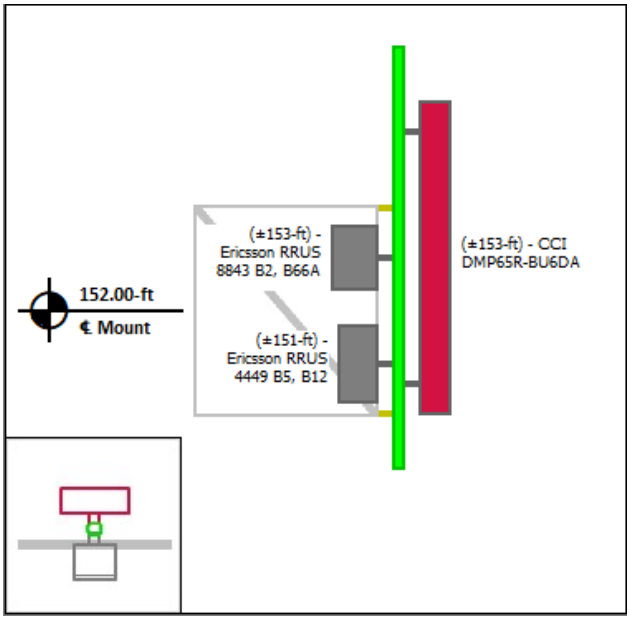
Mount Pipe B



Mount Pipe C

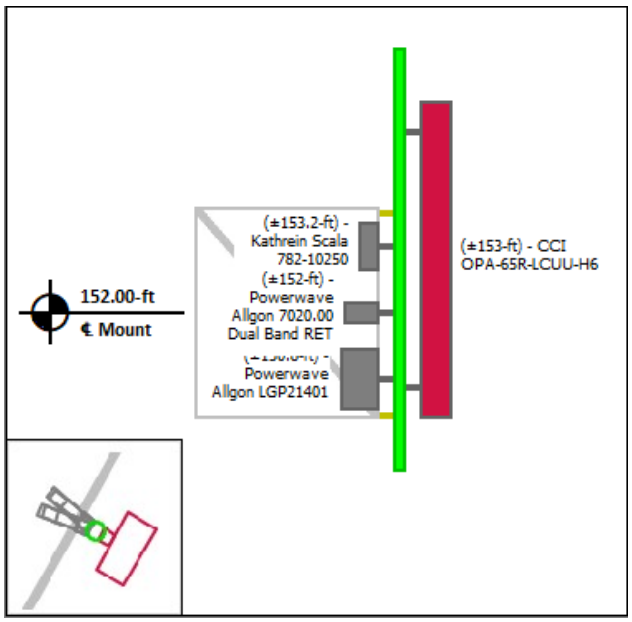


Mount Pipe D

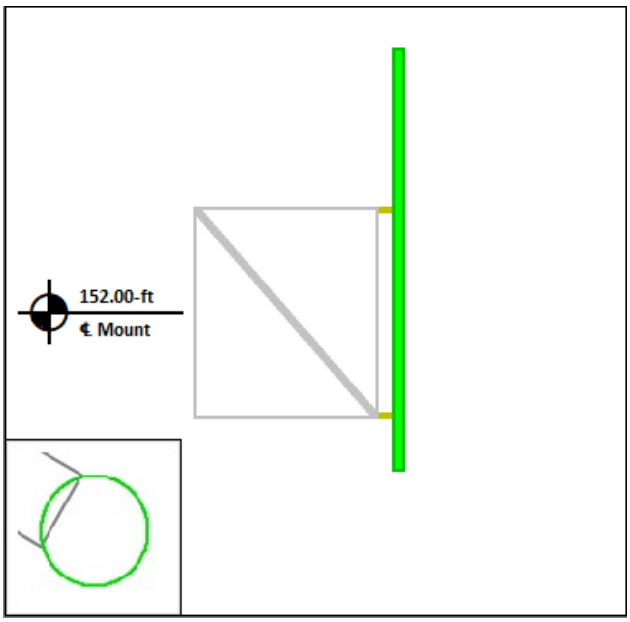


Equipment Layout Cont'd.

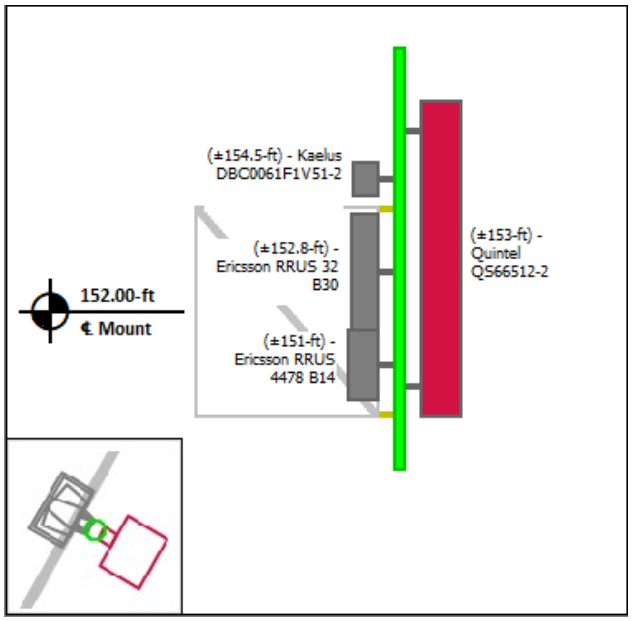
Mount Pipe E



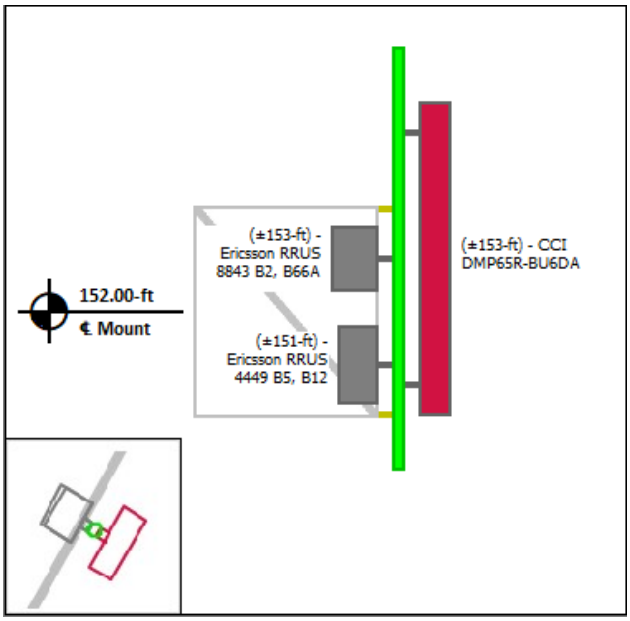
Mount Pipe F



Mount Pipe G

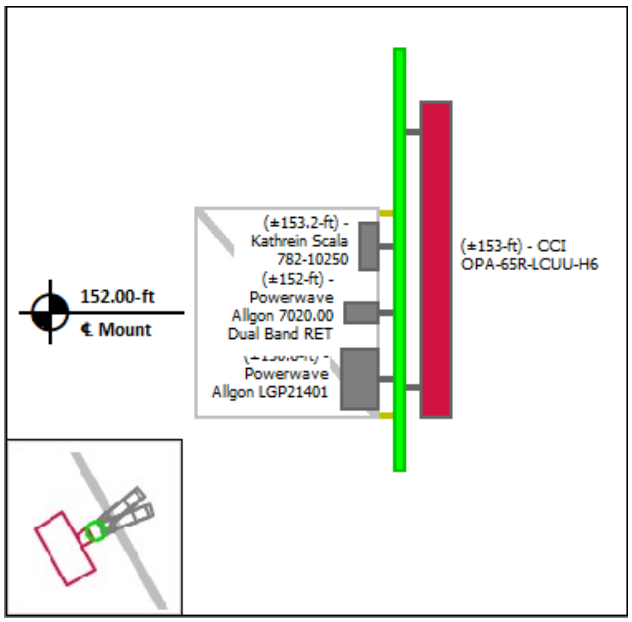


Mount Pipe H

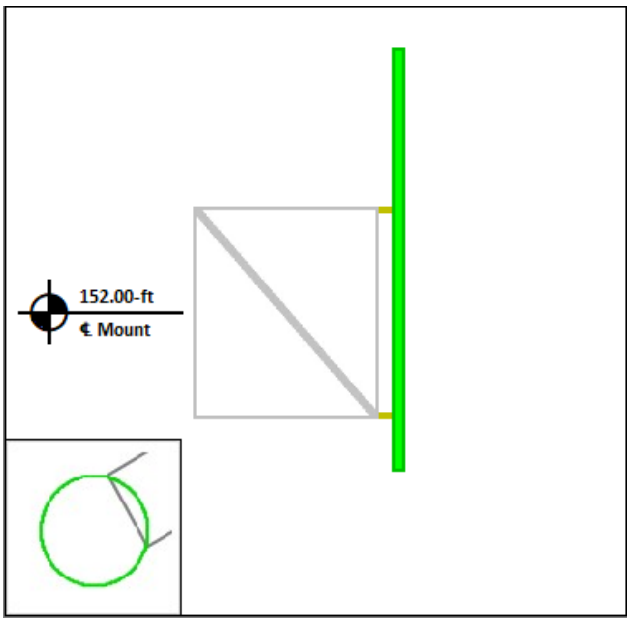


Equipment Layout Cont'd.

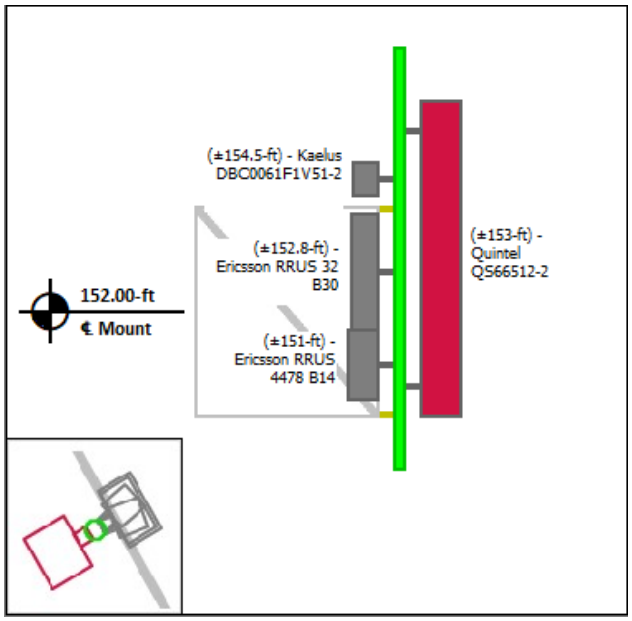
Mount Pipe I



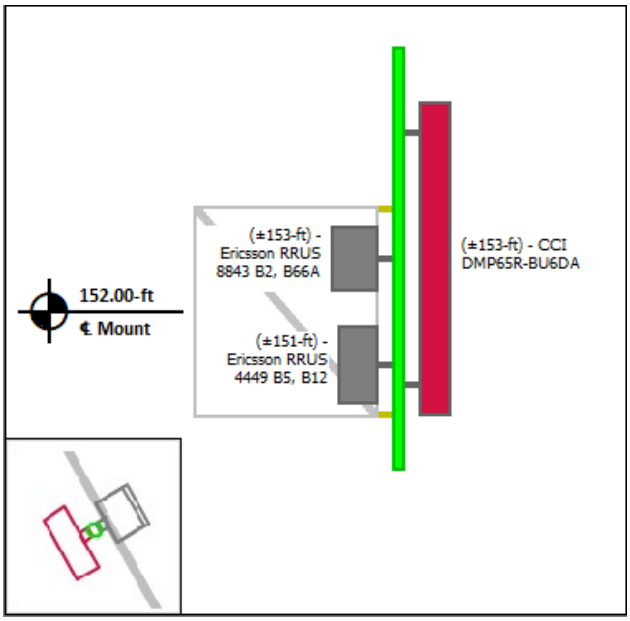
Mount Pipe J



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.

AMERICAN TOWER®
CORPORATION

Site Number:	*302482*
Project Number:	*13242626_C8_01*
Carrier:	*AT&T Mobility*
Mount Elevation:	*152 ft*
Date:	6/18/2020

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.11	
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	120	mph
Velocity Pressure	q_z	39.0	psf
Height Escalation Factor	K_{iz}	1.17	
Thickness of Radial Glaze Ice	T_{iz}	1.17	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.218	
1 Second DSRAP	S_{D1}	0.086	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.109	
Amplification Factor	A	1.0	
Total Weight	W	3101.6	lbs
Total Shear Force	V_S	337.5	lbs
Horizontal Seismic Load	Eh	337.5	lbs
Vertical Seismic Load	Ev	135.0	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 DMP65R-BU6DA	71.2	20.7	7.7	79.4	12.71	2.28	14.60	3.07
CCI OPA-65R-LCUU-H6	72.0	14.8	7.4	73.0	9.66	2.22	11.54	3.01
Quintel QS66512-2	72.0	12.0	9.6	111.0	8.13	2.88	10.03	3.69
Powerwave Allgon LGP21401	14.4	9.2	2.6	14.1	1.10	0.20	1.61	0.44
Kaelus DBC0061F1V51-2	8.0	6.5	6.2	25.5	0.43	0.41	0.76	0.73
Kathrein Scala 782-10250	11.0	4.9	2.5	6.4	0.45	0.25	0.80	0.57
Raycap DC6-48-60-18-8F	23.5	9.7	9.7	20.0	N/A	N/A		
Powerwave Allgon 7020.00 Dual Band RET	4.9	8.3	2.4	2.2	0.34	0.10	0.64	0.28
Ericsson RRUS 4478 B14	16.5	13.4	7.7	59.9	1.84	1.06	2.47	1.57
Ericsson RRUS 32 B30	27.2	12.1	7.0	60.0	2.74	1.67	3.55	2.41
Ericsson RRUS 4449 B5, B12	17.9	13.2	9.4	71.0	1.97	1.40	2.62	1.98
Ericsson RRUS 8843 B2, B66A	14.9	13.2	10.9	72.0	1.64	1.35	2.23	1.90

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N001	33.6	84	96	0	
2	N002	33.6	84	18	0	
3	N003	27.104809	84	107.25	0	
4	N004	40.095191	84	107.25	0	
5	N005	-40.445172	84	146.25	0	
6	N006	107.645172	84	146.25	0	
7	N007	108.6	84	150	0	
8	N008	-41.4	84	150	0	
9	N009	36.370181	84	15.298095	0	
10	N010	-44.170181	84	145.201905	0	
11	N011	111.370181	84	145.201905	0	
12	N012	30.829819	84	15.298095	0	
13	N013	29.269873	84	18	0	
14	N014	37.930127	84	18	0	
15	N015	-42.610236	84	142.5	0	
16	N016	105.480109	84	150	0	
17	N017	-38.280109	84	150	0	
18	N018	109.810236	84	142.5	0	
19	N019	62.178838	84	60	0	
20	N020	33.6	84	60	0	
21	N021	5.021162	84	60	0	
22	N022	-18.361524	84	100.5	0	
23	N023	56.982686	84	150	0	
24	N024	-4.072105	84	125.25	0	
25	N025	71.272105	84	125.25	0	
26	N026	10.217314	84	150	0	
27	N027	85.561524	84	100.5	0	
28	N028	32.1	84	18	0	
29	N029	35.1	84	18	0	
30	N030	-41.195172	84	144.950962	0	
31	N031	106.895172	84	147.549038	0	
32	N032	-39.695172	84	147.549038	0	
33	N033	108.395172	84	144.950962	0	
34	N034	8.1	84	60	0	
35	N035	8.677895	84	147.333648	0	
36	N036	84.022105	84	103.166352	0	
37	N037	59.1	84	60	0	
38	N038	-16.822105	84	103.166352	0	
39	N039	58.522105	84	147.333648	0	
40	N040	33.6	60	96	0	
41	N041	27.104809	60	107.25	0	
42	N042	40.095191	60	107.25	0	
43	N043	108.6	132	150	0	
44	N044	-41.4	132	150	0	
45	N045	36.370181	132	15.298095	0	
46	N046	-44.170181	132	145.201905	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
47	N047	111.370181	132	145.201905	0	
48	N048	30.829819	132	15.298095	0	
49	N049	33.6	84	54	0	
50	N050	-9.268257	84	128.25	0	
51	N051	76.468257	84	128.25	0	
52	N052	29.269873	132	18	0	
53	N053	37.930127	132	18	0	
54	N054	-42.610236	132	142.5	0	
55	N055	105.480109	132	150	0	
56	N056	-38.280109	132	150	0	
57	N057	109.810236	132	142.5	0	
58	N058	99.6	132	153	0	
59	N059	-32.4	132	153	0	
60	N060	55.6	132	153	0	
61	N061	11.6	132	153	0	
62	N062	43.468257	132	21.592323	0	
63	N063	-42.268257	132	135.907677	0	
64	N064	65.468257	132	59.697441	0	
65	N065	-20.268257	132	97.802559	0	
66	N066	87.468257	132	97.802559	0	
67	N067	1.731743	132	59.697441	0	
68	N068	109.468257	132	135.907677	0	
69	N069	23.731743	132	21.592323	0	
70	N070	99.6	84	153	0	
71	N071	99.6	84	150	0	
72	N072	99.6	132	150	0	
73	N073	55.6	84	153	0	
74	N074	55.6	84	150	0	
75	N075	55.6	132	150	0	
76	N076	11.6	84	153	0	
77	N077	11.6	84	150	0	
78	N078	11.6	132	150	0	
79	N079	-32.4	84	153	0	
80	N080	-32.4	84	150	0	
81	N081	-32.4	132	150	0	
82	N082	-42.268257	84	135.907677	0	
83	N083	-39.670181	84	137.407677	0	
84	N084	-39.670181	132	137.407677	0	
85	N085	-20.268257	84	97.802559	0	
86	N086	-17.670181	84	99.302559	0	
87	N087	-17.670181	132	99.302559	0	
88	N088	1.731743	84	59.697441	0	
89	N089	4.329819	84	61.197441	0	
90	N090	4.329819	132	61.197441	0	
91	N091	23.731743	84	21.592323	0	
92	N092	26.329819	84	23.092323	0	
93	N093	26.329819	132	23.092323	0	
94	N094	43.468257	84	21.592323	0	
95	N095	40.870181	84	23.092323	0	
96	N096	40.870181	132	23.092323	0	
97	N097	65.468257	84	59.697441	0	
98	N098	62.870181	84	61.197441	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
99	N099	62.870181	132	61.197441	0	
100	N100	87.468257	84	97.802559	0	
101	N101	84.870181	84	99.302559	0	
102	N102	84.870181	132	99.302559	0	
103	N103	109.468257	84	135.907677	0	
104	N104	106.870181	84	137.407677	0	
105	N105	106.870181	132	137.407677	0	
106	MP1t	99.6	168.75	153	0	
107	MP1b	99.6	72.75	153	0	
108	MP2t	-32.4	168	153	0	
109	MP2b	-32.4	72	153	0	
110	MP3t	55.6	168	153	0	
111	MP3b	55.6	72	153	0	
112	MP4t	11.6	168	153	0	
113	MP4b	11.6	72	153	0	
114	MP5t	43.468257	168.75	21.592323	0	
115	MP5b	43.468257	72.75	21.592323	0	
116	MP6t	-42.268257	168.75	135.907677	0	
117	MP6b	-42.268257	72.75	135.907677	0	
118	MP7t	65.468257	168	59.697441	0	
119	MP7b	65.468257	72	59.697441	0	
120	MP8t	-20.268257	168	97.802559	0	
121	MP8b	-20.268257	72	97.802559	0	
122	MP9t	87.468257	168	97.802559	0	
123	MP9b	87.468257	72	97.802559	0	
124	MP10t	1.731743	168	59.697441	0	
125	MP10b	1.731743	72	59.697441	0	
126	MP11t	109.468257	168	135.907677	0	
127	MP11b	109.468257	72	135.907677	0	
128	MP12t	23.731743	168	21.592323	0	
129	MP12b	23.731743	72	21.592323	0	
130	NAL1	-50.170181	192.75	177	0	
131	NAL2	-50.170181	54	177	0	
132	NAL3	117.370181	192.75	177	0	
133	NAL4	117.370181	54	177	0	
134	NAL5	117.370181	192.75	-8.701905	0	
135	NAL6	117.370181	54	-8.701905	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	N003	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N004	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N040	Reaction	Reaction	Reaction			
5	N041	Reaction	Reaction	Reaction			
6	N042	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	H001	N001	N002			PIPE_3.0	Beam	None	A53 Gr. B	Typical
2	H002	N003	N005			PIPE_3.0	Beam	None	A53 Gr. B	Typical
3	H003	N004	N006			PIPE_3.0	Beam	None	A53 Gr. B	Typical
4	H004	N007	N008			PIPE_3.0	Beam	None	A53 Gr. B	Typical
5	H005	N009	N011			PIPE_3.0	Beam	None	A53 Gr. B	Typical
6	H006	N010	N012			PIPE_3.0	Beam	None	A53 Gr. B	Typical
7	H007	N014	N013			PL6x0.5	Beam	None	A36	Typical
8	H008	N015	N017			PL6x0.5	Beam	None	A36	Typical
9	H009	N016	N018			PL6x0.5	Beam	None	A36	Typical
10	H010	N020	N019			C3x5	Beam	None	A36	Typical
11	H011	N024	N022			C3x5	Beam	None	A36	Typical
12	H012	N025	N023			C3x5	Beam	None	A36	Typical
13	H013	N020	N021		180	C3x5	Beam	None	A36	Typical
14	H014	N024	N026		180	C3x5	Beam	None	A36	Typical
15	H015	N025	N027		180	C3x5	Beam	None	A36	Typical
16	H016	N035	N032			L2x2x2	Beam	None	A36	Typical
17	H017	N036	N033			L2x2x2	Beam	None	A36	Typical
18	H018	N034	N028			L2x2x2	Beam	None	A36	Typical
19	H019	N038	N030		270	L2x2x2	Beam	None	A36	Typical
20	H020	N039	N031		270	L2x2x2	Beam	None	A36	Typical
21	H021	N037	N029		270	L2x2x2	Beam	None	A36	Typical
22	H022	N043	N044			PIPE_2.0	Beam	None	A53 Gr. B	Typical
23	H023	N045	N047			PIPE_2.0	Beam	None	A53 Gr. B	Typical
24	H024	N046	N048			PIPE_2.0	Beam	None	A53 Gr. B	Typical
25	TB025	N040	N049			LL2.5x2.5x4x6	Column	None	A36	Typical
26	TB026	N041	N050			LL2.5x2.5x4x6	Column	None	A36	Typical
27	TB027	N042	N051			LL2.5x2.5x4x6	Column	None	A36	Typical
28	H028	N053	N052			PL6x0.5	Beam	None	A36	Typical
29	H029	N054	N056			PL6x0.5	Beam	None	A36	Typical
30	H030	N055	N057			PL6x0.5	Beam	None	A36	Typical
31	U031	N070	N071			(2) 1/2 U-Bolts	Beam	None	A36	Typical
32	U032	N058	N072			(1) 1/2 U-Bolt	Beam	None	A36	Typical
33	U033	N073	N074			(2) 1/2 U-Bolts	Beam	None	A36	Typical
34	U034	N060	N075			(1) 1/2 U-Bolt	Beam	None	A36	Typical
35	U035	N076	N077			(2) 1/2 U-Bolts	Beam	None	A36	Typical
36	U036	N061	N078			(1) 1/2 U-Bolt	Beam	None	A36	Typical
37	U037	N079	N080			(2) 1/2 U-Bolts	Beam	None	A36	Typical
38	U038	N059	N081			(1) 1/2 U-Bolt	Beam	None	A36	Typical
39	U039	N082	N083			(2) 1/2 U-Bolts	Beam	None	A36	Typical
40	U040	N063	N084			(1) 1/2 U-Bolt	Beam	None	A36	Typical
41	U041	N085	N086			(2) 1/2 U-Bolts	Beam	None	A36	Typical
42	U042	N065	N087			(1) 1/2 U-Bolt	Beam	None	A36	Typical
43	U043	N088	N089			(2) 1/2 U-Bolts	Beam	None	A36	Typical
44	U044	N067	N090			(1) 1/2 U-Bolt	Beam	None	A36	Typical
45	U045	N091	N092			(2) 1/2 U-Bolts	Beam	None	A36	Typical
46	U046	N069	N093			(1) 1/2 U-Bolt	Beam	None	A36	Typical
47	U047	N094	N095			(2) 1/2 U-Bolts	None	None	A36	Typical
48	U048	N062	N096			(1) 1/2 U-Bolt	Beam	None	A36	Typical
49	U049	N097	N098			(2) 1/2 U-Bolts	Beam	None	A36	Typical
50	U050	N064	N099			(1) 1/2 U-Bolt	Beam	None	A36	Typical
51	U051	N100	N101			(2) 1/2 U-Bolts	Beam	None	A36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
52	U052	N066	N102			(1) 1/2 U-Bolt	Beam	None	A36	Typical
53	U053	N103	N104			(2) 1/2 U-Bolts	Beam	None	A36	Typical
54	U054	N068	N105			(1) 1/2 U-Bolt	Beam	None	A36	Typical
55	MP1	MP1t	MP1b			PIPE_2.5	Column	None	A53 Gr. B	Typical
56	MP2	MP2t	MP2b			PIPE_2.5	Column	None	A53 Gr. B	Typical
57	MP3	MP3t	MP3b			PIPE_2.5	Column	None	A53 Gr. B	Typical
58	MP4	MP4t	MP4b			PIPE_2.5	Column	None	A53 Gr. B	Typical
59	MP5	MP5t	MP5b			PIPE_2.5	Column	None	A53 Gr. B	Typical
60	MP6	MP6t	MP6b			PIPE_2.5	Column	None	A53 Gr. B	Typical
61	MP7	MP7t	MP7b			PIPE_2.5	Column	None	A53 Gr. B	Typical
62	MP8	MP8t	MP8b			PIPE_2.5	Column	None	A53 Gr. B	Typical
63	MP9	MP9t	MP9b			PIPE_2.5	Column	None	A53 Gr. B	Typical
64	MP10	MP10t	MP10b			PIPE_2.5	Column	None	A53 Gr. B	Typical
65	MP11	MP11t	MP11b			PIPE_2.5	Column	None	A53 Gr. B	Typical
66	MP12	MP12t	MP12b			PIPE_2.5	Column	None	A53 Gr. B	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						Yes				None
4	H004						Yes				None
5	H005						Yes				None
6	H006						Yes				None
7	H007	BenPIN	BenPIN				Yes				None
8	H008	BenPIN	BenPIN				Yes				None
9	H009	BenPIN	BenPIN				Yes				None
10	H010		BenPIN				Yes				None
11	H011		BenPIN				Yes				None
12	H012		BenPIN				Yes				None
13	H013		BenPIN				Yes				None
14	H014		BenPIN				Yes				None
15	H015		BenPIN				Yes				None
16	H016						Yes				None
17	H017						Yes				None
18	H018						Yes				None
19	H019						Yes				None
20	H020						Yes				None
21	H021						Yes				None
22	H022						Yes				None
23	H023						Yes				None
24	H024						Yes				None
25	TB025		BenPIN				Yes	** NA **			None
26	TB026		BenPIN				Yes	** NA **			None
27	TB027		BenPIN				Yes	** NA **			None
28	H028						Yes				None
29	H029						Yes				None
30	H030						Yes				None
31	U031						Yes	Default		Exclude	None
32	U032	OOOXOX					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	Default		Exclude	None
34	U034	OOOXOX					Yes			Exclude	None
35	U035						Yes	Default		Exclude	None
36	U036	OOOXOX					Yes			Exclude	None
37	U037						Yes	Default		Exclude	None
38	U038	OOOXOX					Yes			Exclude	None
39	U039						Yes	Default		Exclude	None
40	U040	OOOXOX					Yes			Exclude	None
41	U041						Yes	Default		Exclude	None
42	U042	OOOXOX					Yes			Exclude	None
43	U043						Yes	Default		Exclude	None
44	U044	OOOXOX					Yes			Exclude	None
45	U045						Yes	Default		Exclude	None
46	U046	OOOXOX					Yes			Exclude	None
47	U047						Yes	** NA **		Exclude	None
48	U048	OOOXOX					Yes			Exclude	None
49	U049						Yes	Default		Exclude	None
50	U050	OOOXOX					Yes			Exclude	None
51	U051						Yes	Default		Exclude	None
52	U052	OOOXOX					Yes			Exclude	None
53	U053						Yes	Default		Exclude	None
54	U054	OOOXOX					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 ...	L-torqu...	Kyy	Kzz	Cb	Function
1	H001	PIPE_3.0	78						1	1		Lateral
2	H002	PIPE_3.0	78						1	1		Lateral
3	H003	PIPE_3.0	78						1	1		Lateral
4	H004	PIPE_3.0	150						1	1		Lateral
5	H005	PIPE_3.0	150						1	1		Lateral
6	H006	PIPE_3.0	150						1	1		Lateral
7	H007	PL6x0.5	8.66						1	1		Lateral
8	H008	PL6x0.5	8.66						1	1		Lateral
9	H009	PL6x0.5	8.66						1	1		Lateral
10	H010	C3x5	28.579						.8	.8		Lateral
11	H011	C3x5	28.579						.8	.8		Lateral
12	H012	C3x5	28.579						.8	.8		Lateral
13	H013	C3x5	28.579						.8	.8		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp ...	L-torqu...	Kyy	Kzz	Cb	Function
14	H014	C3x5	28.579						.8	.8		Lateral
15	H015	C3x5	28.579						.8	.8		Lateral
16	H016	L2x2x2	48.374						.65	.65		Lateral
17	H017	L2x2x2	48.374						.65	.65		Lateral
18	H018	L2x2x2	48.374						.65	.65		Lateral
19	H019	L2x2x2	48.374						.65	.65		Lateral
20	H020	L2x2x2	48.374						.65	.65		Lateral
21	H021	L2x2x2	48.374						.65	.65		Lateral
22	H022	PIPE_2.0	150						1	1		Lateral
23	H023	PIPE_2.0	150						1	1		Lateral
24	H024	PIPE_2.0	150						1	1		Lateral
25	TB025	LL2.5x2.5x4...	48.374						1	1		Lateral
26	TB026	LL2.5x2.5x4...	48.374						1	1		Lateral
27	TB027	LL2.5x2.5x4...	48.374						1	1		Lateral
28	H028	PL6x0.5	8.66						.65	.65		Lateral
29	H029	PL6x0.5	8.66						.65	.65		Lateral
30	H030	PL6x0.5	8.66						.65	.65		Lateral
31	U031	(2) 1/2 U-B...	3						.5	.5		Lateral
32	U032	(1) 1/2 U-Bolt	3						.5	.5		Lateral
33	U033	(2) 1/2 U-B...	3						.5	.5		Lateral
34	U034	(1) 1/2 U-Bolt	3						.5	.5		Lateral
35	U035	(2) 1/2 U-B...	3						.5	.5		Lateral
36	U036	(1) 1/2 U-Bolt	3						.5	.5		Lateral
37	U037	(2) 1/2 U-B...	3						.5	.5		Lateral
38	U038	(1) 1/2 U-Bolt	3						.5	.5		Lateral
39	U039	(2) 1/2 U-B...	3						.5	.5		Lateral
40	U040	(1) 1/2 U-Bolt	3						.5	.5		Lateral
41	U041	(2) 1/2 U-B...	3						.5	.5		Lateral
42	U042	(1) 1/2 U-Bolt	3						.5	.5		Lateral
43	U043	(2) 1/2 U-B...	3						.5	.5		Lateral
44	U044	(1) 1/2 U-Bolt	3						.5	.5		Lateral
45	U045	(2) 1/2 U-B...	3						.5	.5		Lateral
46	U046	(1) 1/2 U-Bolt	3						.5	.5		Lateral
47	U047	(2) 1/2 U-B...	3						.5	.5		Lateral
48	U048	(1) 1/2 U-Bolt	3						.5	.5		Lateral
49	U049	(2) 1/2 U-B...	3						.5	.5		Lateral
50	U050	(1) 1/2 U-Bolt	3						.5	.5		Lateral
51	U051	(2) 1/2 U-B...	3						.5	.5		Lateral
52	U052	(1) 1/2 U-Bolt	3						.5	.5		Lateral
53	U053	(2) 1/2 U-B...	3						.5	.5		Lateral
54	U054	(1) 1/2 U-Bolt	3						.5	.5		Lateral
55	MP1	PIPE_2.5	96						2.1	2.1		Lateral
56	MP2	PIPE_2.5	96						2.1	2.1		Lateral
57	MP3	PIPE_2.5	96						2.1	2.1		Lateral
58	MP4	PIPE_2.5	96						2.1	2.1		Lateral
59	MP5	PIPE_2.5	96						2.1	2.1		Lateral
60	MP6	PIPE_2.5	96						2.1	2.1		Lateral
61	MP7	PIPE_2.5	96						2.1	2.1		Lateral
62	MP8	PIPE_2.5	96						2.1	2.1		Lateral
63	MP9	PIPE_2.5	96						2.1	2.1		Lateral
64	MP10	PIPE_2.5	96						2.1	2.1		Lateral
65	MP11	PIPE_2.5	96						2.1	2.1		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp ...	L-torqu...	Kyy	Kzz	Cb	Function
66	MP12	PIPE_2.5	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	-6.4	44.25
2	MP1	Y	-6.4	44.25
3	MP1	Y	-2.2	59.25
4	MP1	Y	-2.2	59.25
5	MP1	Y	-14.1	74.25
6	MP1	Y	-14.1	74.25
7	MP1	Y	-36.5	18.45
8	MP1	Y	-36.5	76.05
9	MP2	Y	-39.7	18.8
10	MP2	Y	-39.7	75.75
11	MP2	Y	-71	71.25
12	MP2	Y	-72	47.25
13	MP4	Y	-55.5	18.45
14	MP4	Y	-55.5	76.05
15	MP4	Y	-60	50.25
16	MP4	Y	-59.9	71.25
17	MP4	Y	-25.5	29.25
18	MP4	Y	-25.5	29.25
19	MP5	Y	-36.5	18.45
20	MP5	Y	-36.5	76.05
21	MP5	Y	-14.1	74.25
22	MP5	Y	-6.4	44.25
23	MP5	Y	-14.1	74.25
24	MP5	Y	-6.4	44.25
25	MP5	Y	-2.2	59.25
26	MP5	Y	-2.2	59.25
27	MP6	Y	-36.5	18.45
28	MP6	Y	-36.5	76.05
29	MP6	Y	-14.1	74.25
30	MP6	Y	-14.1	74.25
31	MP6	Y	-6.4	44.25
32	MP6	Y	-6.4	44.25
33	MP6	Y	-2.2	59.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
34	MP6	Y	-2.2	59.25
35	MP9	Y	-55.5	18.45
36	MP9	Y	-55.5	76.05
37	MP9	Y	-25.5	29.25
38	MP9	Y	-25.5	29.25
39	MP9	Y	-59.9	71.25
40	MP9	Y	-60	50.25
41	MP10	Y	-55.5	18.45
42	MP10	Y	-55.5	76.05
43	MP10	Y	-25.5	29.25
44	MP10	Y	-25.5	29.25
45	MP10	Y	-59.9	71.25
46	MP10	Y	-60	50.25
47	MP11	Y	-39.7	18.8
48	MP11	Y	-39.7	75.75
49	MP11	Y	-71	71.25
50	MP11	Y	-72	47.25
51	MP12	Y	-39.7	18.8
52	MP12	Y	-39.7	75.75
53	MP12	Y	-71	71.25
54	MP12	Y	-72	47.25

Member Point Loads (BLC 2 : Ice)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-10.958	44.25
2	MP1	Y	-10.958	44.25
3	MP1	Y	-8.811	59.25
4	MP1	Y	-8.811	59.25
5	MP1	Y	-20.095	74.25
6	MP1	Y	-20.095	74.25
7	MP1	Y	-74.593	18.45
8	MP1	Y	-74.593	76.05
9	MP2	Y	-93.353	18.8
10	MP2	Y	-93.353	75.75
11	MP2	Y	-48.506	71.25
12	MP2	Y	-46.256	47.25
13	MP4	Y	-73.091	18.45
14	MP4	Y	-73.091	76.05
15	MP4	Y	-55.384	50.25
16	MP4	Y	-42.019	71.25
17	MP4	Y	-15.096	29.25
18	MP4	Y	-15.096	29.25
19	MP5	Y	-74.593	18.45
20	MP5	Y	-74.593	76.05
21	MP5	Y	-20.095	74.25
22	MP5	Y	-10.958	44.25
23	MP5	Y	-20.095	74.25
24	MP5	Y	-10.958	44.25
25	MP5	Y	-8.811	59.25
26	MP5	Y	-8.811	59.25
27	MP6	Y	-74.593	18.45

Member Point Loads (BLC 2 : Ice) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
28	MP6	Y	-74.593	76.05
29	MP6	Y	-20.095	74.25
30	MP6	Y	-20.095	74.25
31	MP6	Y	-10.958	44.25
32	MP6	Y	-10.958	44.25
33	MP6	Y	-8.811	59.25
34	MP6	Y	-8.811	59.25
35	MP9	Y	-73.091	18.45
36	MP9	Y	-73.091	76.05
37	MP9	Y	-15.096	29.25
38	MP9	Y	-15.096	29.25
39	MP9	Y	-42.019	71.25
40	MP9	Y	-55.384	50.25
41	MP10	Y	-73.091	18.45
42	MP10	Y	-73.091	76.05
43	MP10	Y	-15.096	29.25
44	MP10	Y	-15.096	29.25
45	MP10	Y	-42.019	71.25
46	MP10	Y	-55.384	50.25
47	MP11	Y	-93.353	18.8
48	MP11	Y	-93.353	75.75
49	MP11	Y	-48.506	71.25
50	MP11	Y	-46.256	47.25
51	MP12	Y	-93.353	18.8
52	MP12	Y	-93.353	75.75
53	MP12	Y	-48.506	71.25
54	MP12	Y	-46.256	47.25

Member Point Loads (BLC 3 : Wind -Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-11.229	44.25
2	MP1	Z	-11.229	44.25
3	MP1	Z	-5.459	59.25
4	MP1	Z	-5.459	59.25
5	MP1	Z	-13.642	74.25
6	MP1	Z	-13.642	74.25
7	MP1	Z	-169.682	18.45
8	MP1	Z	-169.682	76.05
9	MP2	Z	-223.493	18.8
10	MP2	Z	-223.101	75.75
11	MP2	Z	-34.594	71.25
12	MP2	Z	-28.796	47.25
13	MP4	Z	-142.898	18.45
14	MP4	Z	-142.898	76.05
15	MP4	Z	-48.187	50.25
16	MP4	Z	-32.372	71.25
17	MP4	Z	-17.518	29.25
18	MP4	Z	-16.948	29.25
19	MP5	Z	-118.619	18.45
20	MP5	Z	-118.619	76.05
21	MP5	Z	-34.225	74.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
22	MP5	Z	-17.779	44.25
23	MP5	Z	-38.852	74.25
24	MP5	Z	-17.631	44.25
25	MP5	Z	-11.336	59.25
26	MP5	Z	-12.369	59.25
27	MP6	Z	-118.619	18.45
28	MP6	Z	-118.619	76.05
29	MP6	Z	-38.852	74.25
30	MP6	Z	-34.225	74.25
31	MP6	Z	-17.631	44.25
32	MP6	Z	-17.779	44.25
33	MP6	Z	-12.369	59.25
34	MP6	Z	-11.336	59.25
35	MP9	Z	-115.27	18.45
36	MP9	Z	-115.27	76.05
37	MP9	Z	-21	29.25
38	MP9	Z	-18.856	29.25
39	MP9	Z	-32.295	71.25
40	MP9	Z	-49.475	50.25
41	MP10	Z	-115.27	18.45
42	MP10	Z	-115.27	76.05
43	MP10	Z	-19.276	29.25
44	MP10	Z	-20.914	29.25
45	MP10	Z	-32.295	71.25
46	MP10	Z	-49.475	50.25
47	MP11	Z	-146.535	18.8
48	MP11	Z	-146.277	75.75
49	MP11	Z	-38.632	71.25
50	MP11	Z	-34.991	47.25
51	MP12	Z	-146.535	18.8
52	MP12	Z	-146.277	75.75
53	MP12	Z	-38.632	71.25
54	MP12	Z	-34.991	47.25

Member Point Loads (BLC 4 : Wind -X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-17.04	44.25
2	MP1	X	-17.04	44.25
3	MP1	X	-12.326	59.25
4	MP1	X	-12.326	59.25
5	MP1	X	-39.422	74.25
6	MP1	X	-39.422	74.25
7	MP1	X	-39.004	18.45
8	MP1	X	-39.004	76.05
9	MP2	X	-40.17	18.8
10	MP2	X	-40.099	75.75
11	MP2	X	-49.271	71.25
12	MP2	X	-47.557	47.25
13	MP4	X	-50.6	18.45
14	MP4	X	-50.6	76.05
15	MP4	X	-58.615	50.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
16	MP4	X	-37.203	71.25
17	MP4	X	-16.948	29.25
18	MP4	X	-17.518	29.25
19	MP5	X	-166.451	18.45
20	MP5	X	-166.451	76.05
21	MP5	X	-30.307	74.25
22	MP5	X	-13.498	44.25
23	MP5	X	-19.857	74.25
24	MP5	X	-16.748	44.25
25	MP5	X	-10.293	59.25
26	MP5	X	-7.309	59.25
27	MP6	X	-166.451	18.45
28	MP6	X	-166.451	76.05
29	MP6	X	-19.857	74.25
30	MP6	X	-30.307	74.25
31	MP6	X	-16.748	44.25
32	MP6	X	-13.498	44.25
33	MP6	X	-7.309	59.25
34	MP6	X	-10.293	59.25
35	MP9	X	-149.053	18.45
36	MP9	X	-149.053	76.05
37	MP9	X	-20.914	29.25
38	MP9	X	-19.276	29.25
39	MP9	X	-74.671	71.25
40	MP9	X	-112.77	50.25
41	MP10	X	-149.053	18.45
42	MP10	X	-149.053	76.05
43	MP10	X	-18.856	29.25
44	MP10	X	-21	29.25
45	MP10	X	-74.671	71.25
46	MP10	X	-112.77	50.25
47	MP11	X	-213.636	18.8
48	MP11	X	-213.261	75.75
49	MP11	X	-84.554	71.25
50	MP11	X	-73.655	47.25
51	MP12	X	-213.636	18.8
52	MP12	X	-213.261	75.75
53	MP12	X	-84.554	71.25
54	MP12	X	-73.655	47.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-13.555	44.25
2	MP1	Z	-13.555	44.25
3	MP1	Z	-8.317	59.25
4	MP1	Z	-8.317	59.25
5	MP1	Z	-11.388	74.25
6	MP1	Z	-11.388	74.25
7	MP1	Z	-33.092	18.45
8	MP1	Z	-33.092	76.05
9	MP2	Z	-33.316	18.8

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP2	Z	-33.258	75.75
11	MP2	Z	-11.412	71.25
12	MP2	Z	-10.388	47.25
13	MP4	Z	-33.291	18.45
14	MP4	Z	-33.291	76.05
15	MP4	Z	-14.212	50.25
16	MP4	Z	-11.003	71.25
17	MP4	Z	-13.277	29.25
18	MP4	Z	-13.111	29.25
19	MP5	Z	-28.627	18.45
20	MP5	Z	-28.627	76.05
21	MP5	Z	-18.989	74.25
22	MP5	Z	-15.654	44.25
23	MP5	Z	-19.524	74.25
24	MP5	Z	-16.972	44.25
25	MP5	Z	-12.35	59.25
26	MP5	Z	-12.214	59.25
27	MP6	Z	-28.627	18.45
28	MP6	Z	-28.627	76.05
29	MP6	Z	-19.524	74.25
30	MP6	Z	-18.989	74.25
31	MP6	Z	-16.972	44.25
32	MP6	Z	-15.654	44.25
33	MP6	Z	-12.214	59.25
34	MP6	Z	-12.35	59.25
35	MP9	Z	-29.052	18.45
36	MP9	Z	-29.052	76.05
37	MP9	Z	-16.058	29.25
38	MP9	Z	-14.536	29.25
39	MP9	Z	-13.345	71.25
40	MP9	Z	-18.46	50.25
41	MP10	Z	-29.052	18.45
42	MP10	Z	-29.052	76.05
43	MP10	Z	-14.659	29.25
44	MP10	Z	-16.033	29.25
45	MP10	Z	-13.345	71.25
46	MP10	Z	-18.46	50.25
47	MP11	Z	-28.676	18.8
48	MP11	Z	-28.626	75.75
49	MP11	Z	-14.466	71.25
50	MP11	Z	-13.511	47.25
51	MP12	Z	-28.676	18.8
52	MP12	Z	-28.626	75.75
53	MP12	Z	-14.466	71.25
54	MP12	Z	-13.511	47.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-14.267	44.25
2	MP1	X	-14.267	44.25
3	MP1	X	-11.585	59.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	X	-11.585	59.25
5	MP1	X	-18.901	74.25
6	MP1	X	-18.901	74.25
7	MP1	X	-13.95	18.45
8	MP1	X	-13.95	76.05
9	MP2	X	-13.877	18.8
10	MP2	X	-13.853	75.75
11	MP2	X	-20.231	71.25
12	MP2	X	-19.206	47.25
13	MP4	X	-14.326	18.45
14	MP4	X	-14.326	76.05
15	MP4	X	-26.222	50.25
16	MP4	X	-18.114	71.25
17	MP4	X	-13.111	29.25
18	MP4	X	-13.277	29.25
19	MP5	X	-35.633	18.45
20	MP5	X	-35.633	76.05
21	MP5	X	-17.847	74.25
22	MP5	X	-15.129	44.25
23	MP5	X	-13.988	74.25
24	MP5	X	-16.864	44.25
25	MP5	X	-11.853	59.25
26	MP5	X	-9.806	59.25
27	MP6	X	-35.633	18.45
28	MP6	X	-35.633	76.05
29	MP6	X	-13.988	74.25
30	MP6	X	-17.847	74.25
31	MP6	X	-16.864	44.25
32	MP6	X	-15.129	44.25
33	MP6	X	-9.806	59.25
34	MP6	X	-11.853	59.25
35	MP9	X	-35.994	18.45
36	MP9	X	-35.994	76.05
37	MP9	X	-16.033	29.25
38	MP9	X	-14.659	29.25
39	MP9	X	-28.115	71.25
40	MP9	X	-37.726	50.25
41	MP10	X	-35.994	18.45
42	MP10	X	-35.994	76.05
43	MP10	X	-14.536	29.25
44	MP10	X	-16.058	29.25
45	MP10	X	-28.115	71.25
46	MP10	X	-37.726	50.25
47	MP11	X	-35.791	18.8
48	MP11	X	-35.729	75.75
49	MP11	X	-29.882	71.25
50	MP11	X	-27.596	47.25
51	MP12	X	-35.791	18.8
52	MP12	X	-35.729	75.75
53	MP12	X	-29.882	71.25
54	MP12	X	-27.596	47.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-.702	44.25
2	MP1	Z	-.702	44.25
3	MP1	Z	-.341	59.25
4	MP1	Z	-.341	59.25
5	MP1	Z	-.853	74.25
6	MP1	Z	-.853	74.25
7	MP1	Z	-10.605	18.45
8	MP1	Z	-10.605	76.05
9	MP2	Z	-13.968	18.8
10	MP2	Z	-13.944	75.75
11	MP2	Z	-2.162	71.25
12	MP2	Z	-1.8	47.25
13	MP4	Z	-8.931	18.45
14	MP4	Z	-8.931	76.05
15	MP4	Z	-3.012	50.25
16	MP4	Z	-2.023	71.25
17	MP4	Z	-1.095	29.25
18	MP4	Z	-1.059	29.25
19	MP5	Z	-7.414	18.45
20	MP5	Z	-7.414	76.05
21	MP5	Z	-2.139	74.25
22	MP5	Z	-1.111	44.25
23	MP5	Z	-2.428	74.25
24	MP5	Z	-1.102	44.25
25	MP5	Z	-.709	59.25
26	MP5	Z	-.773	59.25
27	MP6	Z	-7.414	18.45
28	MP6	Z	-7.414	76.05
29	MP6	Z	-2.428	74.25
30	MP6	Z	-2.139	74.25
31	MP6	Z	-1.102	44.25
32	MP6	Z	-1.111	44.25
33	MP6	Z	-.773	59.25
34	MP6	Z	-.709	59.25
35	MP9	Z	-7.204	18.45
36	MP9	Z	-7.204	76.05
37	MP9	Z	-1.313	29.25
38	MP9	Z	-1.179	29.25
39	MP9	Z	-2.018	71.25
40	MP9	Z	-3.092	50.25
41	MP10	Z	-7.204	18.45
42	MP10	Z	-7.204	76.05
43	MP10	Z	-1.205	29.25
44	MP10	Z	-1.307	29.25
45	MP10	Z	-2.018	71.25
46	MP10	Z	-3.092	50.25
47	MP11	Z	-9.158	18.8
48	MP11	Z	-9.142	75.75
49	MP11	Z	-2.414	71.25
50	MP11	Z	-2.187	47.25
51	MP12	Z	-9.158	18.8
52	MP12	Z	-9.142	75.75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP12	Z	-2.414	71.25
54	MP12	Z	-2.187	47.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-1.065	44.25
2	MP1	X	-1.065	44.25
3	MP1	X	-.77	59.25
4	MP1	X	-.77	59.25
5	MP1	X	-2.464	74.25
6	MP1	X	-2.464	74.25
7	MP1	X	-2.438	18.45
8	MP1	X	-2.438	76.05
9	MP2	X	-2.511	18.8
10	MP2	X	-2.506	75.75
11	MP2	X	-3.079	71.25
12	MP2	X	-2.972	47.25
13	MP4	X	-3.162	18.45
14	MP4	X	-3.162	76.05
15	MP4	X	-3.663	50.25
16	MP4	X	-2.325	71.25
17	MP4	X	-1.059	29.25
18	MP4	X	-1.095	29.25
19	MP5	X	-10.403	18.45
20	MP5	X	-10.403	76.05
21	MP5	X	-1.894	74.25
22	MP5	X	-.844	44.25
23	MP5	X	-1.241	74.25
24	MP5	X	-1.047	44.25
25	MP5	X	-.643	59.25
26	MP5	X	-.457	59.25
27	MP6	X	-10.403	18.45
28	MP6	X	-10.403	76.05
29	MP6	X	-1.241	74.25
30	MP6	X	-1.894	74.25
31	MP6	X	-1.047	44.25
32	MP6	X	-.844	44.25
33	MP6	X	-.457	59.25
34	MP6	X	-.643	59.25
35	MP9	X	-9.316	18.45
36	MP9	X	-9.316	76.05
37	MP9	X	-1.307	29.25
38	MP9	X	-1.205	29.25
39	MP9	X	-4.667	71.25
40	MP9	X	-7.048	50.25
41	MP10	X	-9.316	18.45
42	MP10	X	-9.316	76.05
43	MP10	X	-1.179	29.25
44	MP10	X	-1.313	29.25
45	MP10	X	-4.667	71.25
46	MP10	X	-7.048	50.25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
47	MP11	X	-13.352	18.8
48	MP11	X	-13.329	75.75
49	MP11	X	-5.285	71.25
50	MP11	X	-4.603	47.25
51	MP12	X	-13.352	18.8
52	MP12	X	-13.329	75.75
53	MP12	X	-5.285	71.25
54	MP12	X	-4.603	47.25

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	-6.806	-6.806	0	%100
2	H002	Y	-6.806	-6.806	0	%100
3	H003	Y	-6.806	-6.806	0	%100
4	H004	Y	-6.806	-6.806	0	%100
5	H005	Y	-6.806	-6.806	0	%100
6	H006	Y	-6.806	-6.806	0	%100
7	H007	Y	-2.432	-2.432	0	%100
8	H008	Y	-2.432	-2.432	0	%100
9	H009	Y	-2.432	-2.432	0	%100
10	H010	Y	-6.593	-6.593	0	%100
11	H011	Y	-6.593	-6.593	0	%100
12	H012	Y	-6.593	-6.593	0	%100
13	H013	Y	-6.593	-6.593	0	%100
14	H014	Y	-6.593	-6.593	0	%100
15	H015	Y	-6.593	-6.593	0	%100
16	H016	Y	-2.043	-2.043	0	%100
17	H017	Y	-2.043	-2.043	0	%100
18	H018	Y	-2.043	-2.043	0	%100
19	H019	Y	-2.043	-2.043	0	%100
20	H020	Y	-2.043	-2.043	0	%100
21	H021	Y	-2.043	-2.043	0	%100
22	H022	Y	-5.165	-5.165	0	%100
23	H023	Y	-5.165	-5.165	0	%100
24	H024	Y	-5.165	-5.165	0	%100
25	TB025	Y	-2.353	-2.353	0	%100
26	TB026	Y	-2.353	-2.353	0	%100
27	TB027	Y	-2.353	-2.353	0	%100
28	H028	Y	-2.432	-2.432	0	%100
29	H029	Y	-2.432	-2.432	0	%100
30	H030	Y	-2.432	-2.432	0	%100
31	MP1	Y	-5.894	-5.894	0	%100
32	MP2	Y	-5.894	-5.894	0	%100
33	MP3	Y	-5.894	-5.894	0	%100
34	MP4	Y	-5.894	-5.894	0	%100
35	MP5	Y	-5.894	-5.894	0	%100
36	MP6	Y	-5.894	-5.894	0	%100
37	MP7	Y	-5.894	-5.894	0	%100
38	MP8	Y	-5.894	-5.894	0	%100
39	MP9	Y	-5.894	-5.894	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,%]
40	MP10	Y	-5.894	-5.894	0	%100
41	MP11	Y	-5.894	-5.894	0	%100
42	MP12	Y	-5.894	-5.894	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	-1.577	-1.577	0	%100
2	H002	Z	-1.577	-1.577	0	%100
3	H003	Z	-1.577	-1.577	0	%100
4	H004	Z	-1.577	-1.577	0	%100
5	H005	Z	-1.577	-1.577	0	%100
6	H006	Z	-1.577	-1.577	0	%100
7	H007	Z	-1.577	-1.577	0	%100
8	H008	Z	-1.577	-1.577	0	%100
9	H009	Z	-1.577	-1.577	0	%100
10	H010	Z	-1.577	-1.577	0	%100
11	H011	Z	-1.577	-1.577	0	%100
12	H012	Z	-1.577	-1.577	0	%100
13	H013	Z	-1.577	-1.577	0	%100
14	H014	Z	-1.577	-1.577	0	%100
15	H015	Z	-1.577	-1.577	0	%100
16	H016	Z	-1.577	-1.577	0	%100
17	H017	Z	-1.577	-1.577	0	%100
18	H018	Z	-1.577	-1.577	0	%100
19	H019	Z	-1.577	-1.577	0	%100
20	H020	Z	-1.577	-1.577	0	%100
21	H021	Z	-1.577	-1.577	0	%100
22	H022	Z	-1.577	-1.577	0	%100
23	H023	Z	-1.577	-1.577	0	%100
24	H024	Z	-1.577	-1.577	0	%100
25	TB025	Z	-1.577	-1.577	0	%100
26	TB026	Z	-1.577	-1.577	0	%100
27	TB027	Z	-1.577	-1.577	0	%100
28	H028	Z	-1.577	-1.577	0	%100
29	H029	Z	-1.577	-1.577	0	%100
30	H030	Z	-1.577	-1.577	0	%100
31	MP1	Z	-1.577	-1.577	0	%100
32	MP2	Z	-1.577	-1.577	0	%100
33	MP3	Z	-1.577	-1.577	0	%100
34	MP4	Z	-1.577	-1.577	0	%100
35	MP5	Z	-1.577	-1.577	0	%100
36	MP6	Z	-1.577	-1.577	0	%100
37	MP7	Z	-1.577	-1.577	0	%100
38	MP8	Z	-1.577	-1.577	0	%100
39	MP9	Z	-1.577	-1.577	0	%100
40	MP10	Z	-1.577	-1.577	0	%100
41	MP11	Z	-1.577	-1.577	0	%100
42	MP12	Z	-1.577	-1.577	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,%]

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,%]
1	H001	X	-1.578	-1.578	0	%100
2	H002	X	-1.578	-1.578	0	%100
3	H003	X	-1.578	-1.578	0	%100
4	H004	X	-1.578	-1.578	0	%100
5	H005	X	-1.578	-1.578	0	%100
6	H006	X	-1.578	-1.578	0	%100
7	H007	X	-1.578	-1.578	0	%100
8	H008	X	-1.578	-1.578	0	%100
9	H009	X	-1.578	-1.578	0	%100
10	H010	X	-1.578	-1.578	0	%100
11	H011	X	-1.578	-1.578	0	%100
12	H012	X	-1.578	-1.578	0	%100
13	H013	X	-1.578	-1.578	0	%100
14	H014	X	-1.578	-1.578	0	%100
15	H015	X	-1.578	-1.578	0	%100
16	H016	X	-1.578	-1.578	0	%100
17	H017	X	-1.578	-1.578	0	%100
18	H018	X	-1.578	-1.578	0	%100
19	H019	X	-1.578	-1.578	0	%100
20	H020	X	-1.578	-1.578	0	%100
21	H021	X	-1.578	-1.578	0	%100
22	H022	X	-1.578	-1.578	0	%100
23	H023	X	-1.578	-1.578	0	%100
24	H024	X	-1.578	-1.578	0	%100
25	TB025	X	-1.578	-1.578	0	%100
26	TB026	X	-1.578	-1.578	0	%100
27	TB027	X	-1.578	-1.578	0	%100
28	H028	X	-1.578	-1.578	0	%100
29	H029	X	-1.578	-1.578	0	%100
30	H030	X	-1.578	-1.578	0	%100
31	MP1	X	-1.578	-1.578	0	%100
32	MP2	X	-1.578	-1.578	0	%100
33	MP3	X	-1.578	-1.578	0	%100
34	MP4	X	-1.578	-1.578	0	%100
35	MP5	X	-1.578	-1.578	0	%100
36	MP6	X	-1.578	-1.578	0	%100
37	MP7	X	-1.578	-1.578	0	%100
38	MP8	X	-1.578	-1.578	0	%100
39	MP9	X	-1.578	-1.578	0	%100
40	MP10	X	-1.578	-1.578	0	%100
41	MP11	X	-1.578	-1.578	0	%100
42	MP12	X	-1.578	-1.578	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	-.537	-.537	0	%100
2	H002	Y	-.537	-.537	0	%100
3	H003	Y	-.537	-.537	0	%100
4	H004	Y	-.537	-.537	0	%100
5	H005	Y	-.537	-.537	0	%100
6	H006	Y	-.537	-.537	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,%]
7	H007	Y	-.537	-.537	0	%100
8	H008	Y	-.537	-.537	0	%100
9	H009	Y	-.537	-.537	0	%100
10	H010	Y	-.537	-.537	0	%100
11	H011	Y	-.537	-.537	0	%100
12	H012	Y	-.537	-.537	0	%100
13	H013	Y	-.537	-.537	0	%100
14	H014	Y	-.537	-.537	0	%100
15	H015	Y	-.537	-.537	0	%100
16	H016	Y	-.537	-.537	0	%100
17	H017	Y	-.537	-.537	0	%100
18	H018	Y	-.537	-.537	0	%100
19	H019	Y	-.537	-.537	0	%100
20	H020	Y	-.537	-.537	0	%100
21	H021	Y	-.537	-.537	0	%100
22	H022	Y	-.537	-.537	0	%100
23	H023	Y	-.537	-.537	0	%100
24	H024	Y	-.537	-.537	0	%100
25	TB025	Y	-.537	-.537	0	%100
26	TB026	Y	-.537	-.537	0	%100
27	TB027	Y	-.537	-.537	0	%100
28	H028	Y	-.537	-.537	0	%100
29	H029	Y	-.537	-.537	0	%100
30	H030	Y	-.537	-.537	0	%100
31	MP1	Y	-.537	-.537	0	%100
32	MP2	Y	-.537	-.537	0	%100
33	MP3	Y	-.537	-.537	0	%100
34	MP4	Y	-.537	-.537	0	%100
35	MP5	Y	-.537	-.537	0	%100
36	MP6	Y	-.537	-.537	0	%100
37	MP7	Y	-.537	-.537	0	%100
38	MP8	Y	-.537	-.537	0	%100
39	MP9	Y	-.537	-.537	0	%100
40	MP10	Y	-.537	-.537	0	%100
41	MP11	Y	-.537	-.537	0	%100
42	MP12	Y	-.537	-.537	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	-1.342	-1.342	0	%100
2	H002	Z	-1.342	-1.342	0	%100
3	H003	Z	-1.342	-1.342	0	%100
4	H004	Z	-1.342	-1.342	0	%100
5	H005	Z	-1.342	-1.342	0	%100
6	H006	Z	-1.342	-1.342	0	%100
7	H007	Z	-1.342	-1.342	0	%100
8	H008	Z	-1.342	-1.342	0	%100
9	H009	Z	-1.342	-1.342	0	%100
10	H010	Z	-1.342	-1.342	0	%100
11	H011	Z	-1.342	-1.342	0	%100
12	H012	Z	-1.342	-1.342	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,%]
13	H013	Z	-1.342	-1.342	0	%100
14	H014	Z	-1.342	-1.342	0	%100
15	H015	Z	-1.342	-1.342	0	%100
16	H016	Z	-1.342	-1.342	0	%100
17	H017	Z	-1.342	-1.342	0	%100
18	H018	Z	-1.342	-1.342	0	%100
19	H019	Z	-1.342	-1.342	0	%100
20	H020	Z	-1.342	-1.342	0	%100
21	H021	Z	-1.342	-1.342	0	%100
22	H022	Z	-1.342	-1.342	0	%100
23	H023	Z	-1.342	-1.342	0	%100
24	H024	Z	-1.342	-1.342	0	%100
25	TB025	Z	-1.342	-1.342	0	%100
26	TB026	Z	-1.342	-1.342	0	%100
27	TB027	Z	-1.342	-1.342	0	%100
28	H028	Z	-1.342	-1.342	0	%100
29	H029	Z	-1.342	-1.342	0	%100
30	H030	Z	-1.342	-1.342	0	%100
31	MP1	Z	-1.342	-1.342	0	%100
32	MP2	Z	-1.342	-1.342	0	%100
33	MP3	Z	-1.342	-1.342	0	%100
34	MP4	Z	-1.342	-1.342	0	%100
35	MP5	Z	-1.342	-1.342	0	%100
36	MP6	Z	-1.342	-1.342	0	%100
37	MP7	Z	-1.342	-1.342	0	%100
38	MP8	Z	-1.342	-1.342	0	%100
39	MP9	Z	-1.342	-1.342	0	%100
40	MP10	Z	-1.342	-1.342	0	%100
41	MP11	Z	-1.342	-1.342	0	%100
42	MP12	Z	-1.342	-1.342	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	-1.342	-1.342	0	%100
2	H002	X	-1.342	-1.342	0	%100
3	H003	X	-1.342	-1.342	0	%100
4	H004	X	-1.342	-1.342	0	%100
5	H005	X	-1.342	-1.342	0	%100
6	H006	X	-1.342	-1.342	0	%100
7	H007	X	-1.342	-1.342	0	%100
8	H008	X	-1.342	-1.342	0	%100
9	H009	X	-1.342	-1.342	0	%100
10	H010	X	-1.342	-1.342	0	%100
11	H011	X	-1.342	-1.342	0	%100
12	H012	X	-1.342	-1.342	0	%100
13	H013	X	-1.342	-1.342	0	%100
14	H014	X	-1.342	-1.342	0	%100
15	H015	X	-1.342	-1.342	0	%100
16	H016	X	-1.342	-1.342	0	%100
17	H017	X	-1.342	-1.342	0	%100
18	H018	X	-1.342	-1.342	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,%]
19	H019	X	-1.342	-1.342	0	%100
20	H020	X	-1.342	-1.342	0	%100
21	H021	X	-1.342	-1.342	0	%100
22	H022	X	-1.342	-1.342	0	%100
23	H023	X	-1.342	-1.342	0	%100
24	H024	X	-1.342	-1.342	0	%100
25	TB025	X	-1.342	-1.342	0	%100
26	TB026	X	-1.342	-1.342	0	%100
27	TB027	X	-1.342	-1.342	0	%100
28	H028	X	-1.342	-1.342	0	%100
29	H029	X	-1.342	-1.342	0	%100
30	H030	X	-1.342	-1.342	0	%100
31	MP1	X	-1.342	-1.342	0	%100
32	MP2	X	-1.342	-1.342	0	%100
33	MP3	X	-1.342	-1.342	0	%100
34	MP4	X	-1.342	-1.342	0	%100
35	MP5	X	-1.342	-1.342	0	%100
36	MP6	X	-1.342	-1.342	0	%100
37	MP7	X	-1.342	-1.342	0	%100
38	MP8	X	-1.342	-1.342	0	%100
39	MP9	X	-1.342	-1.342	0	%100
40	MP10	X	-1.342	-1.342	0	%100
41	MP11	X	-1.342	-1.342	0	%100
42	MP12	X	-1.342	-1.342	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	H002	Z	-10.631	-10.631	0	78
2	H003	Z	-10.631	-10.631	0	78
3	H004	Z	-12.276	-12.276	0	150
4	H005	Z	-6.138	-6.138	0	150
5	H006	Z	-6.138	-6.138	0	150
6	H007	Z	-21.044	-21.044	0	8.66
7	H008	Z	-10.522	-10.522	0	8.66
8	H009	Z	-10.522	-10.522	0	8.66
9	H010	Z	-10.522	-10.522	0	28.579
10	H011	Z	-5.261	-5.261	0	28.579
11	H012	Z	-5.261	-5.261	0	28.579
12	H013	Z	-10.522	-10.522	0	28.579
13	H014	Z	-5.261	-5.261	0	28.579
14	H015	Z	-5.261	-5.261	0	28.579
15	H016	Z	-7.015	-7.015	0	48.374
16	H017	Z	-3.534	-3.534	0	48.374
17	H018	Z	-3.48	-3.48	0	48.374
18	H019	Z	-3.534	-3.534	0	48.374
19	H020	Z	-7.015	-7.015	0	48.374
20	H021	Z	-3.48	-3.48	0	48.374
21	H022	Z	-8.33	-8.33	0	150
22	H023	Z	-4.165	-4.165	0	150
23	H024	Z	-4.165	-4.165	0	150
24	TB025	Z	-8.701	-8.701	0	48.374

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,%]
25	TB026	Z	-9.769	-9.769	0	48.374
26	TB027	Z	-9.769	-9.769	0	48.374
27	H028	Z	-21.044	-21.044	0	8.66
28	H029	Z	-10.522	-10.522	0	8.66
29	H030	Z	-10.522	-10.522	0	8.66
30	U039	Z	-3.037	-3.037	0	3
31	U040	Z	-3.037	-3.037	0	3
32	U041	Z	-3.037	-3.037	0	3
33	U042	Z	-3.037	-3.037	0	3
34	U043	Z	-3.037	-3.037	0	3
35	U044	Z	-3.037	-3.037	0	3
36	U045	Z	-3.037	-3.037	0	3
37	U046	Z	-3.037	-3.037	0	3
38	U047	Z	-3.037	-3.037	0	3
39	U048	Z	-3.037	-3.037	0	3
40	U049	Z	-3.037	-3.037	0	3
41	U050	Z	-3.037	-3.037	0	3
42	U051	Z	-3.037	-3.037	0	3
43	U052	Z	-3.037	-3.037	0	3
44	U053	Z	-3.037	-3.037	0	3
45	U054	Z	-3.037	-3.037	0	3
46	MP1	Z	-10.083	-10.083	0	96
47	MP2	Z	-10.083	-10.083	0	96
48	MP3	Z	-10.083	-10.083	0	96
49	MP4	Z	-10.083	-10.083	0	96
50	MP5	Z	-10.083	-10.083	0	96
51	MP6	Z	-10.083	-10.083	0	96
52	MP7	Z	-10.083	-10.083	0	96
53	MP8	Z	-10.083	-10.083	0	96
54	MP9	Z	-10.083	-10.083	0	96
55	MP10	Z	-10.083	-10.083	0	96
56	MP11	Z	-10.083	-10.083	0	96
57	MP12	Z	-10.083	-10.083	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	H001	X	-12.276	-12.276	0	78
2	H002	X	-6.138	-6.138	0	78
3	H003	X	-6.138	-6.138	0	78
4	H005	X	-10.631	-10.631	0	150
5	H006	X	-10.631	-10.631	0	150
6	H008	X	-18.224	-18.224	0	8.66
7	H009	X	-18.224	-18.224	0	8.66
8	H011	X	-9.112	-9.112	0	28.579
9	H012	X	-9.112	-9.112	0	28.579
10	H014	X	-9.112	-9.112	0	28.579
11	H015	X	-9.112	-9.112	0	28.579
12	H016	X	-.031	-.031	0	48.374
13	H017	X	-6.059	-6.059	0	48.374
14	H018	X	-6.09	-6.09	0	48.374
15	H019	X	-6.059	-6.059	0	48.374

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,%]
16	H020	X	-.031	-.031	0	48.374
17	H021	X	-6.09	-6.09	0	48.374
18	H023	X	-7.214	-7.214	0	150
19	H024	X	-7.214	-7.214	0	150
20	TB025	X	-8.768	-8.768	0	48.374
21	TB026	X	-8.152	-8.152	0	48.374
22	TB027	X	-8.152	-8.152	0	48.374
23	H029	X	-18.224	-18.224	0	8.66
24	H030	X	-18.224	-18.224	0	8.66
25	U031	X	-3.507	-3.507	0	3
26	U032	X	-3.507	-3.507	0	3
27	U033	X	-3.507	-3.507	0	3
28	U034	X	-3.507	-3.507	0	3
29	U035	X	-3.507	-3.507	0	3
30	U036	X	-3.507	-3.507	0	3
31	U037	X	-3.507	-3.507	0	3
32	U038	X	-3.507	-3.507	0	3
33	U039	X	-1.754	-1.754	0	3
34	U040	X	-1.754	-1.754	0	3
35	U041	X	-1.754	-1.754	0	3
36	U042	X	-1.754	-1.754	0	3
37	U043	X	-1.754	-1.754	0	3
38	U044	X	-1.754	-1.754	0	3
39	U045	X	-1.754	-1.754	0	3
40	U046	X	-1.754	-1.754	0	3
41	U047	X	-1.754	-1.754	0	3
42	U048	X	-1.754	-1.754	0	3
43	U049	X	-1.754	-1.754	0	3
44	U050	X	-1.754	-1.754	0	3
45	U051	X	-1.754	-1.754	0	3
46	U052	X	-1.754	-1.754	0	3
47	U053	X	-1.754	-1.754	0	3
48	U054	X	-1.754	-1.754	0	3
49	MP1	X	-10.083	-10.083	0	96
50	MP2	X	-10.083	-10.083	0	96
51	MP3	X	-10.083	-10.083	0	96
52	MP4	X	-10.083	-10.083	0	96
53	MP5	X	-10.083	-10.083	0	96
54	MP6	X	-10.083	-10.083	0	96
55	MP7	X	-10.083	-10.083	0	96
56	MP8	X	-10.083	-10.083	0	96
57	MP9	X	-10.083	-10.083	0	96
58	MP10	X	-10.083	-10.083	0	96
59	MP11	X	-10.083	-10.083	0	96
60	MP12	X	-10.083	-10.083	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	H002	Z	-1.846	-1.846	0	78
2	H003	Z	-1.846	-1.846	0	78
3	H004	Z	-2.131	-2.131	0	150

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,%]
4	H005	Z	-1.066	-1.066	0	150
5	H006	Z	-1.066	-1.066	0	150
6	H007	Z	-3.654	-3.654	0	8.66
7	H008	Z	-1.827	-1.827	0	8.66
8	H009	Z	-1.827	-1.827	0	8.66
9	H010	Z	-1.827	-1.827	0	28.579
10	H011	Z	-.913	-.913	0	28.579
11	H012	Z	-.913	-.913	0	28.579
12	H013	Z	-1.827	-1.827	0	28.579
13	H014	Z	-.913	-.913	0	28.579
14	H015	Z	-.913	-.913	0	28.579
15	H016	Z	-1.218	-1.218	0	48.374
16	H017	Z	-.614	-.614	0	48.374
17	H018	Z	-.604	-.604	0	48.374
18	H019	Z	-.614	-.614	0	48.374
19	H020	Z	-1.218	-1.218	0	48.374
20	H021	Z	-.604	-.604	0	48.374
21	H022	Z	-1.446	-1.446	0	150
22	H023	Z	-.723	-.723	0	150
23	H024	Z	-.723	-.723	0	150
24	TB025	Z	-1.511	-1.511	0	48.374
25	TB026	Z	-1.696	-1.696	0	48.374
26	TB027	Z	-1.696	-1.696	0	48.374
27	H028	Z	-3.654	-3.654	0	8.66
28	H029	Z	-1.827	-1.827	0	8.66
29	H030	Z	-1.827	-1.827	0	8.66
30	U039	Z	-.527	-.527	0	3
31	U040	Z	-.527	-.527	0	3
32	U041	Z	-.527	-.527	0	3
33	U042	Z	-.527	-.527	0	3
34	U043	Z	-.527	-.527	0	3
35	U044	Z	-.527	-.527	0	3
36	U045	Z	-.527	-.527	0	3
37	U046	Z	-.527	-.527	0	3
38	U047	Z	-.527	-.527	0	3
39	U048	Z	-.527	-.527	0	3
40	U049	Z	-.527	-.527	0	3
41	U050	Z	-.527	-.527	0	3
42	U051	Z	-.527	-.527	0	3
43	U052	Z	-.527	-.527	0	3
44	U053	Z	-.527	-.527	0	3
45	U054	Z	-.527	-.527	0	3
46	MP1	Z	-1.751	-1.751	0	96
47	MP2	Z	-1.751	-1.751	0	96
48	MP3	Z	-1.751	-1.751	0	96
49	MP4	Z	-1.751	-1.751	0	96
50	MP5	Z	-1.751	-1.751	0	96
51	MP6	Z	-1.751	-1.751	0	96
52	MP7	Z	-1.751	-1.751	0	96
53	MP8	Z	-1.751	-1.751	0	96
54	MP9	Z	-1.751	-1.751	0	96
55	MP10	Z	-1.751	-1.751	0	96

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,%]
56	MP11	Z	-1.751	-1.751	0	96
57	MP12	Z	-1.751	-1.751	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	H001	X	-2.131	-2.131	0	78
2	H002	X	-1.066	-1.066	0	78
3	H003	X	-1.066	-1.066	0	78
4	H005	X	-1.846	-1.846	0	150
5	H006	X	-1.846	-1.846	0	150
6	H008	X	-3.164	-3.164	0	8.66
7	H009	X	-3.164	-3.164	0	8.66
8	H011	X	-1.582	-1.582	0	28.579
9	H012	X	-1.582	-1.582	0	28.579
10	H014	X	-1.582	-1.582	0	28.579
11	H015	X	-1.582	-1.582	0	28.579
12	H016	X	-.005	-.005	0	48.374
13	H017	X	-1.052	-1.052	0	48.374
14	H018	X	-1.057	-1.057	0	48.374
15	H019	X	-1.052	-1.052	0	48.374
16	H020	X	-.005	-.005	0	48.374
17	H021	X	-1.057	-1.057	0	48.374
18	H023	X	-1.252	-1.252	0	150
19	H024	X	-1.252	-1.252	0	150
20	TB025	X	-1.522	-1.522	0	48.374
21	TB026	X	-1.415	-1.415	0	48.374
22	TB027	X	-1.415	-1.415	0	48.374
23	H029	X	-3.164	-3.164	0	8.66
24	H030	X	-3.164	-3.164	0	8.66
25	U031	X	-.609	-.609	0	3
26	U032	X	-.609	-.609	0	3
27	U033	X	-.609	-.609	0	3
28	U034	X	-.609	-.609	0	3
29	U035	X	-.609	-.609	0	3
30	U036	X	-.609	-.609	0	3
31	U037	X	-.609	-.609	0	3
32	U038	X	-.609	-.609	0	3
33	U039	X	-.304	-.304	0	3
34	U040	X	-.304	-.304	0	3
35	U041	X	-.304	-.304	0	3
36	U042	X	-.304	-.304	0	3
37	U043	X	-.304	-.304	0	3
38	U044	X	-.304	-.304	0	3
39	U045	X	-.304	-.304	0	3
40	U046	X	-.304	-.304	0	3
41	U047	X	-.304	-.304	0	3
42	U048	X	-.304	-.304	0	3
43	U049	X	-.304	-.304	0	3
44	U050	X	-.304	-.304	0	3
45	U051	X	-.304	-.304	0	3
46	U052	X	-.304	-.304	0	3

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,%]
47	U053	X	-.304	-.304	0	3
48	U054	X	-.304	-.304	0	3
49	MP1	X	-1.751	-1.751	0	96
50	MP2	X	-1.751	-1.751	0	96
51	MP3	X	-1.751	-1.751	0	96
52	MP4	X	-1.751	-1.751	0	96
53	MP5	X	-1.751	-1.751	0	96
54	MP6	X	-1.751	-1.751	0	96
55	MP7	X	-1.751	-1.751	0	96
56	MP8	X	-1.751	-1.751	0	96
57	MP9	X	-1.751	-1.751	0	96
58	MP10	X	-1.751	-1.751	0	96
59	MP11	X	-1.751	-1.751	0	96
60	MP12	X	-1.751	-1.751	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	H002	Z	-.665	-.665	0	78
2	H003	Z	-.665	-.665	0	78
3	H004	Z	-.767	-.767	0	150
4	H005	Z	-.384	-.384	0	150
5	H006	Z	-.384	-.384	0	150
6	H007	Z	-1.315	-1.315	0	8.66
7	H008	Z	-.658	-.658	0	8.66
8	H009	Z	-.658	-.658	0	8.66
9	H010	Z	-.658	-.658	0	28.579
10	H011	Z	-.329	-.329	0	28.579
11	H012	Z	-.329	-.329	0	28.579
12	H013	Z	-.658	-.658	0	28.579
13	H014	Z	-.329	-.329	0	28.579
14	H015	Z	-.329	-.329	0	28.579
15	H016	Z	-.438	-.438	0	48.374
16	H017	Z	-.221	-.221	0	48.374
17	H018	Z	-.218	-.218	0	48.374
18	H019	Z	-.221	-.221	0	48.374
19	H020	Z	-.438	-.438	0	48.374
20	H021	Z	-.218	-.218	0	48.374
21	H022	Z	-.521	-.521	0	150
22	H023	Z	-.26	-.26	0	150
23	H024	Z	-.26	-.26	0	150
24	TB025	Z	-.544	-.544	0	48.374
25	TB026	Z	-.611	-.611	0	48.374
26	TB027	Z	-.611	-.611	0	48.374
27	H028	Z	-1.315	-1.315	0	8.66
28	H029	Z	-.658	-.658	0	8.66
29	H030	Z	-.658	-.658	0	8.66
30	U039	Z	-.19	-.19	0	3
31	U040	Z	-.19	-.19	0	3
32	U041	Z	-.19	-.19	0	3
33	U042	Z	-.19	-.19	0	3
34	U043	Z	-.19	-.19	0	3

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,%]
35	U044	Z	-.19	-.19	0	3
36	U045	Z	-.19	-.19	0	3
37	U046	Z	-.19	-.19	0	3
38	U047	Z	-.19	-.19	0	3
39	U048	Z	-.19	-.19	0	3
40	U049	Z	-.19	-.19	0	3
41	U050	Z	-.19	-.19	0	3
42	U051	Z	-.19	-.19	0	3
43	U052	Z	-.19	-.19	0	3
44	U053	Z	-.19	-.19	0	3
45	U054	Z	-.19	-.19	0	3
46	MP1	Z	-.63	-.63	0	96
47	MP2	Z	-.63	-.63	0	96
48	MP3	Z	-.63	-.63	0	96
49	MP4	Z	-.63	-.63	0	96
50	MP5	Z	-.63	-.63	0	96
51	MP6	Z	-.63	-.63	0	96
52	MP7	Z	-.63	-.63	0	96
53	MP8	Z	-.63	-.63	0	96
54	MP9	Z	-.63	-.63	0	96
55	MP10	Z	-.63	-.63	0	96
56	MP11	Z	-.63	-.63	0	96
57	MP12	Z	-.63	-.63	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	H001	X	-.767	-.767	0	78
2	H002	X	-.384	-.384	0	78
3	H003	X	-.384	-.384	0	78
4	H005	X	-.665	-.665	0	150
5	H006	X	-.665	-.665	0	150
6	H008	X	-1.139	-1.139	0	8.66
7	H009	X	-1.139	-1.139	0	8.66
8	H011	X	-.57	-.57	0	28.579
9	H012	X	-.57	-.57	0	28.579
10	H014	X	-.57	-.57	0	28.579
11	H015	X	-.57	-.57	0	28.579
12	H016	X	-.002	-.002	0	48.374
13	H017	X	-.379	-.379	0	48.374
14	H018	X	-.381	-.381	0	48.374
15	H019	X	-.379	-.379	0	48.374
16	H020	X	-.002	-.002	0	48.374
17	H021	X	-.381	-.381	0	48.374
18	H023	X	-.451	-.451	0	150
19	H024	X	-.451	-.451	0	150
20	TB025	X	-.548	-.548	0	48.374
21	TB026	X	-.51	-.51	0	48.374
22	TB027	X	-.51	-.51	0	48.374
23	H029	X	-1.139	-1.139	0	8.66
24	H030	X	-1.139	-1.139	0	8.66
25	U031	X	-.219	-.219	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,%]
26	U032	X	-.219	-.219	0	3
27	U033	X	-.219	-.219	0	3
28	U034	X	-.219	-.219	0	3
29	U035	X	-.219	-.219	0	3
30	U036	X	-.219	-.219	0	3
31	U037	X	-.219	-.219	0	3
32	U038	X	-.219	-.219	0	3
33	U039	X	-.11	-.11	0	3
34	U040	X	-.11	-.11	0	3
35	U041	X	-.11	-.11	0	3
36	U042	X	-.11	-.11	0	3
37	U043	X	-.11	-.11	0	3
38	U044	X	-.11	-.11	0	3
39	U045	X	-.11	-.11	0	3
40	U046	X	-.11	-.11	0	3
41	U047	X	-.11	-.11	0	3
42	U048	X	-.11	-.11	0	3
43	U049	X	-.11	-.11	0	3
44	U050	X	-.11	-.11	0	3
45	U051	X	-.11	-.11	0	3
46	U052	X	-.11	-.11	0	3
47	U053	X	-.11	-.11	0	3
48	U054	X	-.11	-.11	0	3
49	MP1	X	-.63	-.63	0	96
50	MP2	X	-.63	-.63	0	96
51	MP3	X	-.63	-.63	0	96
52	MP4	X	-.63	-.63	0	96
53	MP5	X	-.63	-.63	0	96
54	MP6	X	-.63	-.63	0	96
55	MP7	X	-.63	-.63	0	96
56	MP8	X	-.63	-.63	0	96
57	MP9	X	-.63	-.63	0	96
58	MP10	X	-.63	-.63	0	96
59	MP11	X	-.63	-.63	0	96
60	MP12	X	-.63	-.63	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	-42.088

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	-42.088

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	-7.307

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	-7.307

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	-2.631

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	-2.631

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL		-1			54			
2	Ice	IL					54	42		3
3	Wind -Z	WLZ					54		1	
4	Wind -X	WLX					54		1	
5	Wind -Z (Ice)	WL-Z					54	42	1	
6	Wind -X (Ice)	WL-X					54	42	1	
7	Wind -Z (Working)	WLZP1					54		1	
8	Wind -X (Working)	WLXP1					54		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						57		
25	BLC 4 Transient Area...	None						60		
26	BLC 5 Transient Area...	None						57		
27	BLC 6 Transient Area...	None						60		
28	BLC 7 Transient Area...	None						57		
29	BLC 8 Transient Area...	None						60		

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
1	1.4D	Yes	Y		DL	1.4																				
2	1.2D + 1.0Wo [0Á]	Yes	Y		DL	1.2	W...	.001	W...	1																
3	1.2D + 1.0Wo [30Á]	Yes	Y		DL	1.2	W...	.5	W...	.866																
4	1.2D + 1.0Wo [60Á]	Yes	Y		DL	1.2	W...	.866	W...	.5																

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
5	1.2D + 1.0Wo [90Á]	Yes	Y		DL	1.2	W...	1	W...	.001																
6	1.2D + 1.0Wo [120Á]	Yes	Y		DL	1.2	W...	.866	W...	-.5																
7	1.2D + 1.0Wo [150Á]	Yes	Y		DL	1.2	W...	.5	W...	-.866																
8	1.2D + 1.0Wo [180Á]	Yes	Y		DL	1.2	W...	.001	W...	-1																
9	1.2D + 1.0Wo [210Á]	Yes	Y		DL	1.2	W...	-.5	W...	-.866																
10	1.2D + 1.0Wo [240Á]	Yes	Y		DL	1.2	W...	-.866	W...	-.5																
11	1.2D + 1.0Wo [270Á]	Yes	Y		DL	1.2	W...	-1	W...	.001																
12	1.2D + 1.0Wo [300Á]	Yes	Y		DL	1.2	W...	-.866	W...	.5																
13	1.2D + 1.0Wo [330Á]	Yes	Y		DL	1.2	W...	-.5	W...	.866																
14	0.9D + 1.0Wo [0Á]	Yes	Y		DL	.9	W...	.001	W...	1																
15	0.9D + 1.0Wo [30Á]	Yes	Y		DL	.9	W...	.5	W...	.866																
16	0.9D + 1.0Wo [60Á]	Yes	Y		DL	.9	W...	.866	W...	.5																
17	0.9D + 1.0Wo [90Á]	Yes	Y		DL	.9	W...	1	W...	.001																
18	0.9D + 1.0Wo [120Á]	Yes	Y		DL	.9	W...	.866	W...	-.5																
19	0.9D + 1.0Wo [150Á]	Yes	Y		DL	.9	W...	.5	W...	-.866																
20	0.9D + 1.0Wo [180Á]	Yes	Y		DL	.9	W...	.001	W...	-1																
21	0.9D + 1.0Wo [210Á]	Yes	Y		DL	.9	W...	-.5	W...	-.866																
22	0.9D + 1.0Wo [240Á]	Yes	Y		DL	.9	W...	-.866	W...	-.5																
23	0.9D + 1.0Wo [270Á]	Yes	Y		DL	.9	W...	-1	W...	.001																
24	0.9D + 1.0Wo [300Á]	Yes	Y		DL	.9	W...	-.866	W...	.5																
25	0.9D + 1.0Wo [330Á]	Yes	Y		DL	.9	W...	-.5	W...	.866																
26	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	.001	W...	1														
27	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	.5	W...	.866														
28	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	.866	W...	.5														
29	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	1	W...	.001														
30	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	.866	W...	-.5														
31	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	.5	W...	-.866														
32	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	.001	W...	-1														
33	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	-.5	W...	-.866														
34	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	-.866	W...	-.5														
35	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	-1	W...	.001														
36	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	-.866	W...	.5														
37	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	IL	1	W...	-.5	W...	.866														
38	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	1	ELX	.001														
39	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	.866	ELX	.5														
40	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	.5	ELX	.866														
41	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	.001	ELX	1														
42	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	-.5	ELX	.866														
43	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	-.866	ELX	.5														
44	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	-1	ELX	.001														
45	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	-.866	ELX	-.5														
46	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	-.5	ELX	-.866														
47	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	.001	ELX	-1														
48	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	.5	ELX	-.866														
49	1.2D + 1.0Ev + 1.0E...	Yes	Y		DL	1.2	ELY	1	ELZ	.866	ELX	-.5														
50	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	1	ELX	.001														
51	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	.866	ELX	.5														
52	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	.5	ELX	.866														
53	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	.001	ELX	1														
54	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	-.5	ELX	.866														
55	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	-.866	ELX	.5														
56	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	-1	ELX	.001														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
57	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	-.866	ELX	-.5														
58	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	-.5	ELX	-.866														
59	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	.001	ELX	-1														
60	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	.5	ELX	-.866														
61	0.9D + 1.0Ev + 1.0E...	Yes	Y		DL	.9	ELY	1	ELZ	.866	ELX	-.5														
62	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	.001	W...	1														
63	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	.5	W...	.866														
64	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	.866	W...	.5														
65	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	1	W...	.001														
66	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	.866	W...	-.5														
67	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	.5	W...	-.866														
68	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	.001	W...	-1														
69	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	-.5	W...	-.866														
70	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	-.866	W...	-.5														
71	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	-1	W...	.001														
72	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	-.866	W...	.5														
73	1.2D + 1.5Lm(1) + 1....	Yes	Y		DL	1.2	12	1.5	W...	-.5	W...	.866														
74	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	.001	W...	1														
75	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	.5	W...	.866														
76	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	.866	W...	.5														
77	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	1	W...	.001														
78	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	.866	W...	-.5														
79	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	.5	W...	-.866														
80	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	.001	W...	-1														
81	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	-.5	W...	-.866														
82	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	-.866	W...	-.5														
83	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	-1	W...	.001														
84	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	-.866	W...	.5														
85	1.2D + 1.5Lm(2) + 1....	Yes	Y		DL	1.2	13	1.5	W...	-.5	W...	.866														
86	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	.001	W...	1														
87	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	.5	W...	.866														
88	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	.866	W...	.5														
89	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	1	W...	.001														
90	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	.866	W...	-.5														
91	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	.5	W...	-.866														
92	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	.001	W...	-1														
93	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	-.5	W...	-.866														
94	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	-.866	W...	-.5														
95	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	-1	W...	.001														
96	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	-.866	W...	.5														
97	1.2D + 1.5Lm(3) + 1....	Yes	Y		DL	1.2	14	1.5	W...	-.5	W...	.866														
98	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	.001	W...	1														
99	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	.5	W...	.866														
100	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	.866	W...	.5														
101	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	1	W...	.001														
102	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	.866	W...	-.5														
103	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	.5	W...	-.866														
104	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	.001	W...	-1														
105	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	-.5	W...	-.866														
106	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	-.866	W...	-.5														
107	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	-1	W...	.001														
108	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	-.866	W...	.5														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
109	1.2D + 1.5Lm(4) + 1....	Yes	Y		DL	1.2	15	1.5	W...	-.5	W...	.866														
110	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	.001	W...	1														
111	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	.5	W...	.866														
112	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	.866	W...	.5														
113	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	1	W...	.001														
114	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	.866	W...	-.5														
115	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	.5	W...	-.866														
116	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	.001	W...	-1														
117	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	-.5	W...	-.866														
118	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	-.866	W...	-.5														
119	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	-1	W...	.001														
120	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	-.866	W...	.5														
121	1.2D + 1.5Lm(5) + 1....	Yes	Y		DL	1.2	16	1.5	W...	-.5	W...	.866														
122	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	.001	W...	1														
123	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	.5	W...	.866														
124	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	.866	W...	.5														
125	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	1	W...	.001														
126	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	.866	W...	-.5														
127	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	.5	W...	-.866														
128	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	.001	W...	-1														
129	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	-.5	W...	-.866														
130	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	-.866	W...	-.5														
131	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	-1	W...	.001														
132	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	-.866	W...	.5														
133	1.2D + 1.5Lm(6) + 1....	Yes	Y		DL	1.2	17	1.5	W...	-.5	W...	.866														
134	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	.001	W...	1														
135	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	.5	W...	.866														
136	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	.866	W...	.5														
137	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	1	W...	.001														
138	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	.866	W...	-.5														
139	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	.5	W...	-.866														
140	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	.001	W...	-1														
141	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	-.5	W...	-.866														
142	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	-.866	W...	-.5														
143	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	-1	W...	.001														
144	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	-.866	W...	.5														
145	1.2D + 1.5Lm(7) + 1....	Yes	Y		DL	1.2	18	1.5	W...	-.5	W...	.866														
146	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	.001	W...	1														
147	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	.5	W...	.866														
148	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	.866	W...	.5														
149	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	1	W...	.001														
150	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	.866	W...	-.5														
151	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	.5	W...	-.866														
152	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	.001	W...	-1														
153	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	-.5	W...	-.866														
154	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	-.866	W...	-.5														
155	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	-1	W...	.001														
156	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	-.866	W...	.5														
157	1.2D + 1.5Lm(8) + 1....	Yes	Y		DL	1.2	19	1.5	W...	-.5	W...	.866														
158	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	.001	W...	1														
159	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	.5	W...	.866														
160	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	.866	W...	.5														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
161	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	1	W...	.001														
162	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	.866	W...	-.5														
163	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	.5	W...	-.866														
164	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	.001	W...	-1														
165	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	-.5	W...	-.866														
166	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	-.866	W...	-.5														
167	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	-1	W...	.001														
168	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	-.866	W...	.5														
169	1.2D + 1.5Lm(9) + 1....	Yes	Y		DL	1.2	20	1.5	W...	-.5	W...	.866														
170	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	.001	W...	1														
171	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	.5	W...	.866														
172	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	.866	W...	.5														
173	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	1	W...	.001														
174	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	.866	W...	-.5														
175	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	.5	W...	-.866														
176	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	.001	W...	-1														
177	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	-.5	W...	-.866														
178	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	-.866	W...	-.5														
179	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	-1	W...	.001														
180	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	-.866	W...	.5														
181	1.2D + 1.5Lm(10) + 1...	Yes	Y		DL	1.2	21	1.5	W...	-.5	W...	.866														
182	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	.001	W...	1														
183	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	.5	W...	.866														
184	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	.866	W...	.5														
185	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	1	W...	.001														
186	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	.866	W...	-.5														
187	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	.5	W...	-.866														
188	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	.001	W...	-1														
189	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	-.5	W...	-.866														
190	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	-.866	W...	-.5														
191	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	-1	W...	.001														
192	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	-.866	W...	.5														
193	1.2D + 1.5Lm(11) + 1...	Yes	Y		DL	1.2	22	1.5	W...	-.5	W...	.866														
194	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	.001	W...	1														
195	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	.5	W...	.866														
196	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	.866	W...	.5														
197	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	1	W...	.001														
198	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	.866	W...	-.5														
199	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	.5	W...	-.866														
200	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	.001	W...	-1														
201	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	-.5	W...	-.866														
202	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	-.866	W...	-.5														
203	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	-1	W...	.001														
204	1.2D + 1.5Lm(12) + 1...	Yes	Y		DL	1.2	23	1.5	W...	-.866	W...	.5														
205	1.2D + 1.5Lm(12) + 1...	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	1175.256	5	680.458	20	9859.429	2	684.665	20	2356.059	23	331.248	143
2		min	-1172.433	11	-1031.976	2	-5855.289	20	-1005.254	2	-2363.728	17	-465.097	173

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
3	N003	max	8302.508	6	684.723	24	3379.543	24	465.505	5	1360.537	25	906.244	6
4		min	-4852.568	24	-1036.409	6	-5413.51	6	-405.992	23	-1354.326	19	-571.195	24
5	N004	max	5012.155	16	686.857	16	3181.459	16	584.214	11	789.182	21	620.743	16
6		min	-8465.6	10	-1037.233	10	-5204.169	10	-324.256	17	-800.579	3	-838.473	10
7	N040	max	16.432	18	4114.267	2	2561.144	20	0	205	0	205	0	205
8		min	-16.346	22	-1459.894	20	-7158.497	2	0	1	0	1	0	1
9	N041	max	2242.684	24	4129.187	6	3607.209	6	0	205	0	205	0	205
10		min	-6213.864	6	-1473.358	24	-1285.502	24	0	1	0	1	0	1
11	N042	max	6216.757	10	4129.272	10	3602.543	10	0	205	0	205	0	205
12		min	-2246.169	16	-1476.294	16	-1289.715	16	0	1	0	1	0	1
13	Totals:	max	5633.776	17	7716.592	37	5508.645	14						
14		min	-5633.776	11	2926.728	14	-5508.645	8						

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear Ch...	Loc[in]	Dir	LC	phi*Pnc [...	phi*Pnt [...	phi*Mn y-y...	phi*Mn z-z ...	Cb	Eqn
1	H001	PIPE_3.0	.671	41.438	2	.186	41.438		13	52006.429	65205	5748.75	5748.75	1.575	H1-1b
2	H002	PIPE_3.0	.674	41.437	6	.178	41.437		5	52006.429	65205	5748.75	5748.75	1.574	H1-1b
3	H003	PIPE_3.0	.674	41.438	10	.186	41.438		9	52006.429	65205	5748.75	5748.75	1.574	H1-1b
4	H004	PIPE_3.0	.369	53.125	11	.165	146.875		3	28250.554	65205	5748.75	5748.75	3.005	H1-1b
5	H005	PIPE_3.0	.370	53.125	3	.164	146.875		7	28250.554	65205	5748.75	5748.75	3.054	H1-1b
6	H006	PIPE_3.0	.375	53.125	6	.176	146.875		11	28250.554	65205	5748.75	5748.75	2.894	H1-1b
7	H007	PL6x0.5	.293	4.33	9	1.578	5.864	y	10	80419.023	97200	1012.5	12150	1.386	H1-1b
8	H008	PL6x0.5	.284	4.33	13	1.520	5.864	y	2	80419.023	97200	1012.5	12150	1.389	H1-1b
9	H009	PL6x0.5	.277	4.33	5	1.501	5.864	y	6	80419.023	97200	1012.5	12150	1.411	H1-1b
10	H010	C3x5	.599	0	13	1.059	25.602	z	6	40268.544	47628	981.263	4104	1.609	H1-1b
11	H011	C3x5	.568	0	6	1.018	25.602	z	10	40268.544	47628	981.263	4104	1.643	H1-1b
12	H012	C3x5	.578	0	9	1.016	25.602	z	2	40268.544	47628	981.263	4104	1.611	H1-1b
13	H013	C3x5	.609	0	3	1.064	25.602	z	10	40268.544	47628	981.263	4104	1.608	H1-1b
14	H014	C3x5	.612	0	7	1.030	25.602	z	2	40268.544	47628	981.263	4104	1.608	H1-1b
15	H015	C3x5	.575	0	11	1.031	25.602	z	6	40268.544	47628	981.263	4104	1.608	H1-1b
16	H016	L2x2x2	.773	48.374	8	.039	48.374	y	8	10817.012	15908.4	402.563	794.613	2.187	H2-1
17	H017	L2x2x2	.764	48.374	12	.038	48.374	y	12	10817.012	15908.4	402.563	795.278	2.196	H2-1
18	H018	L2x2x2	.794	48.374	4	.040	48.374	y	4	10817.012	15908.4	402.563	795.31	2.197	H2-1
19	H019	L2x2x2	.777	48.374	4	.039	48.374	z	4	10817.012	15908.4	402.563	794.757	2.189	H2-1
20	H020	L2x2x2	.782	48.374	8	.039	48.374	z	8	10817.012	15908.4	402.563	794.126	2.18	H2-1
21	H021	L2x2x2	.811	48.374	12	.041	48.374	z	12	10817.012	15908.4	402.563	794.866	2.191	H2-1
22	H022	PIPE_2.0	.335	7.813	6	.091	146.875		13	6295.422	32130	1871.625	1871.625	1.887	H1-1b
23	H023	PIPE_2.0	.393	98.437	12	.108	146.875		5	6295.422	32130	1871.625	1871.625	2.179	H1-1b
24	H024	PIPE_2.0	.337	98.438	4	.091	3.125		5	6295.422	32130	1871.625	1871.625	2.141	H1-1b
25	TB025	LL2.5x2....	.133	48.374	2	.001	48.374	y	2	62352.532	77112	6325.983	3332.364	1.136	H1-1...
26	TB026	LL2.5x2....	.133	48.374	6	.001	0	y	6	62352.532	77112	6325.983	3332.364	1.136	H1-1...
27	TB027	LL2.5x2....	.133	48.374	10	.001	48.374	y	10	62352.532	77112	6325.983	3332.364	1.136	H1-1...
28	H028	PL6x0.5	.347	0	4	.222	8.66	y	11	89720.432	97200	1012.5	12150	2.207	H1-1b
29	H029	PL6x0.5	.349	0	8	.211	8.66	y	3	89720.432	97200	1012.5	12150	2.202	H1-1b
30	H030	PL6x0.5	.407	0	12	.211	8.66	y	7	89720.432	97200	1012.5	12150	2.19	H1-1b
31	MP1	PIPE_2.5	.539	84	5	.163	84		7	8059.847	50715	3596.25	3596.25	2.197	H1-1b
32	MP2	PIPE_2.5	.550	84	11	.178	36		8	8059.847	50715	3596.25	3596.25	2.173	H1-1b
33	MP3	PIPE_2.5	.599	84	11	.095	84		7	8059.847	50715	3596.25	3596.25	2.15	H1-1b
34	MP4	PIPE_2.5	.630	84	11	.069	84		9	8059.847	50715	3596.25	3596.25	2.146	H1-1b
35	MP5	PIPE_2.5	.566	84	9	.151	84		11	8059.847	50715	3596.25	3596.25	2.063	H1-1b

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear Ch...	Loc[in]	Dir	LC	phi*Pnc [...	phi*Pnt [...	phi*Mn y-y...	phi*Mn z-z ...	Cb	Eqn
36	MP6	PIPE_2.5	.574	84	13	.173	37		4	8059.847	50715	3596.25	3596.25	2.047	H1-1b
37	MP7	PIPE_2.5	.635	84	3	.072	84		13	8059.847	50715	3596.25	3596.25	2.154	H1-1b
38	MP8	PIPE_2.5	.640	84	7	.122	84		5	8059.847	50715	3596.25	3596.25	2.15	H1-1b
39	MP9	PIPE_2.5	.665	84	3	.109	84		11	8059.847	50715	3596.25	3596.25	2.125	H1-1b
40	MP10	PIPE_2.5	.670	84	7	.074	84		2	8059.847	50715	3596.25	3596.25	2.124	H1-1b
41	MP11	PIPE_2.5	.581	84	3	.214	36		12	8059.847	50715	3596.25	3596.25	2.064	H1-1b
42	MP12	PIPE_2.5	.582	84	7	.175	36		4	8059.847	50715	3596.25	3596.25	2.077	H1-1b

EXHIBIT 3

15 DWIGHT ST

Location	15 DWIGHT ST	**Mblu**	100/ / 001/ /
Acct#	338330	**Owner**	15 DWIGHT STREET LLC
Assessment	$3,523,590	**Appraisal**	$5,033,700
PID	9010	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$3,451,000	$1,582,700	$5,033,700
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$2,415,700	$1,107,890	$3,523,590

Owner of Record

Owner	15 DWIGHT STREET LLC	**Sale Price**	$0
Co-Owner	C/O NEIL F CARRANO	**Certificate**	1
Address	11 SAGAMORE TERR SO WESTBROOK, CT 06498-2107	**Book & Page**	529/ 23
		Sale Date	09/28/1998

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
15 DWIGHT STREET LLC	$0	1	529/ 23	09/28/1998
V J C REALTY % CARRANOS	$0	3	318/ 434	10/02/1981
V J C REALTY	$0	4	310/ 253	11/15/1979

Building Information

Building 1 : Section 1

Year Built:	1981
Living Area:	171,555
Replacement Cost:	$4,921,913
Building Percent Good:	67

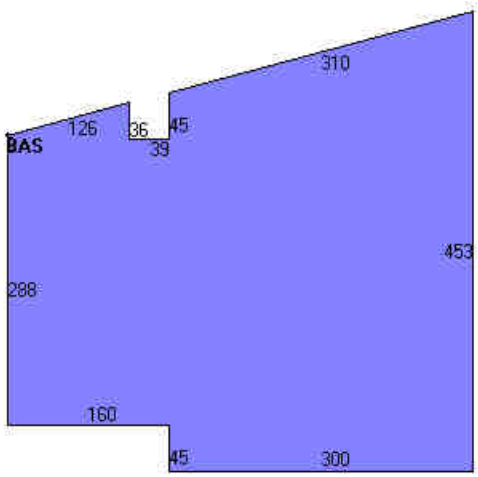
Replacement Cost
Less Depreciation: $3,297,700

Building Attributes	
Field	**Description**
STYLE	Warehouse
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	1
Exterior Wall 1	Metal
Exterior Wall 2	Concr/Cinder
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Average
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Unit Heat
AC Type	None
Bldg Use	IND WHSES M96
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	22
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/NorthHavenCTPhotos//\00\01\81/95.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	171,555	171,555
		171,555	171,555

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
SPR1	SPRINKLERS-WET	172908 S.F.	$104,300	1
OVHD	OVER HEADDOOR	2320 S.F.	$0	1
LDL1	LOAD LEVELERS	29 UNITS	$56,300	1
A/C	AIR CONDITION	2780 S.F.	$3,700	1
OVHD	OVER HEADDOOR	140 S.F.	$0	1

MEZ2	FINISHED	2500 S.F.	$25,100	1

Land

Land Use

Use Code	4010
Description	IND WHSES M96
Zone	IL80
Neighborhood	307
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	11.99
Frontage	
Depth	
Assessed Value	$1,107,890
Appraised Value	$1,582,700

Outbuildings

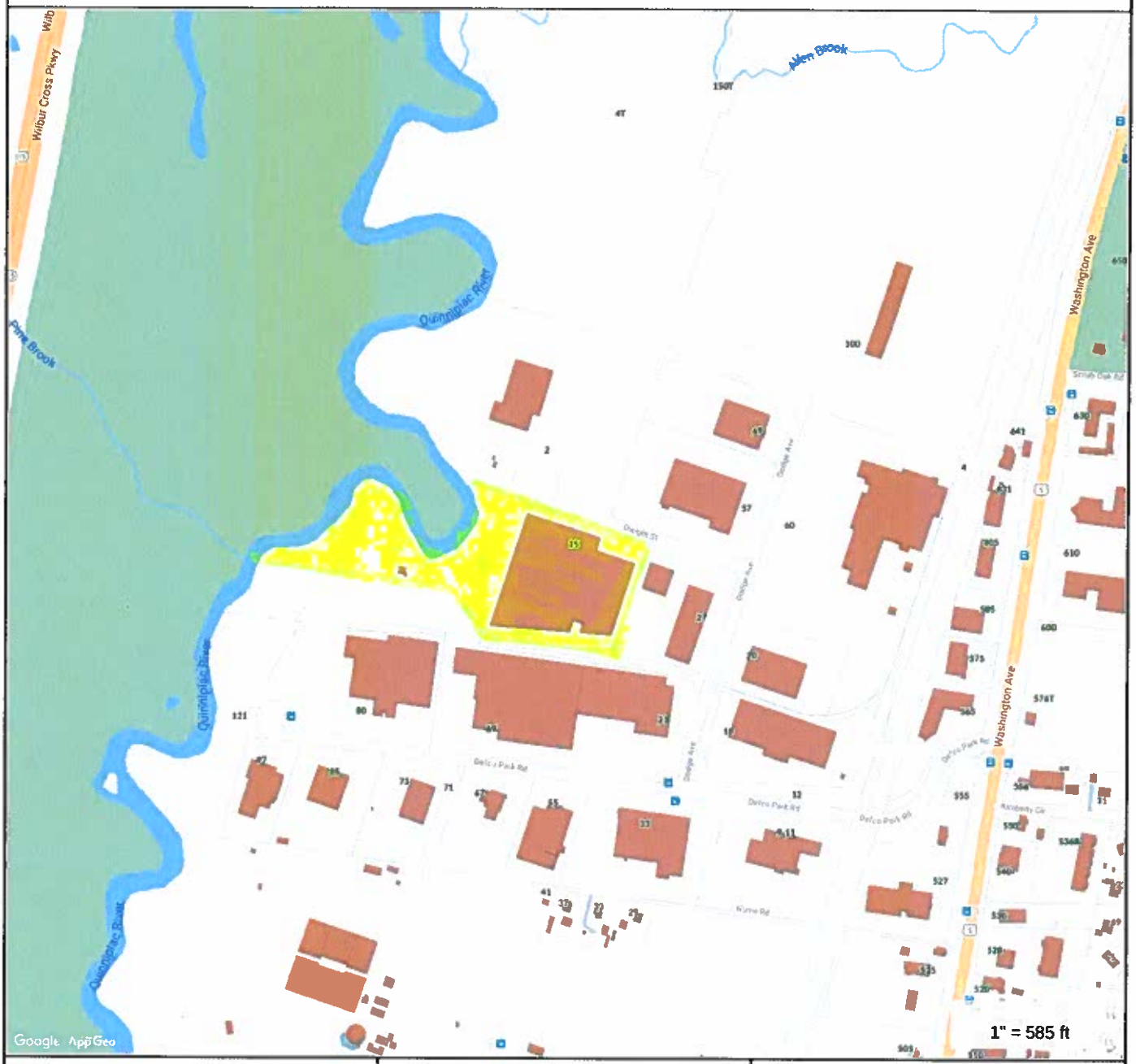
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN1	FENCE-4' CHAIN			16000 L.F.	$48,000	1
PAV1	PAVING-ASPHALT			80000 S.F.	$54,000	1
TWR1	COMMU-TOWER			1 UNITS	$112,500	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$4,359,100	$1,678,700	$6,037,800
2008	$4,011,900	$1,217,600	$5,229,500
2007		$852,320	$3,660,650

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$3,051,370	$1,175,090	$4,226,460
2008	$2,808,330	$852,320	$3,660,650
2007		$852,320	$3,660,650

15 Dwight Street



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of North Haven, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 4/1/2020
Data updated 4/1/2020

EXHIBIT 4

Lawrence Behr Associates INC
www.lbagroup.com

NIER Study Report

SITE NAME:

302482 North Haven CT 1

LOCATION:

North Haven, Connecticut

COMPANY:

American Tower Corporation
Woburn, Massachusetts

June 29th, 2020

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

Contents

DISCLAIMER NOTICE

This work is based upon our best interpretation of available information. However, these data and their interpretation are constantly changing. Therefore, we do not warrant that any undertaking based on this report will be successful, or that others will not require further research or actions in support of this proposal or future undertaking. In the event of errors, our liability is strictly limited to replacement of this document with a corrected one. Liability for consequential damages is specifically disclaimed. Any use of this document constitutes an agreement to hold Lawrence Behr Associates, Inc. and its employees harmless and indemnify it for any and all liability, claims, demands, and litigation expenses and attorney's fees arising out of such use.

Work product documents released prior to account settlement remain the sole property of Lawrence Behr Associates, Inc. and must be returned on demand. Underlying work notes and data relating to this document remain the property of Lawrence Behr Associates, Inc. This document shall not be reproduced in whole or part without permission of Lawrence Behr Associates, Inc. Any dispute hereunder shall be adjudicated in North Carolina. Any use or retention of this document constitutes acceptance of these terms, the entire work product, and all charges associated therewith.

NIER STUDY REPORT

302482 North Haven CT 1

North Haven, Connecticut

INTRODUCTION

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

SITE AND FACILITY CONSIDERATIONS

Site 302482 North Haven CT 1 is located at 15 Dewight Street in North Haven, Connecticut at coordinates 41.4208, -72.8488. The support structure is a 154' monopole. The installation consists of three antenna levels with radiation centers of 109', 142', and 152' 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.

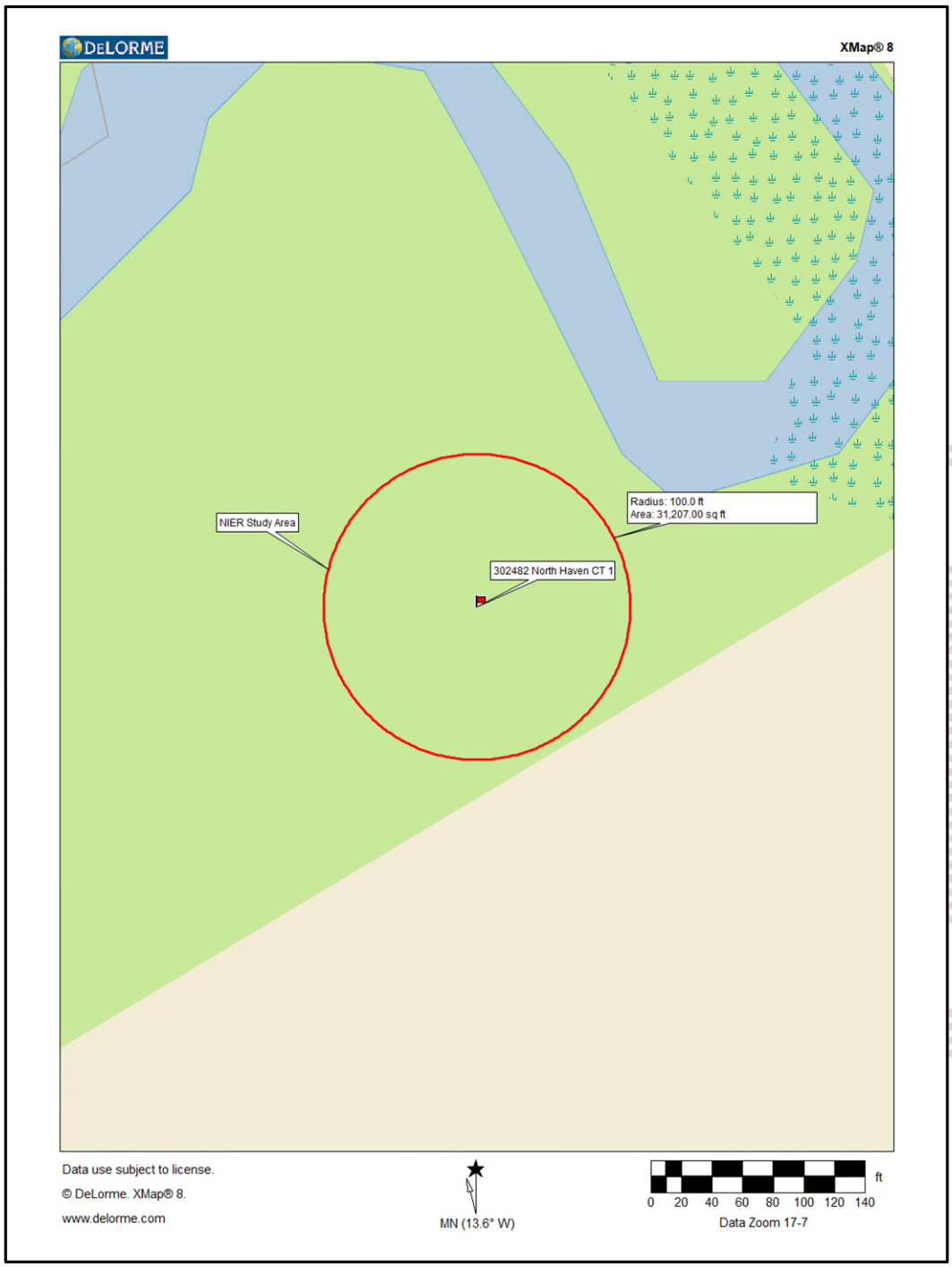
POWER DENSITY CALCULATIONS

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.

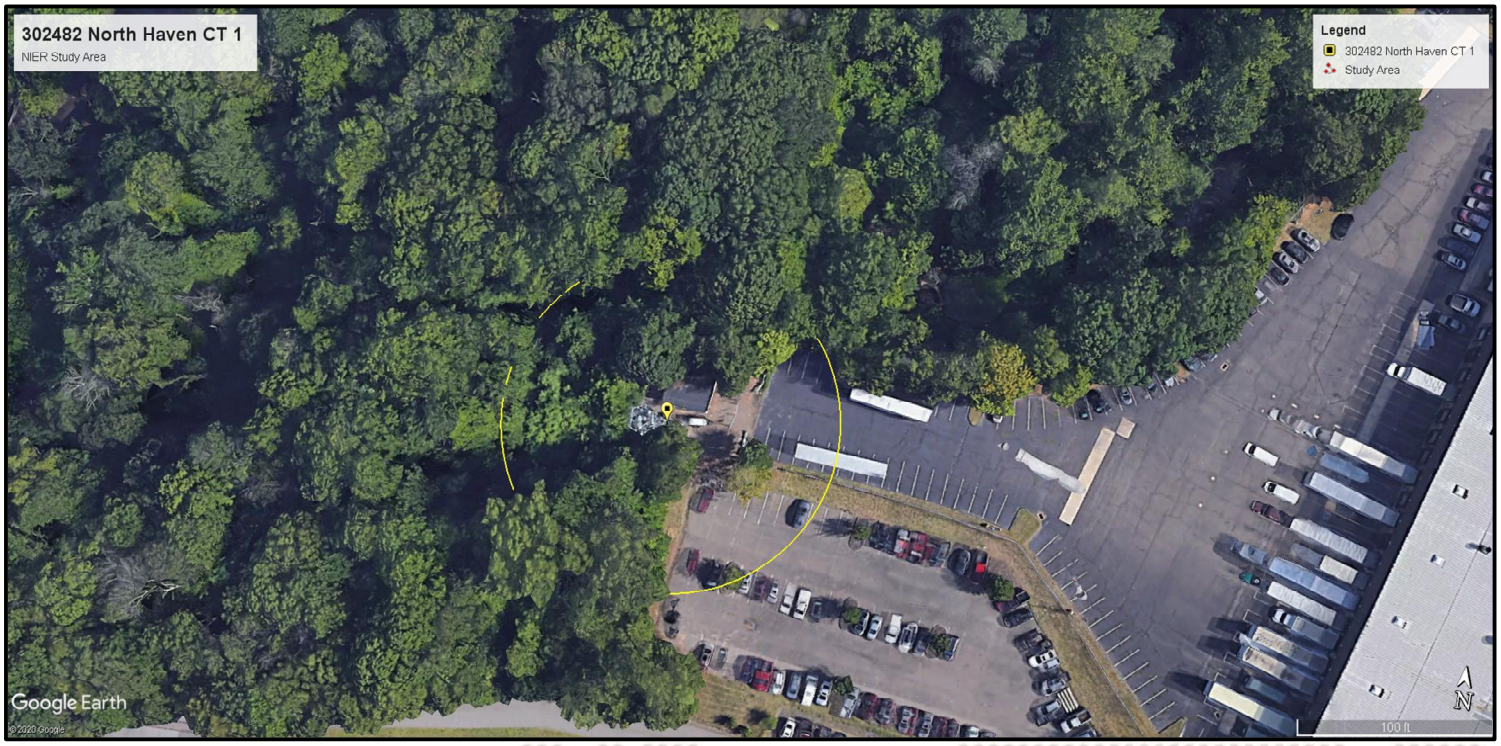
June 29th, 2020

Kathryn G. Tesh
Wireless Services Manager

APPENDIX 1 *Topographic Map*



APPENDIX 2 *Satellite Photo*

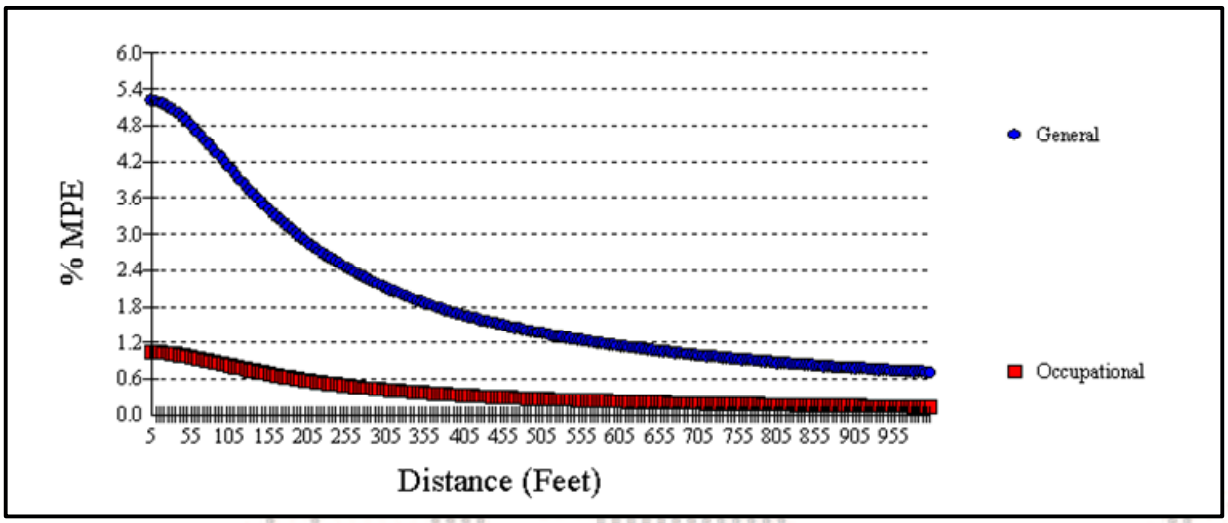


APPENDIX 3 *Load List*

Proposed	Customer	RAD Height (ft)	Equipment Quantity	Equipment Type	Manufacturer	Model Number	Line Quantity	Line size	Mount Type	Azimuths	TX Frequency	RX Frequency
No	AT&T MOBILITY	152	3	PANEL	Powerwave Allgon	7770.00	12	1 1/4" Coax	Platform with Handrails	20/140/270		
No	AT&T MOBILITY	152	3	PANEL	CCI	OPA-65R-LCUU-H6			Platform with Handrails	20/140/270	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
No	CLEARWIRE CORPORATION	146	1	PANEL	Argus	LLPX310R			Stand-Off			
No	CLEARWIRE CORPORATION	142	1	DISH-HP		A-ANT-11G-2-C	1	1/2" Coax	Platform with Handrails	26.1309	11	11
No	CLEARWIRE CORPORATION	142	1	DISH-HP		A-ANT-11G-2.5-C	1	1/2" Coax	Platform with Handrails	150.9997	11	11
No	CLEARWIRE CORPORATION	142	1	DISH-HP		A-ANT-23G-1-C	1	1/2" Coax	Platform with Handrails	47.7745	23	23
No	CLEARWIRE CORPORATION	142	3	PANEL	Commscope	NNVV-65B-R4			Platform with Handrails	1/120/240	1850-1995, 806-869	1850-1995, 806-869
No	CLEARWIRE CORPORATION	142	3	PANEL	RFS	APXVTM14-ALU-I20			Platform with Handrails	0/120/240	2496-2690	2496-2690
No	VERIZON WIRELESS	109	3	PANEL	Commscope	LNX-6514DS-VTM			Low Profile Platform	30/130/270	869-880, 890-892	824-835, 845-847
No	VERIZON WIRELESS	109	6	PANEL	Commscope	JAHH-65B-R3B			Low Profile Platform	40/130/270	2145-2155, 746-757	1745-1755, 776-787

APPENDIX 4

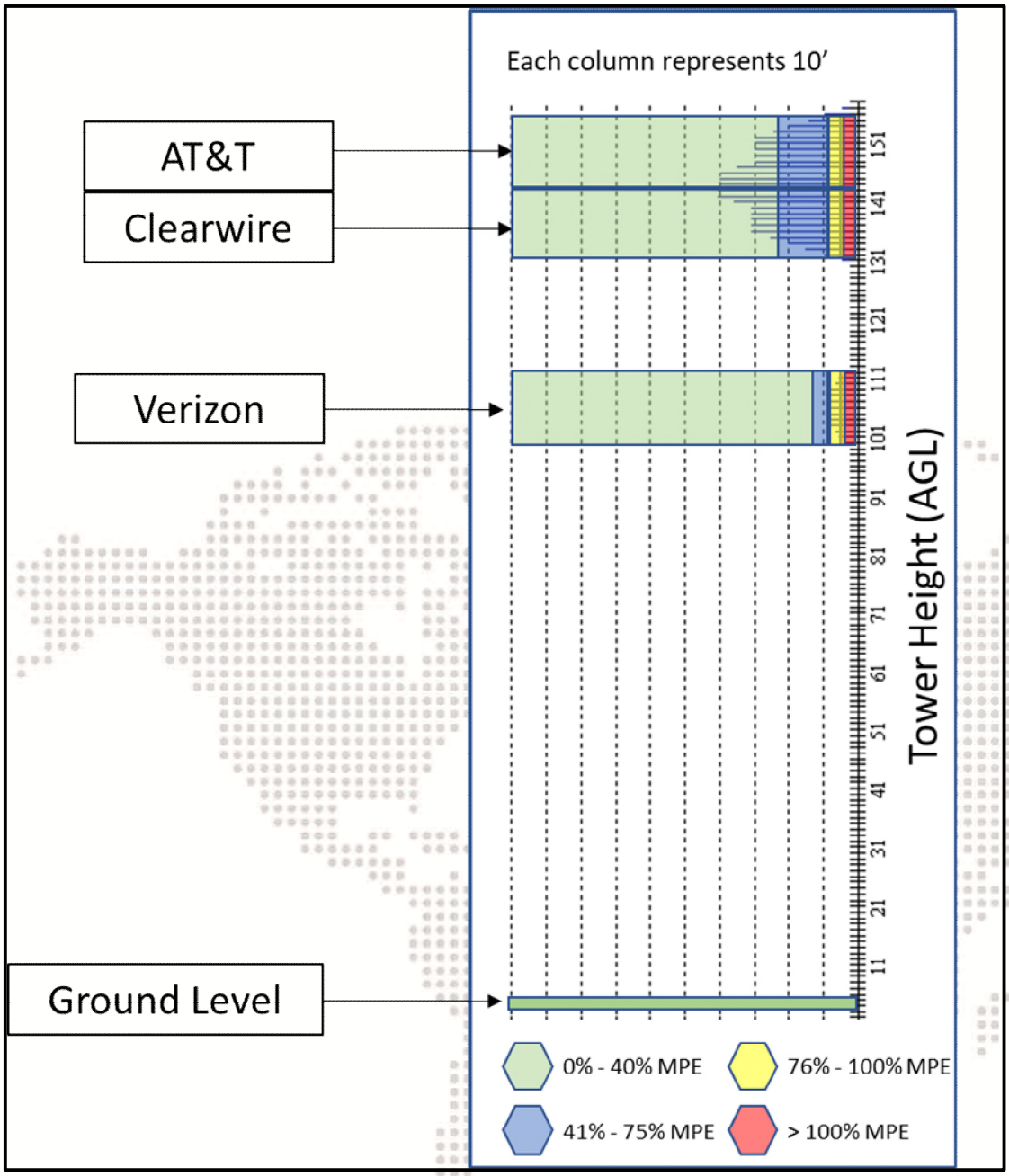
FCC OET-65 MPE Limit Study



General Population MPE (@5'):	5.20%
Occupational MPE (@5'):	1.04%
Maximum Power Density (@5'):	0.0349 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
θ_{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 5

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**North Haven CT 1, CT**
ATC Asset Number	:	**302482**
Engineering Number	:	**13242626_C3_03**
Proposed Carrier	:	**AT&T MOBILITY**
Carrier Site Name	:	**MRCTB046848**
Carrier Site Number	:	**CTL02012**
Site Location	:	**15 Dewight Street** **North Haven, CT 06473-1198** **41.420800,-72.848800**
County	:	**New Haven**
Date	:	**June 19, 2020**
Max Usage	:	**98%**
Result	:	**Pass**

Prepared By:
Hansol Shin
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 150 ft monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	ITT Meyer, Type "B", Spec. AT-8935, dated April 13, 1984
Foundation Drawing	Southern New England Telephone Job #3C032, dated September 18, 1984
Geotechnical Report	S&ME Job #1261-08-049O, dated April 24, 2008
Modifications	Spectrasite Communications File #CT-0018-M1, Rev. 4, dated October 15, 2002 ATC Project #41732832, dated June 30, 2008 ATC Project #43874133, dated September 1, 2009 ATC Project #60261734, dated January 19, 2015
Mount Analysis	ATC Job #13242626_C9_04, dated July 6, 2020

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, Vasd) / 125 mph (3-Second Gust, Vult)
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 = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
153.0	6	Powerwave Allgon 7020.00 Dual Band RET	-	(4) 0.78" (19.7mm) 8 AWG 6 (12) 1 1/4" Coax	AT&T MOBILITY
	3	Kaelus DBC0061F1V51-2			
	6	Powerwave Allgon LGP21401			
	3	CCI OPA-65R-LCUU-H6			
	3	Quintel QS66512-2			
	3	Ericsson RRUS A2 B2			
	2	Raycap DC6-48-60-18-8F			
142.0	1	DragonWave A-ANT-23G-1-C	Platform with Handrails	(4) 1 1/4" Hybriflex Cable (3) 1/2" Coax (1) 2" conduit	CLEARWIRE CORPORATION
	6	Alcatel-Lucent RRH2x50-08			
	3	DragonWave Horizon Compact			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	Generic RRU (Model TBD)			
	1	DragonWave A-ANT-11G-2-C			
	3	RFS APXVTM14-ALU-I20			
	1	DragonWave A-ANT-11G-2.5-C			
	3	Commscope NNVV-65B-R4			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
108.0	3	Nokia B5 RRH4x40-850	Low Profile Platform	(9) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	6	RFS FD9R6004/2C-3L			
	6	RFS FD9R6004/1C-3L			
	6	Commscope JAHH-65B-R3B			
	3	Commscope LNX-6514DS-VTM			
	2	RFS DB-T1-6Z-8AB-0Z			
	3	Commscope HBX-6516DS-VTM			
	3	Alcatel-Lucent RRH 2X60-1900			
	3	Alcatel-Lucent RRH2x60 700			
	3	Alcatel-Lucent B66 RRH4x45			

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
153.0	3	Ericsson RRUS A2 B2	-	(2) 0.51" (13mm) Hybrid	AT&T MOBILITY
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Powerwave Allgon 7770.00			
	3	Ericsson RRUS 12			
	3	Ericsson RRUS 11 (Band 7)			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
153.0	3	Kaelus DBC0061F1V51-2	Platform with Handrails and Handrail Reinforcement Kit	(2) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (2) 2" conduit	AT&T MOBILITY
	6	Kathrein Scala 782-10250			
	1	Raycap DC6-48-60-18-8F			
	3	Ericsson RRUS 8843 B2, B66A			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 32 B30			
	3	CCI DMP65R-BU6DA			

[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	90%	Pass
Shaft	98%	Pass
Base Plate	64%	Pass
Reinforcement	98%	Pass
Flanges	30%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,783.8	95%
Axial (Kips)	43.7	77%
Shear (Kips)	25.7	31%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
153.0	Kaelus DBC0061F1V51-2	AT&T MOBILITY	0.000	0.000
	Kathrein Scala 782-10250			
	Raycap DC6-48-60-18-8F			
	Ericsson RRUS 8843 B2, B66A			
	Ericsson RRUS 4478 B14			
	Ericsson RRUS 4449 B5, B12			
	Ericsson RRUS 32 B30			
	CCI DMP65R-BU6DA			
142.0	DragonWave A-ANT-23G-1-C	CLEARWIRE CORPORATION	2.206	1.841
	DragonWave A-ANT-11G-2-C			
	DragonWave A-ANT-11G-2.5-C			

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

Standard Conditions

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

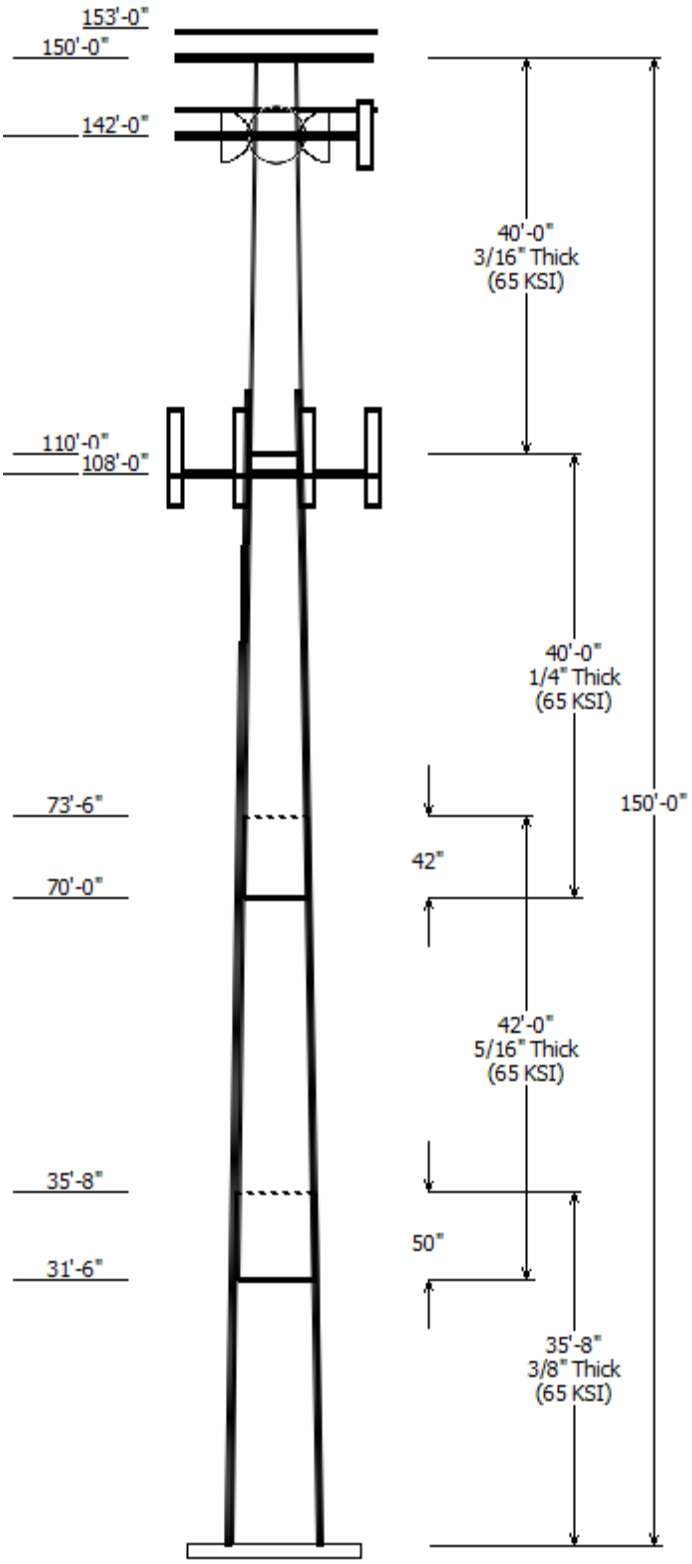
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

Client :	AT&T MOBILITY		
Pole :	302482	Code:	ANSI/TIA-222-G
Location :	North Haven CT 1, CT		
Description :	150' ITT Meyer Type B Monopole	Struct Class :	II
Shape :	12 Sides	Exposure :	B
Height :	150.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.156667 (in/ft)		

Sections Properties

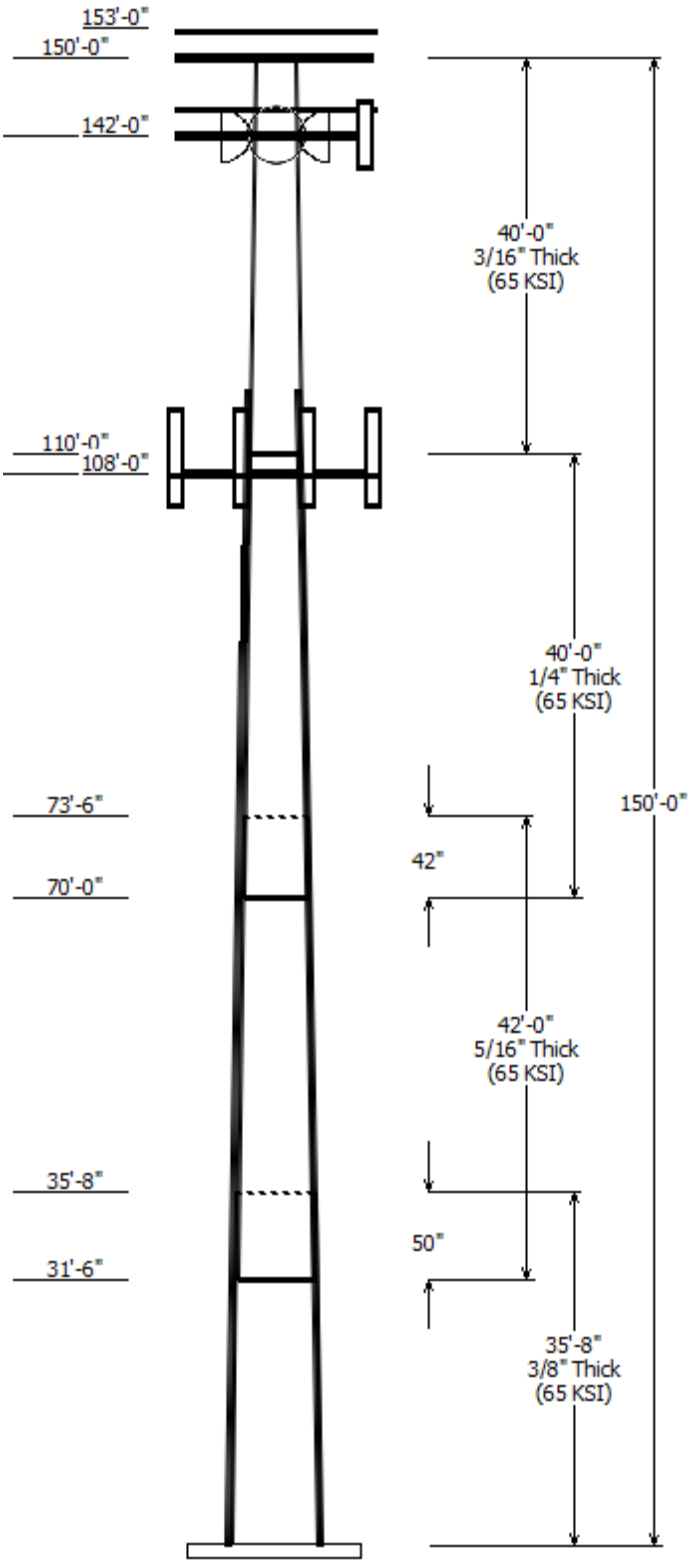
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	35.667	31.78	37.37	0.375		0.000	12 Sides	65
2	42.000	26.48	33.06	0.313	Slip Joint	50.000	12 Sides	65
3	40.000	21.26	27.53	0.250	Slip Joint	42.000	12 Sides	65
4	40.000	15.00	21.26	0.188	Butt Joint	0.000	12 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
153.000	153.000	3	CCI DMP65R-BU6DA
153.000	152.000	3	CCI OPA-65R-LCUU-H6
153.000	153.000	3	Quintel QS66512-2
153.000	153.000	3	Ericsson RRUS 32 B30
153.000	152.000	3	Ericsson RRUS A2 B2
153.000	153.000	3	Ericsson RRUS 4449 B5, B12
153.000	153.000	3	Ericsson RRUS 4478 B14
153.000	153.000	3	Ericsson RRUS 8843 B2, B66A
153.000	152.000	1	Raycap DC6-48-60-18-8F
153.000	152.000	2	Raycap DC6-48-60-18-8F
153.000	152.000	6	Powerwave Allgon LGP21401
153.000	153.000	6	Kathrein Scala 782-10250
153.000	153.000	3	Kaelus DBC0061F1V51-2
153.000	153.000	3	Kaelus DBC0061F1V51-2
153.000	153.000	6	Powerwave Allgon 7020.00
150.000	150.000	1	Round Platform w/ Handrails
142.000	142.000	3	Commscope NNVV-65B-R4
142.000	142.000	1	DragonWave A-ANT-11G-2.5-C
142.000	142.000	3	RFS APXVTM14-ALU-I20
142.000	142.000	1	DragonWave A-ANT-11G-2-C
142.000	142.000	3	Generic RRU (Model TBD)
142.000	142.000	3	Alcatel-Lucent TD-RRH8x20-25
142.000	142.000	3	Alcatel-Lucent 1900 MHz 4X45
142.000	142.000	6	Alcatel-Lucent RRH2x50-08
142.000	142.000	1	DragonWave A-ANT-23G-1-C
142.000	142.000	3	DragonWave Horizon Compact
142.000	142.000	1	Platform with Handrails RMQP-
108.000	109.000	3	Alcatel-Lucent RRH 2X60-1900
108.000	109.000	3	Nokia B5 RRH4x40-850
108.000	108.000	6	RFS FD9R6004/2C-3L
108.000	108.000	6	RFS FD9R6004/1C-3L
108.000	108.000	1	Round Low Profile Platform
108.000	109.000	6	Commscope JAHH-65B-R3B
108.000	109.000	3	Commscope LNX-6514DS-VTM
108.000	109.000	2	RFS DB-T1-6Z-8AB-0Z
108.000	108.000	3	Commscope HBX-6516DS-VTM
108.000	109.000	3	Alcatel-Lucent B66 RRH4x45
108.000	109.000	3	Alcatel-Lucent RRH2x60 700

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind



101.0	121.0	#20 All Thread Bar	Yes
101.0	121.0	#20 All Thread Bar	Yes
101.0	121.0	#20 All Thread Bar	Yes
5.000	142.0	1 1/4" Hybriflex	No
5.000	142.0	1/2" Coax	Yes
5.000	142.0	2" conduit	Yes
5.000	108.0	1 5/8" Hybriflex	No
5.000	153.0	0.78" (19.7mm) 8	Yes
0.000	101.0	#20 All Thread Bar	Yes
0.000	101.0	#20 All Thread Bar	Yes
0.000	101.0	#20 All Thread Bar	Yes
0.000	101.0	#20 All Thread Bar	Yes
0.000	108.0	1 5/8" Coax	No
0.000	153.0	0.39" (10mm)	No
0.000	153.0	0.78" (19.7mm) 8	No
0.000	153.0	1 1/4" Coax	No
0.000	153.0	1 1/4" Coax	Yes
0.000	153.0	2" conduit	No

Load Cases

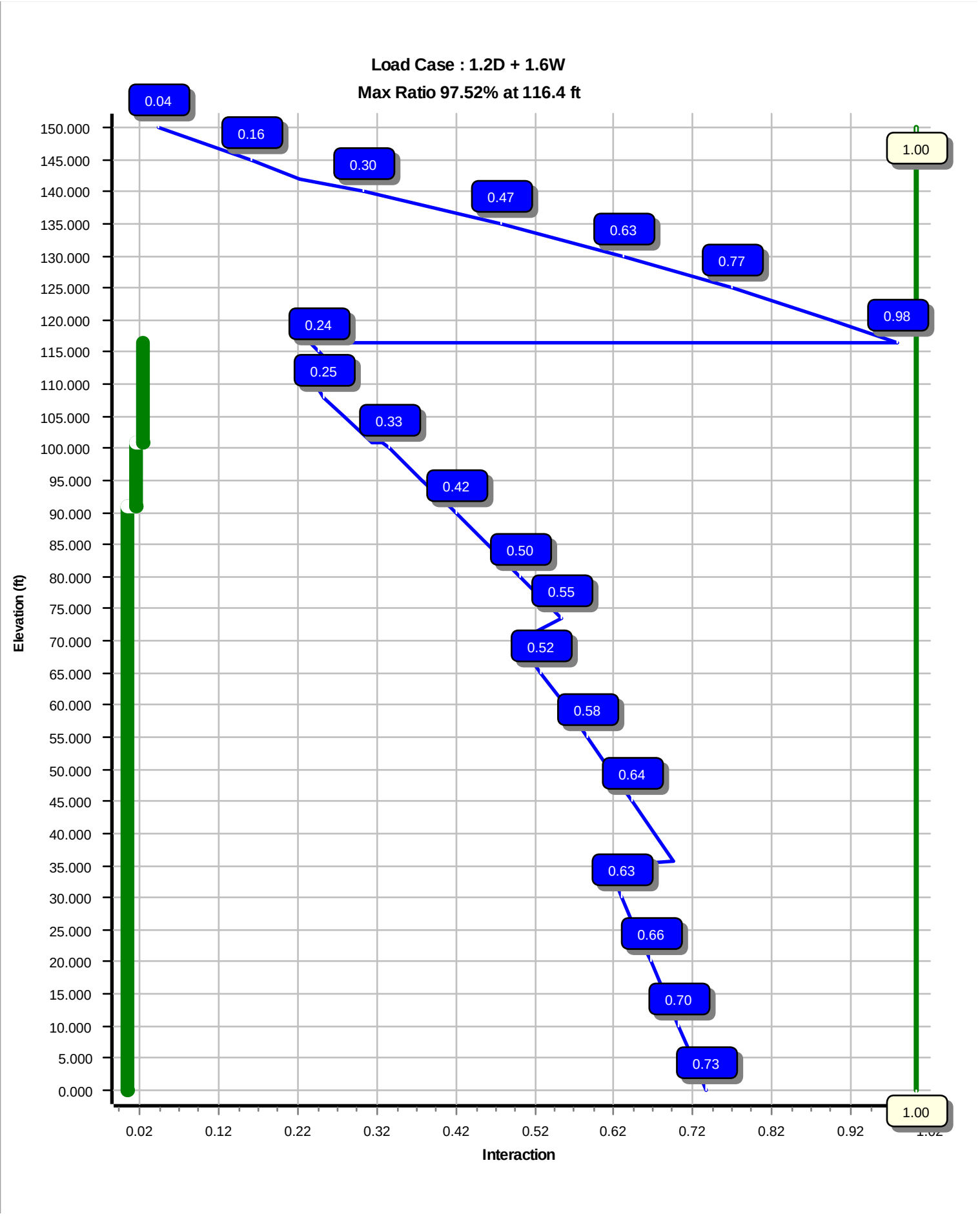
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	2783.83	25.75	43.65
0.9D + 1.6W	2630.02	24.11	32.73
1.2D + 1.0Di + 1.0Wi	1265.49	12.32	67.52
(1.2 + 0.2Sds) * DL + E ELFM	189.89	1.43	43.63
(1.2 + 0.2Sds) * DL + E EMAM	355.59	2.65	43.63
(0.9 - 0.2Sds) * DL + E ELFM	184.87	1.43	30.36
(0.9 - 0.2Sds) * DL + E EMAM	345.43	2.65	30.36
1.0D + 1.0W	568.08	5.16	36.43

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	142.00	26.476	1.841
1.0D + 1.0W	142.00	26.476	1.841
1.0D + 1.0W	142.00	26.476	1.841


Load Case : 1.2D + 1.6W
Max Ratio 97.52% at 116.4 ft
0.04
0.16
0.30
0.47
0.63
0.77
0.98
1.00
0.24
0.25
0.33
0.42
0.50
0.55
0.52
0.58
0.64
0.63
0.66
0.70
0.73
1.00
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
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: 302482 Code: ANSI/TIA-222-G

Site Name: North Haven CT 1, CT Engineering Number:13242626_C3_03 6/19/2020 2:26:59 PM

Customer: AT&T MOBILITY

Analysis Parameters

Location :	New Haven County, CT	Height (ft) :	150
Code :	ANSI/TIA-222-G	Base Diameter (in) :	37.38
Shape :	12 Sides	Top Diameter (in) :	15.00
Pole Type :	Taper	Taper (in/ft) :	0.157
Pole Manfacturer :	ITT Meyer	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	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): 3.15

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

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 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

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	35.667	0.3750	65		0.00	5,013	37.37	0.00	44.68	7806.9	24.03	99.67	31.78	35.67	37.93	4777.2	20.03	84.77	0.156667
2-12	42.000	0.3125	65	Slip	50.00	4,237	33.06	31.50	32.96	4512.6	25.67	105.81	26.48	73.50	26.34	2302.6	20.03	84.75	0.156667
3-12	40.000	0.2500	65	Slip	42.00	2,646	27.53	70.00	21.96	2086.8	26.83	110.13	21.26	110.00	16.92	953.8	20.11	85.07	0.156667
4-12	40.000	0.1875	65	Butt	0.00	1,475	21.26	110.00	12.73	721.8	27.71	113.42	15.00	150.00	8.94	250.5	18.76	80.00	0.156667
				Shaft Weight		13,371													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
153.00	Powerwave Allgon 7020.00 Dual	6	0.75	0.000	2.20	0.339	0.50	12.42	0.748	0.50
153.00	Kaelus DBC0061F1V51-2	3	0.75	0.000	25.50	0.433	0.50	43.98	0.883	0.50
153.00	Kaelus DBC0061F1V51-2	3	0.75	0.000	25.50	0.433	0.50	43.98	0.883	0.50
153.00	Kathrein Scala 782-10250	6	0.75	0.000	6.40	0.449	0.50	19.17	0.940	0.50
153.00	Powerwave Allgon LGP21401	6	0.75	-1.000	14.10	1.104	0.50	39.06	1.818	0.50
153.00	Raycap DC6-48-60-18-8F	2	0.75	-1.000	20.00	1.260	1.00	72.67	1.919	1.00
153.00	Raycap DC6-48-60-18-8F	1	0.75	-1.000	20.00	1.260	1.00	72.67	1.919	1.00
153.00	Ericsson RRUS 8843 B2, B66A	3	0.75	0.000	72.00	1.639	0.50	133.32	2.484	0.50
153.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	115.21	2.739	0.50
153.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	135.47	2.902	0.50
153.00	Ericsson RRUS A2 B2	3	0.75	-1.000	22.00	2.064	0.67	66.11	3.008	0.67
153.00	Ericsson RRUS 32 B30	3	0.75	0.000	60.00	2.743	0.67	133.59	3.913	0.67
153.00	Quintel QS66512-2	3	0.75	0.000	111.00	8.133	0.74	310.35	10.922	0.74
153.00	CCI OPA-65R-LCUU-H6	3	0.75	-1.000	73.00	9.658	0.66	276.60	12.431	0.66
153.00	CCI DMP65R-BU6DA	3	0.75	0.000	79.40	12.709	0.63	337.09	15.499	0.63
150.00	Round Platform w/ Handrails	1	1.00	0.000	2,000.00	27.200	1.00	3,296.26	51.653	1.00
142.00	DragonWave Horizon Compact	3	0.75	0.000	10.60	0.721	0.50	32.99	1.288	0.50
142.00	DragonWave A-ANT-23G-1-C	1	0.75	0.000	15.00	1.610	1.00	50.19	2.364	1.00
142.00	Alcatel-Lucent RRH2x50-08	6	0.75	0.000	52.90	1.701	0.50	111.92	2.560	0.50
142.00	Alcatel-Lucent 1900 MHz 4X45	3	0.75	0.000	60.00	2.322	0.67	140.26	3.398	0.67
142.00	Alcatel-Lucent TD-RRH8x20-25	3	0.75	0.000	70.00	4.046	0.61	164.12	5.368	0.61
142.00	Generic RRU (Model TBD)	3	0.75	0.000	55.00	4.563	0.59	161.77	5.946	0.59
142.00	DragonWave A-ANT-11G-2-C	1	0.75	0.000	27.00	4.688	1.00	124.05	5.956	1.00
142.00	RFS APXVTM14-ALU-I20	3	0.75	0.000	56.20	6.342	0.66	193.33	8.511	0.66
142.00	DragonWave A-ANT-11G-2.5-C	1	0.75	0.000	47.60	8.670	1.00	224.05	10.390	1.00
142.00	Commscope NNVV-65B-R4	3	0.75	0.000	77.40	12.271	0.64	327.64	15.063	0.64
142.00	Platform with Handrails RMQP-	1	1.00	0.000	2,448.70	27.200	1.00	4,028.64	51.543	1.00
108.00	RFS FD9R6004/1C-3L	6	0.80	0.000	3.10	0.314	0.50	10.86	0.688	0.50
108.00	RFS FD9R6004/2C-3L	6	0.80	0.000	2.60	0.314	0.50	10.36	0.688	0.50
108.00	Nokia B5 RRH4x40-850	3	0.80	1.000	48.50	1.322	0.50	88.45	2.059	0.50
108.00	Alcatel-Lucent RRH 2X60-1900	3	0.80	1.000	39.60	1.876	0.50	92.76	2.783	0.50
108.00	Alcatel-Lucent RRH2x60 700	3	0.80	1.000	56.70	2.150	0.67	122.60	3.120	0.67
108.00	Alcatel-Lucent B66 RRH4x45	3	0.80	1.000	67.00	2.580	0.67	135.61	3.671	0.67
108.00	Commscope HBX-6516DS-VTM	3	0.80	0.000	10.40	3.318	0.68	74.61	5.012	0.68
108.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	1.000	44.00	4.800	0.72	165.87	6.176	0.72
108.00	Commscope LNX-6514DS-VTM	3	0.80	1.000	38.80	8.173	0.69	209.17	10.902	0.69
108.00	Commscope JAHH-65B-R3B	6	0.80	1.000	60.60	9.113	0.69	256.50	11.799	0.69
108.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,127.36	40.291	1.00
Totals	Num Loadings:38	119			10,606.20			23,178.92		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier

0.00	153.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	7	1 1/4" Coax	1.55	0.63	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	5	1 1/4" Coax	1.55	0.63	N	5	0.00	0.00	0	0.00	Y	AT&T MOBILITY
0.00	153.00	2	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
5.00	153.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	2	0.00	0.00	0	0.00	Y	AT&T MOBILITY
5.00	142.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	CLEARWIRE
5.00	142.00	3	1/2" Coax	0.63	0.15	N	3	0.00	0.00	90	0.00	Y	CLEARWIRE
5.00	142.00	1	2" conduit	2.38	3.65	N	1	0.00	0.00	90	0.00	Y	CLEARWIRE
101.00	121.00	1	#20 All Thread Bar	2.72	0.00	N	1	0.00	0.00	90	0.00	Y	-
101.00	121.00	1	#20 All Thread Bar	2.72	0.00	N	1	0.00	0.00	210	0.00	Y	-
101.00	121.00	1	#20 All Thread Bar	2.72	0.00	N	1	0.00	0.00	330	0.00	Y	-
0.00	108.00	9	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
5.00	108.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	101.00	1	#20 All Thread Bar	2.72	0.00	N	1	0.00	0.00	90	0.00	Y	-
0.00	101.00	1	#20 All Thread Bar	2.72	0.00	N	1	0.00	0.00	0	0.00	Y	-
0.00	101.00	1	#20 All Thread Bar	2.72	0.00	N	1	0.00	0.00	180	0.00	Y	-
0.00	101.00	1	#20 All Thread Bar	2.72	0.00	N	1	0.00	0.00	270	0.00	Y	-

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections			Connectors	Continuation?
						Description	Spacing (in)	Len (in)		
0.00	91.00	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No
91.00	101.0	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	18.0	3.31	5/8" A36 U-Bolt	Yes
101.0	116.4	3	SOL #20 All Thread	80	5.15	6" T Bracket	30.0	3.31	5/8" A36 U-Bolt	No

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	37.375	44.678	7,806.9	24.03	99.67	78.5	403.5	0.0	0.0	19.64	4,815	0.0
5.00		0.3750	36.592	43.732	7,321.5	23.47	97.58	79.1	386.5	0.0	752.1	19.64	4,647	334.0
10.00		0.3750	35.808	42.786	6,856.6	22.91	95.49	79.7	369.9	0.0	736.0	19.64	4,481	334.0
15.00		0.3750	35.025	41.840	6,411.8	22.35	93.40	80.3	353.7	0.0	719.9	19.64	4,318	334.0
20.00		0.3750	34.242	40.894	5,986.7	21.79	91.31	81.0	337.8	0.0	703.8	19.64	4,159	334.0
25.00		0.3750	33.458	39.948	5,580.9	21.23	89.22	81.6	322.2	0.0	687.7	19.64	4,002	334.0
30.00		0.3750	32.675	39.002	5,193.7	20.67	87.13	81.9	307.1	0.0	671.6	19.64	3,848	334.0
31.50	Bot - Section 2	0.3750	32.440	38.718	5,081.2	20.50	86.51	81.9	302.6	0.0	198.4	19.64	3,803	100.2
35.00		0.3750	31.892	38.056	4,825.0	20.11	85.04	81.9	292.3	0.0	846.4	19.64	3,818	233.8
35.67	Top - Section 1	0.3125	32.412	32.300	4,248.1	25.11	103.72	77.3	253.2	0.0	159.6	19.64	3,797	44.5
40.00		0.3125	31.733	31.617	3,984.2	24.53	101.55	78.0	242.6	0.0	471.2	19.64	3,668	289.5
45.00		0.3125	30.950	30.829	3,693.6	23.86	99.04	78.7	230.5	0.0	531.2	19.64	3,521	334.0
50.00		0.3125	30.167	30.041	3,417.5	23.19	96.53	79.4	218.9	0.0	517.8	19.64	3,377	334.0
55.00		0.3125	29.383	29.253	3,155.5	22.51	94.03	80.2	207.5	0.0	504.4	19.64	3,236	334.0
60.00		0.3125	28.600	28.464	2,907.2	21.84	91.52	80.9	196.4	0.0	491.0	19.64	3,098	334.0
65.00		0.3125	27.817	27.676	2,672.3	21.17	89.01	81.6	185.6	0.0	477.6	19.64	2,963	334.0
70.00	Bot - Section 3	0.3125	27.033	26.888	2,450.4	20.50	86.51	81.9	175.1	0.0	464.2	19.64	2,831	334.0
73.50	Top - Section 2	0.2500	26.985	21.522	1,963.5	26.24	107.94	76.1	140.6	0.0	575.9	19.64	2,823	233.8
75.00		0.2500	26.750	21.333	1,912.1	25.99	107.00	76.4	138.1	0.0	109.4	19.64	2,784	100.2
80.00		0.2500	25.967	20.702	1,747.5	25.15	103.87	77.3	130.0	0.0	357.6	19.64	2,656	334.0
85.00		0.2500	25.183	20.071	1,592.7	24.31	100.73	78.2	122.2	0.0	346.9	19.64	2,531	334.0
90.00		0.2500	24.400	19.441	1,447.2	23.47	97.60	79.1	114.6	0.0	336.1	19.64	2,409	334.0
91.00	Reinf. Top Reinf	0.2500	24.243	19.315	1,419.2	23.30	96.97	79.3	113.1	0.0	65.9	19.64	2,385	66.8
95.00		0.2500	23.617	18.810	1,310.9	22.63	94.47	80.0	107.2	0.0	259.5	19.64	2,290	267.2
100.0		0.2500	22.833	18.180	1,183.4	21.79	91.33	80.9	100.1	0.0	314.7	19.64	2,175	334.0
101.0	Reinf. Top Reinf	0.2500	22.677	18.053	1,159.0	21.63	90.71	81.1	98.7	0.0	61.6	19.64	2,152	66.8
105.0		0.2500	22.050	17.549	1,064.5	20.95	88.20	81.9	93.3	0.0	242.3	14.73	2,242	200.4
108.0		0.2500	21.580	17.171	997.1	20.45	86.32	81.9	89.3	0.0	177.2	14.73	2,182	150.3
110.0	Top - Section 3	0.2500	21.267	16.918	953.8	20.11	85.07	81.9	86.6	0.0	116.0	14.73	2,142	100.2
110.0	Bot - Section 4	0.1875	21.267	12.727	721.8	27.71	113.42	74.5	65.6	0.0		14.73	2,142	
115.0		0.1875	20.483	12.254	644.3	26.59	109.24	75.7	60.8	0.0	212.5	14.73	2,045	250.5
116.4	Reinf. Top	0.1875	20.261	12.120	623.4	26.28	108.06	76.1	59.4	0.0	58.7	14.73	2,018	71.0
120.0		0.1875	19.700	11.781	572.5	25.47	105.07	76.9	56.1	0.0	145.7			
125.0		0.1875	18.917	11.308	506.3	24.35	100.89	78.2	51.7	0.0	196.4			
130.0		0.1875	18.133	10.835	445.4	23.23	96.71	79.4	47.4	0.0	188.4			
135.0		0.1875	17.350	10.362	389.6	22.11	92.53	80.6	43.4	0.0	180.3			
140.0		0.1875	16.567	9.889	338.6	21.00	88.36	81.8	39.5	0.0	172.3			
142.0		0.1875	16.253	9.700	319.6	20.55	86.68	81.9	38.0	0.0	66.7			
145.0		0.1875	15.783	9.416	292.3	19.88	84.18	81.9	35.8	0.0	97.6			
150.0		0.1875	15.000	8.943	250.5	18.76	80.00	81.9	32.3	0.0	156.2			
											13,370.7			7,519.1

Site Number: 302482 Code: ANSI/TIA-222-G

Site Name: North Haven CT 1, CT Engineering Number:13242626_C3_03 6/19/2020 2:27:00 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		253.3	0.0					0.0	0.0	253.3	0.0	0.0	0.0
5.00		503.2	902.5					0.0	542.0	503.2	1,444.5	0.0	0.0
10.00		496.5	883.2					0.0	620.4	496.5	1,503.6	0.0	0.0
15.00		489.9	863.9					0.0	620.4	489.9	1,484.3	0.0	0.0
20.00		483.2	844.6					0.0	620.4	483.2	1,465.0	0.0	0.0
25.00		476.5	825.3					0.0	620.4	476.5	1,445.7	0.0	0.0
30.00		307.5	806.0					0.0	620.4	307.5	1,426.3	0.0	0.0
31.50	Bot - Section 2	242.1	238.0					0.0	186.1	242.1	424.1	0.0	0.0
35.00		204.2	1,015.7					0.0	434.3	204.2	1,450.0	0.0	0.0
35.67	Top - Section 1	248.4	191.5					0.0	82.7	248.4	274.2	0.0	0.0
40.00		468.8	565.5					0.0	537.7	468.8	1,103.2	0.0	0.0
45.00		511.3	637.5					0.0	620.4	511.3	1,257.9	0.0	0.0
50.00		519.2	621.4					0.0	620.4	519.2	1,241.8	0.0	0.0
55.00		525.7	605.3					0.0	620.4	525.7	1,225.7	0.0	0.0
60.00		530.8	589.2					0.0	620.4	530.8	1,209.6	0.0	0.0
65.00		534.7	573.1					0.0	620.4	534.7	1,193.5	0.0	0.0
70.00	Bot - Section 3	460.3	557.0					0.0	620.4	460.3	1,177.4	0.0	0.0
73.50	Top - Section 2	273.8	691.1					0.0	434.3	273.8	1,125.3	0.0	0.0
75.00		354.8	131.2					0.0	186.1	354.8	317.4	0.0	0.0
80.00		522.4	429.1					0.0	620.4	522.4	1,049.5	0.0	0.0
85.00		495.2	416.2					102.5	620.4	597.6	1,036.6	0.0	0.0
90.00		294.5	403.4					104.2	620.4	398.7	1,023.8	0.0	0.0
91.00	Reinf. Top Reinf	241.9	79.1					21.0	124.1	262.9	203.2	0.0	0.0
95.00		430.7	311.4					84.8	496.3	515.5	807.7	0.0	0.0
100.00		284.5	377.6					107.5	620.4	391.9	998.0	0.0	0.0
101.00	Reinf. Top Reinf	209.9	74.0					21.7	124.1	231.6	198.1	0.0	0.0
105.00		284.4	290.8					0.0	416.2	284.4	706.9	0.0	0.0
108.00	Appurtenance(s)	201.9	212.7	3,640.1	0.0	2,475.6	3,322.6	0.0	312.1	3,842.0	3,847.3	0.0	0.0
110.00	Top - Section 3	280.2	139.2					0.0	184.1	280.2	323.3	0.0	0.0
115.00		255.9	255.0					0.0	460.3	255.9	715.3	0.0	0.0
116.42	Reinf. Top	197.3	70.5					0.0	130.4	197.3	200.9	0.0	0.0
120.00		335.8	174.9					0.0	114.5	335.8	289.3	0.0	0.0
125.00		377.4	235.7					0.0	159.7	377.4	395.4	0.0	0.0
130.00		362.5	226.0					0.0	159.7	362.5	385.8	0.0	0.0
135.00		356.1	216.4					0.0	159.7	356.1	376.1	0.0	0.0
140.00		246.1	206.7					0.0	159.7	246.1	366.4	0.0	0.0
142.00	Appurtenance(s)	161.1	80.0	3,751.0	0.0	0.0	4,612.0	0.0	63.9	3,912.1	4,755.8	0.0	0.0
145.00		239.1	117.1					0.0	66.7	239.1	183.8	0.0	0.0
150.00	Appurtenance(s)	147.6	187.4	1,215.5	0.0	0.0	2,400.0	0.0	111.1	1,363.2	2,698.5	0.0	0.0
								Totals:		22,856.8	41,331.2	0.00	0.00

Site Number: 302482 Code: ANSI/TIA-222-G

Site Name: North Haven CT 1, CT Engineering Number:13242626_C3_03 6/19/2020 2:27:04 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 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	-43.65	-25.75	0.00	-2,783.83	0.00	2,783.83	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.734
5.00	-42.07	-25.47	0.00	-2,655.09	0.00	2,655.09	3,114.09	1,557.04	4,644.49	2,293.74	0.16	-0.31	0.718
10.00	-40.44	-25.18	0.00	-2,527.77	0.00	2,527.77	3,070.24	1,535.12	4,479.04	2,212.03	0.65	-0.61	0.700
15.00	-38.83	-24.88	0.00	-2,401.89	0.00	2,401.89	3,025.35	1,512.68	4,314.96	2,131.00	1.46	-0.92	0.682
20.00	-37.24	-24.57	0.00	-2,277.52	0.00	2,277.52	2,979.43	1,489.71	4,152.36	2,050.69	2.59	-1.23	0.664
25.00	-35.68	-24.25	0.00	-2,154.68	0.00	2,154.68	2,932.46	1,466.23	3,991.34	1,971.17	4.05	-1.54	0.645
30.00	-34.17	-24.02	0.00	-2,033.44	0.00	2,033.44	2,874.86	1,437.43	3,819.25	1,886.18	5.84	-1.86	0.627
31.50	-33.69	-23.86	0.00	-1,997.40	0.00	1,997.40	2,853.94	1,426.97	3,763.56	1,858.68	6.43	-1.95	0.623
35.00	-32.20	-23.67	0.00	-1,913.91	0.00	1,913.91	2,805.14	1,402.57	3,635.21	1,795.29	7.95	-2.17	0.603
35.67	-31.87	-23.50	0.00	-1,898.12	0.00	1,898.12	2,247.90	1,123.95	2,973.33	1,468.42	8.25	-2.21	0.692
40.00	-30.67	-23.15	0.00	-1,796.29	0.00	1,796.29	2,218.43	1,109.21	2,871.69	1,418.22	10.38	-2.48	0.668
45.00	-29.31	-22.74	0.00	-1,680.56	0.00	1,680.56	2,183.45	1,091.72	2,755.25	1,360.71	13.15	-2.80	0.641
50.00	-27.97	-22.32	0.00	-1,566.84	0.00	1,566.84	2,147.43	1,073.71	2,639.81	1,303.70	16.25	-3.12	0.613
55.00	-26.66	-21.87	0.00	-1,455.27	0.00	1,455.27	2,110.37	1,055.18	2,525.48	1,247.24	19.69	-3.44	0.584
60.00	-25.37	-21.40	0.00	-1,345.94	0.00	1,345.94	2,072.27	1,036.13	2,412.36	1,191.37	23.45	-3.75	0.555
65.00	-24.10	-20.91	0.00	-1,238.94	0.00	1,238.94	2,033.13	1,016.56	2,300.54	1,136.15	27.54	-4.05	0.524
70.00	-22.87	-20.47	0.00	-1,134.39	0.00	1,134.39	1,981.90	990.95	2,177.99	1,075.63	31.95	-4.35	0.496
73.50	-21.72	-20.16	0.00	-1,062.75	0.00	1,062.75	1,473.88	736.94	1,624.33	802.19	35.21	-4.56	0.552
75.00	-21.37	-19.86	0.00	-1,032.51	0.00	1,032.51	1,466.20	733.10	1,601.53	790.93	36.66	-4.65	0.540
80.00	-20.27	-19.35	0.00	-933.23	0.00	933.23	1,439.92	719.96	1,525.89	753.58	41.68	-4.95	0.499
85.00	-19.20	-18.76	0.00	-836.48	0.00	836.48	1,412.60	706.30	1,450.91	716.55	47.01	-5.23	0.458
90.00	-18.16	-18.32	0.00	-742.70	0.00	742.70	1,384.24	692.12	1,376.67	679.88	52.63	-5.50	0.417
91.00	-17.94	-18.08	0.00	-724.38	0.00	724.38	1,378.45	689.22	1,361.92	672.60	53.79	-5.56	0.409
91.00	-17.94	-18.08	0.00	-724.38	0.00	724.38	1,378.45	689.22	1,361.92	672.60	53.79	-5.56	0.409
95.00	-17.12	-17.55	0.00	-652.08	0.00	652.08	1,354.85	677.42	1,303.28	643.64	58.53	-5.76	0.376
100.00	-16.13	-17.10	0.00	-564.33	0.00	564.33	1,324.41	662.20	1,230.84	607.87	64.69	-6.00	0.334
101.00	-15.92	-16.88	0.00	-547.23	0.00	547.23	1,318.20	659.10	1,216.47	600.77	65.95	-6.05	0.325
101.00	-15.92	-16.88	0.00	-547.23	0.00	547.23	1,318.20	659.10	1,216.47	600.77	65.95	-6.05	0.310
105.00	-15.21	-16.56	0.00	-479.72	0.00	479.72	1,292.93	646.47	1,159.45	572.61	71.09	-6.23	0.277
108.00	-11.78	-12.34	0.00	-427.58	0.00	427.58	1,265.65	632.82	1,110.24	548.30	75.03	-6.35	0.250
110.00	-11.47	-12.05	0.00	-402.90	0.00	402.90	1,247.06	623.53	1,077.67	532.22	77.70	-6.42	0.238
110.00	-11.47	-12.05	0.00	-402.90	0.00	402.90	853.21	426.60	741.71	366.30	77.70	-6.42	0.284
115.00	-10.76	-11.73	0.00	-342.66	0.00	342.66	834.97	417.48	698.64	345.03	84.51	-6.59	0.245
116.42	-10.57	-11.53	0.00	-326.04	0.00	326.04	829.61	414.80	686.50	339.04	86.47	-6.64	0.233
116.42	-10.57	-11.53	0.00	-326.04	0.00	326.04	829.61	414.80	686.50	339.04	86.47	-6.64	0.975
120.00	-10.25	-11.23	0.00	-284.73	0.00	284.73	815.69	407.84	655.93	323.94	91.49	-6.76	0.892
125.00	-9.79	-10.91	0.00	-228.57	0.00	228.57	795.37	397.68	613.66	303.07	98.90	-7.40	0.767
130.00	-9.36	-10.59	0.00	-174.01	0.00	174.01	774.01	387.00	571.96	282.47	106.93	-7.96	0.629
135.00	-8.96	-10.25	0.00	-121.08	0.00	121.08	751.61	375.80	530.91	262.20	115.50	-8.43	0.474
140.00	-8.60	-9.98	0.00	-69.85	0.00	69.85	728.17	364.08	490.63	242.30	124.50	-8.78	0.301
142.00	-4.49	-5.39	0.00	-49.90	0.00	49.90	714.97	357.48	472.41	233.31	128.19	-8.88	0.220
145.00	-4.34	-5.13	0.00	-33.72	0.00	33.72	694.05	347.03	445.02	219.78	133.79	-8.99	0.160
150.00	0.00	-4.39	0.00	-8.05	0.00	8.05	659.19	329.60	401.19	198.13	143.24	-9.10	0.041

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

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

Wind Importance Factor 1.00

Applied Segment Forces Summary

Seg Elev (ft)	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		224.9	0.0					0.0	0.0	224.9	0.0	0.0	0.0
5.00		445.0	676.9					0.0	406.5	445.0	1,083.4	0.0	0.0
10.00		435.5	662.4					0.0	465.3	435.5	1,127.7	0.0	0.0
15.00		425.9	647.9					0.0	465.3	425.9	1,113.2	0.0	0.0
20.00		416.4	633.4					0.0	465.3	416.4	1,098.7	0.0	0.0
25.00		406.9	618.9					0.0	465.3	406.9	1,084.2	0.0	0.0
30.00		260.9	604.5					0.0	465.3	260.9	1,069.8	0.0	0.0
31.50	Bot - Section 2	203.7	178.5					0.0	139.6	203.7	318.1	0.0	0.0
35.00		171.5	761.8					0.0	325.7	171.5	1,087.5	0.0	0.0
35.67	Top - Section 1	208.4	143.6					0.0	62.0	208.4	205.7	0.0	0.0
40.00		391.4	424.1					0.0	403.3	391.4	827.4	0.0	0.0
45.00		422.7	478.1					0.0	465.3	422.7	943.4	0.0	0.0
50.00		424.7	466.0					0.0	465.3	424.7	931.3	0.0	0.0
55.00		425.1	454.0					0.0	465.3	425.1	919.3	0.0	0.0
60.00		424.2	441.9					0.0	465.3	424.2	907.2	0.0	0.0
65.00		422.1	429.8					0.0	465.3	422.1	895.1	0.0	0.0
70.00	Bot - Section 3	359.4	417.8					0.0	465.3	359.4	883.1	0.0	0.0
73.50	Top - Section 2	212.5	518.3					0.0	325.7	212.5	844.0	0.0	0.0
75.00		273.9	98.4					0.0	139.6	273.9	238.0	0.0	0.0
80.00		459.7	321.8					0.0	465.3	459.7	787.1	0.0	0.0
85.00		495.2	312.2					102.5	465.3	597.6	777.5	0.0	0.0
90.00		294.5	302.5					104.2	465.3	398.7	767.8	0.0	0.0
91.00	Reinf. Top Reinf	241.9	59.3					21.0	93.1	262.9	152.4	0.0	0.0
95.00		430.7	233.5					84.8	372.2	515.5	605.8	0.0	0.0
100.00		284.5	283.2					107.5	465.3	391.9	748.5	0.0	0.0
101.00	Reinf. Top Reinf	201.8	55.5					21.7	93.1	223.5	148.5	0.0	0.0
105.00		269.3	218.1					0.0	312.1	269.3	530.2	0.0	0.0
108.00	Appurtenance(s)	189.8	159.5	3,640.1	0.0	2,475.6	2,491.9	0.0	234.1	3,829.9	2,885.5	0.0	0.0
110.00	Top - Section 3	260.7	104.4					0.0	138.1	260.7	242.5	0.0	0.0
115.00		237.0	191.3					0.0	345.2	237.0	536.5	0.0	0.0
116.42	Reinf. Top	180.6	52.9					0.0	97.8	180.6	150.7	0.0	0.0
120.00		304.6	131.1					0.0	85.8	304.6	217.0	0.0	0.0
125.00		346.1	176.8					0.0	119.8	346.1	296.6	0.0	0.0
130.00		335.5	169.5					0.0	119.8	335.5	289.3	0.0	0.0
135.00		324.5	162.3					0.0	119.8	324.5	282.1	0.0	0.0
140.00		221.6	155.0					0.0	119.8	221.6	274.8	0.0	0.0
142.00	Appurtenance(s)	153.6	60.0	3,751.0	0.0	0.0	3,459.0	0.0	47.9	3,904.7	3,566.9	0.0	0.0
145.00		239.1	87.8					0.0	50.0	239.1	137.8	0.0	0.0
150.00	Appurtenance(s)	147.6	140.6	1,215.5	0.0	0.0	1,800.0	0.0	83.3	1,363.2	2,023.9	0.0	0.0
								Totals:		21,221.6	30,998.4	0.00	0.00

Site Number: 302482 Code: ANSI/TIA-222-G

Site Name: North Haven CT 1, CT Engineering Number:13242626_C3_03 6/19/2020 2:27:08 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 27 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	-32.73	-24.11	0.00	-2,630.02	0.00	2,630.02	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.692
5.00	-31.53	-23.82	0.00	-2,509.49	0.00	2,509.49	3,114.09	1,557.04	4,644.49	2,293.74	0.16	-0.29	0.676
10.00	-30.28	-23.53	0.00	-2,390.41	0.00	2,390.41	3,070.24	1,535.12	4,479.04	2,212.03	0.61	-0.58	0.661
15.00	-29.06	-23.24	0.00	-2,272.77	0.00	2,272.77	3,025.35	1,512.68	4,314.96	2,131.00	1.38	-0.87	0.644
20.00	-27.85	-22.94	0.00	-2,156.58	0.00	2,156.58	2,979.43	1,489.71	4,152.36	2,050.69	2.45	-1.17	0.627
25.00	-26.66	-22.65	0.00	-2,041.86	0.00	2,041.86	2,932.46	1,466.23	3,991.34	1,971.17	3.83	-1.46	0.610
30.00	-25.52	-22.44	0.00	-1,928.61	0.00	1,928.61	2,874.86	1,437.43	3,819.25	1,886.18	5.52	-1.76	0.593
31.50	-25.15	-22.30	0.00	-1,894.95	0.00	1,894.95	2,853.94	1,426.97	3,763.56	1,858.68	6.09	-1.85	0.589
35.00	-24.02	-22.14	0.00	-1,816.91	0.00	1,816.91	2,805.14	1,402.57	3,635.21	1,795.29	7.52	-2.05	0.571
35.67	-23.77	-21.99	0.00	-1,802.15	0.00	1,802.15	2,247.90	1,123.95	2,973.33	1,468.42	7.81	-2.09	0.655
40.00	-22.85	-21.67	0.00	-1,706.88	0.00	1,706.88	2,218.43	1,109.21	2,871.69	1,418.22	9.82	-2.35	0.633
45.00	-21.81	-21.33	0.00	-1,598.51	0.00	1,598.51	2,183.45	1,091.72	2,755.25	1,360.71	12.45	-2.65	0.608
50.00	-20.79	-20.97	0.00	-1,491.87	0.00	1,491.87	2,147.43	1,073.71	2,639.81	1,303.70	15.39	-2.96	0.582
55.00	-19.79	-20.60	0.00	-1,387.03	0.00	1,387.03	2,110.37	1,055.18	2,525.48	1,247.24	18.65	-3.26	0.555
60.00	-18.81	-20.22	0.00	-1,284.05	0.00	1,284.05	2,072.27	1,036.13	2,412.36	1,191.37	22.22	-3.56	0.528
65.00	-17.84	-19.83	0.00	-1,182.96	0.00	1,182.96	2,033.13	1,016.56	2,300.54	1,136.15	26.10	-3.85	0.499
70.00	-16.90	-19.48	0.00	-1,083.82	0.00	1,083.82	1,981.90	990.95	2,177.99	1,075.63	30.28	-4.13	0.473
73.50	-16.03	-19.24	0.00	-1,015.64	0.00	1,015.64	1,473.88	736.94	1,624.33	802.19	33.38	-4.33	0.526
75.00	-15.75	-19.00	0.00	-986.78	0.00	986.78	1,466.20	733.10	1,601.53	790.93	34.76	-4.42	0.514
80.00	-14.92	-18.56	0.00	-891.76	0.00	891.76	1,439.92	719.96	1,525.89	753.58	39.53	-4.70	0.476
85.00	-14.11	-17.96	0.00	-798.97	0.00	798.97	1,412.60	706.30	1,450.91	716.55	44.60	-4.97	0.436
90.00	-13.33	-17.53	0.00	-709.17	0.00	709.17	1,384.24	692.12	1,376.67	679.88	49.94	-5.23	0.397
91.00	-13.17	-17.28	0.00	-691.64	0.00	691.64	1,378.45	689.22	1,361.92	672.60	51.04	-5.29	0.389
91.00	-13.17	-17.28	0.00	-691.64	0.00	691.64	1,378.45	689.22	1,361.92	672.60	51.04	-5.29	0.389
95.00	-12.55	-16.76	0.00	-622.50	0.00	622.50	1,354.85	677.42	1,303.28	643.64	55.55	-5.48	0.357
100.00	-11.80	-16.33	0.00	-538.69	0.00	538.69	1,324.41	662.20	1,230.84	607.87	61.41	-5.71	0.317
101.00	-11.65	-16.11	0.00	-522.37	0.00	522.37	1,318.20	659.10	1,216.47	600.77	62.61	-5.76	0.309
101.00	-11.65	-16.11	0.00	-522.37	0.00	522.37	1,318.20	659.10	1,216.47	600.77	62.61	-5.76	0.295
105.00	-11.11	-15.82	0.00	-457.92	0.00	457.92	1,292.93	646.47	1,159.45	572.61	67.50	-5.92	0.263
108.00	-8.62	-11.72	0.00	-408.00	0.00	408.00	1,265.65	632.82	1,110.24	548.30	71.25	-6.04	0.237
110.00	-8.38	-11.45	0.00	-384.56	0.00	384.56	1,247.06	623.53	1,077.67	532.22	73.79	-6.11	0.227
110.00	-8.38	-11.45	0.00	-384.56	0.00	384.56	853.21	426.60	741.71	366.30	73.79	-6.11	0.270
115.00	-7.86	-11.17	0.00	-327.30	0.00	327.30	834.97	417.48	698.64	345.03	80.26	-6.27	0.232
116.42	-7.71	-10.99	0.00	-311.47	0.00	311.47	829.61	414.80	686.50	339.04	82.13	-6.32	0.222
116.42	-7.71	-10.99	0.00	-311.47	0.00	311.47	829.61	414.80	686.50	339.04	82.13	-6.32	0.929
120.00	-7.46	-10.71	0.00	-272.09	0.00	272.09	815.69	407.84	655.93	323.94	86.91	-6.43	0.850
125.00	-7.10	-10.40	0.00	-218.55	0.00	218.55	795.37	397.68	613.66	303.07	93.96	-7.04	0.731
130.00	-6.77	-10.09	0.00	-166.53	0.00	166.53	774.01	387.00	571.96	282.47	101.61	-7.58	0.599
135.00	-6.47	-9.78	0.00	-116.06	0.00	116.06	751.61	375.80	530.91	262.20	109.78	-8.03	0.452
140.00	-6.19	-9.54	0.00	-67.18	0.00	67.18	728.17	364.08	490.63	242.30	118.36	-8.37	0.286
142.00	-3.23	-5.16	0.00	-48.09	0.00	48.09	714.97	357.48	472.41	233.31	121.87	-8.46	0.211
145.00	-3.12	-4.91	0.00	-32.61	0.00	32.61	694.05	347.03	445.02	219.78	127.21	-8.57	0.153
150.00	0.00	-4.39	0.00	-8.05	0.00	8.05	659.19	329.60	401.19	198.13	136.22	-8.67	0.041

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 27 Iterations

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		47.5	0.0					0.0	0.0	47.5	0.0	0.0	0.0
5.00		94.4	1,185.8					120.4	623.4	214.8	1,809.2	0.0	0.0
10.00		93.0	1,193.9					224.6	758.6	317.5	1,952.5	0.0	0.0
15.00		91.4	1,184.5					222.8	767.3	314.1	1,951.8	0.0	0.0
20.00		89.7	1,169.5					220.5	773.3	310.2	1,942.8	0.0	0.0
25.00		87.9	1,151.4					218.0	778.1	305.9	1,929.5	0.0	0.0
30.00		56.5	1,131.5					215.4	781.9	271.9	1,913.4	0.0	0.0
31.50	Bot - Section 2	44.2	336.1					64.6	235.3	108.8	571.4	0.0	0.0
35.00		37.2	1,247.0					153.1	550.0	190.3	1,797.1	0.0	0.0
35.67	Top - Section 1	45.3	235.7					29.5	104.9	74.8	340.6	0.0	0.0
40.00		85.3	849.1					196.7	683.3	282.0	1,532.4	0.0	0.0
45.00		92.4	960.9					231.7	790.8	324.1	1,751.7	0.0	0.0
50.00		93.1	940.7					235.9	793.1	329.0	1,733.9	0.0	0.0
55.00		93.5	920.0					239.3	795.3	332.8	1,715.3	0.0	0.0
60.00		93.6	898.9					242.0	797.3	335.6	1,696.2	0.0	0.0
65.00		93.5	877.4					244.1	799.1	337.6	1,676.5	0.0	0.0
70.00	Bot - Section 3	79.8	855.6					245.8	800.8	325.6	1,656.4	0.0	0.0
73.50	Top - Section 2	47.2	901.1					172.8	561.5	220.0	1,462.6	0.0	0.0
75.00		61.1	220.8					75.0	240.9	136.1	461.7	0.0	0.0
80.00		93.5	720.8					250.5	803.9	344.0	1,524.7	0.0	0.0
85.00		92.6	701.5					251.0	805.4	343.6	1,506.9	0.0	0.0
90.00		55.2	682.0					251.1	806.7	306.3	1,488.8	0.0	0.0
91.00	Reinf. Top Reinf	45.5	134.7					50.2	161.5	95.7	296.2	0.0	0.0
95.00		81.3	529.0					200.7	646.5	282.0	1,175.5	0.0	0.0
100.00		53.8	642.5					250.4	809.3	304.2	1,451.8	0.0	0.0
101.00	Reinf. Top Reinf	44.3	126.8					50.0	162.0	94.2	288.8	0.0	0.0
105.00		61.5	497.1					187.9	553.7	249.5	1,050.8	0.0	0.0
108.00	Appurtenance(s)	43.5	364.9	898.3	0.0	548.6	6,326.0	140.4	415.7	1,082.3	7,106.6	0.0	0.0
110.00	Top - Section 3	60.0	239.6					93.3	253.4	153.4	492.9	0.0	0.0
115.00		54.7	498.2					232.3	634.1	287.0	1,132.3	0.0	0.0
116.42	Reinf. Top	41.9	138.9					65.5	179.9	107.4	318.8	0.0	0.0
120.00		70.9	343.8					165.1	239.8	236.1	583.6	0.0	0.0
125.00		81.0	463.7					216.4	290.6	297.5	754.3	0.0	0.0
130.00		79.1	446.3					211.1	280.0	290.2	726.3	0.0	0.0
135.00		77.1	428.8					208.7	280.6	285.8	709.4	0.0	0.0
140.00		53.0	411.3					206.1	281.2	259.1	692.4	0.0	0.0
142.00	Appurtenance(s)	37.0	160.6	931.5	0.0	0.0	8,305.4	81.7	112.6	1,050.2	8,578.6	0.0	0.0
145.00		57.9	235.1					101.4	115.9	159.3	350.9	0.0	0.0
150.00	Appurtenance(s)	35.9	375.8	383.3	0.0	0.0	3,510.3	166.4	193.4	585.6	4,079.5	0.0	0.0
								Totals:		11,591.8	62,204.0	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 27 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	-67.52	-12.32	0.00	-1,265.49	0.00	1,265.49	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.344
5.00	-65.69	-12.26	0.00	-1,203.90	0.00	1,203.90	3,114.09	1,557.04	4,644.49	2,293.74	0.07	-0.14	0.336
10.00	-63.70	-12.09	0.00	-1,142.61	0.00	1,142.61	3,070.24	1,535.12	4,479.04	2,212.03	0.30	-0.28	0.327
15.00	-61.73	-11.91	0.00	-1,082.16	0.00	1,082.16	3,025.35	1,512.68	4,314.96	2,131.00	0.66	-0.42	0.317
20.00	-59.76	-11.73	0.00	-1,022.59	0.00	1,022.59	2,979.43	1,489.71	4,152.36	2,050.69	1.17	-0.56	0.308
25.00	-57.80	-11.55	0.00	-963.92	0.00	963.92	2,932.46	1,466.23	3,991.34	1,971.17	1.83	-0.70	0.298
30.00	-55.88	-11.34	0.00	-906.19	0.00	906.19	2,874.86	1,437.43	3,819.25	1,886.18	2.64	-0.84	0.289
31.50	-55.29	-11.29	0.00	-889.19	0.00	889.19	2,853.94	1,426.97	3,763.56	1,858.68	2.91	-0.88	0.287
35.00	-53.49	-11.12	0.00	-849.69	0.00	849.69	2,805.14	1,402.57	3,635.21	1,795.29	3.59	-0.98	0.277
35.67	-53.14	-11.10	0.00	-842.27	0.00	842.27	2,247.90	1,123.95	2,973.33	1,468.42	3.73	-0.99	0.318
40.00	-51.58	-10.91	0.00	-794.15	0.00	794.15	2,218.43	1,109.21	2,871.69	1,418.22	4.68	-1.11	0.306
45.00	-49.81	-10.67	0.00	-739.60	0.00	739.60	2,183.45	1,091.72	2,755.25	1,360.71	5.92	-1.25	0.292
50.00	-48.06	-10.42	0.00	-686.22	0.00	686.22	2,147.43	1,073.71	2,639.81	1,303.70	7.31	-1.39	0.278
55.00	-46.33	-10.16	0.00	-634.11	0.00	634.11	2,110.37	1,055.18	2,525.48	1,247.24	8.85	-1.53	0.264
60.00	-44.62	-9.88	0.00	-583.33	0.00	583.33	2,072.27	1,036.13	2,412.36	1,191.37	10.53	-1.67	0.250
65.00	-42.94	-9.59	0.00	-533.94	0.00	533.94	2,033.13	1,016.56	2,300.54	1,136.15	12.35	-1.80	0.235
70.00	-41.27	-9.29	0.00	-486.00	0.00	486.00	1,981.90	990.95	2,177.99	1,075.63	14.30	-1.93	0.222
73.50	-39.81	-9.06	0.00	-453.50	0.00	453.50	1,473.88	736.94	1,624.33	802.19	15.75	-2.02	0.246
75.00	-39.34	-8.96	0.00	-439.91	0.00	439.91	1,466.20	733.10	1,601.53	790.93	16.39	-2.06	0.241
80.00	-37.81	-8.65	0.00	-395.09	0.00	395.09	1,439.92	719.96	1,525.89	753.58	18.61	-2.18	0.222
85.00	-36.30	-8.32	0.00	-351.86	0.00	351.86	1,412.60	706.30	1,450.91	716.55	20.96	-2.30	0.203
90.00	-34.82	-7.99	0.00	-310.27	0.00	310.27	1,384.24	692.12	1,376.67	679.88	23.43	-2.42	0.184
91.00	-34.52	-7.92	0.00	-302.28	0.00	302.28	1,378.45	689.22	1,361.92	672.60	23.94	-2.44	0.180
91.00	-34.52	-7.92	0.00	-302.28	0.00	302.28	1,378.45	689.22	1,361.92	672.60	23.94	-2.44	0.180
95.00	-33.34	-7.64	0.00	-270.62	0.00	270.62	1,354.85	677.42	1,303.28	643.64	26.02	-2.52	0.165
100.00	-31.90	-7.30	0.00	-232.43	0.00	232.43	1,324.41	662.20	1,230.84	607.87	28.72	-2.62	0.146
101.00	-31.61	-7.22	0.00	-225.13	0.00	225.13	1,318.20	659.10	1,216.47	600.77	29.27	-2.64	0.143
101.00	-31.61	-7.22	0.00	-225.13	0.00	225.13	1,318.20	659.10	1,216.47	600.77	29.27	-2.64	0.138
105.00	-30.56	-6.95	0.00	-196.25	0.00	196.25	1,292.93	646.47	1,159.45	572.61	31.52	-2.72	0.123
108.00	-23.51	-5.55	0.00	-174.85	0.00	174.85	1,265.65	632.82	1,110.24	548.30	33.24	-2.76	0.110
110.00	-23.02	-5.39	0.00	-163.75	0.00	163.75	1,247.06	623.53	1,077.67	532.22	34.40	-2.79	0.105
110.00	-23.02	-5.39	0.00	-163.75	0.00	163.75	853.21	426.60	741.71	366.30	34.40	-2.79	0.125
115.00	-21.90	-5.06	0.00	-136.80	0.00	136.80	834.97	417.48	698.64	345.03	37.37	-2.86	0.107
116.42	-21.59	-4.95	0.00	-129.63	0.00	129.63	829.61	414.80	686.50	339.04	38.22	-2.88	0.102
116.42	-21.59	-4.95	0.00	-129.63	0.00	129.63	829.61	414.80	686.50	339.04	38.22	-2.88	0.409
120.00	-21.00	-4.74	0.00	-111.88	0.00	111.88	815.69	407.84	655.93	323.94	40.40	-2.93	0.371
125.00	-20.25	-4.49	0.00	-88.15	0.00	88.15	795.37	397.68	613.66	303.07	43.61	-3.18	0.316
130.00	-19.52	-4.23	0.00	-65.71	0.00	65.71	774.01	387.00	571.96	282.47	47.05	-3.39	0.258
135.00	-18.82	-3.95	0.00	-44.58	0.00	44.58	751.61	375.80	530.91	262.20	50.70	-3.57	0.195
140.00	-18.14	-3.67	0.00	-24.85	0.00	24.85	728.17	364.08	490.63	242.30	54.52	-3.70	0.128
142.00	-9.65	-2.07	0.00	-17.52	0.00	17.52	714.97	357.48	472.41	233.31	56.07	-3.73	0.089
145.00	-9.31	-1.89	0.00	-11.30	0.00	11.30	694.05	347.03	445.02	219.78	58.43	-3.77	0.065
150.00	0.00	-1.27	0.00	-1.83	0.00	1.83	659.19	329.60	401.19	198.13	62.40	-3.80	0.009

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 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		48.1	0.0					0.0	0.0	48.1	0.0	0.0	0.0
5.00		95.2	752.1					0.0	451.7	95.2	1,203.8	0.0	0.0
10.00		93.2	736.0					0.0	517.0	93.2	1,253.0	0.0	0.0
15.00		91.1	719.9					0.0	517.0	91.1	1,236.9	0.0	0.0
20.00		89.1	703.8					0.0	517.0	89.1	1,220.8	0.0	0.0
25.00		87.1	687.7					0.0	517.0	87.1	1,204.7	0.0	0.0
30.00		55.8	671.6					0.0	517.0	55.8	1,188.6	0.0	0.0
31.50	Bot - Section 2	43.6	198.4					0.0	155.1	43.6	353.5	0.0	0.0
35.00		36.7	846.4					0.0	361.9	36.7	1,208.3	0.0	0.0
35.67	Top - Section 1	44.6	159.6					0.0	68.9	44.6	228.5	0.0	0.0
40.00		83.8	471.2					0.0	448.1	83.8	919.3	0.0	0.0
45.00		90.5	531.2					0.0	517.0	90.5	1,048.2	0.0	0.0
50.00		90.9	517.8					0.0	517.0	90.9	1,034.8	0.0	0.0
55.00		91.0	504.4					0.0	517.0	91.0	1,021.4	0.0	0.0
60.00		90.8	491.0					0.0	517.0	90.8	1,008.0	0.0	0.0
65.00		90.3	477.6					0.0	517.0	90.3	994.6	0.0	0.0
70.00	Bot - Section 3	76.9	464.2					0.0	517.0	76.9	981.2	0.0	0.0
73.50	Top - Section 2	45.5	575.9					0.0	361.9	45.5	937.8	0.0	0.0
75.00		58.6	109.4					0.0	155.1	58.6	264.5	0.0	0.0
80.00		98.4	357.6					0.0	517.0	98.4	874.6	0.0	0.0
85.00		105.9	346.9					21.9	517.0	127.9	863.9	0.0	0.0
90.00		63.0	336.1					22.3	517.0	85.3	853.1	0.0	0.0
91.00	Reinf. Top Reinf	51.7	65.9					4.5	103.4	56.2	169.3	0.0	0.0
95.00		92.1	259.5					18.1	413.6	110.3	673.1	0.0	0.0
100.00		60.9	314.7					23.0	517.0	83.9	831.7	0.0	0.0
101.00	Reinf. Top Reinf	43.2	61.6					4.6	103.4	47.8	165.0	0.0	0.0
105.00		57.6	242.3					0.0	346.8	57.6	589.1	0.0	0.0
108.00	Appurtenance(s)	40.6	177.2	778.8	0.0	529.7	2,768.8	0.0	260.1	819.4	3,206.1	0.0	0.0
110.00	Top - Section 3	55.8	116.0					0.0	153.4	55.8	269.4	0.0	0.0
115.00		50.7	212.5					0.0	383.6	50.7	596.1	0.0	0.0
116.42	Reinf. Top	38.6	58.7					0.0	108.7	38.6	167.4	0.0	0.0
120.00		65.2	145.7					0.0	95.4	65.2	241.1	0.0	0.0
125.00		74.0	196.4					0.0	133.1	74.0	329.5	0.0	0.0
130.00		71.8	188.4					0.0	133.1	71.8	321.5	0.0	0.0
135.00		69.4	180.3					0.0	133.1	69.4	313.4	0.0	0.0
140.00		47.4	172.3					0.0	133.1	47.4	305.4	0.0	0.0
142.00	Appurtenance(s)	32.9	66.7	802.6	0.0	0.0	3,843.3	0.0	53.2	835.4	3,963.2	0.0	0.0
145.00		51.2	97.6					0.0	55.6	51.2	153.1	0.0	0.0
150.00	Appurtenance(s)	31.6	156.2	260.1	0.0	0.0	2,000.0	0.0	92.6	291.7	2,248.8	0.0	0.0
								Totals:		4,540.59	34,442.6	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 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	-36.43	-5.16	0.00	-568.08	0.00	568.08	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.156
5.00	-35.22	-5.10	0.00	-542.29	0.00	542.29	3,114.09	1,557.04	4,644.49	2,293.74	0.03	-0.06	0.152
10.00	-33.97	-5.04	0.00	-516.78	0.00	516.78	3,070.24	1,535.12	4,479.04	2,212.03	0.13	-0.13	0.149
15.00	-32.72	-4.99	0.00	-491.56	0.00	491.56	3,025.35	1,512.68	4,314.96	2,131.00	0.30	-0.19	0.145
20.00	-31.50	-4.93	0.00	-466.64	0.00	466.64	2,979.43	1,489.71	4,152.36	2,050.69	0.53	-0.25	0.141
25.00	-30.29	-4.87	0.00	-442.00	0.00	442.00	2,932.46	1,466.23	3,991.34	1,971.17	0.83	-0.32	0.138
30.00	-29.10	-4.83	0.00	-417.67	0.00	417.67	2,874.86	1,437.43	3,819.25	1,886.18	1.19	-0.38	0.134
31.50	-28.74	-4.80	0.00	-410.43	0.00	410.43	2,853.94	1,426.97	3,763.56	1,858.68	1.32	-0.40	0.133
35.00	-27.53	-4.76	0.00	-393.64	0.00	393.64	2,805.14	1,402.57	3,635.21	1,795.29	1.63	-0.44	0.129
35.67	-27.30	-4.73	0.00	-390.47	0.00	390.47	2,247.90	1,123.95	2,973.33	1,468.42	1.69	-0.45	0.148
40.00	-26.38	-4.67	0.00	-369.97	0.00	369.97	2,218.43	1,109.21	2,871.69	1,418.22	2.12	-0.51	0.143
45.00	-25.32	-4.60	0.00	-346.62	0.00	346.62	2,183.45	1,091.72	2,755.25	1,360.71	2.69	-0.57	0.138
50.00	-24.28	-4.52	0.00	-323.64	0.00	323.64	2,147.43	1,073.71	2,639.81	1,303.70	3.33	-0.64	0.132
55.00	-23.26	-4.45	0.00	-301.02	0.00	301.02	2,110.37	1,055.18	2,525.48	1,247.24	4.03	-0.71	0.126
60.00	-22.25	-4.37	0.00	-278.79	0.00	278.79	2,072.27	1,036.13	2,412.36	1,191.37	4.81	-0.77	0.120
65.00	-21.25	-4.29	0.00	-256.95	0.00	256.95	2,033.13	1,016.56	2,300.54	1,136.15	5.65	-0.83	0.113
70.00	-20.27	-4.21	0.00	-235.52	0.00	235.52	1,981.90	990.95	2,177.99	1,075.63	6.56	-0.90	0.108
73.50	-19.33	-4.16	0.00	-220.77	0.00	220.77	1,473.88	736.94	1,624.33	802.19	7.23	-0.94	0.120
75.00	-19.06	-4.11	0.00	-214.52	0.00	214.52	1,466.20	733.10	1,601.53	790.93	7.53	-0.96	0.117
80.00	-18.18	-4.02	0.00	-193.95	0.00	193.95	1,439.92	719.96	1,525.89	753.58	8.56	-1.02	0.109
85.00	-17.32	-3.89	0.00	-173.85	0.00	173.85	1,412.60	706.30	1,450.91	716.55	9.66	-1.08	0.100
90.00	-16.46	-3.80	0.00	-154.39	0.00	154.39	1,384.24	692.12	1,376.67	679.88	10.82	-1.13	0.091
91.00	-16.29	-3.75	0.00	-150.58	0.00	150.58	1,378.45	689.22	1,361.92	672.60	11.06	-1.15	0.089
91.00	-16.29	-3.75	0.00	-150.58	0.00	150.58	1,378.45	689.22	1,361.92	672.60	11.06	-1.15	0.089
95.00	-15.62	-3.64	0.00	-135.59	0.00	135.59	1,354.85	677.42	1,303.28	643.64	12.04	-1.19	0.082
100.00	-14.79	-3.54	0.00	-117.39	0.00	117.39	1,324.41	662.20	1,230.84	607.87	13.31	-1.24	0.073
101.00	-14.62	-3.50	0.00	-113.85	0.00	113.85	1,318.20	659.10	1,216.47	600.77	13.57	-1.25	0.072
101.00	-14.62	-3.50	0.00	-113.85	0.00	113.85	1,318.20	659.10	1,216.47	600.77	13.57	-1.25	0.069
105.00	-14.03	-3.44	0.00	-99.85	0.00	99.85	1,292.93	646.47	1,159.45	572.61	14.64	-1.29	0.062
108.00	-10.85	-2.55	0.00	-89.01	0.00	89.01	1,265.65	632.82	1,110.24	548.30	15.45	-1.31	0.056
110.00	-10.58	-2.49	0.00	-83.92	0.00	83.92	1,247.06	623.53	1,077.67	532.22	16.00	-1.33	0.053
110.00	-10.58	-2.49	0.00	-83.92	0.00	83.92	853.21	426.60	741.71	366.30	16.00	-1.33	0.064
115.00	-9.98	-2.43	0.00	-71.46	0.00	71.46	834.97	417.48	698.64	345.03	17.41	-1.36	0.055
116.42	-9.82	-2.39	0.00	-68.02	0.00	68.02	829.61	414.80	686.50	339.04	17.82	-1.37	0.053
116.42	-9.82	-2.39	0.00	-68.02	0.00	68.02	829.61	414.80	686.50	339.04	17.82	-1.37	0.212
120.00	-9.57	-2.33	0.00	-59.45	0.00	59.45	815.69	407.84	655.93	323.94	18.86	-1.40	0.195
125.00	-9.24	-2.27	0.00	-47.79	0.00	47.79	795.37	397.68	613.66	303.07	20.39	-1.53	0.169
130.00	-8.92	-2.21	0.00	-36.43	0.00	36.43	774.01	387.00	571.96	282.47	22.06	-1.65	0.141
135.00	-8.60	-2.14	0.00	-25.40	0.00	25.40	751.61	375.80	530.91	262.20	23.84	-1.75	0.108
140.00	-8.30	-2.09	0.00	-14.69	0.00	14.69	728.17	364.08	490.63	242.30	25.71	-1.82	0.072
142.00	-4.36	-1.13	0.00	-10.50	0.00	10.50	714.97	357.48	472.41	233.31	26.48	-1.84	0.051
145.00	-4.21	-1.08	0.00	-7.11	0.00	7.11	694.05	347.03	445.02	219.78	27.64	-1.86	0.038
150.00	0.00	-0.94	0.00	-1.72	0.00	1.72	659.19	329.60	401.19	198.13	29.61	-1.89	0.009

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	3.15	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	36.44	k
Seismic Base Shear (E):	1.42	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)
38	147.50	249	5,413	0.017	24	308
37	143.50	153	3,153	0.010	14	190
36	141.00	120	2,384	0.007	10	148
35	137.50	305	5,773	0.018	25	378
34	132.50	313	5,502	0.017	24	388
33	127.50	321	5,226	0.016	23	398
32	122.50	330	4,945	0.015	22	408
31	118.21	241	3,369	0.010	15	299
30	115.71	167	2,242	0.007	10	207
29	112.50	596	7,544	0.023	33	738
28	109.00	269	3,201	0.010	14	334
27	106.50	437	4,960	0.015	22	542
26	103.00	589	6,250	0.019	27	730
25	100.50	165	1,667	0.005	7	204
24	97.50	832	7,906	0.024	35	1,030
23	93.00	673	5,821	0.018	25	834
22	90.50	169	1,387	0.004	6	210
21	87.50	853	6,532	0.020	29	1,057
20	82.50	864	5,880	0.018	26	1,070
19	77.50	875	5,253	0.016	23	1,083
18	74.25	264	1,458	0.004	6	328
17	71.75	938	4,828	0.015	21	1,161
16	67.50	981	4,470	0.014	20	1,215

15	62.50	995	3,885	0.012	17	1,232
14	57.50	1,008	3,333	0.010	15	1,248
13	52.50	1,021	2,815	0.009	12	1,265
12	47.50	1,035	2,335	0.007	10	1,282
11	42.50	1,048	1,893	0.006	8	1,298
10	37.83	919	1,316	0.004	6	1,138
9	35.33	229	285	0.001	1	283
8	33.25	1,208	1,336	0.004	6	1,496
7	30.75	353	334	0.001	1	438
6	27.50	1,189	899	0.003	4	1,472
5	22.50	1,205	610	0.002	3	1,492
4	17.50	1,221	374	0.001	2	1,512
3	12.50	1,237	193	0.001	1	1,532
2	7.50	1,253	70	0.000	0	1,552
1	2.50	1,204	8	0.000	0	1,491
Powerwave Allgon 702	150.00	13	297	0.001	1	16
Kaelus DBC0061F1V51-	150.00	76	1,721	0.005	8	95
Kaelus DBC0061F1V51-	150.00	76	1,721	0.005	8	95
Kathrein Scala 782-1	150.00	38	864	0.003	4	48
Powerwave Allgon LGP	150.00	85	1,904	0.006	8	105
Raycap DC6-48-60-18-	150.00	40	900	0.003	4	50
Raycap DC6-48-60-18-	150.00	20	450	0.001	2	25
Ericsson RRUS 8843 B	150.00	216	4,860	0.015	21	267
Ericsson RRUS 4478 B	150.00	180	4,043	0.012	18	223
Ericsson RRUS 4449 B	150.00	213	4,793	0.015	21	264
Ericsson RRUS A2 B2	150.00	66	1,485	0.005	7	82
Ericsson RRUS 32 B30	150.00	180	4,050	0.012	18	223
Quintel QS66512-2	150.00	333	7,493	0.023	33	412
CCI OPA-65R-LCUU-H6	150.00	219	4,928	0.015	22	271
CCI DMP65R-BU6DA	150.00	238	5,360	0.017	23	295
Round Platform w/ Ha	150.00	2,000	45,000	0.139	197	2,477
DragonWave Horizon C	142.00	32	641	0.002	3	39
DragonWave A-ANT-23G	142.00	15	302	0.001	1	19
Alcatel-Lucent RRH2x	142.00	317	6,400	0.020	28	393
Alcatel-Lucent 1900	142.00	180	3,630	0.011	16	223
Alcatel-Lucent TD-RR	142.00	210	4,234	0.013	19	260
Generic RRU (Model T	142.00	165	3,327	0.010	15	204
DragonWave A-ANT-11G	142.00	27	544	0.002	2	33
RFS APXVTM14-ALU-I20	142.00	169	3,400	0.010	15	209
DragonWave A-ANT-11G	142.00	48	960	0.003	4	59
Commscope NNVV-65B-R	142.00	232	4,682	0.014	21	288
Platform with Handra	142.00	2,449	49,376	0.152	216	3,032
RFS FD9R6004/1C-3L	108.00	19	217	0.001	1	23
RFS FD9R6004/2C-3L	108.00	16	182	0.001	1	19
Nokia B5 RRH4x40-850	108.00	146	1,697	0.005	7	180
Alcatel-Lucent RRH 2	108.00	119	1,386	0.004	6	147
Alcatel-Lucent RRH2x	108.00	170	1,984	0.006	9	211
Alcatel-Lucent B66 R	108.00	201	2,344	0.007	10	249
Commscope HBX-6516DS	108.00	31	364	0.001	2	39
RFS DB-T1-6Z-8AB-0Z	108.00	88	1,026	0.003	4	109
Commscope LNX-6514DS	108.00	116	1,358	0.004	6	144
Commscope JAHH-65B-R	108.00	364	4,241	0.013	19	450
Round Low Profile Pl	108.00	1,500	17,496	0.054	77	1,858
		36,437	324,509	1.000	1,421	45,123

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)
38	147.50	249	5,413	0.017	24	214

37	143.50	153	3,153	0.010	14	132
36	141.00	120	2,384	0.007	10	103
35	137.50	305	5,773	0.018	25	263
34	132.50	313	5,502	0.017	24	270
33	127.50	321	5,226	0.016	23	277
32	122.50	330	4,945	0.015	22	284
31	118.21	241	3,369	0.010	15	208
30	115.71	167	2,242	0.007	10	144
29	112.50	596	7,544	0.023	33	514
28	109.00	269	3,201	0.010	14	232
27	106.50	437	4,960	0.015	22	377
26	103.00	589	6,250	0.019	27	508
25	100.50	165	1,667	0.005	7	142
24	97.50	832	7,906	0.024	35	717
23	93.00	673	5,821	0.018	25	580
22	90.50	169	1,387	0.004	6	146
21	87.50	853	6,532	0.020	29	735
20	82.50	864	5,880	0.018	26	744
19	77.50	875	5,253	0.016	23	754
18	74.25	264	1,458	0.004	6	228
17	71.75	938	4,828	0.015	21	808
16	67.50	981	4,470	0.014	20	845
15	62.50	995	3,885	0.012	17	857
14	57.50	1,008	3,333	0.010	15	868
13	52.50	1,021	2,815	0.009	12	880
12	47.50	1,035	2,335	0.007	10	892
11	42.50	1,048	1,893	0.006	8	903
10	37.83	919	1,316	0.004	6	792
9	35.33	229	285	0.001	1	197
8	33.25	1,208	1,336	0.004	6	1,041
7	30.75	353	334	0.001	1	305
6	27.50	1,189	899	0.003	4	1,024
5	22.50	1,205	610	0.002	3	1,038
4	17.50	1,221	374	0.001	2	1,052
3	12.50	1,237	193	0.001	1	1,066
2	7.50	1,253	70	0.000	0	1,080
1	2.50	1,204	8	0.000	0	1,037
Powerwave Allgon 702	150.00	13	297	0.001	1	11
Kaelus DBC0061F1V51-	150.00	76	1,721	0.005	8	66
Kaelus DBC0061F1V51-	150.00	76	1,721	0.005	8	66
Kathrein Scala 782-1	150.00	38	864	0.003	4	33
Powerwave Allgon LGP	150.00	85	1,904	0.006	8	73
Raycap DC6-48-60-18-	150.00	40	900	0.003	4	34
Raycap DC6-48-60-18-	150.00	20	450	0.001	2	17
Ericsson RRUS 8843 B	150.00	216	4,860	0.015	21	186
Ericsson RRUS 4478 B	150.00	180	4,043	0.012	18	155
Ericsson RRUS 4449 B	150.00	213	4,793	0.015	21	184
Ericsson RRUS A2 B2	150.00	66	1,485	0.005	7	57
Ericsson RRUS 32 B30	150.00	180	4,050	0.012	18	155
Quintel QS66512-2	150.00	333	7,493	0.023	33	287
CCI OPA-65R-LCUU-H6	150.00	219	4,928	0.015	22	189
CCI DMP65R-BU6DA	150.00	238	5,360	0.017	23	205
Round Platform w/ Ha	150.00	2,000	45,000	0.139	197	1,723
DragonWave Horizon C	142.00	32	641	0.002	3	27
DragonWave A-ANT-23G	142.00	15	302	0.001	1	13
Alcatel-Lucent RRH2x	142.00	317	6,400	0.020	28	273
Alcatel-Lucent 1900	142.00	180	3,630	0.011	16	155
Alcatel-Lucent TD-RR	142.00	210	4,234	0.013	19	181
Generic RRU (Model T	142.00	165	3,327	0.010	15	142
DragonWave A-ANT-11G	142.00	27	544	0.002	2	23
RFS APXVTM14-ALU-I20	142.00	169	3,400	0.010	15	145
DragonWave A-ANT-11G	142.00	48	960	0.003	4	41
Commscope NNVV-65B-R	142.00	232	4,682	0.014	21	200
Platform with Handra	142.00	2,449	49,376	0.152	216	2,110

RFS FD9R6004/1C-3L	108.00	19	217	0.001	1	16
RFS FD9R6004/2C-3L	108.00	16	182	0.001	1	13
Nokia B5 RRH4x40-850	108.00	146	1,697	0.005	7	125
Alcatel-Lucent RRH 2	108.00	119	1,386	0.004	6	102
Alcatel-Lucent RRH2x	108.00	170	1,984	0.006	9	147
Alcatel-Lucent B66 R	108.00	201	2,344	0.007	10	173
Commscope HBX-6516DS	108.00	31	364	0.001	2	27
RFS DB-T1-6Z-8AB-0Z	108.00	88	1,026	0.003	4	76
Commscope LNX-6514DS	108.00	116	1,358	0.004	6	100
Commscope JAHH-65B-R	108.00	364	4,241	0.013	19	313
Round Low Profile Pl	108.00	1,500	17,496	0.054	77	1,292
		36,437	324,509	1.000	1,421	31,394

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	-43.63	-1.43	0.00	-189.89	0.00	189.89	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.059
5.00	-42.08	-1.44	0.00	-182.75	0.00	182.75	3,114.09	1,557.04	4,644.49	2,293.74	0.01	-0.02	0.058
10.00	-40.55	-1.46	0.00	-175.53	0.00	175.53	3,070.24	1,535.12	4,479.04	2,212.03	0.04	-0.04	0.057
15.00	-39.04	-1.47	0.00	-168.25	0.00	168.25	3,025.35	1,512.68	4,314.96	2,131.00	0.10	-0.06	0.056
20.00	-37.54	-1.48	0.00	-160.91	0.00	160.91	2,979.43	1,489.71	4,152.36	2,050.69	0.18	-0.09	0.055
25.00	-36.07	-1.49	0.00	-153.52	0.00	153.52	2,932.46	1,466.23	3,991.34	1,971.17	0.28	-0.11	0.054
30.00	-35.63	-1.49	0.00	-146.09	0.00	146.09	2,874.86	1,437.43	3,819.25	1,886.18	0.41	-0.13	0.053
31.50	-34.14	-1.49	0.00	-143.86	0.00	143.86	2,853.94	1,426.97	3,763.56	1,858.68	0.45	-0.14	0.052
35.00	-33.85	-1.49	0.00	-138.64	0.00	138.64	2,805.14	1,402.57	3,635.21	1,795.29	0.55	-0.15	0.051
35.67	-32.71	-1.49	0.00	-137.65	0.00	137.65	2,247.90	1,123.95	2,973.33	1,468.42	0.57	-0.16	0.059
40.00	-31.41	-1.49	0.00	-131.19	0.00	131.19	2,218.43	1,109.21	2,871.69	1,418.22	0.73	-0.17	0.057
45.00	-30.13	-1.49	0.00	-123.73	0.00	123.73	2,183.45	1,091.72	2,755.25	1,360.71	0.92	-0.20	0.055
50.00	-28.87	-1.48	0.00	-116.29	0.00	116.29	2,147.43	1,073.71	2,639.81	1,303.70	1.14	-0.22	0.053
55.00	-27.62	-1.48	0.00	-108.87	0.00	108.87	2,110.37	1,055.18	2,525.48	1,247.24	1.39	-0.25	0.051
60.00	-26.39	-1.46	0.00	-101.50	0.00	101.50	2,072.27	1,036.13	2,412.36	1,191.37	1.66	-0.27	0.049
65.00	-25.17	-1.45	0.00	-94.18	0.00	94.18	2,033.13	1,016.56	2,300.54	1,136.15	1.95	-0.29	0.047
70.00	-24.01	-1.43	0.00	-86.94	0.00	86.94	1,981.90	990.95	2,177.99	1,075.63	2.27	-0.32	0.045
73.50	-23.68	-1.43	0.00	-81.94	0.00	81.94	1,473.88	736.94	1,624.33	802.19	2.51	-0.33	0.050
75.00	-22.60	-1.40	0.00	-79.80	0.00	79.80	1,466.20	733.10	1,601.53	790.93	2.61	-0.34	0.049
80.00	-21.53	-1.38	0.00	-72.79	0.00	72.79	1,439.92	719.96	1,525.89	753.58	2.98	-0.36	0.046
85.00	-20.47	-1.35	0.00	-65.90	0.00	65.90	1,412.60	706.30	1,450.91	716.55	3.37	-0.38	0.043
90.00	-20.26	-1.35	0.00	-59.15	0.00	59.15	1,384.24	692.12	1,376.67	679.88	3.78	-0.41	0.040
91.00	-19.43	-1.32	0.00	-57.80	0.00	57.80	1,378.45	689.22	1,361.92	672.60	3.87	-0.41	0.039
91.00	-19.43	-1.32	0.00	-57.80	0.00	57.80	1,378.45	689.22	1,361.92	672.60	3.87	-0.41	0.039
95.00	-18.40	-1.28	0.00	-52.52	0.00	52.52	1,354.85	677.42	1,303.28	643.64	4.22	-0.43	0.036
100.00	-18.19	-1.28	0.00	-46.11	0.00	46.11	1,324.41	662.20	1,230.84	607.87	4.68	-0.45	0.033
101.00	-17.46	-1.25	0.00	-44.83	0.00	44.83	1,318.20	659.10	1,216.47	600.77	4.77	-0.45	0.032
101.00	-17.46	-1.25	0.00	-44.83	0.00	44.83	1,318.20	659.10	1,216.47	600.77	4.77	-0.45	0.032
105.00	-16.92	-1.23	0.00	-39.84	0.00	39.84	1,292.93	646.47	1,159.45	572.61	5.15	-0.46	0.030
108.00	-13.16	-1.04	0.00	-36.16	0.00	36.16	1,265.65	632.82	1,110.24	548.30	5.45	-0.47	0.026
110.00	-12.42	-1.00	0.00	-34.08	0.00	34.08	1,247.06	623.53	1,077.67	532.22	5.65	-0.48	0.025
110.00	-12.42	-1.00	0.00	-34.08	0.00	34.08	853.21	426.60	741.71	366.30	5.65	-0.48	0.030
115.00	-12.21	-0.99	0.00	-29.06	0.00	29.06	834.97	417.48	698.64	345.03	6.16	-0.49	0.027
116.42	-11.92	-0.98	0.00	-27.65	0.00	27.65	829.61	414.80	686.50	339.04	6.30	-0.50	0.026
116.42	-11.92	-0.98	0.00	-27.65	0.00	27.65	829.61	414.80	686.50	339.04	6.30	-0.50	0.096
120.00	-11.51	-0.96	0.00	-24.14	0.00	24.14	815.69	407.84	655.93	323.94	6.68	-0.51	0.089
125.00	-11.11	-0.94	0.00	-19.33	0.00	19.33	795.37	397.68	613.66	303.07	7.24	-0.56	0.078
130.00	-10.72	-0.92	0.00	-14.62	0.00	14.62	774.01	387.00	571.96	282.47	7.86	-0.61	0.066
135.00	-10.34	-0.90	0.00	-10.00	0.00	10.00	751.61	375.80	530.91	262.20	8.52	-0.65	0.052
140.00	-10.19	-0.89	0.00	-5.49	0.00	5.49	728.17	364.08	490.63	242.30	9.22	-0.68	0.037
142.00	-5.25	-0.48	0.00	-3.71	0.00	3.71	714.97	357.48	472.41	233.31	9.50	-0.69	0.023
145.00	-4.94	-0.45	0.00	-2.27	0.00	2.27	694.05	347.03	445.02	219.78	9.94	-0.69	0.017
150.00	0.00	-0.39	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	10.67	-0.70	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.36	-1.43	0.00	-184.87	0.00	184.87	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.055
5.00	-29.28	-1.44	0.00	-177.75	0.00	177.75	3,114.09	1,557.04	4,644.49	2,293.74	0.01	-0.02	0.054
10.00	-28.21	-1.44	0.00	-170.57	0.00	170.57	3,070.24	1,535.12	4,479.04	2,212.03	0.04	-0.04	0.053
15.00	-27.16	-1.45	0.00	-163.35	0.00	163.35	3,025.35	1,512.68	4,314.96	2,131.00	0.10	-0.06	0.052
20.00	-26.12	-1.46	0.00	-156.09	0.00	156.09	2,979.43	1,489.71	4,152.36	2,050.69	0.17	-0.08	0.051
25.00	-25.09	-1.46	0.00	-148.80	0.00	148.80	2,932.46	1,466.23	3,991.34	1,971.17	0.27	-0.10	0.050
30.00	-24.79	-1.47	0.00	-141.49	0.00	141.49	2,874.86	1,437.43	3,819.25	1,886.18	0.39	-0.13	0.049
31.50	-23.75	-1.46	0.00	-139.29	0.00	139.29	2,853.94	1,426.97	3,763.56	1,858.68	0.43	-0.13	0.048
35.00	-23.55	-1.46	0.00	-134.18	0.00	134.18	2,805.14	1,402.57	3,635.21	1,795.29	0.54	-0.15	0.047
35.67	-22.76	-1.46	0.00	-133.20	0.00	133.20	2,247.90	1,123.95	2,973.33	1,468.42	0.56	-0.15	0.054
40.00	-21.86	-1.46	0.00	-126.87	0.00	126.87	2,218.43	1,109.21	2,871.69	1,418.22	0.70	-0.17	0.053
45.00	-20.96	-1.45	0.00	-119.59	0.00	119.59	2,183.45	1,091.72	2,755.25	1,360.71	0.89	-0.19	0.051
50.00	-20.08	-1.45	0.00	-112.33	0.00	112.33	2,147.43	1,073.71	2,639.81	1,303.70	1.11	-0.22	0.049
55.00	-19.21	-1.43	0.00	-105.10	0.00	105.10	2,110.37	1,055.18	2,525.48	1,247.24	1.35	-0.24	0.047
60.00	-18.36	-1.42	0.00	-97.93	0.00	97.93	2,072.27	1,036.13	2,412.36	1,191.37	1.61	-0.26	0.045
65.00	-17.51	-1.40	0.00	-90.82	0.00	90.82	2,033.13	1,016.56	2,300.54	1,136.15	1.89	-0.28	0.043
70.00	-16.70	-1.38	0.00	-83.80	0.00	83.80	1,981.90	990.95	2,177.99	1,075.63	2.20	-0.31	0.041
73.50	-16.47	-1.38	0.00	-78.95	0.00	78.95	1,473.88	736.94	1,624.33	802.19	2.43	-0.32	0.046
75.00	-15.72	-1.36	0.00	-76.88	0.00	76.88	1,466.20	733.10	1,601.53	790.93	2.53	-0.33	0.045
80.00	-14.98	-1.33	0.00	-70.10	0.00	70.10	1,439.92	719.96	1,525.89	753.58	2.89	-0.35	0.042
85.00	-14.24	-1.30	0.00	-63.43	0.00	63.43	1,412.60	706.30	1,450.91	716.55	3.27	-0.37	0.039
90.00	-14.09	-1.30	0.00	-56.91	0.00	56.91	1,384.24	692.12	1,376.67	679.88	3.66	-0.39	0.036
91.00	-13.51	-1.27	0.00	-55.61	0.00	55.61	1,378.45	689.22	1,361.92	672.60	3.75	-0.40	0.036
91.00	-13.51	-1.27	0.00	-55.61	0.00	55.61	1,378.45	689.22	1,361.92	672.60	3.75	-0.40	0.036
95.00	-12.80	-1.24	0.00	-50.52	0.00	50.52	1,354.85	677.42	1,303.28	643.64	4.09	-0.41	0.033
100.00	-12.66	-1.23	0.00	-44.33	0.00	44.33	1,324.41	662.20	1,230.84	607.87	4.53	-0.43	0.030
101.00	-12.15	-1.20	0.00	-43.10	0.00	43.10	1,318.20	659.10	1,216.47	600.77	4.62	-0.43	0.030
101.00	-12.15	-1.20	0.00	-43.10	0.00	43.10	1,318.20	659.10	1,216.47	600.77	4.62	-0.43	0.029
105.00	-11.77	-1.18	0.00	-38.29	0.00	38.29	1,292.93	646.47	1,159.45	572.61	4.99	-0.45	0.026
108.00	-9.15	-1.01	0.00	-34.75	0.00	34.75	1,265.65	632.82	1,110.24	548.30	5.27	-0.46	0.024
110.00	-8.64	-0.97	0.00	-32.73	0.00	32.73	1,247.06	623.53	1,077.67	532.22	5.47	-0.46	0.023
110.00	-8.64	-0.97	0.00	-32.73	0.00	32.73	853.21	426.60	741.71	366.30	5.47	-0.46	0.027
115.00	-8.50	-0.96	0.00	-27.89	0.00	27.89	834.97	417.48	698.64	345.03	5.96	-0.48	0.024
116.42	-8.29	-0.94	0.00	-26.52	0.00	26.52	829.61	414.80	686.50	339.04	6.10	-0.48	0.023
116.42	-8.29	-0.94	0.00	-26.52	0.00	26.52	829.61	414.80	686.50	339.04	6.10	-0.48	0.088
120.00	-8.00	-0.93	0.00	-23.14	0.00	23.14	815.69	407.84	655.93	323.94	6.47	-0.49	0.081
125.00	-7.73	-0.91	0.00	-18.51	0.00	18.51	795.37	397.68	613.66	303.07	7.01	-0.54	0.071
130.00	-7.46	-0.89	0.00	-13.98	0.00	13.98	774.01	387.00	571.96	282.47	7.60	-0.59	0.059
135.00	-7.19	-0.86	0.00	-9.56	0.00	9.56	751.61	375.80	530.91	262.20	8.24	-0.63	0.046
140.00	-7.09	-0.85	0.00	-5.25	0.00	5.25	728.17	364.08	490.63	242.30	8.91	-0.65	0.031
142.00	-3.65	-0.46	0.00	-3.55	0.00	3.55	714.97	357.48	472.41	233.31	9.19	-0.66	0.020
145.00	-3.44	-0.43	0.00	-2.17	0.00	2.17	694.05	347.03	445.02	219.78	9.61	-0.67	0.015
150.00	0.00	-0.39	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	10.31	-0.67	0.000

Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	3.15
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
38	147.50	249	1.828	1.667	1.025	0.321	69	308
37	143.50	153	1.730	1.238	0.861	0.261	35	190
36	141.00	120	1.670	1.012	0.769	0.227	24	148
35	137.50	305	1.588	0.742	0.654	0.182	48	378
34	132.50	313	1.475	0.441	0.513	0.125	34	388
33	127.50	321	1.366	0.222	0.397	0.076	21	398
32	122.50	330	1.261	0.069	0.302	0.034	10	408
31	118.21	241	1.174	-0.019	0.236	0.004	1	299
30	115.71	167	1.125	-0.055	0.202	-0.011	-2	207
29	112.50	596	1.063	-0.088	0.165	-0.027	-14	738
28	109.00	269	0.998	-0.110	0.130	-0.042	-10	334
27	106.50	437	0.953	-0.119	0.109	-0.050	-19	542
26	103.00	589	0.891	-0.122	0.084	-0.058	-29	730
25	100.50	165	0.848	-0.119	0.069	-0.061	-9	204
24	97.50	832	0.799	-0.112	0.053	-0.063	-45	1,030
23	93.00	673	0.727	-0.095	0.035	-0.060	-35	834
22	90.50	169	0.688	-0.083	0.028	-0.055	-8	210
21	87.50	853	0.643	-0.068	0.020	-0.047	-35	1,057
20	82.50	864	0.572	-0.043	0.012	-0.028	-21	1,070
19	77.50	875	0.505	-0.018	0.007	-0.005	-4	1,083
18	74.25	264	0.463	-0.003	0.006	0.009	2	328
17	71.75	938	0.432	0.008	0.006	0.020	16	1,161
16	67.50	981	0.383	0.023	0.007	0.035	30	1,215
15	62.50	995	0.328	0.039	0.010	0.048	41	1,232
14	57.50	1,008	0.278	0.050	0.014	0.055	48	1,248
13	52.50	1,021	0.232	0.058	0.019	0.058	52	1,265
12	47.50	1,035	0.190	0.064	0.025	0.059	53	1,282
11	42.50	1,048	0.152	0.068	0.030	0.059	53	1,298
10	37.83	919	0.120	0.070	0.034	0.057	46	1,138
9	35.33	229	0.105	0.071	0.037	0.057	11	283
8	33.25	1,208	0.093	0.071	0.038	0.056	59	1,496
7	30.75	353	0.079	0.072	0.040	0.056	17	438
6	27.50	1,189	0.064	0.072	0.041	0.055	56	1,472
5	22.50	1,205	0.043	0.070	0.042	0.053	55	1,492

4	17.50	1,221	0.026	0.067	0.040	0.051	54	1,512
3	12.50	1,237	0.013	0.059	0.034	0.047	50	1,532
2	7.50	1,253	0.005	0.044	0.025	0.038	41	1,552
1	2.50	1,204	0.001	0.018	0.010	0.019	20	1,491
Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.361	4	16
Kaelus DBC0061F1V51-	150.00	76	1.890	1.980	1.140	0.361	24	95
Kaelus DBC0061F1V51-	150.00	76	1.890	1.980	1.140	0.361	24	95
Kathrein Scala 782-1	150.00	38	1.890	1.980	1.140	0.361	12	48
Powerwave Allgon LGP	150.00	85	1.890	1.980	1.140	0.361	26	105
Raycap DC6-48-60-18-	150.00	40	1.890	1.980	1.140	0.361	13	50
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.361	6	25
Ericsson RRUS 8843 B	150.00	216	1.890	1.980	1.140	0.361	68	267
Ericsson RRUS 4478 B	150.00	180	1.890	1.980	1.140	0.361	56	223
Ericsson RRUS 4449 B	150.00	213	1.890	1.980	1.140	0.361	67	264
Ericsson RRUS A2 B2	150.00	66	1.890	1.980	1.140	0.361	21	82
Ericsson RRUS 32 B30	150.00	180	1.890	1.980	1.140	0.361	56	223
Quintel QS66512-2	150.00	333	1.890	1.980	1.140	0.361	104	412
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.361	68	271
CCI DMP65R-BU6DA	150.00	238	1.890	1.980	1.140	0.361	74	295
Round Platform w/ Ha	150.00	2,000	1.890	1.980	1.140	0.361	625	2,477
DragonWave Horizon C	142.00	32	1.694	1.099	0.805	0.241	7	39
DragonWave A-ANT-23G	142.00	15	1.694	1.099	0.805	0.241	3	19
Alcatel-Lucent RRH2x	142.00	317	1.694	1.099	0.805	0.241	66	393
Alcatel-Lucent 1900	142.00	180	1.694	1.099	0.805	0.241	38	223
Alcatel-Lucent TD-RR	142.00	210	1.694	1.099	0.805	0.241	44	260
Generic RRU (Model T	142.00	165	1.694	1.099	0.805	0.241	34	204
DragonWave A-ANT-11G	142.00	27	1.694	1.099	0.805	0.241	6	33
RFS APXVTM14-ALU-I20	142.00	169	1.694	1.099	0.805	0.241	35	209
DragonWave A-ANT-11G	142.00	48	1.694	1.099	0.805	0.241	10	59
Commscope NNVV-	142.00	232	1.694	1.099	0.805	0.241	48	288
Platform with Handra	142.00	2,449	1.694	1.099	0.805	0.241	510	3,032
RFS FD9R6004/1C-3L	108.00	19	0.980	-0.114	0.122	-0.045	-1	23
RFS FD9R6004/2C-3L	108.00	16	0.980	-0.114	0.122	-0.045	-1	19
Nokia B5 RRH4x40-850	108.00	146	0.980	-0.114	0.122	-0.045	-6	180
Alcatel-Lucent RRH 2	108.00	119	0.980	-0.114	0.122	-0.045	-5	147
Alcatel-Lucent RRH2x	108.00	170	0.980	-0.114	0.122	-0.045	-7	211
Alcatel-Lucent B66 R	108.00	201	0.980	-0.114	0.122	-0.045	-8	249
Commscope HBX-	108.00	31	0.980	-0.114	0.122	-0.045	-1	39
RFS DB-T1-6Z-8AB-0Z	108.00	88	0.980	-0.114	0.122	-0.045	-3	109
Commscope LNX-	108.00	116	0.980	-0.114	0.122	-0.045	-5	144
Commscope JAHH-65B-	108.00	364	0.980	-0.114	0.122	-0.045	-14	450
Round Low Profile Pl	108.00	1,500	0.980	-0.114	0.122	-0.045	-58	1,858
		36,437	84.554	47.770	34.563	9.477	2,657	45,123

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)
38	147.50	249	1.828	1.667	1.025	0.321	69	214
37	143.50	153	1.730	1.238	0.861	0.261	35	132
36	141.00	120	1.670	1.012	0.769	0.227	24	103
35	137.50	305	1.588	0.742	0.654	0.182	48	263
34	132.50	313	1.475	0.441	0.513	0.125	34	270
33	127.50	321	1.366	0.222	0.397	0.076	21	277
32	122.50	330	1.261	0.069	0.302	0.034	10	284
31	118.21	241	1.174	-0.019	0.236	0.004	1	208
30	115.71	167	1.125	-0.055	0.202	-0.011	-2	144
29	112.50	596	1.063	-0.088	0.165	-0.027	-14	514
28	109.00	269	0.998	-0.110	0.130	-0.042	-10	232

27	106.50	437	0.953	-0.119	0.109	-0.050	-19	377
26	103.00	589	0.891	-0.122	0.084	-0.058	-29	508
25	100.50	165	0.848	-0.119	0.069	-0.061	-9	142
24	97.50	832	0.799	-0.112	0.053	-0.063	-45	717
23	93.00	673	0.727	-0.095	0.035	-0.060	-35	580
22	90.50	169	0.688	-0.083	0.028	-0.055	-8	146
21	87.50	853	0.643	-0.068	0.020	-0.047	-35	735
20	82.50	864	0.572	-0.043	0.012	-0.028	-21	744
19	77.50	875	0.505	-0.018	0.007	-0.005	-4	754
18	74.25	264	0.463	-0.003	0.006	0.009	2	228
17	71.75	938	0.432	0.008	0.006	0.020	16	808
16	67.50	981	0.383	0.023	0.007	0.035	30	845
15	62.50	995	0.328	0.039	0.010	0.048	41	857
14	57.50	1,008	0.278	0.050	0.014	0.055	48	868
13	52.50	1,021	0.232	0.058	0.019	0.058	52	880
12	47.50	1,035	0.190	0.064	0.025	0.059	53	892
11	42.50	1,048	0.152	0.068	0.030	0.059	53	903
10	37.83	919	0.120	0.070	0.034	0.057	46	792
9	35.33	229	0.105	0.071	0.037	0.057	11	197
8	33.25	1,208	0.093	0.071	0.038	0.056	59	1,041
7	30.75	353	0.079	0.072	0.040	0.056	17	305
6	27.50	1,189	0.064	0.072	0.041	0.055	56	1,024
5	22.50	1,205	0.043	0.070	0.042	0.053	55	1,038
4	17.50	1,221	0.026	0.067	0.040	0.051	54	1,052
3	12.50	1,237	0.013	0.059	0.034	0.047	50	1,066
2	7.50	1,253	0.005	0.044	0.025	0.038	41	1,080
1	2.50	1,204	0.001	0.018	0.010	0.019	20	1,037
Powerwave Allgon 702	150.00	13	1.890	1.980	1.140	0.361	4	11
Kaelus DBC0061F1V51-	150.00	76	1.890	1.980	1.140	0.361	24	66
Kaelus DBC0061F1V51-	150.00	76	1.890	1.980	1.140	0.361	24	66
Kathrein Scala 782-1	150.00	38	1.890	1.980	1.140	0.361	12	33
Powerwave Allgon LGP	150.00	85	1.890	1.980	1.140	0.361	26	73
Raycap DC6-48-60-18-	150.00	40	1.890	1.980	1.140	0.361	13	34
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.361	6	17
Ericsson RRUS 8843 B	150.00	216	1.890	1.980	1.140	0.361	68	186
Ericsson RRUS 4478 B	150.00	180	1.890	1.980	1.140	0.361	56	155
Ericsson RRUS 4449 B	150.00	213	1.890	1.980	1.140	0.361	67	184
Ericsson RRUS A2 B2	150.00	66	1.890	1.980	1.140	0.361	21	57
Ericsson RRUS 32 B30	150.00	180	1.890	1.980	1.140	0.361	56	155
Quintel QS66512-2	150.00	333	1.890	1.980	1.140	0.361	104	287
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.361	68	189
CCI DMP65R-BU6DA	150.00	238	1.890	1.980	1.140	0.361	74	205
Round Platform w/ Ha	150.00	2,000	1.890	1.980	1.140	0.361	625	1,723
DragonWave Horizon C	142.00	32	1.694	1.099	0.805	0.241	7	27
DragonWave A-ANT-23G	142.00	15	1.694	1.099	0.805	0.241	3	13
Alcatel-Lucent RRH2x	142.00	317	1.694	1.099	0.805	0.241	66	273
Alcatel-Lucent 1900	142.00	180	1.694	1.099	0.805	0.241	38	155
Alcatel-Lucent TD-RR	142.00	210	1.694	1.099	0.805	0.241	44	181
Generic RRU (Model T	142.00	165	1.694	1.099	0.805	0.241	34	142
DragonWave A-ANT-11G	142.00	27	1.694	1.099	0.805	0.241	6	23
RFS APXVTM14-ALU-I20	142.00	169	1.694	1.099	0.805	0.241	35	145
DragonWave A-ANT-11G	142.00	48	1.694	1.099	0.805	0.241	10	41
Commscope NNVV-	142.00	232	1.694	1.099	0.805	0.241	48	200
Platform with Handra	142.00	2,449	1.694	1.099	0.805	0.241	510	2,110
RFS FD9R6004/1C-3L	108.00	19	0.980	-0.114	0.122	-0.045	-1	16
RFS FD9R6004/2C-3L	108.00	16	0.980	-0.114	0.122	-0.045	-1	13
Nokia B5 RRH4x40-850	108.00	146	0.980	-0.114	0.122	-0.045	-6	125
Alcatel-Lucent RRH 2	108.00	119	0.980	-0.114	0.122	-0.045	-5	102
Alcatel-Lucent RRH2x	108.00	170	0.980	-0.114	0.122	-0.045	-7	147
Alcatel-Lucent B66 R	108.00	201	0.980	-0.114	0.122	-0.045	-8	173
Commscope HBX-	108.00	31	0.980	-0.114	0.122	-0.045	-1	27
RFS DB-T1-6Z-8AB-0Z	108.00	88	0.980	-0.114	0.122	-0.045	-3	76
Commscope LNX-	108.00	116	0.980	-0.114	0.122	-0.045	-5	100
Commscope JAHH-65B-	108.00	364	0.980	-0.114	0.122	-0.045	-14	313

Round Low Profile Pl	108.00	1,500	0.980	-0.114	0.122	-0.045	-58	1,292
		36,437	84.554	47.770	34.563	9.477	2,657	31,394

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	-43.63	-2.65	0.00	-355.59	0.00	355.59	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.102
5.00	-42.08	-2.64	0.00	-342.33	0.00	342.33	3,114.09	1,557.04	4,644.49	2,293.74	0.02	-0.04	0.101
10.00	-40.54	-2.62	0.00	-329.13	0.00	329.13	3,070.24	1,535.12	4,479.04	2,212.03	0.08	-0.08	0.099
15.00	-39.03	-2.59	0.00	-316.05	0.00	316.05	3,025.35	1,512.68	4,314.96	2,131.00	0.19	-0.12	0.097
20.00	-37.54	-2.56	0.00	-303.11	0.00	303.11	2,979.43	1,489.71	4,152.36	2,050.69	0.34	-0.16	0.096
25.00	-36.06	-2.52	0.00	-290.33	0.00	290.33	2,932.46	1,466.23	3,991.34	1,971.17	0.53	-0.20	0.094
30.00	-35.62	-2.52	0.00	-277.72	0.00	277.72	2,874.86	1,437.43	3,819.25	1,886.18	0.76	-0.24	0.093
31.50	-34.13	-2.47	0.00	-273.94	0.00	273.94	2,853.94	1,426.97	3,763.56	1,858.68	0.84	-0.26	0.092
35.00	-33.84	-2.47	0.00	-265.30	0.00	265.30	2,805.14	1,402.57	3,635.21	1,795.29	1.04	-0.29	0.090
35.67	-32.70	-2.43	0.00	-263.66	0.00	263.66	2,247.90	1,123.95	2,973.33	1,468.42	1.08	-0.29	0.104
40.00	-31.41	-2.39	0.00	-253.15	0.00	253.15	2,218.43	1,109.21	2,871.69	1,418.22	1.36	-0.33	0.102
45.00	-30.12	-2.35	0.00	-241.20	0.00	241.20	2,183.45	1,091.72	2,755.25	1,360.71	1.73	-0.38	0.099
50.00	-28.86	-2.31	0.00	-229.44	0.00	229.44	2,147.43	1,073.71	2,639.81	1,303.70	2.15	-0.42	0.097
55.00	-27.61	-2.28	0.00	-217.87	0.00	217.87	2,110.37	1,055.18	2,525.48	1,247.24	2.62	-0.47	0.094
60.00	-26.37	-2.25	0.00	-206.47	0.00	206.47	2,072.27	1,036.13	2,412.36	1,191.37	3.14	-0.52	0.091
65.00	-25.16	-2.23	0.00	-195.22	0.00	195.22	2,033.13	1,016.56	2,300.54	1,136.15	3.71	-0.56	0.089
70.00	-23.99	-2.22	0.00	-184.08	0.00	184.08	1,981.90	990.95	2,177.99	1,075.63	4.32	-0.61	0.086
73.50	-23.67	-2.22	0.00	-176.31	0.00	176.31	1,473.88	736.94	1,624.33	802.19	4.78	-0.65	0.099
75.00	-22.58	-2.23	0.00	-172.98	0.00	172.98	1,466.20	733.10	1,601.53	790.93	4.99	-0.66	0.097
80.00	-21.51	-2.25	0.00	-161.85	0.00	161.85	1,439.92	719.96	1,525.89	753.58	5.71	-0.71	0.093
85.00	-20.45	-2.29	0.00	-150.58	0.00	150.58	1,412.60	706.30	1,450.91	716.55	6.48	-0.76	0.088
90.00	-20.24	-2.31	0.00	-139.11	0.00	139.11	1,384.24	692.12	1,376.67	679.88	7.31	-0.81	0.084
91.00	-19.40	-2.34	0.00	-136.80	0.00	136.80	1,378.45	689.22	1,361.92	672.60	7.48	-0.82	0.083
91.00	-19.40	-2.34	0.00	-136.80	0.00	136.80	1,378.45	689.22	1,361.92	672.60	7.48	-0.82	0.083
95.00	-18.37	-2.38	0.00	-127.44	0.00	127.44	1,354.85	677.42	1,303.28	643.64	8.18	-0.86	0.079
100.00	-18.17	-2.40	0.00	-115.52	0.00	115.52	1,324.41	662.20	1,230.84	607.87	9.11	-0.91	0.074
101.00	-17.44	-2.42	0.00	-113.12	0.00	113.12	1,318.20	659.10	1,216.47	600.77	9.30	-0.92	0.072
101.00	-17.44	-2.42	0.00	-113.12	0.00	113.12	1,318.20	659.10	1,216.47	600.77	9.30	-0.92	0.070
105.00	-16.89	-2.44	0.00	-103.42	0.00	103.42	1,292.93	646.47	1,159.45	572.61	10.09	-0.96	0.065
108.00	-13.13	-2.50	0.00	-96.09	0.00	96.09	1,265.65	632.82	1,110.24	548.30	10.70	-0.98	0.061
110.00	-12.39	-2.51	0.00	-91.09	0.00	91.09	1,247.06	623.53	1,077.67	532.22	11.12	-1.00	0.058
110.00	-12.39	-2.51	0.00	-91.09	0.00	91.09	853.21	426.60	741.71	366.30	11.12	-1.00	0.069
115.00	-12.18	-2.51	0.00	-78.54	0.00	78.54	834.97	417.48	698.64	345.03	12.18	-1.04	0.061
116.42	-11.88	-2.51	0.00	-74.98	0.00	74.98	829.61	414.80	686.50	339.04	12.49	-1.05	0.059
116.42	-11.88	-2.51	0.00	-74.98	0.00	74.98	829.61	414.80	686.50	339.04	12.49	-1.05	0.236
120.00	-11.47	-2.51	0.00	-65.98	0.00	65.98	815.69	407.84	655.93	323.94	13.29	-1.08	0.218
125.00	-11.06	-2.51	0.00	-53.42	0.00	53.42	795.37	397.68	613.66	303.07	14.50	-1.23	0.190
130.00	-10.67	-2.49	0.00	-40.88	0.00	40.88	774.01	387.00	571.96	282.47	15.86	-1.36	0.159
135.00	-10.29	-2.45	0.00	-28.43	0.00	28.43	751.61	375.80	530.91	262.20	17.34	-1.47	0.122
140.00	-10.14	-2.43	0.00	-16.18	0.00	16.18	728.17	364.08	490.63	242.30	18.93	-1.55	0.081
142.00	-5.22	-1.46	0.00	-11.32	0.00	11.32	714.97	357.48	472.41	233.31	19.58	-1.57	0.056
145.00	-4.91	-1.39	0.00	-6.93	0.00	6.93	694.05	347.03	445.02	219.78	20.58	-1.60	0.039
150.00	0.00	-1.25	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	22.26	-1.61	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.36	-2.65	0.00	-345.43	0.00	345.43	3,156.90	1,578.45	4,811.22	2,376.08	0.00	0.00	0.097
5.00	-29.27	-2.63	0.00	-332.19	0.00	332.19	3,114.09	1,557.04	4,644.49	2,293.74	0.02	-0.04	0.095
10.00	-28.21	-2.59	0.00	-319.06	0.00	319.06	3,070.24	1,535.12	4,479.04	2,212.03	0.08	-0.08	0.094
15.00	-27.15	-2.56	0.00	-306.09	0.00	306.09	3,025.35	1,512.68	4,314.96	2,131.00	0.18	-0.12	0.092
20.00	-26.11	-2.52	0.00	-293.30	0.00	293.30	2,979.43	1,489.71	4,152.36	2,050.69	0.33	-0.16	0.090
25.00	-25.09	-2.48	0.00	-280.72	0.00	280.72	2,932.46	1,466.23	3,991.34	1,971.17	0.51	-0.20	0.089
30.00	-24.78	-2.47	0.00	-268.34	0.00	268.34	2,874.86	1,437.43	3,819.25	1,886.18	0.74	-0.24	0.087
31.50	-23.74	-2.41	0.00	-264.63	0.00	264.63	2,853.94	1,426.97	3,763.56	1,858.68	0.81	-0.25	0.087
35.00	-23.54	-2.41	0.00	-256.18	0.00	256.18	2,805.14	1,402.57	3,635.21	1,795.29	1.01	-0.28	0.085
35.67	-22.75	-2.37	0.00	-254.58	0.00	254.58	2,247.90	1,123.95	2,973.33	1,468.42	1.05	-0.28	0.098
40.00	-21.85	-2.33	0.00	-244.32	0.00	244.32	2,218.43	1,109.21	2,871.69	1,418.22	1.32	-0.32	0.096
45.00	-20.95	-2.28	0.00	-232.69	0.00	232.69	2,183.45	1,091.72	2,755.25	1,360.71	1.68	-0.36	0.093
50.00	-20.07	-2.24	0.00	-221.27	0.00	221.27	2,147.43	1,073.71	2,639.81	1,303.70	2.09	-0.41	0.091
55.00	-19.20	-2.20	0.00	-210.06	0.00	210.06	2,110.37	1,055.18	2,525.48	1,247.24	2.54	-0.45	0.089
60.00	-18.34	-2.17	0.00	-199.06	0.00	199.06	2,072.27	1,036.13	2,412.36	1,191.37	3.04	-0.50	0.086
65.00	-17.50	-2.14	0.00	-188.22	0.00	188.22	2,033.13	1,016.56	2,300.54	1,136.15	3.59	-0.55	0.084
70.00	-16.69	-2.13	0.00	-177.49	0.00	177.49	1,981.90	990.95	2,177.99	1,075.63	4.18	-0.59	0.081
73.50	-16.46	-2.13	0.00	-170.03	0.00	170.03	1,473.88	736.94	1,624.33	802.19	4.63	-0.62	0.093
75.00	-15.70	-2.14	0.00	-166.83	0.00	166.83	1,466.20	733.10	1,601.53	790.93	4.83	-0.64	0.091
80.00	-14.96	-2.16	0.00	-156.14	0.00	156.14	1,439.92	719.96	1,525.89	753.58	5.52	-0.69	0.088
85.00	-14.22	-2.20	0.00	-145.33	0.00	145.33	1,412.60	706.30	1,450.91	716.55	6.27	-0.74	0.083
90.00	-14.07	-2.21	0.00	-134.32	0.00	134.32	1,384.24	692.12	1,376.67	679.88	7.07	-0.78	0.079
91.00	-13.49	-2.25	0.00	-132.11	0.00	132.11	1,378.45	689.22	1,361.92	672.60	7.23	-0.79	0.078
91.00	-13.49	-2.25	0.00	-132.11	0.00	132.11	1,378.45	689.22	1,361.92	672.60	7.23	-0.79	0.078
95.00	-12.77	-2.29	0.00	-123.12	0.00	123.12	1,354.85	677.42	1,303.28	643.64	7.91	-0.83	0.074
100.00	-12.63	-2.30	0.00	-111.66	0.00	111.66	1,324.41	662.20	1,230.84	607.87	8.81	-0.88	0.069
101.00	-12.12	-2.33	0.00	-109.36	0.00	109.36	1,318.20	659.10	1,216.47	600.77	8.99	-0.89	0.068
101.00	-12.12	-2.33	0.00	-109.36	0.00	109.36	1,318.20	659.10	1,216.47	600.77	8.99	-0.89	0.066
105.00	-11.74	-2.35	0.00	-100.04	0.00	100.04	1,292.93	646.47	1,159.45	572.61	9.75	-0.92	0.061
108.00	-9.12	-2.43	0.00	-92.99	0.00	92.99	1,265.65	632.82	1,110.24	548.30	10.34	-0.95	0.057
110.00	-8.61	-2.44	0.00	-88.13	0.00	88.13	1,247.06	623.53	1,077.67	532.22	10.74	-0.97	0.055
110.00	-8.61	-2.44	0.00	-88.13	0.00	88.13	853.21	426.60	741.71	366.30	10.74	-0.97	0.065
115.00	-8.46	-2.44	0.00	-75.95	0.00	75.95	834.97	417.48	698.64	345.03	11.78	-1.00	0.057
116.42	-8.25	-2.44	0.00	-72.49	0.00	72.49	829.61	414.80	686.50	339.04	12.08	-1.01	0.055
116.42	-8.25	-2.44	0.00	-72.49	0.00	72.49	829.61	414.80	686.50	339.04	12.08	-1.01	0.224
120.00	-7.97	-2.44	0.00	-63.75	0.00	63.75	815.69	407.84	655.93	323.94	12.85	-1.04	0.207
125.00	-7.68	-2.43	0.00	-51.58	0.00	51.58	795.37	397.68	613.66	303.07	14.01	-1.18	0.180
130.00	-7.41	-2.40	0.00	-39.44	0.00	39.44	774.01	387.00	571.96	282.47	15.33	-1.31	0.149
135.00	-7.14	-2.36	0.00	-27.43	0.00	27.43	751.61	375.80	530.91	262.20	16.76	-1.42	0.114
140.00	-7.04	-2.34	0.00	-15.63	0.00	15.63	728.17	364.08	490.63	242.30	18.29	-1.50	0.074
142.00	-3.62	-1.41	0.00	-10.95	0.00	10.95	714.97	357.48	472.41	233.31	18.92	-1.52	0.052
145.00	-3.41	-1.34	0.00	-6.71	0.00	6.71	694.05	347.03	445.02	219.78	19.88	-1.54	0.035
150.00	0.00	-1.25	0.00	0.00	0.00	0.00	659.19	329.60	401.19	198.13	21.51	-1.56	0.000

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	25.75	0.00	43.65	0.00	0.00	2783.83	116.42	0.98
0.9D + 1.6W	24.11	0.00	32.73	0.00	0.00	2630.02	116.42	0.93
1.2D + 1.0Di + 1.0Wi	12.32	0.00	67.52	0.00	0.00	1265.49	116.42	0.41
(1.2 + 0.2Sds) * DL + E ELFM	1.43	0.00	43.63	0.00	0.00	189.89	116.42	0.10
(1.2 + 0.2Sds) * DL + E EMAM	2.65	0.00	43.63	0.00	0.00	355.59	116.42	0.24
(0.9 - 0.2Sds) * DL + E ELFM	1.43	0.00	30.36	0.00	0.00	184.87	116.42	0.09
(0.9 - 0.2Sds) * DL + E EMAM	2.65	0.00	30.36	0.00	0.00	345.43	116.42	0.22
1.0D + 1.0W	5.16	0.00	36.43	0.00	0.00	568.08	116.42	0.21

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	91.00	(4) SOL-#20 All Thread Bar	364.7	10.9	16.8	0.651	290.9	330.5	0.880
91.00	101.00	(4) SOL-#20 All Thread Bar	371.3	6.7	16.8	0.398	176.8	345.0	0.512
101.00	116.42	(3) SOL-#20 All Thread Bar	428.4	12.9	16.8	0.765	166.6	330.5	0.504

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
0.00	91.00	(4) SOL-#20 All Thread Bar	0.0	12.0	0	12	0.000	0.0	12.0	0	0	0.000
91.00	101.00	(4) SOL-#20 All Thread Bar	143.9	12.0	12	16	0.749	0.0	12.0	0	0	0.000
101.00	116.42	(3) SOL-#20 All Thread Bar	120.2	12.0	11	12	0.835	164.3	12.0	14	14	0.978

Site Name: North Haven CT 1, CT
Site Number: 302482
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-G Standards

Monolithic Mat & Pier Foundation Analysis

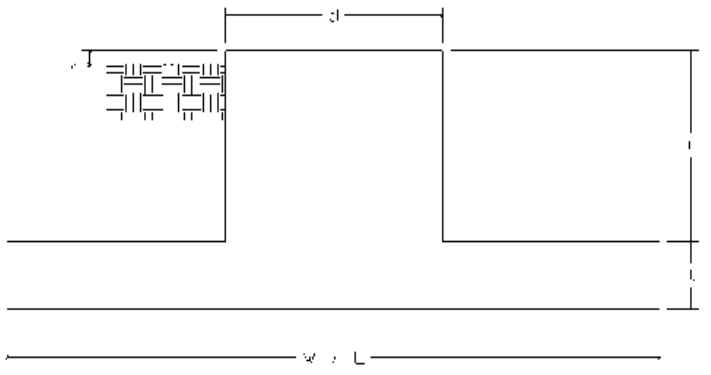
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	43.7	k
Uplift/Leg:	0.0	k
Total Shear:	25.8	k
Moment:	2,783.8	k-ft
Tower + Appurtenance Weight:	36.4	k
Depth to Base of Foundation (l + t - h):	8	ft
Diameter of Pier (d):	6	ft
Length of Pier (l):	5.5	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	18	ft
Length of Pad (L):	22	ft
Thickness of Pad (t):	3	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	7	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	125	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	62.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.35	-
Ultimate Compressive Bearing Pressure:	8,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{Soil\ and\ Concrete\ Weight}$:	0.9	-
f_{Soil}:	0.75	-

Foundation Steel Parameters		
Concrete Strength (f'_c):	3,000	psi
Pad Tension Steel Depth:	32.0	in
Dead Load Factor:	0.9	-
f_{Shear}:	0.75	-
$f_{Flexure\ /\ Tension}$:	0.9	-
$f_{Compression:}$	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	10	-
# of Bottom Pad Rebar:	36	-
Pad Bottom Steel Area:	45.72	in^2
Pad Steel F_y:	60,000	psi
Top Pad Rebar Size #:	5	-
# of Top Pad Rebar:	36	-
Pad Top Steel Area:	11.16	in^2
Pier Rebar Size #:	11	-
Pier Steel Area (Single Bar):	1.56	in^2
# of Pier Rebar:	14	-
Pier Steel F_y:	60,000	psi
Pier Cage Diameter:	64.0	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	4	-
Tie Steel Area (Single Bar):	0.20	in^2
Tie Spacing:	12	in
Tie Steel F_y:	60,000	psi

Overturning Moment Usage		
Design OTM:	3002.7	k-ft
OTM Resistance:	3933.8	k-ft
Design OTM / OTM Resistance:	76%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	4265	psf
Factored Nominal Bearing Pressure:	6000	psf
Factored Nominal (Net) Bearing Pressure:	71%	Pass
Load Direction Controling Design Bearing Pressure:	*Diagonal to Pad Edge*	

Sliding Factor of Safety		
Ultimate Friction Resistance:	153.0	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	114.7	k
Sliding Design / Sliding Resistance:	22%	Pass



Pad Strength Capacity			
Factored One Way Shear (V_u):	136.0	k	
One Way Shear Capacity (fV_c):	445.5	k	*ACI11.3.1.1*
V_u / fV_c:	31%	Pass	
Load Direction Controling Shear Capacity:	*Diagonal to Pad Edge*		
Lower Steel Pad Factored Moment (M_u):	821.3	k-ft	
Lower Steel Pad Moment Capacity (fM_n):	5335.9	k-ft	*ACI10.3*
M_u / fM_n:	15%	Pass	
Load Direction Controling Flexural Capacity:	*Diagonal to Pad Edge*		
Upper Steel Pad Factored Moment (M_u):	628.1	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	1585.8	k-ft	
M_u / fM_n:	40%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0054		*OK - Minimum Reinforcement Ratio Met - ACI10.5.1*
Upper Pad Flexural Reinforcement Ratio:	0.0013		*OK - Minimum Reinforcement Ratio Met - ACI10.5.1*
Pad Shrinkage Reinforcement Ratio:	0.0067		*OK - Shrinkage Reinforcement Ratio Met - ACI7.12.2.1*
Lower Pad Reinforcement Spacing:	7	in	*Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4*
Upper Pad Reinforcement Spacing:	7	in	*Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4*
Factored Punching Shear (V_u):	0.0	k	
Nominal Punching Shear Capacity (f_cV_n):	1718.0	k	*ACI11.12.2.1*
V_u / fV_c:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	2925.5	k-ft	
Pier Moment Capacity (fM_n):	3087.5	k-ft	
M_u / fM_n:	95%	Pass	
Factored Shear in Pier (V_u):	25.8	k	
Pier Shear Capacity (fV_n):	422.7	k	
V_u / fV_c:	6%	Pass	
Pier Shear Reinforcement Ratio:	0.0005		*OK - No Ties Necessary for Shear - ACI11.5.6.1*
Factored Tension in Pier (T_u):	0.0	k	
Pier Tension Capacity (fT_n):	1179.4	k	
T_u / fT_n:	0%	Pass	
Factored Compression in Pier (P_u):	43.7	k	
Pier Compression Capacity (fP_n):	5369.9	k	*ACI10.3.6.2*
P_u / fP_n:	1%	Pass	
Pier Compression Reinforcement Ratio:	0.005		*OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4*
Minimum Depth to Develop Vertical Rebar:	31	in	*ACI12.2.3*
Minimum Hook Development Length:	22	in	*ACI12.5*
Minimum Mat Thickness / Edge Distance from Pier:	25.0	in	
Minimum Foundation Depth:	4.93	ft	
$M_u/f_BM_n + T_u/f_TT_n$:	95%	Pass	

Base Plate & Anchor Rod Analysis

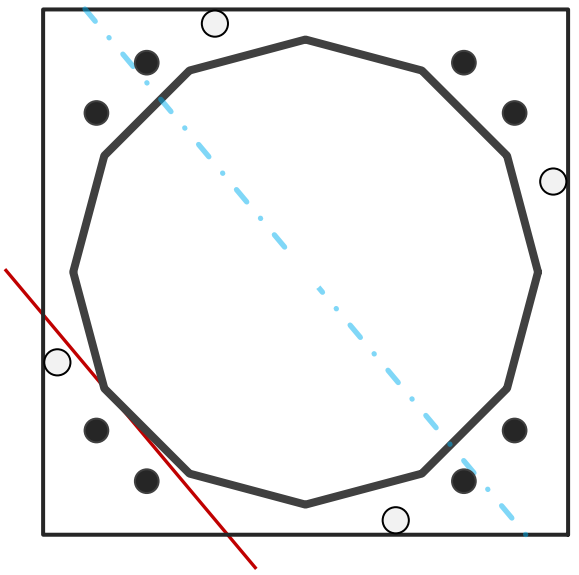
Pole Dimensions		
Number of Sides	12	-
Diameter	37.38	in
Thickness	3/8	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2783.8	k-ft
Axial, Pu	43.7	k
Shear, Vu	25.8	k
Neutral Axis	130	°

Report Capacities		
Component	Capacity	Result
Base Plate	64%	Pass
Anchor Rods	90%	Pass
Dwyidag	72%	Pass

Base Plate		
Shape	Square	-
Width	44	in
Thickness	2 1/2	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	0	in
Orientation Offset	0	°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	1333.1	k
Bending Stress, ϕMn	2075.2	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	8	-
Diameter, ø	2 1/4	in
Bolt Circle	44	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	232.5	k
Anchor Rods, ϕPn	259.8	k



Dywidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	44.26	in
Orientation Offset	20	°
Applied Force, Pu	283.9	k
Dywidag Bar, ϕPn	392.7	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	25.8	1684.5	0.61
Anchor Rod Forces	25.8	1684.5	0.61
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	1099.3	0.39
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	43.0992	3.5916	0.1692		7379.37
Bolt	3.9761	3.2477	0.8393	4.5	6294.24
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		4815.65
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	44	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	23.211	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

Anchor Rods		
Anchor Rod Quantity, N	8	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	44	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	232.5	k
Applied Shear, Vu	0.3	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.895	OK
Interaction Capacity	0.897	OK

External Base Plate		
Chord Length AA	24.595	in
Additional AA	0.000	in
Section Modulus, Z	38.430	in^3
Applied Moment, Mu	1333.1	k-ft
Bending Capacity, ϕMn	2075.2	k-ft
Capacity, Mu/ϕMn	0.642	OK
Chord Length AB	23.268	in
Additional AB	0.000	in
Section Modulus, Z	36.356	in^3
Applied Moment, Mu	1028.1	k-ft
Bending Capacity, ϕMn	1963.2	k-ft
Capacity, Mu/ϕMn	0.524	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

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

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	44.26	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	283.9	k
Compressive Capacity, ϕPn	392.7	k
Capacity, Pu/ϕPn	0.723	OK

Flange Plate Analysis

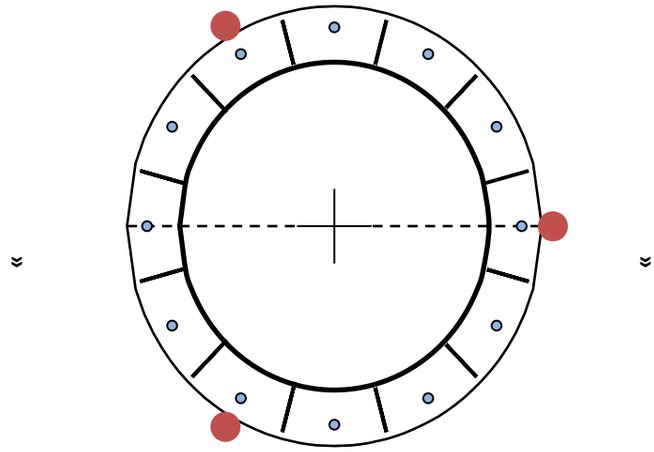
Flange Plate			
	Plate Type	***Flange***	***@ 110 ft***
	Pole Diameter	21.25	in
	Pole Thickness	0.1875	in
	Plate Diameter	28.5	in
	Plate Thickness	1	in
	Plate Fy	50	ksi
	Weld Length	3/16	in
	f_s Resistance	117.26	k-in
	Applied	22.86	k-in

Code Rev.	***G***
Moment	402.9 k-ft
Axial	11.5 k

Date	6/19/2020
Engineer	HS
Site #	302482
Carrier	AT&T MOBILITY

Stiffeners			
	#	***12***	***Show***
	Thickness	1/2	in
	Length	4	in
	Height	3	in
	Chamfer	1/4	in
	Offset Angle	0	°
	Fy	36	ksi

Bolts			
	#	***12***	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
•	Diameter	1	in
	Hole Diameter	1 1/8	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	f_s Resistance	54.52	k
	Applied	15.24	k



Reinforcement			
	#	***3***	
•	DYW. Circle	30	in
	Offset Angle	0	°
	Type	#20	
	Diameter	2.72	in
	Fu	100	ksi
	f_s Resistance	464.86	k
	Applied	137.34	k

Extra Bolts O		
	#	

Plate Stress Ratio:

19%	Pass

Bolt Stress Ratio:

28%	Pass

Reinforcement Stress Ratio:

30%	Pass

DEPARTMENT OF ADMINISTRATIVE SERVICES

June 18, 2020

Brendan Smith, P.E.
American Tower Corporation
3500 Regency Parkway, Suite 100
Cary, NC 27518

I-20-07

Re: Interpretation of 2018 State Building Code – Communication Tower Structural Design

Mr. Smith,

You requested a formal interpretation regarding the requirements of section 3108 and 1609 of the 2015 International Building Code portion of the 2018 Connecticut State Building Code which states:

3108.1 General. Towers shall be designed and constructed in accordance with the provisions of TIA-222. Towers shall be designed for seismic loads; exceptions related to seismic design listed in Section 2.7.3 of TIA-222 shall not apply. In Section 2.6.6.2 of TIA 222, the horizontal extent of Topographic Category 2, escarpments, shall be 16 times the height of the escarpment.

1609.1.1 Determination of wind loads. Wind loads on every building or structure shall be determined in accordance with chapters 26 to 30 of ASCE 7 or provisions of the alternate all-heights method in Section 1609.6. The type of opening protection required, the ultimate design wind speed, Vult, and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.
Exceptions:
5. Designs using TIA-222 for antenna-supporting structures and antennas, provided the horizontal extent of Topographic Category 2 escarpments in Section 2.6.6.2 of TIA-222 shall be 16 times the height of the escarpment.

Question 1:
Would an installation done to the TIA-222-H standard be compliant under the current State Building Code?

Answer 1:
Yes. The 2015 International Building Code references TIA-222-G plus several amendments. TIA-222-H is an updated version of the TIA-222-G standard and is the reference standard in the 2018 International Building Code. Designs complying with the updated standard would be deemed to comply with the current code.

Question 2:

If TIA-222-H is compliant under the current State Building Code, is the use of ASCE 7-16 Wind Speeds, as referenced by TIA-222-H, compliant? Or does CT have specific wind and ice parameters that must be utilized?

Answer 2:

Per 1609.1.1 exception 5, telecommunication towers may be designed to TIA-222 with conditions. Since TIA-222-H is a compliant design standard and references ASCE-7-16, the parameters found in that standard may be utilized.

Sincerely,

Joseph V. Cassidy, P.E.
State Building Inspector

Cc: Darren Hobbs, Deputy State Building Inspector