John Coleman, Project Manager
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (240) 615 -7389
JColeman@clinellc.com

February 15, 2021

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

**RE: Notice of Exempt Modification // Site: Bethany CT (ATC: 88008)**
**93 Old Amity Road, Bethany CT, 06524**
**N 41.40475833 // W 73.99998333**

Dear Ms. Bachman,

Cellco Partnership d/b/a Verizon Wireless currently maintains Twelve (12) antenna at approximately 180' level on the existing 339 ft Self Support Tower, located at 93 Old Amity Road, Bethany, CT. The tower is owned by American Tower. The property is also owned by Carl & Marilyn Ferencek. Verizon Wireless now intends to install nine (9) new antenna for the LTE (3700 MHz) replacements for its 5G upgrade. Additionally, Verizon Wireless will be removing Six (6) existing antenna and six (6) Diplexers and installing three (3) Dual Mount Brackets, nine (9) RRH's and one (1) OVP with associated cabling; altogether updating leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Paula Cofrancesco, First Selectwoman, its Building Enforcement Officer, Robert Walsh, American Tower, the tower owner and property owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Enclosed to accommodate this filing are construction drawings dated December 20, 2021, by Colliers Engineering & Design, a structural analysis dated July 29, 2021, by American Tower Corporation, and a structural mount analysis by Maser Consulting Connecticut date July 13, 2021, and radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

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

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

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

4. The operation of the new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

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

6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analysis by American Tower Corporation, dated July 29, 2021, and a structural mount analysis by Maser Consulting Connecticut, dated July 13, 2021, pursuant to certain conditions defined therein. Design and engineering is fully illustrated within final construction drawings, signed and stamped dated December 20, 2021.

For the foregoing reasons, Verizon Wireless 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,

*John Coleman*

_____

John Coleman, Project Manager
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (240) 615 -7389
JColeman@clinellc.com

Attachments
cc: Paula Cofrancesco, First Selectwoman – Chief Elected Official
Robert Walsh – Zoning Enforcement Officer - as P&Z official
ATC - Property Owner

**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.

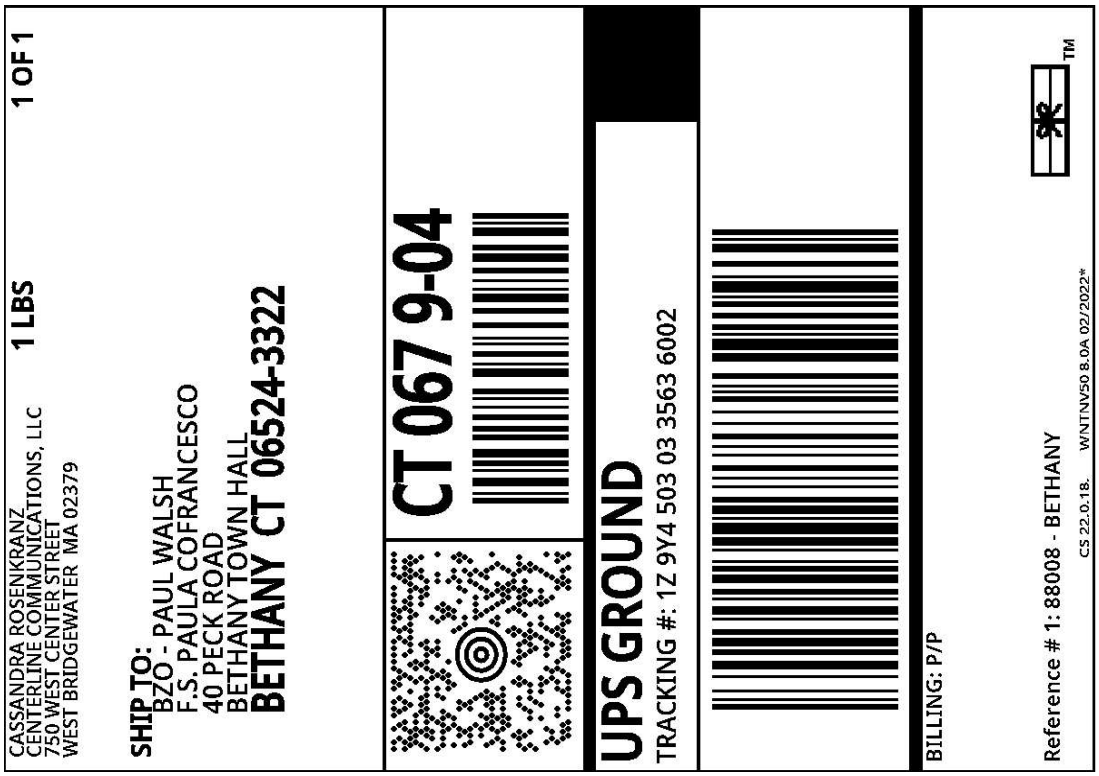
   **Customers without a Daily Pickup**
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. 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™
TOWNLINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



# Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

**Tracking Number**
1Z9Y45030335636002

**Weight**
1.00 LBS

**Service**

UPS Ground

**Shipped / Billed On**
02/16/2022

**Delivered On**

04/20/2022 11:53 A.M.

**Delivered To**
BETHANY, CT, US

**Received By**

HOWARD

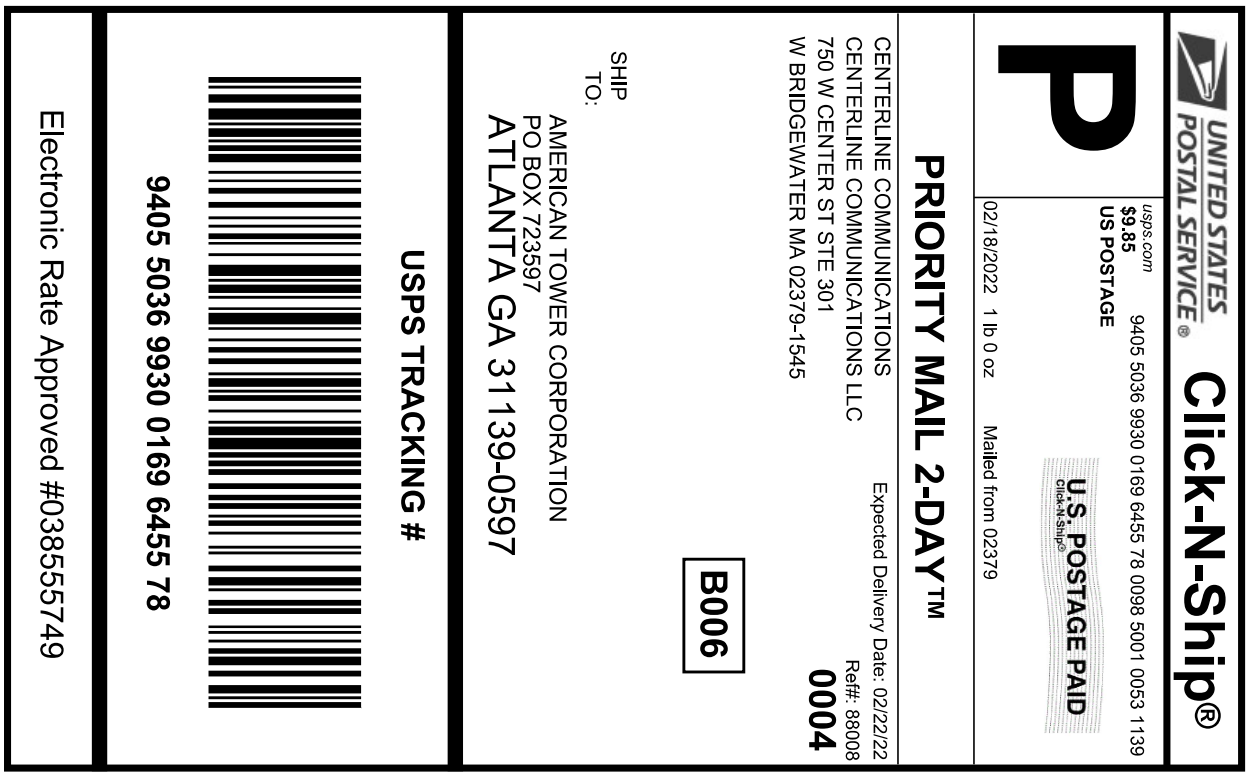
**Left At**
Inside Delivery

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 04/26/2022 1:09 P.M. EST




*Cut on dotted line.*

## Instructions

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

## Click-N-Ship® Label Record

**USPS TRACKING # :**
**9405 5036 9930 0169 6455 78**

| | |
|---|---|
| Trans. #: | 556869434 |
| Print Date: | 02/17/2022 |
| Ship Date: | 02/18/2022 |
| Expected Delivery Date: | 02/22/2022 |

| | |
|---|---|
| Priority Mail® Postage: | **$9.85** |
| Total: | **$9.85** |

**From:** CENTERLINE COMMUNICATIONS Ref#: 88008
CENTERLINE COMMUNICATIONS LLC
750 W CENTER ST STE 301
W BRIDGEWATER MA 02379-1545

**To:** AMERICAN TOWER CORPORATION
PO BOX 723597
ATLANTA GA 31139-0597

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

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

# USPS Tracking®

FAQs >

**Track Another Package +**

**Tracking Number:** 9405503699300169645578

Remove ×

Your item has been delivered and is available at a PO Box at 11:56 am on April 22, 2022 in ATLANTA, GA 31139.

**USPS Tracking Plus® Available** ⌄

## Delivered, PO Box

April 22, 2022 at 11:56 am
ATLANTA, GA 31139

**Get Updates** ⌄

**Text & Email Updates** ⌄

**Tracking History** ⌃

April 22, 2022, 11:56 am
Delivered, PO Box
ATLANTA, GA 31139
Your item has been delivered and is available at a PO Box at 11:56 am on April 22, 2022 in ATLANTA, GA 31139.

April 22, 2022, 11:44 am
Available for Pickup
ATLANTA, GA 31139

April 22, 2022, 11:20 am
Delivered to Agent for Final Delivery
ATLANTA, GA 30339

April 22, 2022, 8:27 am
Arrived at Post Office
ATLANTA, GA 30339

April 22, 2022, 7:05 am
Arrived at USPS Facility
MARIETTA, GA 30067

April 22, 2022, 7:05 am
Arrived at USPS Facility
ATLANTA, GA 30339

April 22, 2022, 6:15 am
Departed USPS Facility
ATLANTA, GA 30327

April 22, 2022, 6:15 am
Arrived at USPS Facility
ATLANTA, GA 30327

April 22, 2022, 5:48 am
Departed USPS Regional Facility
ATLANTA GA DISTRIBUTION CENTER

April 22, 2022, 2:55 am
Arrived at USPS Regional Destination Facility
ATLANTA GA DISTRIBUTION CENTER

April 20, 2022, 9:01 pm
Arrived at USPS Regional Origin Facility
NASHUA NH DISTRIBUTION CENTER

April 20, 2022, 4:19 pm
USPS in possession of item
EAST BRIDGEWATER, MA 02333

April 20, 2022, 4:10 pm
Departed Post Office
WEST BRIDGEWATER, MA 02379

April 20, 2022, 9:36 am
USPS picked up item
WEST BRIDGEWATER, MA 02379

February 17, 2022
Pre-Shipment Info Sent to USPS, USPS Awaiting Item

**USPS Tracking Plus®**

**Product Information**

**See Less**

## Can’t find what you’re looking for?

Go to our FAQs section to find answers to your tracking questions.

**FAQs**

**From:** Lina Frazer
**To:** John Coleman
**Subject:** 93 Old Amity Road - Tower
**Date:** Wednesday, April 13, 2022 2:59:32 PM
**Attachments:** Scan_0028.pdf
Scan_0029.pdf

---

Good Afternoon John:

Attached is what I could gather in relation to the Tower and whom the company that owns it. I hope you find it useful.

Best Regards,

Lina V. Cortez – Frazer
Town of Bethany
40 Peck Road - Bethany, CT 06524
**********
Zoning Enforcement Officer
Inland Wetlands Enforcement Officer
Land Use & Building Department Administrator
**********
Ph: 203-393-2100 ext. 1115
Email: LFrazer@bethany-ct.com
Website: https://link.edgepilot.com/s/9cad1874/tFQH9z7vu0ar8KII-jHN3A?u=http://www.bethany-ct.com/
**********

Links contained in this email have been replaced. If you click on a link in the email above, the link will be analyzed for known threats. If a known threat is found, you will not be able to proceed to the destination. If suspicious content is detected, you will see a warning.

AMERICAN TOWER®
CORPORATION

RE: Tower Modification Permit Application
ATC Site Number: 88008
ATC Site Name: Bethany CT
State: CT

To Whom It May Concern:

This letter serves as ATC approval for East Coast Communications to submit application for tower modification permitting for Sprint Nextel modification design OAA712592_C6_13 dated 8/13/18. ATC will review and sign the document if ATC signature is required to complete the application.

Please contact me with any questions or concerns.

Thank you,

**Ian Culbert**
*Associate Construction Manager - East*
**American Tower Corporation**
10 Presidential Way
Woburn, MA 01801
781-926-7805 (Office)
603-401-9127 (Mobile)
Ian.Culbert@americantower.com

**After Recordation, Return To:**

**Sullivan & Worcester LLP**
**One Post Office Square**
**Boston, Massachusetts 02109**
**Attn: Sander Ash, Esq.**

VOL. 124 PAGE 716

**Transfer Tax Due: $** 6,906.95

STATE OF GEORGIA

COUNTY OF FULTON

**CONNECTICUT**
**QUITCLAIM DEED**

**Site: Bethany GLC: CT1340**

THIS INDENTURE is made this 14th day of January, 2000 between **AT&T Corp.**, a New York corporation, formerly known as American Telephone and Telegraph Company ("Grantor"), and **AMERICAN TOWERS, INC.**, a Delaware corporation, having as its address c/o American Tower Corporation, 116 Huntington Avenue, Boston, MA 02116 (hereinafter referred to as "Grantee")(the words "Grantor" and "Grantee" to include their respective heirs, successors, legal representatives and assigns where the context permits or requires).

WITNESSETH:

GRANTOR, for and in consideration of the sum of TEN AND NO/100 DOLLARS ($10.00) and other valuable consideration in hand paid at and before the sealing and delivery of these presents, the receipt, adequacy and sufficiency whereof are hereby acknowledged, does by these presents remise, release and forever quit-claim unto Grantee all of Grantor's right, title and interest in and to:

ALL THE TRACT(S) OR PARCEL(S) OF LAND being more particularly described on Exhibit "A" attached hereto and by this reference made a part hereof (hereinafter referred to as the "Property").

TO HAVE AND TO HOLD said Property unto Grantee, so that neither Grantor nor any entity or entities claiming under Grantor shall at any time, by any means or ways, have, claim, or demand any right, title, or interest in or to the Property or its appurtenances, or any rights thereof;

GRANTOR RESERVES UNTO ITSELF, and excepts from the above conveyance, the easements, rights and privileges hereinafter set forth:

(a) By its acceptance of this Deed, Grantee acknowledges and agrees Grantor has and hereby does reserve an exclusive, perpetual easement and right-of-way (the "Reserved Easement") for the benefit of Grantor, its Affiliates[1] and its and their respective transferees, successors and assigns, for the purpose of installing, operating, maintaining, repairing, removing and replacing underground telecommunication cables and conduits of Grantor, its Affiliates and its and their respective transferees, successors and assigns, together with manholes, markers and surface testing terminals and any regeneration huts or other above-surface improvements existing upon, over and under the Property as of the date first above written (collectively, the "Easement Area Equipment"), in such locations (the "Easement Area") where (i) the Easement Area Equipment is currently located and with respect to subsurface installations, as is marked by utility installation markers, and (ii) should there be no existing Easement Area Equipment installed on the date hereof, Easement Area Equipment may be installed within an Easement Area, the location of which Grantee may hereafter approve, which approval shall not be unreasonably withheld, conditioned or delayed (taking into account Grantee's then current use of the burdened Property and the reasonable future use thereof). By its acceptance of this Deed, the Grantee acknowledges its intent to find at least one location for the Reserved Easement. Such Easement Area shall be a minimum of sixteen and one-half (16½) feet in width and a maximum of thirty (30) feet in width. Should the Easement Area Equipment now installed (or that initially installed in the future) not encumber the maximum Easement Area, additional Easement Area Equipment may be constructed or installed within such Easement Area and, with respect to any underground cabling, conduits, wires, lines or similar improvements, such additional Easement Area Equipment shall be installed in a line parallel to and equidistant from the first cable laid; provided sufficient area is available for the installation of the additional Easement Area Equipment in the reasonable discretion of Grantee, taking into account Grantee's then current use of the burdened Property and the reasonable future use thereof. Grantor shall install, maintain and replace, as appropriate, surface markers indicating the location of the Easement Area Equipment.

(b) Grantor further reserves the following rights and powers incidental to the Easement Area and the "Temporary Easement Area" (as hereinafter defined):

---

[1] Affiliates. Shall mean, with respect to any person or entity, any other person or entity that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, such first person or entity. As used in this definition, "control" (including, with correlative meanings, "controlled by" and "under common control with") shall mean possession, directly or indirectly, of the power to direct or cause the direction of management or polices (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise).

(i) A non-exclusive temporary right-of-way and easement (the "Temporary Easement") to be used solely for the purpose of installing, repairing, removing or replacing Easement Area Equipment upon a strip of land ten (10) feet wide on either side of the Easement Area (the "Temporary Easement Area"), provided sufficient area is then available for the installation of the additional Easement Area Equipment, taking into account Grantee's then current use of the burdened Property. Subject to the foregoing limitation, Grantor shall be entitled to park its vehicles and store its materials in the Temporary Easement Area in connection with the Grantor's exercising its rights under the Temporary Easement.

(ii) If the Easement Area or the Temporary Easement Area is not accessible other than by crossing over other portions of the Property, the right of vehicular and pedestrian ingress and egress over such portion of the Property as Grantee shall from time to time designate for such purposes to and from the Easement Area or the Temporary Easement Area, as the case may be, in connection with the exercise of the Temporary Easement rights or the Reserved Easement rights;

(iii) The right to clear all trees, roots, brush, vines, overhanging limbs and other obstructions from the surface and subsurface of the Easement Area and, in connection with the exercise of the Temporary Easement rights, the surface or subsurface of the Temporary Easement Area.

(c) Except as provided in paragraph (a) above, no excavation, building, structure or obstruction will be constructed, erected, built or permitted in or on the surface of the Easement Area and no change will be made by grading or otherwise to the surface or subsurface of the Easement Area. Provided there is no interference with above ground installations located upon or across the Easement Area, Grantee shall have the right to use the surface of the Easement Area for vehicular and pedestrian ingress and egress, except that such use shall exclude heavy trucks, equipment and construction vehicles which could impair the use of or damage the Easement Area Equipment. Should Grantee or Grantee's designees desire to use a portion of the Easement Area, Grantor shall not unreasonably withhold, delay or condition its consent to a proposed use, taking into account Grantor's existing use and the planned reasonable future use thereof; and provided, further, Grantor may condition its consent to Grantee's use of the Easement Area being subject to the same conditions respecting the use thereof by Grantor as are set forth in subparagraph (e) hereinbelow.

(d) Any party seeking to construct, install or maintain any subsurface installations shall call the appropriate utility line location service (e.g., Miss Dig) to determine the location of any Grantor- or Grantee-installed communications systems and utilities prior to the commencement of any work on the Property.

(e) The foregoing reservations are intended to benefit Grantor, its Affiliates, and its and their respective transferees, successors and assigns, and are subject to the following terms and conditions, each of which shall be binding upon Grantor, its Affiliates, and its transferees, successors and assigns, as the case may be (each of which of the foregoing parties is for the

purpose of this subparagraph (e) referred to as a "Beneficiary" or collectively, if applicable, the "Beneficiaries;" and each Beneficiary by its exercising of any right reserved to it hereunder shall have agreed to be bound by the following), and each of which shall be effective only from and after the date hereof:

(i) Except to the extent caused by or resulting from the negligence or willful misconduct of Grantee, from and after the date hereof, the Beneficiaries shall defend, indemnify and hold harmless Grantee, its officers, directors, employees, partners, tenants, invitees, licensees and contractors from all costs, damages, expenses (including, without limitation, reasonable attorneys' fees and disbursements), foreseen or unforeseen, arising (directly or indirectly) after the date hereof from or in connection with the exercise by any Beneficiary of any right reserved unto the Beneficiaries in this reservation, including, but not limited to, the installation, maintenance, operation, removal, replacement or presence, in each case after the date hereof, of the Easement Area Equipment and other property at the Property, any work or thing done or condition created by Beneficiary after the date hereof at the Property, and any and all costs (including attorneys' fees) of enforcing the terms of subparagraphs (a) through (e) hereof.

(ii) Except in the case of emergency when notice reasonable under the circumstances shall be given and except in the case of normal patrols of the Easement Area for the purpose of observing the presence of surface markers or erosion for which no notice is required, Beneficiary shall give reasonable prior written notice before entering upon the Property. Such notice(s) shall set forth in reasonable detail any and all work and actions to be undertaken in connection with such entry.

(iii) Beneficiary shall not suffer or permit any lien to be filed, or shall promptly bond over such lien, against the Property relating to, or arising out of, work performed or materials supplied by or for Beneficiary after the date hereof.

(iv) All work performed by Beneficiary relating to the Easement shall be reasonably coordinated with Grantee and with other work being performed at the Property (taking into account any emergency conditions which may exist). Beneficiary shall promptly repair any damage to the Property occasioned by its exercise of any of its rights related to the Reserved Easement or the Temporary Easement.

(v) Beneficiary shall secure all necessary licenses, permits and other governmental approvals before performing any work at the Property and shall, from and after the date hereof, comply with all applicable laws governing its use of the Easement Area, and shall carry, if required by applicable law, and cause each of its contractors and subcontractors to carry, workers' compensation insurance in statutory amounts.

(vi) The agreements, easements, covenants, conditions, undertakings, restrictions,

rights, privileges made, granted or assumed, or reserved, as the case may be, by Grantee, the Beneficiaries or Grantor, as the case may be, are made not only personally for the benefit of the other parties hereto but also shall run with the land and constitute an equitable servitude on the portion of the land owned by such party appurtenant to the Property, the Easement Area, or the Temporary Easement Area, as the case may be. Any transferee of all or any portion of the Property or all or any portion of the Easement Area or Temporary Easement Area shall be deemed automatically by acceptance of the same, to have assumed all obligations herein set forth and to have agreed with the party then burdened by the rights herein created and reserved to execute any and all instruments and to do any and all things reasonably required to carry out the intention of the agreements herein set forth, and the transferor shall, upon completion of such transfer involving all of its interest in the Easement Area or the Temporary Easement Area and upon the giving of written notice of such transfer to the other, be relieved of all further liability with respect to the Property, Easement Area and/or the Temporary Easement Area transferred, except liability with respect to matters that may have arisen from and after the date hereof and prior to the date of said transfer. The written notice of transfer shall include the name and address of the transferee.

(vii) If the consolidated net worth of the Beneficiaries who are obligated under the indemnity contained in this subparagraph (e) is at any time less than $100,000,000.00, as determined by generally accepted accounting principles consistently applied, the within reservations shall terminate unless at all times thereafter the Beneficiaries maintain for the benefit of Grantee evidence of insurance reasonably satisfactory to Grantee. In such case, the Beneficiaries shall maintain and deliver from time to time as reasonably requested by Grantee evidence of such insurance reasonably satisfactory to Grantee so long as such party is a Beneficiary of the Easement. By acceptance of this Deed, the Grantee acknowledges that evidence of commercial general liability insurance in the minimum amount of $2,500,000 (as such amount shall be reasonably adjusted from time to time to account for inflation) shall be a reasonable amount of commercial general liability insurance acceptable to Grantee. Unless the stock of Beneficiary or, if Beneficiary is a subsidiary of the Grantor, the stock of its parent company shall then be publicly traded, Beneficiary shall provide evidence of its net worth to Grantee from time to time upon Grantee's request.

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EXHIBIT "A"

SITE NAME: BETHANY, CT
GLC: CT1340
LINE NO: A198
Page 1 of 2

ll that certain piece or parcel of land, with all the improvements thereon, situated in the Town of Bethany, in the County of New Haven and State of Connecticut, containing 9.212 acres, or 401,277 square feet, and bounded and described as follows:

Commencing at a point on the east side of Old Amity Road, said point being approximately 300 feet north of Meyers Road;
thence running north 35 degrees, 29 minutes, 45 seconds west 83.73 feet along Old Amity Road;
thence running north 27 degrees, 02 minutes, 49 seconds west 46.95 feet along Old Amity Road;
thence running north 18 degrees, 52 minutes, 39 seconds west 379.83 feet along Old Amity Road;
thence running north 68 degrees, 13 minutes, 57 seconds east 191.55 feet along land belonging now or formerly to Phillip Chamberlain and Marjorie A. Chamberlain;
thence running north 66 degrees, 20 minutes, 58 seconds east 27.25 feet along land belonging now or formerly to Phillip Chamberlain and Marjorie A. Chamberlain;
thence running north 25 degrees, 08 minutes, 22 seconds east 68.00 feet along land belonging now or formerly to Phillip Chamberlain and Marjorie A. Chamberlain;
thence running north 6 degrees, 28 minutes, 02 seconds west 71.23 feet along land belonging now or formerly to Phillip Chamberlain and Marjorie A. Chamberlain;
thence running north 4 degrees, 27 minutes, 27 seconds west 82.43 feet along land belonging now or formerly to Konstantine Kosciuk and Margarita Kosciuk;

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SITE NAME: BETHANY, CT
GLC: CT1340
LINE NO: A198
Page 2 of 2

thence running north 5 degrees, 30 minutes, 43 seconds west 196.24 feet along land belonging now or formerly to Walter H. Braun;
thence running north 3 degrees, 09 minutes, 24 seconds west 86.82 feet along land belonging now or formerly to Walter H. Braun;
thence running north 0 degrees, 42 minutes, 15 seconds west 86.75 feet along land belonging now or formerly to Walter H. Braun;
thence running north 85 degrees, 01 minutes, 45 seconds east 136.63 feet along land belonging now or formerly to the Estate of William Beletzky;
thence running south 19 degrees. 15 minutes. 14 seconds east 1,012.01 feet;
thence running south 67 degrees, 51 minutes, 46 seconds west 56.18 feet;
thence running south 9 degrees, 50 minutes.00 seconds west 213.75 feet;
thence running south 59 degrees, 04 minutes, 46 seconds west 51.05 feet along the easterly line of Meyers Road, so-called;
thence running north 19 degrees. 15 minutes. 14 seconds west 189.36 feet;
thence running south 67 degrees, 51 minutes, 46 seconds west 296.70 feet to the point and place of beginning.

Being the same parcel as conveyed to American Telephone and Telegraph Company by Elsie M. Halter by Warranty Deed dated August 10, 1966 and recorded August 19, 1966 in Volume 43, Page 554 of the Town of Bethany Land Records.

CT1340 - Deed
AT&T Corp./QCD/CT

$ 6202.48 STATE CONVEYANCE TAX COLLECTED
$ 684.47 CONVEYANCE TAX RECEIVED

ASST TOWN CLERK OF BETHANY

IN WITNESS WHEREOF, Grantor has signed and sealed this deed, the day and year first above written.

Witnessed by:

Virginia N. Goss

Mary K. Hedds

GRANTOR:

AT&T Corp., a New York corporation, formerly known as American Telephone and Telegraph Company

By: R S Adler

Name: Richard S. Adler,
Manager, Network Services Infrastructure
Program Management (ANS Real Estate)

State of Georgia

County of Fulton

Personally appeared, Richard S. Adler, as aforesaid, signer of the foregoing instrument and acknowledged the same to be his/her free act and deed as such Manager, Network Services Infrastructure Program Management (ANS Real Estate) of AT&T Corp., and the free act and deed of said corporation, before me.

Maurice Mario

Notary Public
Print Name: MAURICE, MARIO
My Commission Expires: [illegible]

(NOTARIAL SEAL)

Grantees' Address:

c/o American Tower Corporation

116 Huntington Avenue

Boston, MA 02116



CT1340 - Deed
AT&T Corp./QCD/CT

RECEIVED FOR RECORD Feb. 16, 2000
AT 1:19 P.M. AND RECORDED BY
Joan C. Simpson, TOWN CLERK

U.S. Department of Homeland Security

United States Coast Guard

Commanding Officer
Civil Engineering Unit Miami

15608 SW 117th Ave
Miami, FL 33177
Staff Symbol: (c)
Phone: (305) 278-6770
Fax (305) 278-6703
Email. Benjamin L Davis@uscg mil

RECEIVED
SEP 21 2012

11100

September 14, 2012

Robert Walsh, Building Official
Bethany Town Hall
40 Peck Road
Bethany, CT 06524-3338

Dear Mr. Walsh:

This letter is confirmation that the United States, acting by and through the U.S. Coast Guard (USCG), has a lease for the RFF Bethany tower site located at 93 Old Amity Road, Bethany, CT 06524-3429 is currently used by the USCG has an antenna tower site for the National Distress and Response System, also known as "Rescue 21". The Lessor is American Tower, Inc..

The premise leased by the Federal Government includes the existing tower and a surface area sufficient for supporting equipment. A shelter, generator and fuel tank are also part of the surface area of the existing tower compound. In addition, the USCG has antennas and cables and utility connections on the tower. The above improvements and equipment are for the exclusive use of the Federal Government.

The USCG will soon begin the installation of a VSAT satellite antenna on the existing surface area in order to transmit and receive private internet protocol data services. The USCG will not need to climb the tower as the VSAT satellite antenna will be installed on the Ice Bridge as detailed on the attached site plan.

The "Rescue 21" contractor (Verizon Satellite Solutions Group), will be authorized to commence construction and equipment installation, make the necessary utility connections, and otherwise prepare the site for operation. Per 40 USC 3312, federal agencies and their contractors are not required to obtain permits or to pay permitting or inspections fees.

Verizon Satellite Solutions Group is authorized to reproduce copies of this letter and distribute as needed to confirm to state and/or local authorities that this project will constitute a Federal construction or alteration project on federally leased real property.

If you would like further consultation about the project or would like to review the construction drawings or require an inspection of the facilities during construction or alteration, please don't hesitate to contact the U.S Coast Guard. Attached is the site plan for your perusal.

For any questions, please contact James Middleton, Contractor at 202-475-3285 or James.E.Middleton@uscg.mil, and/or Jaime Reyes, Real Property Specialist at 305-278-6716 or Jaime.Reyes4@uscg.mil.

Sincerely,

Jaime Reyes, Real Property Specialist
United States Coast Guard

Enclosures

1.) Site Plan

AMERICAN TOWER®
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# Structural Analysis Report

| | | |
|---|---|---|
| **Structure** | : | **337.5 ft Self Supported Tower** |
| **ATC Site Name** | : | **BETHANY CT, CT** |
| **ATC Asset Number** | : | **88008** |
| **Engineering Number** | : | **13685609_C3_02** |
| **Proposed Carrier** | : | **VERIZON WIRELESS** |
| **Carrier Site Name** | : | **BETHANY** |
| **Carrier Site Number** | : | **469372** |
| **Site Location** | : | **93 Old Amity Road**<br>**Bethany, CT 06524-3400**<br>**41.404800,-73.000000** |
| **County** | : | **New Haven** |
| **Date** | : | **July 29, 2021** |
| **Max Usage** | : | **74%** |
| **Result** | : | **Pass** |


Prepared By:
Adam Pittman
Structural Engineer II

Reviewed By:

**COA: PEC.0001553**

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## Table of Contents

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 337.5 ft self supported tower to reflect the change in loading by VERIZON WIRELESS.

## Supporting Documents

| | |
|---|---|
| **Tower Drawings** | CSEI Analysis ATC Engineering #73115244, dated November 18, 2002 |
| **Foundation Drawing** | Mapping by ETS Project #120302.01, dated June 18, 2012 |
| **Geotechnical Report** | Geotel Report #E12-221, dated June 5, 2012 |
| **Modifications** | ATC Job #OAA712592_C6_13, dated August 13, 2018 |

## Analysis

The tower was analyzed using Power Lines systems INC., tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

| | |
|---|---|
| **Basic Wind Speed:** | 119 mph (3-Second Gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-second gust) w/1" radial ice concurrent |
| **Code:** | ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code |
| **Exposure Category:** | B |
| **Risk Category:** | II |
| **Topographic Factor Procedure:** | Method 1 |
| **Topographic Category:** | 1 |

## Conclusion

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

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

**Existing and Reserved Equipment**

| Elev.[1] (ft) | Qty | Equipment | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 344.0 | 1 | Rohde & Schwarz ADD090 | Leg | (2) 7/8" Coax | US DEPT OF HOMELAND SECURITY |
| 326.0 | 1 | Kathrein Scala 750 10074 | Platform with Handrails | (1) 1 5/8" Coax | LIGADO NETWORKS LLC |
| 320.0 | 1 | Sinclair SC281-L | Leg/Flush | (1) 7/8" Coax | US DEPT OF HOMELAND SECURITY |
| 315.0 | 1 | Sinclair SC381-HL (160") | Leg/Flush | (1) 7/8" Coax | |
| 300.0 | 1 | Generic Abandoned Line | Leg/Flush | (1) 1/2" Coax | |
| 291.0 | 2 | Generic 8' Omni | Side Arm | - | UNKNOWN |
| 285.0 | 1 | Sinclair SC281-L | Leg/Flush | (1) 7/8" Coax | US DEPT OF HOMELAND SECURITY |
| 266.0 | 1 | Generic 8' Omni | Side Arm | - | UNKNOWN |
| 253.0 | 12 | Decibel DB844H90E-XY | Leg | (12) 1 5/8" Coax | SPRINT NEXTEL |
| 240.0 | 6 | Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter | Sector Frame | (4) 1 1/4" Hybriflex Cable | |
| | 3 | Alcatel-Lucent 1900 MHz 4X45 RRH | | | |
| | 3 | Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield | | | |
| | 3 | RFS APXVTM14-ALU-I20 | | | |
| | 3 | Commscope NNVV-65B-R4 | | | |
| 222.0 | 3 | Ericsson Radio 4449 B12,B71 | Sector Frame | (3) 1 1/4" (1.25"-31.8mm) Fiber (6) 1 5/8" Coax | T-MOBILE |
| | 3 | Andrew ETT19V2A12UB | | | |
| | 3 | RFS APX16DWV-16DWVS-E-A20 | | | |
| | 3 | RFS APXVAARR24_43-U-NA20 | | | |
| 213.0 | 1 | Andrew DB616E-BC | Side Arm | (1) 1 1/4" Coax | US DEPT OF HOMELAND SECURITY |
| 180.0 | 6 | Andrew DB844H90E-XY | Triangular Low Profile Platform | (12) 1 5/8" Coax | VERIZON WIRELESS |
| 158.0 | 6 | Powerwave Allgon LGP21401 | Sector Frame | (1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (1) 3" conduit | AT&T MOBILITY |
| | 1 | Raycap FC12-PC6-10E | | | |
| | 3 | Ericsson RRUS 11 (Band 12) | | | |
| | 3 | Raycap DC2-48-60-0-9E | | | |
| | 3 | Powerwave Allgon LGP21901 | | | |
| | 3 | Powerwave Allgon 7770.00 | | | |
| | 2 | Andrew SBNH-1D6565C (60.8 lbs) | | | |
| | 1 | KMW AM-X-CD-16-65-00T-RET | | | |
| 147.0 | 1 | Generic 5" x 3" x 2" Cavity Filter | Side Arm | (1) 1/2" Coax | SIGFOX S.A. |
| | 1 | Generic Low Noise Amplifier | | | |
| | 1 | Procom CXL 900-3LW | | | |
| 100.0 | 3 | RFS APXV18-206517S-C | Flush | (6) 1 5/8" Coax | METRO PCS INC |
| 48.0 | 1 | PCTEL GPS-TMG-HR-26N | Stand-Off | (1) 1/2" Coax | SPRINT NEXTEL |

**Equipment to be Removed**

| Elev.[1] (ft) | Qty | Equipment | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 180.0 | 6 | RFS FD9R6004/1C-3L | - | - | VERIZON WIRELESS |
| | 3 | Powerwave Allgon P65-16-XL-2 | | | |

**Equipment to be Removed**

| Elev.[1] (ft) | Qty | Equipment | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| | 3 | Rymsa MGD3-800TX | | | |

**Proposed Equipment**

| Elev.[1] (ft) | Qty | Equipment | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 180.0 | 3 | Samsung Outdoor CBRS 20W RRH –Clip-on Antenna | Sector Frame | (2) 1 5/8" Hybriflex | VERIZON WIRELESS |
| | 3 | Samsung RT4401-48A | | | |
| | 3 | Samsung B2/B66A RRH-BR049 | | | |
| | 3 | Samsung B5/B13 RRH-BR04C | | | |
| | 1 | Raycap RCMDC-6627-PF-48 | | | |
| | 3 | Samsung MT6407-77A | | | |
| | 6 | JMA Wireless MX06FRO660-03 | | | |

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

Install proposed lines stacked on top of existing VERIZON WIRELESS coax.

## Structure Usages

| Structural Component | Controlling Usage | Pass/Fail |
|---|---|---|
| Legs | 57% | Pass |
| Diagonals | 74% | Pass |
| Trussed Diagonals | 71% | Pass |
| Horizontals | 69% | Pass |
| Trussed Horizontals | 57% | Pass |
| Anchor Bolts | 42% | Pass |

## Foundations

| Reaction Component | Analysis Reactions | % of Usage |
|---|---|---|
| Uplift (Kips) | 289.5 | 51% |
| Axial (Kips) | 416.3 | 2% |

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.

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## Standard Conditions

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

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

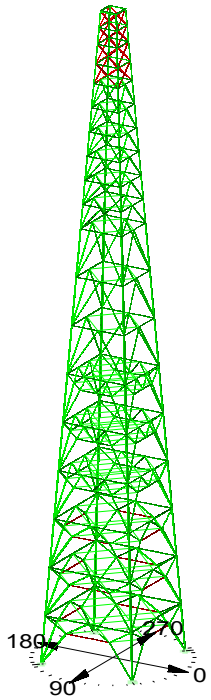
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

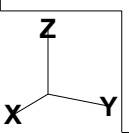
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

American Tower Corp., Project: "88008"
Tower Version 16.01, 4:08:53 PM Thursday, July 29, 2021
Undeformed geometry displayed



Project Name : 88008
Project Notes:
Project File : X:\A-B\Bethany CT, CT (88008)\13685609 VERIZON WIRELESS\13685609_02_CUST_STR\88008.TOW
Date run : 4:06:56 PM Thursday, July 29, 2021
by : Tower Version 16.01
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

Member check option: ANSI/TIA 222-G-1
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: X:\C-E\Carmel NJ, NJ (88077)\13685609_C3_02\ver.eia

*** Analysis Results:

Maximum element usage is 74.10% for Angle "D 12X" in load case "W -90"

**Foundation Design Forces For All Load Cases:**

**Note: loads are factored.**

| Load Case | Foundation Description | Axial Force (kips) | Shear Force (kips) | Bending Moment (ft-k) | Foundation Usage % |
|---|---|---|---|---|---|
| W 0 | 0P | 298.67 | 47.39 | 4.71 | 0.00 |
| W 0 | 0X | 293.06 | 46.47 | 4.47 | 0.00 |
| W 0 | 0XY | -172.78 | 33.63 | 5.09 | 0.00 |
| W 0 | 0Y | -171.66 | 34.28 | 5.29 | 0.00 |
| W 180 | 0P | -168.32 | 34.15 | 5.35 | 0.00 |
| W 180 | 0X | -169.18 | 33.58 | 5.17 | 0.00 |
| W 180 | 0XY | 289.46 | 46.42 | 4.55 | 0.00 |
| W 180 | 0Y | 295.33 | 47.26 | 4.77 | 0.00 |
| W 45 | 0P | 416.27 | 62.43 | 4.12 | 0.00 |
| W 45 | 0X | 60.33 | 22.75 | 5.28 | 0.00 |
| W 45 | 0XY | -289.53 | 50.18 | 5.58 | 0.00 |
| W 45 | 0Y | 60.22 | 22.70 | 5.26 | 0.00 |
| W -45 | 0P | 65.25 | 23.89 | 5.52 | 0.00 |
| W -45 | 0X | 411.36 | 62.03 | 4.17 | 0.00 |
| W -45 | 0XY | 58.41 | 22.04 | 5.11 | 0.00 |
| W -45 | 0Y | -287.72 | 50.28 | 5.65 | 0.00 |
| W 90 | 0P | 298.77 | 47.42 | 4.72 | 0.00 |
| W 90 | 0X | -171.65 | 34.31 | 5.30 | 0.00 |
| W 90 | 0XY | -172.68 | 33.61 | 5.08 | 0.00 |
| W 90 | 0Y | 292.86 | 46.45 | 4.46 | 0.00 |
| W -90 | 0P | -168.41 | 34.18 | 5.35 | 0.00 |
| W -90 | 0X | 295.54 | 47.29 | 4.78 | 0.00 |
| W -90 | 0XY | 289.37 | 46.39 | 4.54 | 0.00 |
| W -90 | 0Y | -169.19 | 33.56 | 5.16 | 0.00 |
| W 0 Ice | 0P | 149.81 | 19.57 | 1.76 | 0.00 |
| W 0 Ice | 0X | 145.24 | 19.13 | 1.67 | 0.00 |
| W 0 Ice | 0XY | 31.40 | 3.12 | 3.14 | 0.00 |
| W 0 Ice | 0Y | 35.20 | 3.20 | 3.21 | 0.00 |
| W 180 Ice | 0P | 39.32 | 3.51 | 3.27 | 0.00 |
| W 180 Ice | 0X | 35.87 | 3.39 | 3.23 | 0.00 |
| W 180 Ice | 0XY | 140.77 | 18.98 | 1.63 | 0.00 |
| W 180 Ice | 0Y | 145.70 | 19.32 | 1.75 | 0.00 |
| W 45 Ice | 0P | 179.19 | 24.04 | 1.15 | 0.00 |
| W 45 Ice | 0X | 90.16 | 10.83 | 2.57 | 0.00 |
| W 45 Ice | 0XY | 2.26 | 4.19 | 3.45 | 0.00 |
| W 45 Ice | 0Y | 90.05 | 10.82 | 2.57 | 0.00 |
| W -45 Ice | 0P | 94.56 | 11.33 | 2.66 | 0.00 |
| W -45 Ice | 0X | 174.79 | 23.70 | 1.12 | 0.00 |
| W -45 Ice | 0XY | 86.08 | 10.72 | 2.51 | 0.00 |
| W -45 Ice | 0Y | 6.23 | 4.07 | 3.53 | 0.00 |
| W 90 Ice | 0P | 149.83 | 19.57 | 1.76 | 0.00 |
| W 90 Ice | 0X | 35.29 | 3.21 | 3.21 | 0.00 |
| W 90 Ice | 0XY | 31.42 | 3.12 | 3.14 | 0.00 |
| W 90 Ice | 0Y | 145.12 | 19.12 | 1.66 | 0.00 |
| W -90 Ice | 0P | 39.30 | 3.51 | 3.27 | 0.00 |
| W -90 Ice | 0X | 145.82 | 19.33 | 1.75 | 0.00 |
| W -90 Ice | 0XY | 140.75 | 18.98 | 1.62 | 0.00 |
| W -90 Ice | 0Y | 35.78 | 3.38 | 3.23 | 0.00 |

**Summary of Joint Support Reactions For All Load Cases:**

| Load Case | Joint Label | Long. Force (kips) | Tran. Force (kips) | Vert. Force (kips) | Shear Force (kips) | Tran. Moment (ft-k) | Long. Moment (ft-k) | Bending Moment (ft-k) | Vert. Moment (ft-k) | Found. Usage % |
|---|---|---|---|---|---|---|---|---|---|---|
| W 0 | 0P | -42.88 | -20.19 | -298.67 | 47.39 | -0.94 | -4.62 | 4.71 | -2.79 | 0.00 |
| W 0 | 0X | -41.56 | 20.81 | -293.06 | 46.47 | 0.68 | -4.42 | 4.47 | 2.78 | 0.00 |
| W 0 | 0XY | -31.33 | -12.22 | 172.78 | 33.63 | 0.48 | -5.06 | 5.09 | 2.49 | 0.00 |
| W 0 | 0Y | -32.26 | 11.60 | 171.66 | 34.28 | -0.37 | -5.28 | 5.29 | -2.47 | 0.00 |
| W 180 | 0P | 32.23 | 11.30 | 168.32 | 34.15 | -0.36 | 5.34 | 5.35 | 2.48 | 0.00 |
| W 180 | 0X | 31.37 | -11.99 | 169.18 | 33.58 | 0.49 | 5.14 | 5.17 | -2.50 | 0.00 |
| W 180 | 0XY | 41.59 | 20.62 | -289.46 | 46.42 | 0.67 | 4.50 | 4.55 | -2.79 | 0.00 |
| W 180 | 0Y | 42.85 | -19.93 | -295.33 | 47.26 | -0.94 | 4.68 | 4.77 | 2.80 | 0.00 |
| W 45 | 0P | -44.13 | -44.17 | -416.27 | 62.43 | 2.92 | -2.91 | 4.12 | 0.00 | 0.00 |
| W 45 | 0X | -19.99 | -10.88 | -60.33 | 22.75 | 4.21 | -3.18 | 5.28 | 3.82 | 0.00 |
| W 45 | 0XY | -35.50 | -35.47 | 289.53 | 50.18 | 3.95 | -3.95 | 5.58 | -0.00 | 0.00 |
| W 45 | 0Y | -10.84 | -19.94 | -60.22 | 22.70 | 3.17 | -4.20 | 5.26 | -3.82 | 0.00 |
| W -45 | 0P | -21.04 | 11.31 | -65.25 | 23.89 | -4.41 | -3.33 | 5.52 | -3.83 | 0.00 |
| W -45 | 0X | -43.12 | 44.59 | -411.36 | 62.03 | -3.12 | -2.76 | 4.17 | -0.01 | 0.00 |
| W -45 | 0XY | -10.24 | 19.52 | -58.41 | 22.04 | -3.12 | -4.04 | 5.11 | 3.84 | 0.00 |
| W -45 | 0Y | -36.06 | 35.04 | 287.72 | 50.28 | -3.89 | -4.10 | 5.65 | 0.02 | 0.00 |
| W 90 | 0P | -20.16 | -42.92 | -298.77 | 47.42 | 4.62 | 0.95 | 4.72 | 2.79 | 0.00 |
| W 90 | 0X | 11.58 | -32.29 | 171.65 | 34.31 | 5.28 | 0.37 | 5.30 | 2.47 | 0.00 |
| W 90 | 0XY | -12.24 | -31.30 | 172.68 | 33.61 | 5.06 | -0.49 | 5.08 | -2.49 | 0.00 |
| W 90 | 0Y | 20.82 | -41.52 | -292.86 | 46.45 | 4.41 | -0.68 | 4.46 | -2.78 | 0.00 |
| W -90 | 0P | 11.29 | 32.26 | 168.41 | 34.18 | -5.34 | 0.36 | 5.35 | -2.48 | 0.00 |
| W -90 | 0X | -19.92 | 42.89 | -295.54 | 47.29 | -4.68 | 0.95 | 4.78 | -2.80 | 0.00 |
| W -90 | 0XY | 20.64 | 41.55 | -289.37 | 46.39 | -4.49 | -0.66 | 4.54 | 2.79 | 0.00 |
| W -90 | 0Y | -12.01 | 31.33 | 169.19 | 33.56 | -5.14 | -0.49 | 5.16 | 2.50 | 0.00 |
| W 0 Ice | 0P | -15.99 | -11.27 | -149.81 | 19.57 | -1.68 | 0.51 | 1.76 | -0.59 | 0.00 |
| W 0 Ice | 0X | -15.37 | 11.39 | -145.24 | 19.13 | 1.56 | 0.58 | 1.67 | 0.58 | 0.00 |
| W 0 Ice | 0XY | -1.76 | 2.58 | -31.40 | 3.12 | 1.62 | -2.69 | 3.14 | 0.58 | 0.00 |
| W 0 Ice | 0Y | -1.73 | -2.69 | -35.20 | 3.20 | -1.67 | -2.74 | 3.21 | -0.56 | 0.00 |
| W 180 Ice | 0P | 1.69 | -3.07 | -39.32 | 3.51 | -1.66 | 2.82 | 3.27 | 0.57 | 0.00 |
| W 180 Ice | 0X | 1.80 | 2.88 | -35.87 | 3.39 | 1.63 | 2.78 | 3.23 | -0.59 | 0.00 |
| W 180 Ice | 0XY | 15.40 | 11.09 | -140.77 | 18.98 | 1.55 | -0.48 | 1.63 | -0.59 | 0.00 |
| W 180 Ice | 0Y | 15.95 | -10.90 | -145.70 | 19.32 | -1.70 | -0.44 | 1.75 | 0.60 | 0.00 |
| W 45 Ice | 0P | -16.99 | -17.00 | -179.19 | 24.04 | -0.81 | 0.81 | 1.15 | 0.00 | 0.00 |
| W 45 Ice | 0X | -10.18 | 3.69 | -90.16 | 10.83 | 2.43 | 0.85 | 2.57 | 0.85 | 0.00 |
| W 45 Ice | 0XY | -2.97 | -2.96 | -2.26 | 4.19 | 2.44 | -2.44 | 3.45 | -0.00 | 0.00 |
| W 45 Ice | 0Y | 3.69 | -10.17 | -90.05 | 10.82 | -0.85 | -2.43 | 2.57 | -0.85 | 0.00 |
| W -45 Ice | 0P | -10.73 | -3.62 | -94.56 | 11.33 | -2.53 | 0.80 | 2.66 | -0.86 | 0.00 |
| W -45 Ice | 0X | -16.44 | 17.07 | -174.79 | 23.70 | 0.71 | 0.86 | 1.12 | -0.01 | 0.00 |
| W -45 Ice | 0XY | 3.59 | 10.10 | -86.08 | 10.72 | 0.79 | -2.38 | 2.51 | 0.87 | 0.00 |
| W -45 Ice | 0Y | -2.86 | 2.89 | -6.23 | 4.07 | -2.50 | -2.48 | 3.53 | 0.01 | 0.00 |
| W 90 Ice | 0P | -11.27 | -16.00 | -149.83 | 19.57 | -0.51 | 1.68 | 1.76 | 0.59 | 0.00 |
| W 90 Ice | 0X | -2.70 | -1.73 | -35.29 | 3.21 | 2.74 | 1.67 | 3.21 | 0.56 | 0.00 |
| W 90 Ice | 0XY | 2.58 | -1.76 | -31.42 | 3.12 | 2.69 | -1.62 | 3.14 | -0.58 | 0.00 |
| W 90 Ice | 0Y | 11.39 | -15.35 | -145.12 | 19.12 | -0.58 | -1.56 | 1.66 | -0.58 | 0.00 |
| W -90 Ice | 0P | -3.07 | 1.69 | -39.30 | 3.51 | -2.82 | 1.66 | 3.27 | -0.57 | 0.00 |
| W -90 Ice | 0X | -10.90 | 15.96 | -145.82 | 19.33 | 0.44 | 1.70 | 1.75 | -0.60 | 0.00 |
| W -90 Ice | 0XY | 11.10 | 15.39 | -140.75 | 18.98 | 0.40 | -1.55 | 1.62 | 0.59 | 0.00 |
| W -90 Ice | 0Y | 2.87 | 1.80 | -35.78 | 3.38 | -2.78 | -1.63 | 3.23 | 0.59 | 0.00 |

**Summary of Joint Support Reactions For All Load Cases in Direction of Leg:**

| Load Case | Support Joint | Origin Joint | Leg Member | Force In Leg Dir. (kips) | Residual Shear Perpendicular To Leg (kips) | Residual Shear Horizontal To Leg - Res. (kips) | Residual Shear Horizontal To Leg - Long. (kips) | Residual Shear Horizontal To Leg - Tran. (kips) | Total Long. Force (kips) | Total Tran. Force (kips) | Total Vert. Force (kips) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| W 0 | 0P | 1P | L 1P | 301.465 | 23.883 | 23.936 | 23.905 | 1.212 | -42.88 | -20.19 | -298.67 |
| W 0 | 0X | 1X | L 1X | 295.831 | 22.989 | 23.044 | 22.939 | -2.190 | -41.56 | 20.81 | -293.06 |
| W 0 | 0XY | 1XY | L 1XY | -174.839 | 20.351 | 20.396 | 20.358 | 1.248 | -31.33 | -12.22 | 172.78 |
| W 0 | 0Y | 1Y | L 1Y | -173.749 | 21.319 | 21.365 | 21.353 | -0.097 | -32.26 | 11.60 | 171.66 |
| W 180 | 0P | 1P | L 1P | -170.397 | 21.496 | 21.542 | -21.533 | -0.609 | 32.23 | 11.30 | 168.32 |
| W 180 | 0X | 1X | L 1X | -171.244 | 20.610 | 20.656 | -20.619 | 1.240 | 31.37 | -11.99 | 169.18 |
| W 180 | 0XY | 1XY | L 1XY | 292.236 | 23.250 | 23.306 | -23.199 | -2.230 | 41.59 | 20.62 | -289.46 |
| W 180 | 0Y | 1Y | L 1Y | 298.119 | 24.062 | 24.115 | -24.086 | 1.171 | 42.85 | -19.93 | -295.33 |
| W 45 | 0P | 1P | L 1P | 420.186 | 24.935 | 25.035 | 17.682 | 17.723 | -44.13 | -44.17 | -416.27 |
| W 45 | 0X | 1X | L 1X | 60.666 | 21.847 | 21.847 | 16.153 | 14.710 | -19.99 | -10.88 | -60.33 |
| W 45 | 0XY | 1XY | L 1XY | -292.857 | 24.076 | 24.173 | 17.110 | 17.076 | -35.50 | -35.47 | 289.53 |
| W 45 | 0Y | 1Y | L 1Y | 60.556 | 21.793 | 21.793 | 14.668 | 16.118 | -10.84 | -19.94 | -60.22 |
| W -45 | 0P | 1P | L 1P | 65.605 | 22.898 | 22.898 | 16.895 | -15.455 | -21.04 | 11.31 | -65.25 |
| W -45 | 0X | 1X | L 1X | 415.256 | 24.985 | 25.085 | 16.983 | -18.462 | -43.12 | 44.59 | -411.36 |
| W -45 | 0XY | 1XY | L 1XY | 58.764 | 21.084 | 21.085 | 13.954 | -15.806 | -10.24 | 19.52 | -58.41 |
| W -45 | 0Y | 1Y | L 1Y | -291.068 | 24.334 | 24.432 | 17.779 | -16.758 | -36.06 | 35.04 | 287.72 |
| W 90 | 0P | 1P | L 1P | 301.561 | 23.915 | 23.968 | 1.185 | 23.938 | -20.16 | -42.92 | -298.77 |
| W 90 | 0X | 1X | L 1X | -173.735 | 21.353 | 21.398 | -0.677 | 21.388 | 11.58 | -32.29 | 171.65 |
| W 90 | 0XY | 1XY | L 1XY | -174.744 | 20.325 | 20.370 | 1.267 | 20.331 | -12.24 | -31.30 | 172.68 |
| W 90 | 0Y | 1Y | L 1Y | 295.625 | 22.965 | 23.020 | -2.217 | 22.913 | 20.82 | -41.52 | -292.86 |
| W -90 | 0P | 1P | L 1P | -170.493 | 21.523 | 21.568 | -0.590 | -21.560 | 11.29 | 32.26 | 168.41 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W -90 | 0X | 1X | L 1X | 298.325 | 24.087 | 24.140 | 1.144 | -24.113 | -19.92 | 42.89 | -295.54 |
| W -90 | 0XY | 1XY | L 1XY | 292.140 | 23.220 | 23.276 | -2.256 | -23.166 | 20.64 | 41.55 | -289.37 |
| W -90 | 0Y | 1Y | L 1Y | -171.258 | 20.577 | 20.623 | 1.261 | -20.585 | -12.01 | 31.33 | 169.19 |
| W 0 Ice | 0P | 1P | L 1P | 150.934 | 6.688 | 6.709 | 6.474 | 1.757 | -15.99 | -11.27 | -149.81 |
| W 0 Ice | 0X | 1X | L 1X | 146.355 | 6.488 | 6.509 | 6.139 | -2.164 | -15.37 | 11.39 | -145.24 |
| W 0 Ice | 0XY | 1XY | L 1XY | 31.327 | 3.794 | 3.799 | 3.754 | -0.583 | -1.76 | 2.58 | -31.40 |
| W 0 Ice | 0Y | 1Y | L 1Y | 35.122 | 3.984 | 3.990 | 3.964 | 0.458 | -1.73 | -2.69 | -35.20 |
| W 180 Ice | 0P | 1P | L 1P | 39.247 | 4.220 | 4.226 | -4.187 | 0.574 | 1.69 | -3.07 | 39.32 |
| W 180 Ice | 0X | 1X | L 1X | 35.797 | 4.115 | 4.121 | -4.077 | -0.599 | 1.80 | 2.88 | -35.87 |
| W 180 Ice | 0XY | 1XY | L 1XY | 141.884 | 6.787 | 6.809 | -6.461 | -2.148 | 15.40 | 11.09 | -140.77 |
| W 180 Ice | 0Y | 1Y | L 1Y | 146.810 | 6.875 | 6.895 | -6.697 | 1.641 | 15.95 | -10.90 | -145.70 |
| W 45 Ice | 0P | 1P | L 1P | 180.624 | 7.906 | 7.938 | 5.607 | 5.619 | -16.99 | -17.00 | -179.19 |
| W 45 Ice | 0X | 1X | L 1X | 90.671 | 4.895 | 4.898 | 4.454 | 2.037 | -10.18 | 3.69 | -90.16 |
| W 45 Ice | 0XY | 1XY | L 1XY | 1.880 | 4.380 | 4.397 | 3.111 | 3.108 | -2.97 | -2.96 | -2.26 |
| W 45 Ice | 0Y | 1Y | L 1Y | 90.561 | 4.886 | 4.889 | 2.027 | 4.449 | 3.69 | -10.17 | -90.05 |
| W -45 Ice | 0P | 1P | L 1P | 95.087 | 5.293 | 5.295 | 4.726 | -2.388 | -10.73 | -3.62 | -94.56 |
| W -45 Ice | 0X | 1X | L 1X | 176.209 | 7.974 | 8.006 | 5.335 | -5.969 | -16.44 | 17.07 | -174.79 |
| W -45 Ice | 0XY | 1XY | L 1XY | 86.601 | 4.995 | 4.998 | 1.882 | -4.630 | 3.59 | 10.10 | -86.08 |
| W -45 Ice | 0Y | 1Y | L 1Y | 5.840 | 4.609 | 4.628 | 3.256 | -3.289 | -2.86 | 2.89 | -6.23 |
| W 90 Ice | 0P | 1P | L 1P | 150.954 | 6.696 | 6.716 | 1.748 | 6.485 | -11.27 | -16.00 | -149.83 |
| W 90 Ice | 0X | 1X | L 1X | 35.212 | 3.993 | 3.999 | 0.460 | 3.973 | -2.70 | -1.73 | -35.29 |
| W 90 Ice | 0XY | 1XY | L 1XY | 31.346 | 3.792 | 3.797 | -0.582 | 3.752 | 2.58 | -1.76 | -31.42 |
| W 90 Ice | 0Y | 1Y | L 1Y | 146.225 | 6.487 | 6.508 | -2.171 | 6.135 | 11.39 | -15.35 | -145.12 |
| W -90 Ice | 0P | 1P | L 1P | 39.227 | 4.221 | 4.228 | 0.575 | -4.188 | -3.07 | 1.69 | -39.30 |
| W -90 Ice | 0X | 1X | L 1X | 146.940 | 6.877 | 6.897 | 1.634 | -6.701 | -10.90 | 15.96 | -145.82 |
| W -90 Ice | 0XY | 1XY | L 1XY | 141.865 | 6.780 | 6.802 | -2.157 | -6.451 | 11.10 | 15.39 | -140.75 |
| W -90 Ice | 0Y | 1Y | L 1Y | 35.707 | 4.106 | 4.112 | -0.596 | -4.069 | 2.87 | 1.80 | -35.78 |

**Overturning Moment Summary For All Load Cases:**

| Load Case | Transverse Moment (ft-k) | Longitudinal Moment (ft-k) | Torsional Moment (ft-k) | Resultant Moment (ft-k) | Transverse Force (kips) | Longitudinal Force (kips) | Vertical Force (kips) |
|---|---|---|---|---|---|---|---|
| W 0 | 174.494 | -24284.309 | 90.503 | 24284.936 | -0.000 | 148.027 | 247.294 |
| W 180 | 174.611 | 23924.234 | -90.564 | 23924.871 | -0.000 | -148.027 | 247.294 |
| W 45 | 18305.545 | -18311.235 | -3.928 | 25891.974 | 110.456 | 110.456 | 247.294 |
| W -45 | -17956.728 | -18311.553 | 132.015 | 25646.775 | -110.456 | 110.456 | 247.294 |
| W 90 | 24278.632 | -180.190 | -96.061 | 24279.300 | 148.027 | -0.000 | 247.294 |
| W -90 | -23929.929 | -180.309 | 96.122 | 23930.608 | -148.027 | -0.000 | 247.294 |
| W 0 Ice | 217.027 | -5926.042 | 21.468 | 5930.014 | -0.000 | 34.844 | 361.658 |
| W 180 Ice | 217.050 | 5480.563 | -21.470 | 5484.859 | -0.000 | -34.844 | 361.658 |
| W 45 Ice | 4586.654 | -4592.354 | -0.808 | 6490.540 | 26.445 | 26.445 | 361.658 |
| W -45 Ice | -4152.588 | -4592.393 | 31.187 | 6191.450 | -26.445 | 26.445 | 361.658 |
| W 90 Ice | 5920.342 | -222.729 | -22.610 | 5924.530 | 34.844 | -0.000 | 361.658 |
| W -90 Ice | -5486.266 | -222.752 | 22.612 | 5490.787 | -34.844 | -0.000 | 361.658 |

**EIA Sections Information:**

| Section Label | Top Z (ft) | Bottom Z (ft) | Joint Count | Member Count | Top Width (ft) | Bottom Width (ft) | Gross Area (ft^2) | Face Adjust Factor | Af Face Adjust Factor | Ar Face Adjust Factor | Dead Load Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 328.9-337.5 | 337.500 | 328.917 | 8 | 20 | 9.00 | 10.09 | 81.93 | 1.1220 | 1.1220 | 1.1220 | 1.146 |
| 320.3-328.9 | 328.917 | 320.334 | 8 | 16 | 10.09 | 11.18 | 91.29 | 1.1610 | 1.1610 | 1.1610 | 1.193 |
| 310.2-320.3 | 320.334 | 310.167 | 8 | 16 | 11.18 | 12.47 | 120.24 | 1.1970 | 1.1970 | 1.1970 | 1.236 |
| 300.0-310.2 | 310.167 | 300.000 | 12 | 24 | 12.47 | 13.76 | 133.38 | 1.1540 | 1.1540 | 1.1540 | 1.185 |
| 287.5-300.0 | 300.000 | 287.500 | 16 | 24 | 13.76 | 15.35 | 181.98 | 1.2010 | 1.2010 | 1.2010 | 1.242 |
| 275.0-287.5 | 287.500 | 275.000 | 16 | 24 | 15.35 | 16.94 | 201.83 | 1.2080 | 1.2080 | 1.2080 | 1.249 |
| 262.5-275.0 | 275.000 | 262.500 | 16 | 24 | 16.94 | 18.53 | 221.69 | 1.2140 | 1.2140 | 1.2140 | 1.257 |
| 250.0-262.5 | 262.500 | 250.000 | 16 | 24 | 18.53 | 20.12 | 241.54 | 1.2200 | 1.2200 | 1.2200 | 1.264 |
| 237.5-250.0 | 250.000 | 237.500 | 16 | 24 | 20.12 | 21.71 | 261.39 | 1.2260 | 1.2260 | 1.2260 | 1.271 |
| 225.0-237.5 | 237.500 | 225.000 | 16 | 24 | 21.71 | 23.29 | 281.24 | 1.2320 | 1.2320 | 1.2320 | 1.278 |
| 200.0-225.0 | 225.000 | 200.000 | 16 | 24 | 23.29 | 26.47 | 622.04 | 1.2640 | 1.2640 | 1.2640 | 1.316 |
| 175.0-200.0 | 200.000 | 175.000 | 16 | 24 | 26.47 | 29.65 | 701.44 | 1.2730 | 1.2730 | 1.2730 | 1.328 |
| 150.0-175.0 | 175.000 | 150.000 | 20 | 32 | 29.65 | 32.82 | 780.85 | 1.2750 | 1.2750 | 1.2750 | 1.330 |
| 125.0-150.0 | 150.000 | 125.000 | 36 | 76 | 32.82 | 36.00 | 860.26 | 1.2300 | 1.2300 | 1.2300 | 1.276 |
| 100.0-125.0 | 125.000 | 100.000 | 36 | 76 | 36.00 | 39.17 | 939.67 | 1.2250 | 1.2250 | 1.2250 | 1.270 |
| 75.00-100.0 | 100.000 | 75.000 | 32 | 68 | 39.17 | 42.35 | 1019.07 | 1.2270 | 1.2270 | 1.2270 | 1.272 |
| 50.00-75.00 | 75.000 | 50.000 | 24 | 52 | 42.35 | 45.53 | 1098.48 | 1.3380 | 1.3380 | 1.3380 | 1.406 |
| 25.00-50.00 | 50.000 | 25.000 | 24 | 52 | 45.53 | 48.70 | 1177.89 | 1.3250 | 1.3250 | 1.3250 | 1.390 |
| 0.000-25.00 | 25.000 | 0.000 | 20 | 40 | 48.70 | 51.88 | 1257.30 | 1.3210 | 1.3210 | 1.3210 | 1.385 |

Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage which may not necessarily be the same as that which produces maximum force.

**Group Summary (Compression Portion):**

| Group Label | Group Desc. | Angle Type | Angle Size | Steel Strength (ksi) | Max Usage % | Usage Control | Max Use In Comp. % | Comp. Control Member | Comp. Force (kips) | Comp. Control Load Case | L/r Capacity (kips) | Comp. Connect. Shear Capacity (kips) | Comp. Connect. Bearing Capacity (kips) | RLX | RLY | RLZ | L/r | KL/r (ft) | Length Comp. Member (ft) | Curve No. | No. Of Bolts Comp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Leg S1 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 56.59 | Comp | 56.59 | L 1P | -366.328 | W 45 | 647.310 | 0.000 | 0.000 | 0.281 | 0.281 | 0.281 | 54.29 | 54.29 | 25.101 | 1 | 0 |
| Leg S2 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 55.05 | Comp | 55.05 | L 2P | -327.495 | W 45 | 594.930 | 0.000 | 0.000 | 0.281 | 0.281 | 0.281 | 54.29 | 54.29 | 25.101 | 1 | 0 |
| Leg S3 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 53.20 | Comp | 53.20 | L 3P | -289.867 | W 45 | 544.890 | 0.000 | 0.000 | 0.281 | 0.281 | 0.281 | 54.29 | 54.29 | 25.101 | 1 | 0 |
| Leg S4 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 43.79 | Comp | 43.79 | L 4P | -239.488 | W 45 | 546.883 | 0.000 | 0.000 | 0.281 | 0.281 | 0.281 | 54.29 | 54.29 | 25.101 | 1 | 0 |
| Leg S5 | L 8" x 8" x 1" | SAE | 8X8X1 | 36.0 | 41.52 | Comp | 41.52 | L 5P | -203.610 | W 45 | 490.433 | 0.000 | 0.000 | 0.281 | 0.281 | 0.281 | 54.29 | 54.29 | 25.101 | 1 | 0 |
| Leg S6 | L 8" x 8" x 1" | SAE | 8X8X1 | 36.0 | 33.80 | Comp | 33.80 | L 6P | -165.747 | W 45 | 490.433 | 0.000 | 0.000 | 0.281 | 0.281 | 0.281 | 54.29 | 54.29 | 25.101 | 1 | 0 |
| Leg S7 | L 8" x 8" x 0.875" | SAE | 8X8X0.88 | 36.0 | 37.65 | Comp | 37.65 | L 7P | -156.381 | W 45 | 415.358 | 0.000 | 0.000 | 0.333 | 0.333 | 0.333 | 63.94 | 63.94 | 25.101 | 1 | 0 |
| Leg S8 | L 8" x 8" x 0.75" | SAE | 8X8X0.75 | 36.0 | 34.83 | Comp | 34.83 | L 8P | -125.163 | W 45 | 359.355 | 0.000 | 0.000 | 0.333 | 0.333 | 0.333 | 63.54 | 63.54 | 25.101 | 1 | 0 |
| Leg S9 | L 8" x 8" x 0.75" | SAE | 8X8X0.75 | 36.0 | 27.24 | Comp | 27.24 | L 9P | -97.872 | W 45 | 359.355 | 0.000 | 0.000 | 0.333 | 0.333 | 0.333 | 63.54 | 63.54 | 25.101 | 1 | 0 |
| Leg S10 | L 6" x 6" x 0.875" | SAE | 6X6X0.88 | 36.0 | 27.62 | Comp | 27.62 | L 10P | -84.244 | W 45 | 304.972 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 64.36 | 64.36 | 12.550 | 1 | 0 |
| Leg S11 | L 6" x 6" x 0.75" | SAE | 6X6X0.75 | 36.0 | 26.63 | Comp | 26.63 | L 11P | -70.462 | W 45 | 264.572 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 64.36 | 64.36 | 12.550 | 1 | 0 |
| Leg S12 | L 6" x 6" x 0.75" | SAE | 6X6X0.75 | 36.0 | 22.42 | Comp | 22.42 | L 12P | -59.319 | W 45 | 264.572 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 64.36 | 64.36 | 12.550 | 1 | 0 |
| Leg S13 | L 6" x 6" x 0.5625" | SAE | 6X6X0.56 | 36.0 | 23.83 | Comp | 23.83 | L 13P | -48.173 | W 45 | 202.137 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 63.82 | 63.82 | 12.550 | 1 | 0 |
| Leg S14 | L 6" x 6" x 0.5625" | SAE | 6X6X0.56 | 36.0 | 18.49 | Comp | 18.49 | L 14P | -37.371 | W 45 | 202.137 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 63.82 | 63.82 | 12.550 | 1 | 0 |
| Leg S15 | L 6" x 6" x 0.4375" | SAE | 6X6X0.44 | 36.0 | 16.80 | Comp | 16.80 | L 15P | -26.751 | W 45 | 159.214 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 63.28 | 63.28 | 12.550 | 1 | 0 |
| Leg S16 | L 5" x 5" x 0.4375" | SAE | 5X5X0.44 | 36.0 | 19.89 | Comp | 19.89 | L 16P | -26.234 | W 45 | 132.414 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 62.12 | 62.12 | 10.208 | 1 | 0 |
| Leg S17 | L 5" x 5" x 0.4375" | SAE | 5X5X0.44 | 36.0 | 13.56 | Comp | 13.56 | L 17P | -17.952 | W 45 | 132.414 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 62.12 | 62.12 | 10.208 | 1 | 0 |
| Leg S18 | L 5" x 5" x 0.3125" | SAE | 5X5X0.31 | 36.0 | 9.96 | Comp | 9.96 | L 18P | -9.636 | W 45 | 96.703 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 52.02 | 52.02 | 8.618 | 1 | 0 |
| Leg S19 | L 5" x 5" x 0.3125" | SAE | 5X5X0.31 | 36.0 | 5.43 | Comp | 5.43 | L 19P | -5.249 | W 45 | 96.703 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 52.02 | 52.02 | 8.618 | 1 | 0 |
| Diag S1 | B/B L3"x4"x0.375" | DAS | 4X3X0.38 | 36.0 | 45.88 | Comp | 45.88 | D 2X | -42.664 | W -90 | 92.986 | 0.000 | 0.000 | 0.333 | 0.848 | 0.333 | 118.88 | 118.88 | 22.664 | 1 | 0 |
| Diag S2 | B/B L3"x4"x0.25" | DAS | 4X3X0.25 | 36.0 | 64.66 | Comp | 64.66 | D 4X | -41.468 | W -90 | 64.134 | 0.000 | 0.000 | 0.333 | 0.848 | 0.333 | 117.61 | 117.61 | 22.191 | 1 | 0 |
| Diag S3 | B/B L3"x4"x0.25" | DAS | 4X3X0.25 | 36.0 | 60.53 | Comp | 60.53 | D 6X | -40.132 | W -90 | 66.301 | 0.000 | 0.000 | 0.333 | 0.848 | 0.333 | 115.20 | 115.20 | 21.737 | 1 | 0 |
| Diag S4 | B/B L3"x3.5"x0.25" | DAS | 3.5X3X0.26 | 36.0 | 52.21 | Comp | 52.21 | D 8X | -43.380 | W -90 | 83.084 | 0.000 | 0.000 | 0.333 | 0.333 | 0.333 | 91.27 | 91.27 | 20.858 | 1 | 0 |
| Diag S5 | B/B L3"x3.5"x0.25" | DAS | 3.5X3X0.25 | 36.0 | 49.66 | Comp | 49.66 | D 10X | -41.783 | W -90 | 84.132 | 0.000 | 0.000 | 0.333 | 0.333 | 0.333 | 89.64 | 89.64 | 20.484 | 1 | 0 |
| Diag S6 | B/B L2.5"x3.5"x0.25" | DAS | 3.5X2.5X0.25 | 36.0 | 74.10 | Comp | 74.10 | D 12X | -39.296 | W -90 | 53.030 | 0.000 | 0.000 | 0.300 | 0.848 | 0.300 | 119.11 | 119.11 | 20.133 | 1 | 0 |
| Diag S7 | B/B L3"x3"x0.375" | DAE | 3X3X0.38 | 36.0 | 51.32 | Comp | 51.32 | D 13X | -25.047 | W -90 | 48.805 | 0.000 | 0.000 | 0.300 | 0.600 | 0.300 | 152.92 | 140.25 | 29.947 | 6 | 0 |
| Diag S8 | B/B L3"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 67.32 | Comp | 67.32 | D 16Y | -21.443 | W 180 | 31.851 | 0.000 | 0.000 | 0.300 | 0.600 | 0.300 | 144.53 | 135.09 | 29.107 | 6 | 0 |
| Diag S9 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 58.27 | Comp | 58.27 | D 18Y | -19.414 | W 180 | 33.317 | 0.000 | 0.000 | 0.300 | 0.600 | 0.300 | 140.68 | 132.72 | 28.332 | 6 | 0 |
| Diag S10 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 45.74 | Comp | 45.74 | D 20Y | -10.962 | W 180 | 23.965 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 172.47 | 152.27 | 17.103 | 6 | 0 |
| Diag S11 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 37.88 | Comp | 37.88 | D 22Y | -9.569 | W 180 | 25.265 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 167.12 | 148.98 | 16.573 | 6 | 0 |
| Diag S12 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 34.99 | Comp | 34.99 | D 24Y | -9.311 | W 180 | 26.613 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 161.99 | 145.82 | 16.064 | 6 | 0 |
| Diag S13 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 53.29 | Comp | 53.29 | D 26Y | -9.083 | W 180 | 17.045 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 199.95 | 169.17 | 15.579 | 6 | 0 |
| Diag S14 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 45.65 | Comp | 45.65 | D 28Y | -8.189 | W 180 | 17.940 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 194.06 | 165.55 | 15.120 | 6 | 0 |
| Diag S15 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 40.12 | Comp | 40.12 | D 29X | -7.561 | W -90 | 18.844 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 188.54 | 162.15 | 14.690 | 6 | 0 |
| Diag S16 | L 3.5" x 3.5" x 0.25" | SAE | 3.5X3.5X0.25 | 36.0 | 14.90 | Tens | 0.00 | D 32Y | 0.000 | | 0.001 | 0.000 | 0.000 | 100.000 | 100.000 | 100.000 | 28719.94 | 17708.96 | 16.610 | 6 | 0 |
| Diag S17 | L 3.5" x 3.5" x 0.25" | SAE | 3.5X3.5X0.25 | 36.0 | 11.49 | Tens | 0.00 | D 34Y | 0.000 | | 0.001 | 0.000 | 0.000 | 100.000 | 100.000 | 100.000 | 26990.64 | 20595.47 | 15.610 | 5 | 0 |
| Diag S18 | L 3" x 3" x 0.25" | SAE | 3X3X0.25 | 36.0 | 8.92 | Tens | 0.00 | D 36Y | 0.000 | | 0.001 | 0.000 | 0.000 | 100.000 | 100.000 | 100.000 | 27725.40 | 21155.35 | 13.678 | 5 | 0 |
| Diag S19 | L 3" x 3" x 0.25" | SAE | 3X3X0.25 | 36.0 | 6.84 | Tens | 0.00 | D 38Y | 0.000 | | 0.001 | 0.000 | 0.000 | 100.000 | 100.000 | 100.000 | 26043.70 | 19873.90 | 12.848 | 5 | 0 |
| Horiz 1 | B/B L4"x3"x0.25" | DAL | 4X3X0.25 | 36.0 | 54.70 | Comp | 54.70 | H 1P | -36.552 | W -90 | 66.826 | 0.000 | 0.000 | 0.500 | 0.500 | 0.500 | 114.15 | 114.15 | 24.352 | 1 | 0 |
| Horiz 2 | B/B L3.5"x2.5"x0.25" | DAL | 3.5X2.5X0.25 | 36.0 | 68.71 | Comp | 68.71 | H 3P | -34.327 | W -90 | 49.961 | 0.000 | 0.000 | 0.490 | 0.490 | 0.490 | 122.80 | 121.72 | 22.764 | 6 | 0 |
| Horiz 3 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 61.25 | Comp | 61.25 | H 5P | -31.660 | W -90 | 51.690 | 0.000 | 0.000 | 0.460 | 0.460 | 0.460 | 123.69 | 122.27 | 21.176 | 6 | 0 |
| Horiz 4 | B/B L3.5"x2.5"x0.25" | DAL | 3.5X2.5X0.25 | 36.0 | 61.99 | Comp | 61.99 | H 7P | -31.118 | W -90 | 50.198 | 0.000 | 0.000 | 0.900 | 0.900 | 0.900 | 129.38 | 125.77 | 13.058 | 6 | 0 |
| Horiz 5 | B/B L3.5"x2.5"x0.25" | DAL | 3.5X2.5X0.25 | 36.0 | 57.40 | Comp | 57.40 | H 9P | -28.223 | W -90 | 49.171 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 132.10 | 127.44 | 12.000 | 6 | 0 |
| Horiz 6 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 55.37 | Comp | 55.37 | H 11P | -24.655 | W -90 | 44.528 | 0.000 | 0.000 | 0.980 | 0.980 | 0.980 | 136.15 | 129.93 | 10.941 | 6 | 0 |
| Horiz 7 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 42.89 | Comp | 42.89 | H 14P | -12.293 | W 180 | 28.661 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 188.23 | 161.96 | 14.823 | 6 | 0 |
| Horiz 8 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 28.92 | Comp | 28.92 | H 16P | -9.720 | W 180 | 33.611 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 168.06 | 149.56 | 13.235 | 6 | 0 |
| Horiz 9 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 29.20 | Comp | 29.20 | H 18P | -7.961 | W 180 | 27.264 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 181.74 | 157.97 | 11.647 | 6 | 0 |
| Horiz 10 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 22.42 | Comp | 22.42 | H 20P | -6.748 | W 180 | 30.098 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 169.35 | 150.35 | 10.853 | 6 | 0 |
| Horiz 11 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 16.48 | Comp | 16.48 | H 22P | -5.502 | W 180 | 33.397 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 156.96 | 142.73 | 10.059 | 6 | 0 |
| Horiz 12 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 13.98 | Comp | 13.98 | H 24P | -5.211 | W 180 | 37.270 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 144.57 | 135.11 | 9.264 | 6 | 0 |
| Horiz 13 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 12.58 | Comp | 12.58 | H 26P | -5.267 | W 180 | 41.857 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 132.18 | 127.49 | 8.470 | 6 | 0 |
| Horiz 14 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 9.37 | Comp | 9.37 | H 28P | -4.403 | W 180 | 46.973 | 0.000 | 0.000 | 1.000 | 1.200 | 1.000 | 119.79 | 119.79 | 7.676 | 1 | 0 |
| Horiz 15 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 12.23 | Comp | 12.23 | H 29P | -6.670 | W -90 | 54.531 | 0.000 | 0.000 | 1.000 | 1.070 | 1.000 | 107.39 | 107.39 | 6.882 | 1 | 0 |
| Horiz 16 | L 3" x 2.5" x 0.25" | SAU | 3X2.5X0.25 | 36.0 | 29.43 | Comp | 29.43 | H 31P | -6.211 | W -90 | 21.106 | 0.000 | 0.000 | 0.500 | 0.520 | 0.500 | 141.74 | 133.37 | 12.473 | 6 | 0 |
| Horiz 17 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 8.67 | Comp | 8.67 | H 33P | -4.324 | W -90 | 49.899 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 118.74 | 118.74 | 11.181 | 1 | 0 |
| Horiz 18 | L 3" x 2.5" x 0.25" | SAU | 3X2.5X0.25 | 36.0 | 15.91 | Comp | 15.91 | H 35P | -2.836 | W -90 | 17.832 | 0.000 | 0.000 | 0.500 | 1.000 | 0.500 | 160.80 | 145.09 | 10.090 | 6 | 0 |
| Horiz 19 | C8X11.5 | CHN | C8x11.5 | 36.0 | 5.37 | Comp | 5.37 | H 37P | -1.765 | W -90 | 32.845 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 172.80 | 152.47 | 9.000 | 6 | 0 |
| LD 1 | B/B L3"x2.5"x0.3125" | DAL | 3X2.5X0.31 | 36.0 | 41.96 | Comp | 41.96 | LD 1X | -18.183 | W -90 | 43.337 | 0.000 | 0.000 | 0.904 | 0.904 | 0.904 | 162.86 | 146.36 | 14.067 | 6 | 0 |
| LD 2 | B/B L4"x3"x0.3125" | DAL | 4X3X0.31 | 36.0 | 58.77 | Comp | 58.77 | LD 3X | -47.062 | W -90 | 80.071 | 0.000 | 0.000 | 0.904 | 0.904 | 0.904 | 120.15 | 120.09 | 14.067 | 6 | 0 |
| LD 4 | B/B L3"x2"x0.25" | DAL | 3X2X0.25 | 36.0 | 59.95 | Comp | 59.95 | LD 7X | -17.299 | W -90 | 28.855 | 0.000 | 0.000 | 0.904 | 0.904 | 0.904 | 162.97 | 146.42 | 13.385 | 6 | 0 |
| LD 5 | B/B L4"x3"x0.25" | DAL | 4X3X0.25 | 36.0 | 65.08 | Comp | 65.08 | LD 9X | -44.680 | W -90 | 68.657 | 0.000 | 0.000 | 0.904 | 0.904 | 0.904 | 113.44 | 113.44 | 13.385 | 1 | 0 |
| LD 7 | B/B L2.5"x2.5"x0.375" | DAE | 2.5X2.5X0.38 | 36.0 | 41.07 | Comp | 41.07 | LD 13X | -16.174 | W -90 | 39.383 | 0.000 | 0.000 | 0.904 | 0.904 | 0.904 | 183.21 | 158.87 | 12.717 | 6 | 0 |
| LD 8 | B/B L3.5"x3"x0.25" | DAL | 3.5X3X0.25 | 36.0 | 71.17 | Comp | 71.17 | LD 15X | -42.090 | W -90 | 59.138 | 0.000 | 0.000 | 0.904 | 0.904 | 0.904 | 124.28 | 122.63 | 12.717 | 6 | 0 |
| LD 10 | B/B L3"x3"x0.25" | DAE | 3X3X0.25 | 36.0 | 37.46 | Comp | 37.46 | LD 19X | -20.898 | W -45 | 55.790 | 0.000 | 0.000 | 0.830 | 0.830 | 0.830 | 121.89 | 121.16 | 11.382 | 6 | 0 |
| LD 11 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 56.73 | Comp | 56.73 | LD 21X | -28.076 | W -90 | 49.489 | 0.000 | 0.000 | 0.850 | 0.850 | 0.850 | 106.16 | 106.16 | 8.160 | 1 | 0 |
| LD 12 | B/B L3"x2"x0.25" | DAL | 3X2X0.25 | 36.0 | 61.69 | Comp | 61.69 | LD 23P | -30.439 | W -90 | 49.345 | 0.000 | 0.000 | 0.860 | 0.860 | 0.860 | 111.25 | 111.25 | 9.605 | 1 | 0 |
| LD 13 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 53.68 | Comp | 53.68 | LD 25X | -19.190 | W -90 | 35.750 | 0.000 | 0.000 | 0.830 | 0.830 | 0.830 | 137.13 | 130.53 | 10.794 | 6 | 0 |
| LD 14 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 53.43 | Comp | 53.43 | LD 27X | -26.957 | W -90 | 50.451 | 0.000 | 0.000 | 0.850 | 0.850 | 0.850 | 104.26 | 104.26 | 8.014 | 1 | 0 |
| LD 15 | B/B L3"x3"x0.25" | DAE | 3X3X0.25 | 36.0 | 41.85 | Comp | 41.85 | LD 29P | -28.999 | W -90 | 69.294 | 0.000 | 0.000 | 0.860 | 0.860 | 0.860 | 102.68 | 102.68 | 9.253 | 1 | 0 |
| LD 16 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 46.31 | Comp | 46.31 | LD 31X | -17.738 | W -45 | 38.298 | 0.000 | 0.000 | 0.830 | 0.830 | 0.830 | 129.96 | 126.12 | 10.229 | 6 | 0 |
| LD 17 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 49.59 | Comp | 49.59 | LD 33X | -25.460 | W -90 | 51.340 | 0.000 | 0.000 | 0.850 | 0.850 | 0.850 | 102.47 | 102.47 | 7.876 | 1 | 0 |
| LD 18 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 60.90 | Comp | 60.90 | LD 35P | -26.459 | W -90 | 43.450 | 0.000 | 0.000 | 0.860 | 0.860 | 0.860 | 117.40 | 117.40 | 8.919 | 1 | 0 |
| LH 1 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 10.05 | Tens | 0.00 | LH 2X | 0.000 | | 0.001 | 0.000 | 0.000 | 100.000 | 100.000 | 100.000 | 38807.73 | 23912.96 | 24.352 | 6 | 0 |
| LH 2 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 6.27 | Tens | 0.00 | LH 4X | 0.000 | | 0.002 | 0.000 | 0.000 | 100.000 | 100.000 | 100.000 | 36276.82 | 22356.44 | 22.764 | 6 | 0 |
| LH 3 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 6.49 | Tens | 0.00 | LH 6X | 0.000 | | 0.002 | 0.000 | 0.000 | 100.000 | 100.000 | 100.000 | 33745.91 | 20799.93 | 21.176 | 6 | 0 |
| LH 4 | B/B L3"x3"x0.375" | DAE | 3X3X0.38 | 36.0 | 46.24 | Comp | 46.24 | LH 7X | -23.738 | W -45 | 51.338 | 0.000 | 0.000 | 0.940 | 1.880 | 0.940 | 170.36 | 150.97 | 10.648 | 6 | 0 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LH 5 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 57.18 | Comp | 57.18 | LH 9X | -21.014 | W -45 | 36.752 | 0.000 | 0.000 | 0.940 | 1.880 | 0.940 | 152.80 | 140.17 | 9.821 | 6 | 0 |
| LH 6 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 44.91 | Comp | 44.91 | LH 11X | -18.581 | W -45 | 41.375 | 0.000 | 0.000 | 0.940 | 1.880 | 0.940 | 139.93 | 132.25 | 8.993 | 6 | 0 |
| DUM 1 | Dummy Bracing Member | DUM | 0.1X0.1X1 | 36.0 | 0.00 | | 0.00 | BR 13XY | -0.884 | W 45 | 0.324 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 | 2.52 | 2.52 | 20.963 | 1 | 0 |

**Group Summary (Tension Portion):**

| Group Label | Group Desc. | Angle Type | Angle Size | Steel Strength (ksi) | Max Usage % | Usage Cont-rol | Max Tension Use In Tens. % | Tension Control Member | Tension Force (kips) | Tension Control Load Case | Net Section Capacity (kips) | Tension Connect. Shear Capacity (kips) | Tension Connect. Bearing Capacity (kips) | Tension Connect. Rupture Capacity (kips) | Length Tens. Member (ft) | No. Of Bolts Tens. | No. Of Holes | Hole Diameter (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Leg S1 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 56.59 | Comp | 45.41 | L 1XY | 246.134 | W 45 | 542.051 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S2 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 55.05 | Comp | 40.97 | L 2XY | 222.058 | W 45 | 542.051 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S3 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 53.20 | Comp | 36.05 | L 3XY | 195.395 | W 45 | 542.051 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S4 | L 8" x 8" x 1.125" | SAE | 8X8X1.13 | 36.0 | 43.79 | Comp | 30.27 | L 4XY | 164.088 | W 45 | 542.051 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S5 | L 8" x 8" x 1" | SAE | 8X8X1 | 36.0 | 41.52 | Comp | 28.53 | L 5XY | 138.678 | W 45 | 485.999 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S6 | L 8" x 8" x 1" | SAE | 8X8X1 | 36.0 | 33.80 | Comp | 23.59 | L 6XY | 114.626 | W 45 | 485.999 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S7 | L 8" x 8" x 0.875" | SAE | 8X8X0.88 | 36.0 | 37.65 | Comp | 25.87 | L 7XY | 110.871 | W 45 | 428.051 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S8 | L 8" x 8" x 0.75" | SAE | 8X8X0.75 | 36.0 | 34.83 | Comp | 23.92 | L 8XY | 88.673 | W 45 | 370.655 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S9 | L 8" x 8" x 0.75" | SAE | 8X8X0.75 | 36.0 | 27.24 | Comp | 18.14 | L 9XY | 67.245 | W 45 | 370.655 | 0.000 | 0.000 | 0.000 | 25.101 | 0 | 0 | 0.000 |
| Leg S10 | L 6" x 6" x 0.875" | SAE | 6X6X0.88 | 36.0 | 27.62 | Comp | 18.30 | L 10XY | 57.689 | W 45 | 315.252 | 0.000 | 0.000 | 0.000 | 12.550 | 0 | 0 | 0.000 |
| Leg S11 | L 6" x 6" x 0.75" | SAE | 6X6X0.75 | 36.0 | 26.63 | Comp | 17.94 | L 11Y | 49.054 | W -45 | 273.456 | 0.000 | 0.000 | 0.000 | 12.550 | 0 | 0 | 0.000 |
| Leg S12 | L 6" x 6" x 0.75" | SAE | 6X6X0.75 | 36.0 | 22.42 | Comp | 14.62 | L 12Y | 39.984 | W -45 | 273.456 | 0.000 | 0.000 | 0.000 | 12.550 | 0 | 0 | 0.000 |
| Leg S13 | L 6" x 6" x 0.5625" | SAE | 6X6X0.56 | 36.0 | 23.83 | Comp | 14.83 | L 13Y | 30.896 | W -45 | 208.332 | 0.000 | 0.000 | 0.000 | 12.550 | 0 | 0 | 0.000 |
| Leg S14 | L 6" x 6" x 0.5625" | SAE | 6X6X0.56 | 36.0 | 18.49 | Comp | 10.68 | L 14Y | 22.245 | W -45 | 208.332 | 0.000 | 0.000 | 0.000 | 12.550 | 0 | 0 | 0.000 |
| Leg S15 | L 6" x 6" x 0.4375" | SAE | 6X6X0.44 | 36.0 | 16.80 | Comp | 8.53 | L 15Y | 13.986 | W -45 | 163.944 | 0.000 | 0.000 | 0.000 | 12.550 | 0 | 0 | 0.000 |
| Leg S16 | L 5" x 5" x 0.4375" | SAE | 5X5X0.44 | 36.0 | 19.89 | Comp | 5.61 | L 16Y | 7.596 | W -45 | 135.432 | 0.000 | 0.000 | 0.000 | 10.208 | 0 | 0 | 0.000 |
| Leg S17 | L 5" x 5" x 0.4375" | SAE | 5X5X0.44 | 36.0 | 13.56 | Comp | 1.52 | L 17Y | 2.057 | W -45 | 135.432 | 0.000 | 0.000 | 0.000 | 10.208 | 0 | 0 | 0.000 |
| Leg S18 | L 5" x 5" x 0.3125" | SAE | 5X5X0.31 | 36.0 | 9.96 | Comp | 0.31 | L 18Y | 0.302 | W -45 | 98.172 | 0.000 | 0.000 | 0.000 | 8.618 | 0 | 0 | 0.000 |
| Leg S19 | L 5" x 5" x 0.3125" | SAE | 5X5X0.31 | 36.0 | 5.43 | Comp | 0.00 | L 19Y | 0.000 | | 98.172 | 0.000 | 0.000 | 0.000 | 8.618 | 0 | 0 | 0.000 |
| Diag S1 | B/B L3"x4"x0.375" | DAS | 4X3X0.38 | 36.0 | 45.88 | Comp | 22.73 | D 2P | 36.604 | W -90 | 161.028 | 0.000 | 0.000 | 0.000 | 22.664 | 0 | 0 | 0.000 |
| Diag S2 | B/B L3"x4"x0.25" | DAS | 4X3X0.25 | 36.0 | 64.66 | Comp | 33.15 | D 4P | 36.298 | W -90 | 109.512 | 0.000 | 0.000 | 0.000 | 22.191 | 0 | 0 | 0.000 |
| Diag S3 | B/B L3"x4"x0.25" | DAS | 4X3X0.25 | 36.0 | 60.53 | Comp | 32.69 | D 6P | 35.801 | W -90 | 109.512 | 0.000 | 0.000 | 0.000 | 21.737 | 0 | 0 | 0.000 |
| Diag S4 | B/B L3"x3.5"x0.25" | DAS | 3.5X3X0.25 | 36.0 | 52.21 | Comp | 36.45 | D 8P | 36.961 | W -90 | 101.412 | 0.000 | 0.000 | 0.000 | 20.858 | 0 | 0 | 0.000 |
| Diag S5 | B/B L3"x3.5"x0.25" | DAS | 3.5X3X0.25 | 36.0 | 49.66 | Comp | 35.46 | D 10P | 35.963 | W -90 | 101.412 | 0.000 | 0.000 | 0.000 | 20.484 | 0 | 0 | 0.000 |
| Diag S6 | B/B L2.5"x3.5"x0.25" | DAS | 3.5X2.5X0.25 | 36.0 | 74.10 | Comp | 35.70 | D 12P | 33.316 | W -90 | 93.312 | 0.000 | 0.000 | 0.000 | 20.133 | 0 | 0 | 0.000 |
| Diag S7 | B/B L3"x3"x0.375" | DAE | 3X3X0.38 | 36.0 | 51.32 | Comp | 16.95 | D 13P | 23.178 | W -90 | 136.728 | 0.000 | 0.000 | 0.000 | 29.947 | 0 | 0 | 0.000 |
| Diag S8 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 67.32 | Comp | 23.15 | D 16P | 19.729 | W 180 | 85.212 | 0.000 | 0.000 | 0.000 | 29.107 | 0 | 0 | 0.000 |
| Diag S9 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 58.27 | Comp | 21.37 | D 18P | 18.206 | W 180 | 85.212 | 0.000 | 0.000 | 0.000 | 28.332 | 0 | 0 | 0.000 |
| Diag S10 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 45.74 | Comp | 13.03 | D 20P | 10.046 | W 180 | 77.112 | 0.000 | 0.000 | 0.000 | 17.103 | 0 | 0 | 0.000 |
| Diag S11 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 37.88 | Comp | 11.33 | D 22P | 8.739 | W 180 | 77.112 | 0.000 | 0.000 | 0.000 | 16.573 | 0 | 0 | 0.000 |
| Diag S12 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 34.99 | Comp | 11.14 | D 24P | 8.589 | W 180 | 77.112 | 0.000 | 0.000 | 0.000 | 16.064 | 0 | 0 | 0.000 |
| Diag S13 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 53.29 | Comp | 12.26 | D 26P | 8.459 | W 180 | 69.012 | 0.000 | 0.000 | 0.000 | 15.579 | 0 | 0 | 0.000 |
| Diag S14 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 45.65 | Comp | 11.05 | D 28P | 7.629 | W 180 | 69.012 | 0.000 | 0.000 | 0.000 | 15.120 | 0 | 0 | 0.000 |
| Diag S15 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 40.12 | Comp | 10.19 | D 29P | 7.035 | W -90 | 69.012 | 0.000 | 0.000 | 0.000 | 14.600 | 0 | 0 | 0.000 |
| Diag S16 L 3.5" x 3.5" x 0.25" | | SAE | 3.5X3.5X0.25 | 36.0 | 14.90 | Tens | 14.90 | D 32P | 8.159 | W -90 | 54.756 | 0.000 | 0.000 | 0.000 | 16.610 | 0 | 0 | 0.000 |
| Diag S17 L 3.5" x 3.5" x 0.25" | | SAE | 3.5X3.5X0.25 | 36.0 | 11.49 | Tens | 11.49 | D 34P | 6.293 | W -90 | 54.756 | 0.000 | 0.000 | 0.000 | 15.610 | 0 | 0 | 0.000 |
| Diag S18 | L 3" x 3" x 0.25" | SAE | 3X3X0.25 | 36.0 | 8.92 | Tens | 8.92 | D 36P | 4.161 | W -90 | 46.656 | 0.000 | 0.000 | 0.000 | 13.678 | 0 | 0 | 0.000 |
| Diag S19 | L 3" x 3" x 0.25" | SAE | 3X3X0.25 | 36.0 | 6.84 | Tens | 6.84 | D 38P | 3.192 | W -90 | 46.656 | 0.000 | 0.000 | 0.000 | 12.848 | 0 | 0 | 0.000 |
| Horiz 1 | B/B L4"x3"x0.25" | DAL | 4X3X0.25 | 36.0 | 54.70 | Comp | 35.74 | H 1X | 39.139 | W -90 | 109.512 | 0.000 | 0.000 | 0.000 | 24.352 | 0 | 0 | 0.000 |
| Horiz 2 | B/B L3.5"x2.5"x0.25" | DAL | 3.5X2.5X0.25 | 36.0 | 68.71 | Comp | 39.19 | H 3X | 36.568 | W -90 | 93.312 | 0.000 | 0.000 | 0.000 | 22.764 | 0 | 0 | 0.000 |
| Horiz 3 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 61.25 | Comp | 40.36 | H 5X | 34.389 | W -90 | 85.212 | 0.000 | 0.000 | 0.000 | 21.176 | 0 | 0 | 0.000 |
| Horiz 4 | B/B L3.5"x2.5"x0.25" | DAL | 3.5X2.5X0.25 | 36.0 | 61.99 | Comp | 37.59 | H 7X | 35.077 | W -90 | 93.312 | 0.000 | 0.000 | 0.000 | 13.058 | 0 | 0 | 0.000 |
| Horiz 5 | B/B L3.5"x2.5"x0.25" | DAL | 3.5X2.5X0.25 | 36.0 | 57.40 | Comp | 34.18 | H 9X | 31.894 | W -90 | 93.312 | 0.000 | 0.000 | 0.000 | 12.000 | 0 | 0 | 0.000 |
| Horiz 6 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 55.37 | Comp | 31.21 | H 11P | 26.597 | W 90 | 85.212 | 0.000 | 0.000 | 0.000 | 10.941 | 0 | 0 | 0.000 |
| Horiz 7 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 42.89 | Comp | 14.51 | H 14P | 12.362 | W 0 | 85.212 | 0.000 | 0.000 | 0.000 | 14.823 | 0 | 0 | 0.000 |
| Horiz 8 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 28.92 | Comp | 11.55 | H 16P | 9.841 | W 0 | 85.212 | 0.000 | 0.000 | 0.000 | 13.235 | 0 | 0 | 0.000 |
| Horiz 9 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 29.20 | Comp | 10.73 | H 18Y | 8.276 | W 180 | 77.112 | 0.000 | 0.000 | 0.000 | 11.647 | 0 | 0 | 0.000 |
| Horiz 10 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 22.42 | Comp | 8.85 | H 20Y | 6.822 | W 180 | 77.112 | 0.000 | 0.000 | 0.000 | 10.853 | 0 | 0 | 0.000 |
| Horiz 11 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 16.48 | Comp | 7.54 | H 22Y | 5.816 | W 180 | 77.112 | 0.000 | 0.000 | 0.000 | 10.059 | 0 | 0 | 0.000 |
| Horiz 12 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 13.98 | Comp | 7.01 | H 24P | 5.408 | W 0 | 77.112 | 0.000 | 0.000 | 0.000 | 9.264 | 0 | 0 | 0.000 |
| Horiz 13 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 12.58 | Comp | 6.98 | H 26P | 5.381 | W 0 | 77.112 | 0.000 | 0.000 | 0.000 | 8.470 | 0 | 0 | 0.000 |
| Horiz 14 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 9.37 | Comp | 5.81 | H 28P | 4.482 | W 0 | 77.112 | 0.000 | 0.000 | 0.000 | 7.676 | 0 | 0 | 0.000 |
| Horiz 15 | B/B L2.5"x2.5"x0.25" | DAE | 2.5X2.5X0.25 | 36.0 | 12.23 | Comp | 0.76 | H 29XY | 0.583 | W -90 | 77.112 | 0.000 | 0.000 | 0.000 | 6.882 | 0 | 0 | 0.000 |
| Horiz 16 | L 3" x 2.5" x 0.25" | SAU | 3X2.5X0.25 | 36.0 | 29.43 | Comp | 0.00 | H 32X | 0.000 | | 42.444 | 0.000 | 0.000 | 0.000 | 12.473 | 0 | 0 | 0.000 |
| Horiz 17 | B/B L3"x2.5"x0.25" | DAL | 3X2.5X0.25 | 36.0 | 8.67 | Comp | 0.00 | H 34X | 0.000 | | 85.212 | 0.000 | 0.000 | 0.000 | 11.181 | 0 | 0 | 0.000 |
| Horiz 18 | L 3" x 2.5" x 0.25" | SAU | 3X2.5X0.25 | 36.0 | 15.91 | Comp | 0.00 | H 36X | 0.000 | | 42.444 | 0.000 | 0.000 | 0.000 | 10.090 | 0 | 0 | 0.000 |
| Horiz 19 | C8x11.5 | CHN | C8x11.5 | 36.0 | 5.37 | Comp | 0.00 | H 38X | 0.000 | | 109.512 | 0.000 | 0.000 | 0.000 | 9.000 | 0 | 0 | 0.000 |
| LD 1 | B/B L3"x2.5"x0.3125" | DAL | 3X2.5X0.31 | 36.0 | 41.96 | Comp | 17.50 | LD 2Y | 18.369 | W -45 | 104.976 | 0.000 | 0.000 | 0.000 | 14.067 | 0 | 0 | 0.000 |
| LD 2 | B/B L4"x3"x0.3125" | DAL | 4X3X0.31 | 36.0 | 58.77 | Comp | 31.33 | LD 3P | 42.430 | W -90 | 135.432 | 0.000 | 0.000 | 0.000 | 14.067 | 0 | 0 | 0.000 |
| LD 4 | B/B L3"x2"x0.25" | DAL | 3X2X0.25 | 36.0 | 59.95 | Comp | 21.80 | LD 7P | 16.808 | W -90 | 77.112 | 0.000 | 0.000 | 0.000 | 13.385 | 0 | 0 | 0.000 |
| LD 5 | B/B L4"x3"x0.25" | DAL | 4X3X0.25 | 36.0 | 65.08 | Comp | 37.20 | LD 9P | 40.744 | W -90 | 109.512 | 0.000 | 0.000 | 0.000 | 13.385 | 0 | 0 | 0.000 |
| LD 7 | B/B L2.5"x2.5"x0.375" | DAE | 2.5X2.5X0.38 | 36.0 | 41.07 | Comp | 14.18 | LD 13P | 15.947 | W -90 | 112.428 | 0.000 | 0.000 | 0.000 | 12.717 | 0 | 0 | 0.000 |
| LD 8 | B/B L3.5"x3"x0.25" | DAL | 3.5X3X0.25 | 36.0 | 71.17 | Comp | 38.52 | LD 15P | 39.060 | W -90 | 101.412 | 0.000 | 0.000 | 0.000 | 12.717 | 0 | 0 | 0.000 |
| LD 10 | B/B L3"x3"x0.25" | DAE | 3X3X0.25 | 36.0 | 37.46 | Comp | 19.38 | LD 19P | 18.087 | W -90 | 93.312 | 0.000 | 0.000 | 0.000 | 11.382 | 0 | 0 | 0.000 |
| LD 11 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 56.73 | Comp | 35.58 | LD 21P | 24.551 | W -90 | 69.012 | 0.000 | 0.000 | 0.000 | 8.160 | 0 | 0 | 0.000 |
| LD 12 | B/B L3"x2"x0.25" | DAL | 3X2X0.25 | 36.0 | 61.69 | Comp | 40.64 | LD 23X | 31.339 | W -90 | 77.112 | 0.000 | 0.000 | 0.000 | 9.605 | 0 | 0 | 0.000 |
| LD 13 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 53.68 | Comp | 24.20 | LD 25P | 16.702 | W -90 | 69.012 | 0.000 | 0.000 | 0.000 | 10.794 | 0 | 0 | 0.000 |
| LD 14 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 53.43 | Comp | 34.80 | LD 27P | 24.013 | W -90 | 69.012 | 0.000 | 0.000 | 0.000 | 8.014 | 0 | 0 | 0.000 |
| LD 15 | B/B L3"x3"x0.25" | DAE | 3X3X0.25 | 36.0 | 41.85 | Comp | 31.82 | LD 29X | 29.691 | W -90 | 93.312 | 0.000 | 0.000 | 0.000 | 9.253 | 0 | 0 | 0.000 |
| LD 16 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 46.31 | Comp | 22.60 | LD 32Y | 15.600 | W -45 | 69.012 | 0.000 | 0.000 | 0.000 | 10.229 | 0 | 0 | 0.000 |
| LD 17 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 49.59 | Comp | 31.82 | LD 33P | 21.963 | W -90 | 69.012 | 0.000 | 0.000 | 0.000 | 7.876 | 0 | 0 | 0.000 |
| LD 18 | B/B L2.5"x2"x0.25" | DAL | 2.5X2X0.25 | 36.0 | 60.90 | Comp | 39.26 | LD 35X | 27.093 | W -90 | 69.012 | 0.000 | 0.000 | 0.000 | 8.919 | 0 | 0 | 0.000 |
| LH 1 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 10.05 | Tens | 10.05 | LH 1Y | 8.567 | W 0 | 85.212 | 0.000 | 0.000 | 0.000 | 24.352 | 0 | 0 | 0.000 |
| LH 2 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 6.27 | Tens | 6.27 | LH 3Y | 5.339 | W 0 | 85.212 | 0.000 | 0.000 | 0.000 | 22.764 | 0 | 0 | 0.000 |
| LH 3 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 6.49 | Tens | 6.49 | LH 5Y | 5.527 | W 0 | 85.212 | 0.000 | 0.000 | 0.000 | 21.176 | 0 | 0 | 0.000 |
| LH 4 | B/B L3"x3"x0.375" | DAE | 3X3X0.38 | 36.0 | 46.24 | Comp | 14.48 | LH 8Y | 19.796 | W -45 | 136.728 | 0.000 | 0.000 | 0.000 | 10.648 | 0 | 0 | 0.000 |
| LH 5 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 57.18 | Comp | 20.82 | LH 9P | 17.743 | W -90 | 85.212 | 0.000 | 0.000 | 0.000 | 9.821 | 0 | 0 | 0.000 |
| LH 6 | B/B L2.5"x3"x0.25" | DAS | 3X2.5X0.25 | 36.0 | 44.91 | Comp | 18.63 | LH 12Y | 15.873 | W -45 | 85.212 | 0.000 | 0.000 | 0.000 | 8.993 | 0 | 0 | 0.000 |
| DUM 1 | Dummy Bracing Member | DUM | 0.1X0.1X1 | 36.0 | 0.00 | | 0.00 | BR 13X | 0.713 | W -45 | 0.324 | 0.000 | 0.000 | 0.000 | 20.963 | 0 | 0 | 0.000 |

*** Maximum Stress Summary for Each Load Case

**Summary of Maximum Usages by Load Case:**

| Load Case | Maximum Usage % | Element Label | Element Type |
|---|---|---|---|
| W 0 | 72.80 | D 11P | Angle |
| W 180 | 73.85 | D 11Y | Angle |
| W 45 | 60.67 | D 12P | Angle |
| W -45 | 64.73 | D 12X | Angle |
| W 90 | 73.09 | D 12P | Angle |
| W -90 | 74.10 | D 12X | Angle |
| W 0 Ice | 24.01 | D 11P | Angle |
| W 180 Ice | 25.12 | D 11Y | Angle |
| W 45 Ice | 25.03 | L 1P | Angle |
| W -45 Ice | 24.33 | L 1X | Angle |
| W 90 Ice | 24.09 | D 12P | Angle |
| W -90 Ice | 25.16 | D 12X | Angle |

*** Weight of structure (lbs):
Weight of Angles*Section DLF: 155444.9
Total: 155444.9

*** End of Report

| | |
|---|---|
| Site #: | BB008 |
| Name: | Bethany CT, CT |

| | |
|---|---|
| Engineer: | ASP |
| Date: | 07/29/21 |

| | | | | |
|---|---|---|---|---|
| Windspeed: | No Ice: | 119 mph | Ice: | 50 mph |
| Carrier: | Verizon | | | |

| | | | |
|---|---|---|---|
| Taper: | 0.127052 | Taper Change: | 337.5 ft |
| FW @ Base: | 51.88 ft | FW @ Top: | 9 ft |

Spreadsheet Version Last Updated: 11/12/2014

| Joint Label | Symmetry Code | X Coord. (ft) | Y Coord. (ft) | Z Coord. (ft) | X Disp. Rest. | Y Disp. Rest. | Z Disp. Rest. | X Rot. Rest. | Y Rot. Rest. | Z Rot. Rest. | Drop Sub-Brace (Y or Blank) | # Vert | Drop (ft) | Height (ft) | Type | Count | Z-Elev. (ft) | FW (ft) | # Sub-Brace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | XY-Symmetry | 25.94 | 25.94 | 0 | Fixed | Fixed | Fixed | Fixed | Fixed | Fixed | | 3 | 7.030 | 25 | 1 | 1 | 0 | 51.88 | 3 |
| 1 | XY-Symmetry | 24.35185185 | 24.35185185 | 25 | Free | Free | Free | Free | Free | Free | | 3 | 7.030 | 25 | 1 | 2 | 25 | 48.7037037 | 3 |
| 2 | XY-Symmetry | 22.7637037 | 22.7637037 | 50 | Free | Free | Free | Free | Free | Free | | 3 | 7.030 | 25 | 1 | 3 | 50 | 45.52740741 | 3 |
| 3 | XY-Symmetry | 21.17555556 | 21.17555556 | 75 | Free | Free | Free | Free | Free | Free | | | 7.030 | 25 | 2 | 4 | 75 | 42.35111111 | 3 |
| 4 | XY-Symmetry | 19.58740741 | 19.58740741 | 100 | Free | Free | Free | Free | Free | Free | | | 7.030 | 25 | 2 | 5 | 100 | 39.17481481 | 3 |
| 5 | XY-Symmetry | 17.99925926 | 17.99925926 | 125 | Free | Free | Free | Free | Free | Free | | | 7.03 | 25 | 2 | 6 | 125 | 35.99851852 | 3 |
| 6 | XY-Symmetry | 16.41111111 | 16.41111111 | 150 | Free | Free | Free | Free | Free | Free | | | | 25 | A | 7 | 150 | 32.82222222 | 2 |
| 7 | XY-Symmetry | 14.82296296 | 14.82296296 | 175 | Free | Free | Free | Free | Free | Free | | | | 25 | A | 8 | 175 | 29.64592593 | 2 |
| 8 | XY-Symmetry | 13.23481481 | 13.23481481 | 200 | Free | Free | Free | Free | Free | Free | | | | 25 | A | 9 | 200 | 26.46962963 | 2 |
| 9 | XY-Symmetry | 11.64666667 | 11.64666667 | 225 | Free | Free | Free | Free | Free | Free | | | | 12.5 | A | 10 | 225 | 23.29333333 | 1 |
| 10 | XY-Symmetry | 10.85259259 | 10.85259259 | 237.5 | Free | Free | Free | Free | Free | Free | | | | 12.5 | A | 11 | 237.5 | 21.70518519 | 1 |
| 11 | XY-Symmetry | 10.05851852 | 10.05851852 | 250 | Free | Free | Free | Free | Free | Free | | | | 12.5 | A | 12 | 250 | 20.11703704 | 1 |
| 12 | XY-Symmetry | 9.264444444 | 9.264444444 | 262.5 | Free | Free | Free | Free | Free | Free | | | | 12.5 | A | 13 | 262.5 | 18.52888889 | 1 |
| 13 | XY-Symmetry | 8.47037037 | 8.47037037 | 275 | Free | Free | Free | Free | Free | Free | | | | 12.5 | A | 14 | 275 | 16.94074074 | 1 |
| 14 | XY-Symmetry | 7.676296296 | 7.676296296 | 287.5 | Free | Free | Free | Free | Free | Free | | | | 12.5 | A | 15 | 287.5 | 15.35259259 | 1 |
| 15 | XY-Symmetry | 6.882222222 | 6.882222222 | 300 | Free | Free | Free | Free | Free | Free | | | | 10.167 | X | 16 | 300 | 13.76444444 | 1 |
| 16 | XY-Symmetry | 6.236354133 | 6.236354133 | 310.167 | Free | Free | Free | Free | Free | Free | | 1 | | 10.167 | X | 17 | 310.167 | 12.47270827 | 1 |
| 17 | XY-Symmetry | 5.590486044 | 5.590486044 | 320.334 | Free | Free | Free | Free | Free | Free | | | | 8.583 | X | 18 | 320.334 | 11.18097209 | 1 |
| 18 | XY-Symmetry | 5.045243022 | 5.045243022 | 328.917 | Free | Free | Free | Free | Free | Free | | | | 8.583 | X | 19 | 328.917 | 10.09048604 | 1 |
| 19 | XY-Symmetry | 4.5 | 4.5 | 337.5 | Free | Free | Free | Free | Free | Free | | | | | | 20 | 337.5 | 9 | |

| NOTES | |
|---|---|
| Types: | |
| 1: | Built up Horizs. w/ A |
| 2: | Built up Horizs. w/ M |
| A: | Typical A brace |
| X: | Typical X brace |
| | |
| Drop: | Use only for types 1 & 2 |

| | |
|---|---|
| # Sections: | 19 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | Y-Symmetry | 24.35185185 | 0 | 25 | Free | Free | Free | Free | Free | Free |
| A2 | X-Symmetry | 0 | 24.35185185 | 25 | Free | Free | Free | Free | Free | Free |
| A3 | Y-Symmetry | 22.7637037 | 0 | 50 | Free | Free | Free | Free | Free | Free |
| A4 | X-Symmetry | 0 | 22.7637037 | 50 | Free | Free | Free | Free | Free | Free |
| A5 | Y-Symmetry | 21.17555556 | 0 | 75 | Free | Free | Free | Free | Free | Free |
| A6 | X-Symmetry | 0 | 21.17555556 | 75 | Free | Free | Free | Free | Free | Free |
| A7 | XY-Symmetry | 19.58740741 | 6.529135802 | 100 | Free | Free | Free | Free | Free | Free |
| A8 | XY-Symmetry | 6.529135802 | 19.58740741 | 100 | Free | Free | Free | Free | Free | Free |
| A9 | XY-Symmetry | 17.99925926 | 5.999753086 | 125 | Free | Free | Free | Free | Free | Free |
| A10 | XY-Symmetry | 5.999753086 | 17.99925926 | 125 | Free | Free | Free | Free | Free | Free |
| A11 | XY-Symmetry | 16.41111111 | 5.47037037 | 150 | Free | Free | Free | Free | Free | Free |
| A12 | XY-Symmetry | 5.47037037 | 16.41111111 | 150 | Free | Free | Free | Free | Free | Free |
| A13 | Y-Symmetry | 14.82296296 | 0 | 175 | Free | Free | Free | Free | Free | Free |
| A14 | X-Symmetry | 0 | 14.82296296 | 175 | Free | Free | Free | Free | Free | Free |
| A15 | Y-Symmetry | 13.23481481 | 0 | 200 | Free | Free | Free | Free | Free | Free |
| A16 | X-Symmetry | 0 | 13.23481481 | 200 | Free | Free | Free | Free | Free | Free |
| A17 | Y-Symmetry | 11.64666667 | 0 | 225 | Free | Free | Free | Free | Free | Free |
| A18 | X-Symmetry | 0 | 11.64666667 | 225 | Free | Free | Free | Free | Free | Free |
| A19 | Y-Symmetry | 10.85259259 | 0 | 237.5 | Free | Free | Free | Free | Free | Free |
| A20 | X-Symmetry | 0 | 10.85259259 | 237.5 | Free | Free | Free | Free | Free | Free |
| A21 | Y-Symmetry | 10.05851852 | 0 | 250 | Free | Free | Free | Free | Free | Free |
| A22 | X-Symmetry | 0 | 10.05851852 | 250 | Free | Free | Free | Free | Free | Free |
| A23 | Y-Symmetry | 9.264444444 | 0 | 262.5 | Free | Free | Free | Free | Free | Free |
| A24 | X-Symmetry | 0 | 9.264444444 | 262.5 | Free | Free | Free | Free | Free | Free |
| A25 | Y-Symmetry | 8.47037037 | 0 | 275 | Free | Free | Free | Free | Free | Free |
| A26 | X-Symmetry | 0 | 8.47037037 | 275 | Free | Free | Free | Free | Free | Free |
| A27 | Y-Symmetry | 7.676296296 | 0 | 287.5 | Free | Free | Free | Free | Free | Free |
| A28 | X-Symmetry | 0 | 7.676296296 | 287.5 | Free | Free | Free | Free | Free | Free |
| A29 | Y-Symmetry | 6.882222222 | 0 | 300 | Free | Free | Free | Free | Free | Free |
| A30 | X-Symmetry | 0 | 6.882222222 | 300 | Free | Free | Free | Free | Free | Free |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| H1 | XY-Symmetry | 24.79843911 | 12.17592593 | 17.97 | Free | Free | Free | Free | Free | Free |
| H2 | XY-Symmetry | 12.17592593 | 24.79843911 | 17.97 | Free | Free | Free | Free | Free | Free |
| H5 | XY-Symmetry | 23.21029096 | 11.38185185 | 42.97 | Free | Free | Free | Free | Free | Free |
| H6 | XY-Symmetry | 11.38185185 | 23.21029096 | 42.97 | Free | Free | Free | Free | Free | Free |
| H9 | XY-Symmetry | 21.62214281 | 10.58777778 | 67.97 | Free | Free | Free | Free | Free | Free |
| H10 | XY-Symmetry | 10.58777778 | 21.62214281 | 67.97 | Free | Free | Free | Free | Free | Free |
| H13 | XY-Symmetry | 20.03399467 | 10.64770904 | 92.97 | Free | Free | Free | Free | Free | Free |
| H14 | XY-Symmetry | 10.64770904 | 20.03399467 | 92.97 | Free | Free | Free | Free | Free | Free |
| H15 | Y-Symmetry | 20.03399467 | 0 | 92.97 | Free | Free | Free | Free | Free | Free |
| H16 | X-Symmetry | 0 | 20.03399467 | 92.97 | Free | Free | Free | Free | Free | Free |
| H17 | XY-Symmetry | 18.44584652 | 9.820601481 | 117.97 | Free | Free | Free | Free | Free | Free |
| H18 | XY-Symmetry | 9.820601481 | 18.44584652 | 117.97 | Free | Free | Free | Free | Free | Free |
| H19 | Y-Symmetry | 18.44584652 | 0 | 117.97 | Free | Free | Free | Free | Free | Free |
| H20 | X-Symmetry | 0 | 18.44584652 | 117.97 | Free | Free | Free | Free | Free | Free |
| H21 | XY-Symmetry | 16.85769837 | 8.993493926 | 142.97 | Free | Free | Free | Free | Free | Free |
| H22 | XY-Symmetry | 8.993493926 | 16.85769837 | 142.97 | Free | Free | Free | Free | Free | Free |
| H23 | Y-Symmetry | 16.85769837 | 0 | 142.97 | Free | Free | Free | Free | Free | Free |
| H24 | X-Symmetry | 0 | 16.85769837 | 142.97 | Free | Free | Free | Free | Free | Free |

## Legs

| | |
|---|---|
| **Site No.:** | 88008 |
| **Engineer:** | ASP |
| **Date:** | 07/29/2021 |
| **Carrier:** | Verizon |

**When inputting thickness values, include all decimal places.**

| Tower Section # | Section Elevations *(ft)* | Type of Shape [1] | Diameter or Length *(in)* | Thickness [2] *(in)* | $F_Y$ *(ksi)* |
|---|---|---|---|---|---|
| 1 | 0.000-25.00 | L | 8 | 1.125 | 36 |
| 2 | 25.00-50.00 | L | 8 | 1.125 | 36 |
| 3 | 50.00-75.00 | L | 8 | 1.125 | 36 |
| 4 | 75.00-100.0 | L | 8 | 1.125 | 36 |
| 5 | 100.0-125.0 | L | 8 | 1 | 36 |
| 6 | 125.0-150.0 | L | 8 | 1 | 36 |
| 7 | 150.0-175.0 | L | 8 | 0.875 | 36 |
| 8 | 175.0-200.0 | L | 8 | 0.75 | 36 |
| 9 | 200.0-225.0 | L | 8 | 0.75 | 36 |
| 10 | 225.0-237.5 | L | 6 | 0.875 | 36 |
| 11 | 237.5-250.0 | L | 6 | 0.75 | 36 |
| 12 | 250.0-262.5 | L | 6 | 0.75 | 36 |
| 13 | 262.5-275.0 | L | 6 | 0.5625 | 36 |
| 14 | 275.0-287.5 | L | 6 | 0.5625 | 36 |
| 15 | 287.5-300.0 | L | 6 | 0.4375 | 36 |
| 16 | 300.0-310.2 | L | 5 | 0.4375 | 36 |
| 17 | 310.2-320.3 | L | 5 | 0.4375 | 36 |
| 18 | 320.3-328.9 | L | 5 | 0.3125 | 36 |
| 19 | 328.9-337.5 | L | 5 | 0.3125 | 36 |

**Notes:**

[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Le

[2] For Solid Round Leg Shapes Thickness Equals Zero.

[3] Adjust for Bent Plate Leg Shapes.

## Diagonals

| | |
|---|---|
| **Site No.:** | 88008 |
| **Engineer:** | ASP |
| **Date:** | 07/29/2021 |
| **Carrier:** | Verizon |

**When inputting thickness values, include all decimal places.**

| Tower Section # | Section Elevations *(ft)* | Type of Shape [1] | Diameter [2] *(in)* | Web Length [3] *(in)* | Flange Length [3] *(in)* | Thickness *(in)* | $F_y$ *(ksi)* | Is Diag. Tension Only? *(Y/N)* |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.000-25.00 | 2L | | 3 | 4 | 0.375 | 36 | |
| 2 | 25.00-50.00 | 2L | | 3 | 4 | 0.25 | 36 | |
| 3 | 50.00-75.00 | 2L | | 3 | 4 | 0.25 | 36 | |
| 4 | 75.00-100.0 | 2L | | 3 | 3.5 | 0.25 | 36 | |
| 5 | 100.0-125.0 | 2L | | 3 | 3.5 | 0.25 | 36 | |
| 6 | 125.0-150.0 | 2L | | 2.5 | 3.5 | 0.25 | 36 | |
| 7 | 150.0-175.0 | 2L | | 3 | 3 | 0.375 | 36 | |
| 8 | 175.0-200.0 | 2L | | 2.5 | 3 | 0.25 | 36 | |
| 9 | 200.0-225.0 | 2L | | 2.5 | 3 | 0.25 | 36 | |
| 10 | 225.0-237.5 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 11 | 237.5-250.0 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 12 | 250.0-262.5 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 13 | 262.5-275.0 | 2L | | 2.5 | 2 | 0.25 | 36 | |
| 14 | 275.0-287.5 | 2L | | 2.5 | 2 | 0.25 | 36 | |
| 15 | 287.5-300.0 | 2L | | 2.5 | 2 | 0.25 | 36 | |
| 16 | 300.0-310.2 | L | | 3.5 | 3.5 | 0.25 | 36 | Y |
| 17 | 310.2-320.3 | L | | 3.5 | 3.5 | 0.25 | 36 | Y |
| 18 | 320.3-328.9 | L | | 3 | 3 | 0.25 | 36 | Y |
| 19 | 328.9-337.5 | L | | 3 | 3 | 0.25 | 36 | Y |

**Notes:**

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

## Horizontals

| | |
|---|---|
| **Site No.:** | 88008 |
| **Engineer:** | ASP |
| **Date:** | 07/29/2021 |
| **Carrier:** | Verizon |

**When inputting thickness values, include all decimal places.**

| Tower Section # | Section Elevations *(ft)* | Type of Shape [1] | Diameter [2] *(in)* | Web Length [3] *(in)* | Flange Length [3] *(in)* | Thickness *(in)* | $F_y$ *(ksi)* | B/B Spacing (in.) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.000-25.00 | 2L | | 4 | 3 | 0.25 | 36 | |
| 2 | 25.00-50.00 | 2L | | 3.5 | 2.5 | 0.25 | 36 | |
| 3 | 50.00-75.00 | 2L | | 3 | 2.5 | 0.25 | 36 | |
| 4 | 75.00-100.0 | 2L | | 3.5 | 2.5 | 0.25 | 36 | |
| 5 | 100.0-125.0 | 2L | | 3.5 | 2.5 | 0.25 | 36 | |
| 6 | 125.0-150.0 | 2L | | 3 | 2.5 | 0.25 | 36 | |
| 7 | 150.0-175.0 | 2L | | 3 | 2.5 | 0.25 | 36 | |
| 8 | 175.0-200.0 | 2L | | 3 | 2.5 | 0.25 | 36 | |
| 9 | 200.0-225.0 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 10 | 225.0-237.5 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 11 | 237.5-250.0 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 12 | 250.0-262.5 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 13 | 262.5-275.0 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 14 | 275.0-287.5 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 15 | 287.5-300.0 | 2L | | 2.5 | 2.5 | 0.25 | 36 | |
| 16 | 300.0-310.2 | L | | 3 | 2.5 | 0.25 | 36 | |
| 17 | 310.2-320.3 | 2L | | 3 | 2.5 | 0.25 | 36 | |
| 18 | 320.3-328.9 | L | | 3 | 2.5 | 0.25 | 36 | |
| 19 | 328.9-337.5 | C | | 8 | 11.5 | | 36 | |

**Notes:**

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

## Built-up Diagonals

| | |
|---|---|
| **Site No.:** | 88008 |
| **Engineer:** | ASP |
| **Date:** | 07/29/2021 |
| **Carrier:** | Verizon |

**When inputting thickness values, include all decimal places.**
**Input diags. from left to center & from base section upward.**

| Tower Built-up Diag. # | Section Elevations (ft) | Type of Shape [1] | Diameter [2] (in) | Web Length [3] (in) | Flange Length [3] (in) | Thickness (in) | $F_y$ (ksi) |
|---|---|---|---|---|---|---|---|
| 1 | 0.000-25.00 | 2L | | 3 | 2.5 | 0.3125 | 36 |
| 2 | 0.000-25.00 | 2L | | 4 | 3 | 0.3125 | 36 |
| 3 | 25.00-50.00 | 2L | | 3 | 2 | 0.25 | 36 |
| 4 | 25.00-50.00 | 2L | | 4 | 3 | 0.25 | 36 |
| 5 | 50.00-75.00 | 2L | | 2.5 | 2.5 | 0.375 | 36 |
| 6 | 50.00-75.00 | 2L | | 3.5 | 3 | 0.25 | 36 |
| 7 | 75.00-100.0 | 2L | | 3 | 3 | 0.25 | 36 |
| 8 | 75.00-100.0 | 2L | | 2.5 | 2 | 0.25 | 36 |
| 9 | 75.00-100.0 | 2L | | 3 | 2 | 0.25 | 36 |
| 10 | 100.0-125.0 | 2L | | 2.5 | 2 | 0.25 | 36 |
| 11 | 100.0-125.0 | 2L | | 2.5 | 2 | 0.25 | 36 |
| 12 | 100.0-125.0 | 2L | | 3 | 3 | 0.25 | 36 |
| 13 | 125.0-150.0 | 2L | | 2.5 | 2 | 0.25 | 36 |
| 14 | 125.0-150.0 | 2L | | 2.5 | 2 | 0.25 | 36 |
| 15 | 125.0-150.0 | 2L | | 2.5 | 2 | 0.25 | 36 |

**Notes:**

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

## Built-up Horizontals

| | |
|---|---|
| **Site No.:** | 88008 |
| **Engineer:** | ASP |
| **Date:** | 07/29/2021 |
| **Carrier:** | Verizon |

**When inputting thickness values, include all decimal places.**

| Tower Section # | Section Elevations *(ft)* | Type of Shape [1] | Diameter [2] *(in)* | Web Length [3] *(in)* | Flange Length [3] *(in)* | Thickness *(in)* | $F_y$ *(ksi)* | Is Horiz. Tension Only? *(Y/N)* |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.000-25.00 | 2L | | 2.5 | 3 | 0.25 | 36 | Y |
| 2 | 25.00-50.00 | 2L | | 2.5 | 3 | 0.25 | 36 | Y |
| 3 | 50.00-75.00 | 2L | | 2.5 | 3 | 0.25 | 36 | Y |
| 4 | 75.00-100.0 | 2L | | 3 | 3 | 0.375 | 36 | |
| 5 | 100.0-125.0 | 2L | | 2.5 | 3 | 0.25 | 36 | |
| 6 | 125.0-150.0 | 2L | | 2.5 | 3 | 0.25 | 36 | |

**Notes:**

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

**Coax (p. 1 of 2)**

*Orig by MED, Improved by ABL. Last update 6/25/13 MED*

| | |
|---|---|
| Site No.: | 88008 |
| Engineer: | ASP |
| Date: | 07/29/21 |
| Carrier: | Verizon |

| Description | From (ft) | To (ft) | Quantity | Shape | Width or Diameter** (in) | Perimeter (in) | Unit Weight (lb/ft) | In Face Zone? (Yes/No) | Include in Wind Load (Yes/No) |
|---|---|---|---|---|---|---|---|---|---|
| 1 Climbing Ladder | 0 | 337.5 | 1 | Flat | 2.000 | 8.0 | 6 | No | Yes |
| 2 US Dept | 0 | 337.5 | 2 | Round | 1.090 | 3.4 | 0.33 | Yes | Yes |
| 3 US Dept1 | 0 | 337.5 | 1 | Round | 0.630 | 2.0 | 0.15 | Yes | Yes |
| 4 Ligado | 0 | 319 | 1 | Round | 1.980 | 6.2 | 0.82 | Yes | Yes |
| 5 US Dept2 | 0 | 310 | 2 | Round | 1.090 | 3.4 | 0.33 | Yes | Yes |
| 6 US Dept3 | 0 | 275 | 1 | Round | 1.090 | 3.4 | 0.33 | Yes | Yes |
| 7 Sprint1 | 0 | 240 | 3 | Round | 1.540 | 4.8 | 1 | No | Yes |
| 8 TMO | 0 | 220 | 1 | Flat | 4.838 | 25.8 | 4.92 | Yes | Yes |
| 9 TMO1 | 0 | 220 | 3 | Round | 1.250 | 3.9 | 1.05 | Yes | Yes |
| 10 US Dept4 | 0 | 194 | 1 | Round | 1.550 | 4.9 | 0.63 | Yes | No |
| 11 Verizon | 0 | 180 | 1 | Flat | 8.190 | 43.7 | 9.84 | Yes | Yes |
| 12 ATT | 0 | 165 | 6 | Round | 1.980 | 6.2 | 0.82 | Yes | Yes |
| 13 ATT1 | 0 | 165 | 1 | Round | 0.390 | 1.2 | 0.17 | Yes | No |
| 14 ATT2 | 0 | 165 | 2 | Round | 0.780 | 2.5 | 0.59 | Yes | No |
| 15 ATT3 | 0 | 165 | 1 | Round | 3.500 | 11.0 | 7.58 | Yes | No |
| 16 Metro | 0 | 100 | 6 | Round | 1.980 | 6.2 | 0.82 | Yes | Yes |
| 17 Sprint2 | 0 | 48 | 1 | Round | 0.630 | 2.0 | 0.15 | No | No |
| 18 Coax Cage | 12.5 | 32.5 | 2 | Flat | 12.000 | 48.0 | 25 | Yes | Yes |
| 19 Coax Cage2 | 12.5 | 32.5 | 2 | Flat | 12.000 | 48.0 | 25 | Yes | Yes |
| 20 Waive Guide | 0 | 180 | 1 | Flat | 1.500 | 6.0 | 2 | Yes | Yes |
| 21 Waive Guide1 | 0 | 165 | 1 | Flat | 1.500 | 6.0 | 2 | Yes | Yes |
| 22 Waive Guide2 | 0 | 100 | 1 | Flat | 1.500 | 6.0 | 2 | Yes | Yes |
| 23 Sigfox | 0 | 147 | 1 | Flat | 0.630 | 2.5 | 0.15 | No | Yes |
| 24 Sprint | 0 | 204.8 | 3 | Flat | 1.980 | 25.8 | 4.92 | No | Yes |
| 25 Verizon | 0 | 180 | 1 | Round | 1.980 | 10.2 | 1.64 | Yes | No |

**Coax (p. 2 of 2)**

| | | | | | |
|---|---|---|---|---|---|
| | | | Ke | 0.977806 | |
| | | Exposure | B | α | 7 $K_{z\,max}$ 2.01 |
| Tia Code: | TIA-222-H | Topo Cat: | 1 | $z_g$ | 1200 $K_{z\,min}$ 0.7 |
| | f | | | $K_c$ | 0.9 $K_s$ |

| | |
|---|---|
| Site No.: | 88008 |
| Engineer: | ASP |
| Date: | 07/29/21 |
| Carrier: | Verizon |

| Description | From (ft) | To (ft) | Quantity | Face # (1-4, A-D) | Coax Width (in) | Coax Shape (Block / Flat / Ind) | % Exposed | Spacing (in) | Shape (Round/Flat) | Block Width (# coax) | Block Depth (# coax) | Perimeter (in) | Unit Weight (lb/ft) | In Face Zone (Yes/No) | Include in Wind Load (Yes/No) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Climbing Ladder | 0 | 337.5 | 1 | B | 2.00 | Flat | 100 | | Flat | 1 | 1 | 8.0 | 6 | No | Yes |
| US Dept | 0 | 337.5 | 2 | 2 | 1.09 | Ind | 100 | | Round | 2 | 1 | 3.4 | 0.33 | Yes | Yes |
| US Dept1 | 0 | 337.5 | 1 | 2 | 0.63 | Ind | 100 | | Round | 1 | 1 | 2.0 | 0.15 | Yes | Yes |
| Ligado | 0 | 319 | 1 | A | 1.98 | Ind | 100 | | Round | 1 | 1 | 6.2 | 0.82 | Yes | Yes |
| US Dept2 | 0 | 310 | 2 | 2 | 1.09 | Ind | 100 | | Round | 2 | 1 | 3.4 | 0.33 | Yes | Yes |
| US Dept3 | 0 | 275 | 1 | 2 | 1.09 | Ind | 100 | | Round | 2 | 1 | 3.4 | 0.33 | Yes | Yes |
| Sprint1 | 0 | 240 | 3 | B | 1.54 | Ind | 100 | | Round | 3 | 1 | 4.8 | 1 | No | Yes |
| TMO | 0 | 220 | 1 | 1 | 4.84 | Block | 50 | 1 | Flat | 1 | 1 | 25.8 | 4.92 | Yes | Yes |
| TMO1 | 0 | 220 | 3 | 1 | 1.25 | Ind | 100 | | Round | 3 | 1 | 3.9 | 1.05 | Yes | Yes |
| US Dept4 | 0 | 194 | 1 | A | 1.55 | Ind | 100 | | Round | 1 | 1 | 4.9 | 0.63 | Yes | No |
| Verizon | 0 | 180 | 12 | 4 | 1.98 | Block | 50 | 1 | Flat | 6 | 2 | 43.7 | 9.84 | Yes | Yes |
| ATT | 0 | 165 | 6 | 2 | 1.98 | Ind | 100 | | Round | 6 | 1 | 6.2 | 0.82 | Yes | Yes |
| ATT1 | 0 | 165 | 1 | 2 | 0.39 | Ind | 100 | | Round | 1 | 1 | 1.2 | 0.17 | Yes | No |
| ATT2 | 0 | 165 | 2 | 2 | 0.78 | Ind | 100 | | Round | 2 | 1 | 2.5 | 0.59 | Yes | No |
| ATT3 | 0 | 165 | 1 | 2 | 3.50 | Ind | 100 | | Round | 1 | 1 | 11.0 | 7.58 | Yes | No |
| Metro | 0 | 100 | 6 | 2 | 1.98 | Ind | 100 | | Round | 6 | 1 | 6.2 | 0.82 | Yes | Yes |
| Sprint2 | 0 | 48 | 1 | B | 0.63 | Ind | 100 | | Round | 1 | 1 | 2.0 | 0.15 | No | Yes |
| Coax Cage | 12.5 | 32.5 | 2 | 1 | 12.00 | Flat | 100 | | Flat | 2 | 1 | 48.0 | 25 | Yes | Yes |
| Coax Cage2 | 12.5 | 32.5 | 2 | 3 | 12.00 | Flat | 100 | | Flat | 2 | 1 | 48.0 | 25 | Yes | Yes |
| Waive Guide | 0 | 180 | 1 | 4 | 1.50 | Flat | 100 | | Flat | 1 | 1 | 6.0 | 2 | Yes | Yes |
| Waive Guide1 | 0 | 165 | 1 | 2 | 1.50 | Flat | 100 | | Flat | 1 | 1 | 6.0 | 2 | Yes | Yes |
| Waive Guide2 | 0 | 100 | 1 | 1 | 1.50 | Flat | 100 | | Flat | 1 | 1 | 6.0 | 2 | Yes | Yes |
| Sigfox | 0 | 147 | 1 | 1 | 0.63 | Flat | 100 | | Flat | 1 | 1 | 2.5 | 0.15 | No | Yes |
| Sprint | 0 | 204.8 | 3 | 1 | 1.98 | Block | 50 | 1 | Flat | 1 | 2 | 25.8 | 4.92 | No | Yes |
| Verizon | 0 | 180 | 1 | A | 1.98 | Ind | 0 | | Round | 1 | 2 | 10.2 | 1.64 | Yes | No |

Fac

**Note: Actual block width multiplied by 0.75 if block area factor actual divided by 2.0 flat

| Task: | Determine Point Loads |
|---|---|
| Tower Height: | 337.5 ft |
| $Kz_t$: | 0.85 |
| Wind Speed: | 110 mph,Vult |
| Ice Wind Speed: | 50 |
| Ice Density: | 56 |
| Tower Type: | S |

| | |
|---|---|
| Ice Thick: | 1 in |
| Topographic Category (1-4): | 1 |
| Exposure Category (B-D): | B |
| Risk Category (1-4): | 2 |
| Height of Crest (H) if Topo Cat. >1: | 0 ft |
| Load Factor, Wind: | 1 |
| Load Factor, Dead: | 1.2 |

| | |
|---|---|
| Rooftop Speed Up Factor (Kt) | 1 |
| Ground Elevation (AMSL) | 620 ft |
| Topographic Factor Procedure | Method 1 |

| | |
|---|---|
| Site No.: | |
| Engineer: | |
| Date: | |
| Carrier: | |

| No. | Carrier | Elevation (ft) | Quantity | # of Azimuths | Proposed? | Manufacturer | Model | Height (in) | Width (in) | Depth (in) | Weight (lbs/ea) | Flat/Round (F/R) | Reduction | $C_AA_A$ ($ft^2$) | Weight (lb) | Ka |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | US Dept | 338 | 1 | 1 | | - | - | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | US Dept | 338 | 1 | 1 | | Rohde & Schwarz | ADD090 | | | | | | 1.000 | 20.76 | 0.09 | 1 |
| 2 | - | 338 | 1 | 1 | | - | Platform | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 338 | 1 | 4 | | - | | | | | | | 1.000 | 70.00 | 6.00 | 1 |
| 3 | Ligado | 319 | 1 | 1 | | - | Side Arm | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | Ligado | 319 | 1 | 1 | | Kathrein Scala | 750 10074 | | | | | | 1.000 | 1.73 | 0.02 | 1 |
| 4 | Ligado | 319 | 1 | 1 | | - | Side Arm | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | Ligado | 319 | 1 | 1 | | - | | | | | | | 1.000 | 5.20 | 0.15 | 1 |
| 5 | US Dept | 310 | 1 | 1 | | - | Sector Frame | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | US Dept | 310 | 1 | 1 | | Sinclair | SC381-HL (160°) | | | | | | 1.000 | 6.00 | 0.05 | 1 |
| 6 | US Dept | 310 | 1 | 1 | | - | | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | US Dept | 310 | 1 | 1 | | Sinclair | SC281-L | | | | | | 1.000 | 10.46 | 0.08 | 1 |
| 7 | - | 310 | 1 | 1 | | - | Sector Frame | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 310 | 1 | 1 | | - | | | | | | | 1.000 | 14.90 | 0.30 | 1 |
| 8 | Unknown | 287 | 1 | 1 | | - | Side Arm | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | Unknown | 287 | 1 | 1 | | Generic | 8' Omni | | | | | | 1.000 | 2.40 | 0.03 | 1 |
| 9 | US Dept | 275 | 1 | 1 | | - | Side Arm | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | US Dept | 275 | 1 | 1 | | Sinclair | SC281-L | | | | | | 1.000 | 10.46 | 0.08 | 1 |
| 10 | US Dept | 275 | 1 | 1 | | - | Sector Frame | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | US Dept | 275 | 1 | 1 | | - | | | | | | | 1.000 | 14.90 | 0.30 | 1 |
| 11 | Unknown | 262 | 1 | 1 | | - | Side Arm | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | Unknown | 262 | 1 | 1 | | Generic | 8' Omni | | | | | | 1.000 | 2.40 | 0.03 | 1 |
| 12 | US Dept | 194 | 1 | 1 | | - | - | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | US Dept | 194 | 1 | 1 | | Andrew | DB616E-BC | | | | | | 1.000 | 6.73 | 0.05 | 1 |
| 13 | US Dept | 194 | 1 | 1 | | - | - | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | US Dept | 194 | 1 | 1 | | - | Side Arm | | | | | | 1.000 | 5.20 | 0.15 | 1 |
| 14 | T-MOBILE | 222 | 3 | 3 | Proposed | Andrew | ETT19V2A12UB | 9.4 | 7.3 | 3.5 | 11 | F | 0.500 | | | 0.8 |
| | T-MOBILE | 222 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 15 | T-MOBILE | 222 | 3 | 3 | Proposed | Ericsson | Radio 4449 B12_B71 | 14.9 | 13.2 | 9.3 | 74 | F | 0.500 | | | 0.8 |
| | T-MOBILE | 222 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 16 | T-MOBILE | 222 | 3 | 3 | existing | RFS | APX16DWV-16DWVS-E-A20 | 55.9 | 13.3 | 3.1 | 40.7 | F | 0.600 | | | 0.8 |
| | T-MOBILE | 222 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 17 | T-MOBILE | 222 | 3 | 3 | Proposed | RFS | APXVAARR24_43-U-NA20 | 95.9 | 24 | 8.7 | 127.9 | F | 0.630 | | | 0.8 |
| | T-MOBILE | 222 | 3 | 3 | | | PV-SFA-B Sector Frames | | | | | | 0.670 | 10.00 | 0.30 | 0.75 |
| 18 | ATT | 165 | 3 | 3 | | Powerwave Allgon | LGP21901 | 4 | 6 | 3 | 5.5 | F | 0.500 | | | 0.8 |
| | ATT | 165 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 19 | ATT | 165 | 3 | 3 | | Raycap | DC2-48-60-0-9E | 10.3 | 10.3 | 6.2 | 16 | F | 0.500 | | | 0.8 |
| | ATT | 165 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 20 | ATT | 165 | 6 | 3 | | Powerwave Allgon | LGP21401 | 14.4 | 9.2 | 2.6 | 14.1 | F | 0.500 | | | 0.8 |
| | ATT | 165 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 21 | ATT | 165 | 1 | 1 | | Raycap | FC12-PC6-10E | 15.5 | 16.3 | 6.6 | 25 | F | 0.500 | | | 0.8 |
| | ATT | 165 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 22 | ATT | 165 | 3 | 3 | | Ericsson | RRUS 11 (Band 12) | 17.8 | 17.3 | 7.2 | 50 | F | 0.500 | | | 0.8 |
| | ATT | 165 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 23 | ATT | 165 | 3 | 3 | | Powerwave Allgon | 7770 | 55 | 11 | 5 | 35 | F | 0.650 | | | 0.8 |
| | ATT | 165 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 24 | ATT | 165 | 1 | 1 | | KMW | AM-X-CD-16-65-00T-RET | 72 | 11.8 | 5.9 | 48.5 | F | 0.670 | | | 0.8 |
| | ATT | 165 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 25 | ATT | 165 | 2 | 2 | | Andrew | SBNH-1D6565C (60.8 lbs) | 96.4 | 11.9 | 7.1 | 60.8 | F | 0.700 | | | 0.8 |
| | ATT | 165 | 3 | 3 | | - | Sector Frame | | | | | | 0.670 | 10.00 | 0.30 | 0.75 |
| 26 | Metro | 100 | 3 | 3 | | RFS | APXV18-206517S-C | 72 | 6.8 | 3.2 | 26.4 | F | 0.680 | | | 1 |
| | Metro | 100 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 27 | Sprint | 48 | 1 | 1 | | PCTEL | GPS-TMG-HR-26N | 5 | 3.2 | 3.2 | 0.6 | F | 1.000 | | | 1 |
| | Sprint | 48 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 28 | - | 320 | 1 | 1 | | - | - | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 320 | 1 | 4 | | - | Access Platform | | | | | | 1.000 | 30.00 | 5.00 | 1 |
| 29 | - | 287.5 | 1 | 1 | | - | Rest Platform | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 287.5 | 1 | 1 | | - | | | | | | | 1.000 | 15.00 | 0.50 | 1 |
| 30 | - | 237 | 1 | 1 | | - | Catwalk | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 237 | 1 | 3 | | - | | | | | | | 1.000 | 30.00 | 5.00 | 1 |
| 31 | - | 200 | 1 | 1 | | - | Rest Platform | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 200 | 1 | 1 | | - | | | | | | | 1.000 | 10.00 | 0.50 | 1 |
| 32 | - | 150 | 1 | 1 | | - | - | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 150 | 1 | 1 | | - | Rest Platform | | | | | | 1.000 | 10.00 | 0.50 | 1 |
| 33 | - | 125 | 1 | 1 | | - | - | 0.001 | 0.001 | 0.001 | 0.001 | F | 0.001 | | | 1 |
| | - | 125 | 1 | 3 | | - | Catwalk | | | | | | 1.000 | 70.00 | 8.00 | 1 |
| 34 | SIGFOX S.A. | 147 | 1 | 1 | | Procom | CXL 900-3LW | 27.6 | 0.6 | 0.6 | 1.5 | R | 1.000 | | | 1 |
| 35 | SIGFOX S.A. | 147 | 1 | 1 | | Generic | 5" x 3" x 2" Cavity Filter | 5.3 | 3.2 | 1.9 | 1.5 | F | 1.000 | | | 1 |
| | SIGFOX S.A. | 147 | 1 | 1 | | | | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 36 | SIGFOX S.A. | 147 | 1 | 1 | | Generic | Low Noise Amplifier | 5 | 4 | 2 | 2 | F | 1.000 | | | 1 |
| | SIGFOX S.A. | 147 | 1 | 1 | | | Side Arm | | | | | | 1.000 | 6.30 | 0.15 | 1 |
| 37 | Sprint | 240 | 3 | 3 | | | APXV19P18-C-A20 | 72 | 11.8 | 7 | 57 | F | 0.680 | | | 0.8 |
| | Sprint | 240 | 1 | 1 | | | | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 38 | Sprint | 240 | 3 | 3 | | | 1900 MHz 4x45 RRH | 25.1 | 11.1 | 10.7 | 60 | F | 0.500 | | | 0.8 |
| | Sprint | 240 | 1 | 1 | | | | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 39 | Sprint | 240 | 3 | 3 | | | 800 MHz 2x50W RHH w/ Filter | 19 | 13 | 12.2 | 64 | F | 0.500 | | | 0.8 |
| 40 | Sprint | 240 | 3 | 3 | | | Pipes | | | | | | 0.670 | 8.00 | 0.20 | 1 |
| | Sprint | 204.8 | 6 | 4 | | | DB980H90E-M | 60 | 6.3 | 3 | 8.5 | F | 0.670 | | | 1 |
| 41 | Sprint | 204.8 | 1 | 1 | | | | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| | Sprint | 48 | 1 | 1 | | | GPS | 5 | 3.2 | 3.2 | 0.6 | | 1.000 | | | 1 |
| 42 | VERIZON WIRELESS | 180 | 3 | 3 | Proposed | Samsung | Outdoor C8RS 2DW RRH –Clip-on Antenna Flat Sector Frames | 12.3 | 8.7 | 1.4 | 4.4 | F | 0.500 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 3 | 3 | | | | | | | | | 0.670 | 17.60 | 0.30 | 0.75 |
| 43 | VERIZON WIRELESS | 180 | 3 | 3 | Proposed | Samsung | RT4401-48A | 13.9 | 8.6 | 4.2 | 18.6 | F | 0.500 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 44 | VERIZON WIRELESS | 180 | 3 | 3 | Proposed | Samsung | B5/B13 RRH-BRD4C | 15 | 15 | 8.1 | 70.3 | F | 0.600 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 1 |
| 45 | VERIZON WIRELESS | 180 | 3 | 3 | Proposed | Samsung | B2/B66A RRH-BRD4J | 15 | 15 | 10 | 84.4 | F | 0.630 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 1 | 1 | | - | - | | | | | | 0.670 | 10.00 | 0.30 | 0.75 |
| 46 | VERIZON WIRELESS | 180 | 6 | 3 | | Andrew | DB844H90E-XY | 48 | 6.5 | 8 | 14 | F | 0.670 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 0.8 |
| 47 | VERIZON WIRELESS | 180 | 1 | 1 | Proposed | Raycap | RCMDC-6627-PF-48 | 29.5 | 16.5 | 12.6 | 32 | F | 0.670 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 0.8 |
| 48 | VERIZON WIRELESS | 180 | 3 | 3 | Proposed | Samsung | MT6407-77A | 35.1 | 16.1 | 5.5 | 81.6 | F | 0.670 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 0.8 |
| 49 | VERIZON WIRELESS | 180 | 6 | 3 | Proposed | JMA Wireless | MX08FRO660-03 | 71.3 | 15.4 | 10.7 | 60 | F | 0.876 | | | 0.8 |
| | VERIZON WIRELESS | 180 | 1 | 1 | | - | - | | | | | | 0.001 | 0.00 | 0.00 | 0.8 |
| 50 | | | | | | | | | | | | | | | | 1 |
| | | | | | | | | | | | | | | | | 1 |

| No. | Elevation (ft) | $C_AA_A$ ($ft^2$) | $C_AA_A$ (Ice) ($ft^2$) | Force (lb) | Force (Ice) (lb) | Weight (lb) | Weight (Ice) (lb) | 60 Azi Mult. | Force mean | F (Ice) mean |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 338 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 338 | 20.76 | 28.03 | 744.097 | 177.341 | 108 | 140 | 1.00 | 409.25 | 97.54 |
| 2 | 338 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 338 | 70.00 | 94.50 | 2508.997 | 597.971 | 7200 | 9360 | 1.00 | 1379.95 | 328.88 |
| 3 | 319 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 319 | 1.73 | 2.34 | 60.991 | 14.536 | 24 | 31 | 1.00 | 33.55 | 7.99 |
| 4 | 319 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 319 | 5.20 | 7.02 | 183.327 | 43.692 | 180 | 234 | 1.00 | 100.83 | 24.03 |
| 5 | 310 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 310 | 6.00 | 8.10 | 209.809 | 50.004 | 60 | 78 | 1.00 | 115.39 | 27.50 |
| 6 | 310 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 310 | 10.46 | 14.12 | 365.766 | 87.173 | 96 | 125 | 1.00 | 201.17 | 47.95 |
| 7 | 310 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 310 | 14.90 | 20.12 | 521.025 | 124.176 | 360 | 468 | 1.00 | 286.56 | 68.30 |
| 8 | 287 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 287 | 2.40 | 3.24 | 82.095 | 19.566 | 36 | 47 | 1.00 | 45.15 | 10.76 |
| 9 | 275 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 275 | 10.46 | 14.12 | 353.458 | 84.240 | 96 | 125 | 1.00 | 194.40 | 46.33 |
| 10 | 275 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 275 | 14.90 | 20.12 | 503.492 | 119.998 | 360 | 468 | 1.00 | 276.92 | 66.00 |
| 11 | 262 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 262 | 2.40 | 3.24 | 79.985 | 19.063 | 36 | 47 | 1.00 | 43.99 | 10.48 |
| 12 | 194 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 194 | 6.73 | 9.09 | 205.839 | 49.058 | 60 | 78 | 1.00 | 113.21 | 26.98 |
| 13 | 194 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 194 | 5.20 | 7.02 | 159.043 | 37.905 | 180 | 234 | 1.00 | 87.47 | 20.85 |
| 14 | 222 | 0.69 | 1.24 | 21.812 | 6.941 | 40 | 60 | 1.00 | 12.00 | 3.82 |
| | 222 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 15 | 222 | 1.97 | 3.00 | 62.517 | 16.818 | 266 | 358 | 1.00 | 34.38 | 9.25 |
| | 222 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 16 | 222 | 9.48 | 12.40 | 301.474 | 69.596 | 147 | 299 | 1.00 | 165.81 | 38.28 |
| | 222 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 17 | 222 | 30.61 | 37.42 | 972.879 | 209.972 | 460 | 932 | 1.00 | 535.08 | 115.48 |
| | 222 | 15.08 | 20.35 | 359.385 | 85.652 | 1080 | 1404 | 1.00 | 197.66 | 47.11 |
| 18 | 165 | 0.24 | 0.56 | 7.009 | 2.887 | 20 | 28 | 1.00 | 3.85 | 1.59 |
| | 165 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 19 | 165 | 1.06 | 1.77 | 30.981 | 9.100 | 58 | 89 | 1.00 | 17.04 | 5.00 |
| | 165 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 20 | 165 | 2.65 | 4.29 | 77.375 | 22.096 | 102 | 144 | 1.00 | 42.56 | 12.15 |
| | 165 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 21 | 165 | 0.84 | 1.25 | 24.593 | 6.421 | 30 | 78 | 1.00 | 13.53 | 3.53 |
| | 165 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 22 | 165 | 3.08 | 4.46 | 89.926 | 22.985 | 180 | 267 | 1.00 | 49.46 | 12.64 |
| | 165 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 23 | 165 | 8.59 | 11.24 | 250.945 | 57.940 | 126 | 256 | 1.00 | 138.02 | 31.87 |
| | 165 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 24 | 165 | 4.30 | 5.32 | 125.603 | 27.435 | 58 | 218 | 1.00 | 69.08 | 15.09 |
| | 165 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 25 | 165 | 12.82 | 14.92 | 374.339 | 76.927 | 146 | 383 | 1.00 | 205.89 | 42.31 |
| | 165 | 15.08 | 20.35 | 330.172 | 78.690 | 1080 | 1404 | 1.00 | 181.59 | 43.28 |
| 26 | 100 | 10.54 | 13.35 | 266.762 | 59.645 | 95 | 199 | 1.00 | 146.72 | 32.80 |
| | 100 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 27 | 48 | 0.16 | 0.35 | 3.192 | 1.282 | 1 | 4 | 1.00 | 1.76 | 0.71 |
| | 48 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 28 | 320 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 320 | 30.00 | 40.50 | 1058.602 | 252.297 | 6000 | 7800 | 1.00 | 582.23 | 138.76 |
| 29 | 287.5 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 287.5 | 15.00 | 20.25 | 513.350 | 122.347 | 600 | 780 | 1.00 | 282.34 | 67.29 |
| 30 | 237 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 237 | 30.00 | 40.50 | 971.572 | 231.555 | 6000 | 7800 | 1.00 | 534.36 | 127.36 |
| 31 | 200 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 200 | 10.00 | 13.50 | 308.526 | 73.531 | 600 | 780 | 1.00 | 169.69 | 40.44 |
| 32 | 150 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 150 | 10.00 | 13.50 | 284.181 | 67.729 | 600 | 780 | 1.00 | 156.30 | 37.25 |
| 33 | 125 | 0.00 | 0.00 | 0.000 | 0.000 | 0 | 0 | 1.00 | 0.00 | 0.00 |
| | 125 | 70.00 | 94.50 | 1888.294 | 450.038 | 9600 | 12480 | 1.00 | 1038.56 | 247.52 |
| 34 | 147 | 0.14 | 0.48 | 3.899 | 2.392 | 2 | 10 | 1.00 | 2.14 | 1.32 |
| | 147 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 35 | 147 | 0.14 | 0.37 | 3.993 | 1.841 | 2 | 6 | 1.00 | 2.20 | 1.01 |
| | 147 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 36 | 147 | 0.17 | 0.41 | 4.709 | 2.037 | 2 | 7 | 1.00 | 2.59 | 1.12 |
| | 147 | 6.30 | 8.51 | 178.003 | 42.424 | 180 | 234 | 1.00 | 97.90 | 23.33 |
| 37 | 240 | 13.30 | 16.20 | 425.647 | 92.973 | 205 | 406 | 1.00 | 234.11 | 51.14 |
| | 240 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 38 | 240 | 3.13 | 4.14 | 101.840 | 23.766 | 216 | 321 | 1.00 | 56.01 | 13.07 |
| | 240 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 39 | 240 | 2.70 | 3.68 | 87.897 | 21.087 | 230 | 330 | 1.00 | 48.34 | 11.60 |
| | 240 | 16.08 | 21.71 | 522.638 | 124.561 | 720 | 936 | 1.00 | 287.45 | 68.51 |
| 40 | 204.8 | 15.66 | 20.34 | 486.475 | 111.525 | 61 | 145 | 1.00 | 267.56 | 61.34 |
| | 204.8 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 41 | 48 | 0.16 | 0.35 | 3.192 | 1.282 | 1 | 4 | 1.00 | 1.76 | 0.71 |
| | 48 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 42 | 180 | 1.07 | 1.79 | 32.036 | 9.435 | 16 | 37 | 1.00 | 17.62 | 5.19 |
| | 180 | 26.53 | 35.82 | 541.981 | 505.730 | 1080 | 1404 | 1.00 | 327.65 | 78.29 |
| 43 | 180 | 1.20 | 1.97 | 35.787 | 10.392 | 67 | 102 | 1.00 | 19.68 | 5.72 |
| | 180 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 44 | 180 | 2.70 | 4.05 | 80.832 | 21.384 | 253 | 343 | 1.00 | 44.46 | 11.76 |
| | 180 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 45 | 180 | 2.84 | 4.25 | 84.873 | 22.453 | 304 | 406 | 1.00 | 46.68 | 12.35 |
| | 180 | 5.03 | 6.78 | 112.828 | 26.890 | 360 | 468 | 1.00 | 62.06 | 14.79 |
| 46 | 180 | 12.01 | 15.63 | 359.444 | 82.626 | 101 | 201 | 1.00 | 197.69 | 45.44 |
| | 180 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 47 | 180 | 2.17 | 3.04 | 65.089 | 16.050 | 38 | 140 | 1.00 | 35.80 | 8.83 |
| | 180 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 48 | 180 | 7.57 | 10.50 | 226.702 | 55.484 | 294 | 445 | 1.00 | 124.69 | 30.52 |
| | 180 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 49 | 180 | 41.49 | 52.12 | 1242.232 | 275.463 | 432 | 724 | 1.00 | 683.23 | 151.50 |
| | 180 | 0.00 | 0.00 | 0.000 | 0.000 | 1 | 2 | 1.00 | 0.00 | 0.00 |
| 50 | | | | | #VALUE! | | | 1.00 | #VALUE! | #VALUE! |

| Height | Sum of Forces (No Ice) | |
|---|---|---|
| Flag | 60 Azi. | 180 Azi. |
| | 0.0000010 | 744.0967354 |
| | 0.0000020 | 0.00 |
| | 1.5029586 | 3253.093435 |
| | 1.5029596 | |
| | 1.5029596 | 60.99149672 |
| | 1.5029606 | |
| | 1.5031348 | 244.3185389 |
| | 1.5031358 | |
| | 1.5031358 | 209.8086061 |
| | 1.5031368 | |
| | 1.5031368 | 575.5749428 |
| | 1.5031378 | |
| | 1.5032258 | 1096.599648 |
| | 1.5032268 | |
| | 1.5034843 | 82.0951751 |
| | 1.5034853 | |
| | 1.5034853 | 353.4583974 |
| | 1.5034863 | |
| | 1.5036364 | 856.9507609 |
| | 1.5036374 | |
| | 1.5038168 | 79.98506261 |
| | 1.5038178 | 205.8387437 |
| | 1.5038188 | |
| | 1.5051546 | 364.8820524 |
| | 1.5051556 | |
| | 1.5045045 | 21.81184144 |
| | 1.5045055 | |
| | 1.5045045 | 84.3293131 |
| | 1.5045055 | |
| | 1.5045045 | 1718.066989 |
| | 1.5045055 | |
| | 1.5045045 | 385.8029684 |
| | 1.5045055 | |
| | 1.5060606 | 7.008649051 |
| | 1.5060616 | |
| | 1.5060606 | 37.98969824 |
| | 1.5060616 | |
| | 1.5060606 | 115.3648906 |
| | 1.5060616 | |
| | 1.5060606 | 139.9583615 |
| | 1.5060616 | |
| | 1.5060606 | 229.8848239 |
| | 1.5060616 | |
| | 1.5060606 | 480.8296765 |
| | 1.5060616 | |
| | 1.5060606 | 606.432999 |
| | 1.5060616 | |
| | 1.5060606 | 1310.943868 |
| | 1.5060616 | |
| | 1.5100000 | 266.7618034 |
| | 1.5100010 | |
| | 1.5208333 | 3.19225355 |
| | 1.5208343 | |
| | 1.5031250 | 1058.60225 |
| | 1.5031260 | |
| | 1.5034783 | 513.3500838 |
| | 1.5034793 | |
| | 1.5042194 | 971.5724769 |
| | 1.5042204 | |
| | 1.5050000 | 308.5258539 |
| | 1.5050010 | |
| | 1.5066667 | 284.1808317 |
| | 1.5066677 | |
| | 1.5080000 | 1888.293977 |
| | 1.5080010 | |
| | 1.5068027 | 3.89915212 |
| | 1.5068037 | |
| | 1.5068027 | 7.892485977 |
| | 1.5068037 | |
| | 1.5068027 | 190.6050536 |
| | 1.5068037 | |
| | 1.5041667 | 425.6473543 |
| | 1.5041677 | |
| | 1.5041667 | 527.4875449 |
| | 1.5041677 | |
| | 1.5041667 | 1138.02254 |
| | 1.5041677 | |
| | 1.5208828 | 486.4753707 |
| | 1.5208838 | |
| | 1.5208333 | 3.19225355 |
| | 1.5208343 | |
| | 1.5055556 | 627.7659921 |
| | 1.5055566 | |
| | 1.5055556 | 663.5535017 |
| | 1.5055566 | |
| | 1.5055556 | 744.3852294 |
| | 1.5055566 | |
| | 1.5055556 | 942.0861164 |
| | 1.5055566 | |
| | 1.5055556 | 1301.529774 |
| | 1.5055566 | |
| | 1.5055556 | 1366.618778 |
| | 1.5055566 | |
| | 1.5055556 | 1593.321024 |
| | 1.5055566 | |
| | 1.5055556 | 2835.553495 |
| | 1.5055566 | |
| | 1.5055556 | #VALUE! |

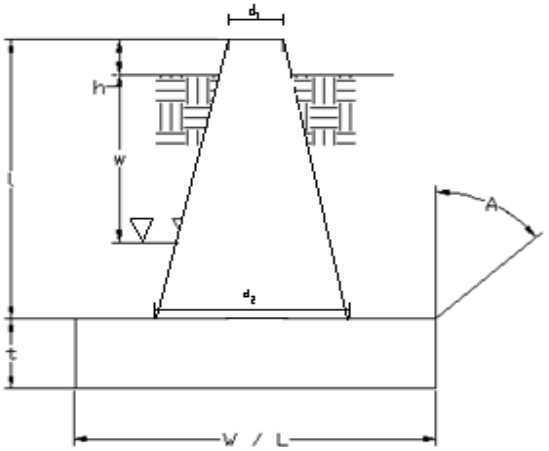
## Foundation

| | |
|---|---|
| **Site No.:** | 88008 |
| **Engineer:** | ASP |
| **Date:** | 07/29/21 |
| **Carrier:** | Verizon |

Design Loads (Factored)

| | | |
|---|---|---|
| Compression/Leg: | 416.27 | k |
| Uplift/Leg: | 289.53 | k |
| Shear/Leg | 62.43 | k |

| | | |
|---|---|---|
| Face Width @ Top of Pier ($d_1$): | 4.00 | ft |
| Face Width @ Bottom of Pier ($d_2$): | 7.50 | ft |
| Total Length of Pier (l): | 7.25 | ft |
| Height of Pedestal Above Ground (h): | 0.50 | ft |
| Width of Pad (W): | 21.50 | ft |
| Length of Pad (L): | 21.50 | ft |
| Thickness of Pad (t): | 2.50 | ft |
| Water Table Depth (w): | 99.00 | ft |
| Unit Weight of Concrete: | 150.0 | pcf |
| Unit Weight of Soil (Above Water Table): | 131.0 | pcf |
| Unit Weight of Soil (Below Water Table): | 68.6 | pcf |
| Friction Angle of Uplift (A): | 30 | ° |
| Ultimate Compressive Bearing Pressure: | 48200 | psf |
| Ultimate Skin Friction: | 0 | psf |




| | | |
|---|---|---|
| Volume Pier (Total): | 247.10 | ft³ |
| Volume Pad (Total): | 1155.63 | ft³ |
| Volume Soil (Total): | 4120.07 | ft³ |
| Volume Pier (Buoyant): | 0.00 | ft³ |
| Volume Pad (Buoyant): | 0.00 | ft³ |
| Volume Soil (Buoyant): | 0.00 | ft³ |
| Weight Pier: | 37.07 | k |
| Weight Pad: | 173.34 | k |
| Weight Soil: | 539.73 | k |
| Uplift Skin Friction: | 0.00 | k |

## Uplift Check

| ϕs Uplift Resistance (k) | Ratio | Result |
|---|---|---|
| 562.60 | 0.51 | **OK** |

## Axial Check

| ϕs Axial Resistance (k) | Ratio | Result |
|---|---|---|
| 16710.34 | 0.02 | **OK** |

## Anchor Bolt Check

| | |
|---|---|
| Bolt Diameter (in) | 2.25 |
| # of Bolts | 6 |
| Steel Grade | A36 |
| Steel Fy | 36 |
| Steel Fu | 58 |
| Detail Type | B |

| Usage Ratio | Result |
|---|---|
| 0.42 | **OK** |

Maser Consulting Connecticut
2000 Midlantic Drive, Suite 100
Mt. Laurel, NJ 08054
(856) 797-0412
Peter.Albano@Colliersengineering.com

# Antenna Mount Analysis Report and PMI Requirements

Mount Analysis

SMART Tool Project #: 10061990
Maser Consulting Connecticut Project #: 21777876A

July 13, 2021

| | | |
|---|---|---|
| ***Site Information*** | *Site ID:* | *469372-VZW / BETHANY CT* |
| | *Site Name:* | *BETHANY CT* |
| | *Carrier Name:* | *Verizon Wireless* |
| | *Address:* | *93 Old Amity Rd.*<br>*Bethany, Connecticut 06524*<br>*New Haven County* |
| | *Latitude:* | *41.404758°* |
| | *Longitude:* | *-72.999983°* |
| ***Structure Information*** | *Tower Type:* | *300-Ft Self Support* |
| | *Mount Type:* | *14.00-Ft T-Frame* |

**FUZE ID # 15288115**

## Analysis Results

T-Frame: **93.8% Pass**

******Contractor PMI Requirements*:**
***Included at the end of this MA report***
***Available & Submitted via portal at https://pmi.vzwsmart.com***
***Contractor - Please Review Specific Site PMI Requirements Upon Award***
***Requirements also Noted on Mount Modification Drawings***
***Requirements may also be Noted on A & E drawings***

Report Prepared By: Lauren Luzier

STATE OF CONNECTICUT · ERIC T. ANDERSON · 32224 · LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson
Date: 2021.07.16 18:32:43-04'00'

## Executive Summary:

The objective of this report is to determine the capacity of the antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

## Sources of Information:

| Document Type | Remarks |
|---|---|
| *Radio Frequency Data Sheet (RFDS)* | *Verizon RFDS Site ID: 323439, dated March 18, 2021* |
| *Mount Mapping* | *Hudson Design Group, LLC Site ID: 469372, dated May 5, 2021* |

## Analysis Criteria:

| | | |
|---|---|---|
| Codes and Standards: | ANSI/TIA-222-H | |
| Wind Parameters: | Basic Wind Speed (Ultimate 3-sec. Gust), $V_{ULT}$: | 119 mph |
| | Ice Wind Speed (3-sec. Gust): | 50 mph |
| | Design Ice Thickness: | 1.00 in |
| | Risk Category: | II |
| | Exposure Category: | B |
| | Topographic Feature Considered: | N/A |
| | Topographic Method: | N/A |
| | Ground Elevation Factor, $K_e$: | 0.978 |
| Seismic Parameters: | $S_S$: | 0.200 |
| | $S_1$: | 0.054 |
| Maintenance Parameters: | Wind Speed (3-sec. Gust): | 30 mph |
| | Maintenance Live Load, Lv: | 250 lbs. |
| | Maintenance Live Load, Lm: | 500 lbs. |
| Analysis Software: | RISA-3D (V17) | |

## Final Loading Configuration:

The following equipment has been considered for the analysis of the mounts:

| Mount Elevation (ft) | Equipment Elevation (ft) | Quantity | Manufacturer | Model | Status |
|---|---|---|---|---|---|
| 179.50 | 178.00 | 3 | Samsung | XXDWMM-12.5-65-8T-CBRS | Added |
| | 180.00 | 6 | JMA Wireless | MX06FRO660-03 | |
| | | 3 | Samsung | B2/B66A RRH-BR049 | |
| | | 3 | Samsung | B5/B13 RRH-BR04C | |
| | | 1 | Raycap | RVZDC-6627-PF-48 | |
| | | 6 | Andrew | DB844H90-XY | Retained |
| | 181.50 | 3 | Samsung | MT6407-77A | Added |

The recent mount mapping did not report existing OVP units. However, it is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required.

| Model Number | Ports | AKA |
|---|---|---|
| DB-B1-6C-12AB-0Z | 6 | OVP-6 |
| RVZDC-6627-PF-48 | 12 | OVP-12 |

## Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Maser Consulting Connecticut and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Maser Consulting Connecticut to verify deviation will not adversely impact the analysis.

2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

   Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

   The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped by Maser Consulting Connecticut, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
   - Channel, Solid Round, Angle, Plate — ASTM A36 (Gr. 36)
   - HSS (Rectangular) — ASTM 500 (Gr. B-46)
   - Pipe — ASTM A53 (Gr. B-35)
   - Threaded Rod — F1554 (Gr. 36)
   - Bolts — ASTM A325

**Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Maser Consulting Connecticut.**

## Analysis Results:

| Component | Utilization % | Pass/Fail |
|---|---|---|
| Face Horizontals | 93.8 % | Pass |
| Mast Pipe | 9.1 % | Pass |
| Antenna Pipe | 46.1 % | Pass |
| Tie Back | 1.6 % | Pass |
| Mount Plate | 49.6 % | Pass |
| Mount Connection | 5.2 % | Pass |

| **Structure Rating – *(Controlling Utilization of all Components)*** | **93.8%** |
|---|---|

## Recommendation:

The existing mounts are **SUFFICIENT** for the final loading configuration and do not require modifications.

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

## Attachments:

1. Mount Photos
2. Mount Mapping Report (for reference only)
3. Analysis Calculations
4. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
5. Antenna Placement Diagrams
6. TIA Adoption and Wind Speed Usage Letter

V4.0 Updated on 3-31-2021

# Antenna Mount Mapping Form (PATENT PENDING)

FCC # 105492

| | | | |
|---|---|---|---|
| **Tower Owner:** | AMERICAN TOWER CO | **Mapping Date:** | 5/5/2021 |
| **Site Name:** | BETHANY CT | **Tower Type:** | Self Support |
| **Site Number or ID:** | 469372 | **Tower Height (Ft.):** | 300 |
| **Mapping Contractor:** | HUDSON DESIGN GROUP,LLC | **Mount Elevation (Ft.):** | 184 |

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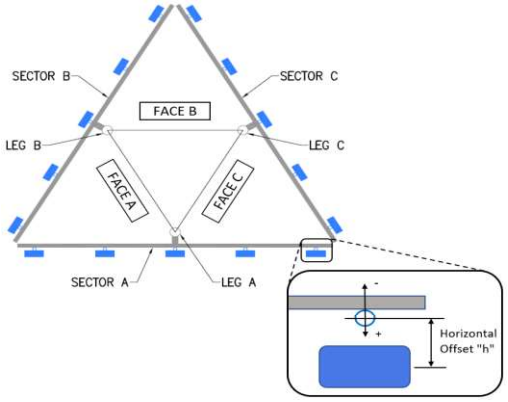
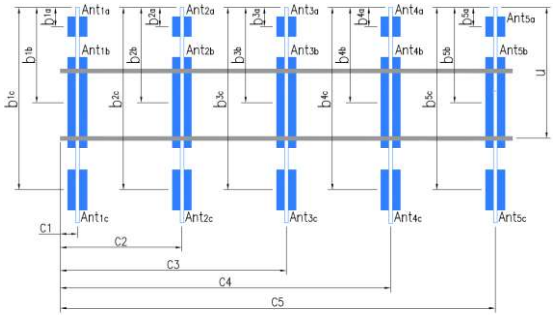
Please insert the sketches of the antenna mount from the "Sketches" tab with dimensions and members here.




**Antenna Layout (Looking Out From Tower)**

## Mount Pipe Configuration and Geometries [Unit = Inches]

| Sector / Position | Mount Pipe Size & Length | Vertical Offset Dimension "u" | Horizontal Offset "C1, C2, C3, etc." | Sector / Position | Mount Pipe Size & Length | Vertical Offset Dimension "u" | Horizontal Offset "C1, C2, C3, etc." |
|---|---|---|---|---|---|---|---|
| A1 | 2" STD. PIPE X 64" LONG | 59.00 | 3.00 | C1 | 2" STD. PIPE X 64" LONG | 59.00 | 3.00 |
| A2 | 2" STD. PIPE X 64" LONG | 59.00 | 60.50 | C2 | 2" STD. PIPE X 64" LONG | 59.00 | 60.50 |
| A3 | 2" STD. PIPE X 64" LONG | 59.00 | 125.50 | C3 | 2" STD. PIPE X 64" LONG | 59.00 | 125.50 |
| A4 | 2" STD. PIPE X 64" LONG | 59.00 | 164.50 | C4 | 2" STD. PIPE X 64" LONG | 59.00 | 164.50 |
| A5 | | | | C5 | | | |
| A6 | | | | C6 | | | |
| B1 | 2" STD. PIPE X 64" LONG | 59.00 | 3.00 | D1 | | | |
| B2 | 2" STD. PIPE X 64" LONG | 59.00 | 60.50 | D2 | | | |
| B3 | 2" STD. PIPE X 64" LONG | 59.00 | 125.50 | D3 | | | |
| B4 | 2" STD. PIPE X 64" LONG | 59.00 | 164.50 | D4 | | | |
| B5 | | | | D5 | | | |
| B6 | | | | D6 | | | |

| | |
|---|---|
| Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. : | 24.00 |
| Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) : | |
| Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) : | |

Please enter additional infomation or comments below.

SST TOWER 4 LEGS

LEG SIZE= ANGLE 8" X 8" X 3/4" THICK.

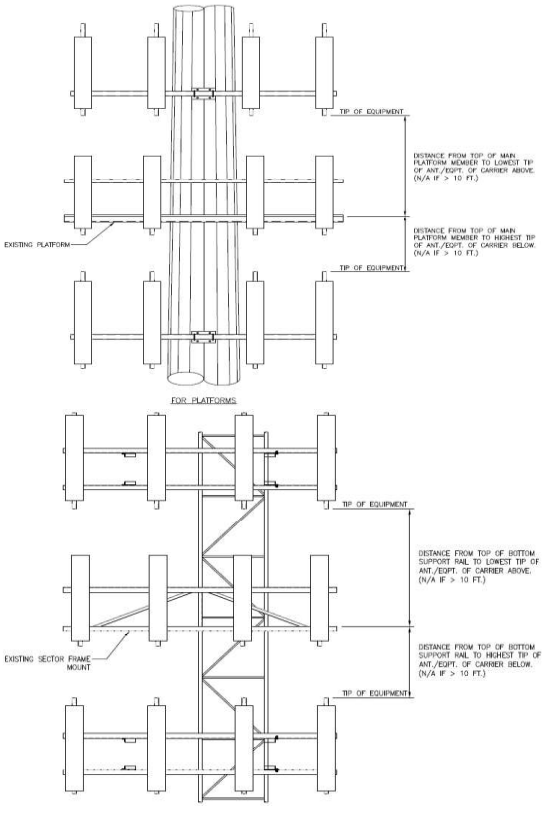
| | | | |
|---|---|---|---|
| Tower Face Width at Mount Elev. (ft.): | 28 | Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.): | 8 |
| For T-Arms/Platforms on monopoles, report the weld size from the main standoff to the plate bolting into the collar mount. | | | |

| Ants. Items | Enter antenna model. If not labeled, enter "Unknown". Antenna Models if Known | Width (in.) | Depth (in.) | Height (in.) | Coax Size and Qty | Antenna Center-line (Ft.) | Mounting Locations [Units are inches and degrees] Vertical Distances"$b_{1a}$, $b_{2a}$, $b_{3a}$, $b_{1b}$...." (Inches) | Horiz. Offset "h" (Use "-" if Ant. is behind) | Antenna Azimuth (Degrees) | Photos of antennas Photo Numbers |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sector A** | | | | | | | | | | |
| $Ant_{1a}$ | | | | | | | | | | |
| $Ant_{1b}$ | UNKNOWN | 7.00 | 8.00 | 48.00 | | 184.917 | 24.00 | 8.50 | 20.00 | 7,65 |
| $Ant_{1c}$ | | | | | | | | | | |
| $Ant_{2a}$ | | | | | | | | | | |
| $Ant_{2b}$ | UNKNOWN | 6.00 | 4.00 | 53.00 | | 184.667 | 27.00 | 7.00 | 20.00 | 8,66 |
| $Ant_{2c}$ | | | | | | | | | | |
| $Ant_{3a}$ | | | | | | | | | | |
| $Ant_{3b}$ | UNKNOWN | 12.00 | 5.00 | 72.00 | | 184.083 | 34.00 | 14.00 | 20.00 | 9,67 |
| $Ant_{3c}$ | | | | | | | | | | |
| $Ant_{4a}$ | | | | | | | | | | |
| $Ant_{4b}$ | UNKNOWN | 7.00 | 8.00 | 48.00 | | 184.917 | 24.00 | 8.50 | 20.00 | 10,67 |
| $Ant_{4c}$ | | | | | | | | | | |
| $Ant_{5a}$ | | | | | | | | | | |
| $Ant_{5b}$ | | | | | | | | | | |
| $Ant_{5c}$ | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |

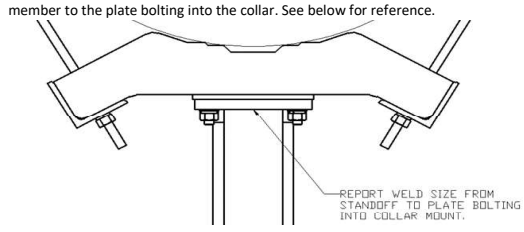
| Mount Azimuth (Degree) for Each Sector | | | | Tower Leg Azimuth (Degree) for Each Sector | |
|---|---|---|---|---|---|
| Sector A: | 20.00 | Deg | Leg A: | 45.00 | Deg |
| Sector B: | 150.00 | Deg | Leg B: | 135.00 | Deg |
| Sector C: | 270.00 | Deg | Leg C: | 225.00 | Deg |
| Sector D: | | Deg | Leg D: | | Deg |

| Climbing Facility Information | | | |
|---|---|---|---|
| Location: | 315.00 | Deg | |
| Climbing Facility | Corrosion Type: | | Good condition. |
| | Access: | | Climbing path was unobstructed. |
| | Condition: | | Good condition. |

Please insert a photo of the mount centerline measurement here.




For T-Arms/Platforms on monopoles, record the weld size from the main standoff member to the plate bolting into the collar. See below for reference.




| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sector B** | | | | | | | | | | |
| $Ant_{1a}$ | | | | | | | | | | |
| $Ant_{1b}$ | UNKNOWN | 7.00 | 8.00 | 48.00 | | 184.917 | 24.00 | 8.50 | 150.00 | 15,103 |
| $Ant_{1c}$ | | | | | | | | | | |
| $Ant_{2a}$ | | | | | | | | | | |
| $Ant_{2b}$ | UNKNOWN | 6.00 | 4.00 | 53.00 | | 184.667 | 27.00 | 7.00 | 150.00 | 16,103 |
| $Ant_{2c}$ | | | | | | | | | | |
| $Ant_{3a}$ | | | | | | | | | | |
| $Ant_{3b}$ | UNKNOWN | 12.00 | 5.00 | 72.00 | | 184.083 | 34.00 | 14.00 | 150.00 | 17,117 |
| $Ant_{3c}$ | | | | | | | | | | |
| $Ant_{4a}$ | | | | | | | | | | |
| $Ant_{4b}$ | UNKNOWN | 7.00 | 8.00 | 48.00 | | 184.917 | 24.00 | 8.50 | 150.00 | 17,114 |
| $Ant_{4c}$ | | | | | | | | | | |
| $Ant_{5a}$ | | | | | | | | | | |
| $Ant_{5b}$ | | | | | | | | | | |
| $Ant_{5c}$ | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |
| **Sector C** | | | | | | | | | | |
| $Ant_{1a}$ | | | | | | | | | | |
| $Ant_{1b}$ | UNKNOWN | 7.00 | 8.00 | 48.00 | | 184.917 | 24.00 | 8.50 | 270.00 | 25,146 |
| $Ant_{1c}$ | | | | | | | | | | |
| $Ant_{2a}$ | | | | | | | | | | |
| $Ant_{2b}$ | UNKNOWN | 6.00 | 4.00 | 53.00 | | 184.667 | 27.00 | 7.00 | 270.00 | 26,146 |
| $Ant_{2c}$ | | | | | | | | | | |
| $Ant_{3a}$ | | | | | | | | | | |
| $Ant_{3b}$ | UNKNOWN | 12.00 | 5.00 | 72.00 | | 184.083 | 34.00 | 14.00 | 270.00 | 27,147 |
| $Ant_{3c}$ | | | | | | | | | | |
| $Ant_{4a}$ | | | | | | | | | | |
| $Ant_{4b}$ | UNKNOWN | 7.00 | 8.00 | 48.00 | | 184.917 | 24.00 | 8.50 | 270.00 | 27,147 |
| $Ant_{4c}$ | | | | | | | | | | |
| $Ant_{5a}$ | | | | | | | | | | |
| $Ant_{5b}$ | | | | | | | | | | |
| $Ant_{5c}$ | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |
| **Sector D** | | | | | | | | | | |
| $Ant_{1a}$ | | | | | | | | | | |
| $Ant_{1b}$ | | | | | | | | | | |
| $Ant_{1c}$ | | | | | | | | | | |
| $Ant_{2a}$ | | | | | | | | | | |
| $Ant_{2b}$ | | | | | | | | | | |
| $Ant_{2c}$ | | | | | | | | | | |
| $Ant_{3a}$ | | | | | | | | | | |
| $Ant_{3b}$ | | | | | | | | | | |
| $Ant_{3c}$ | | | | | | | | | | |
| $Ant_{4a}$ | | | | | | | | | | |
| $Ant_{4b}$ | | | | | | | | | | |
| $Ant_{4c}$ | | | | | | | | | | |
| $Ant_{5a}$ | | | | | | | | | | |
| $Ant_{5b}$ | | | | | | | | | | |
| $Ant_{5c}$ | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Standoff | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |
| Ant on Tower | | | | | | | | | | |

| Observed Safety and Structural Issues During the Mount Mapping | | |
|---|---|---|
| Issue # | Description of Issue | Photo # |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |

| Observed Obstructions to Tower Lighting System | | | | | |
|---|---|---|---|---|---|
| If the tower lighting system is being obstructed by the carrier's equipment (for example: a light nested by the antennas), please provide photos and fill in the information below. | | | | | Photo # |
| Description of Obstruction: | | | | | |
| Type of Light: | | Photo # | | Additional Comments: | |
| Lighting Technology: | | Photo # | | | |
| Elevation (AGL) at base of light (Ft.): | | Photo # | | | |
| Is a service loop available? | | Photo # | | | |
| Is beacon installed on an extension? | | Photo # | | | |

| Mapping Notes |
|---|
| 1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.) |
| 2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness. |
| 3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab. |
| 4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type. |
| 5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required. |
| 6. Please measure and report the size and length of all existing antenna mounting pipes. |
| 7. Please measure and report the antenna information for all sectors. |
| 8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form. |

| Standard Conditions |
|---|
| 1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount. |

# Antenna Mount Mapping Form (PATENT PENDING)

FCC # 105492

| | | | |
|---|---|---|---|
| **Tower Owner:** | AMERICAN TOWER CO | **Mapping Date:** | 5/5/2021 |
| **Site Name:** | BETHANY CT | **Tower Type:** | Self Support |
| **Site Number or ID:** | 469372 | **Tower Height (Ft.):** | 300 |
| **Mapping Contractor:** | HUDSON DESIGN GROUP,LLC | **Mount Elevation (Ft.):** | 184 |

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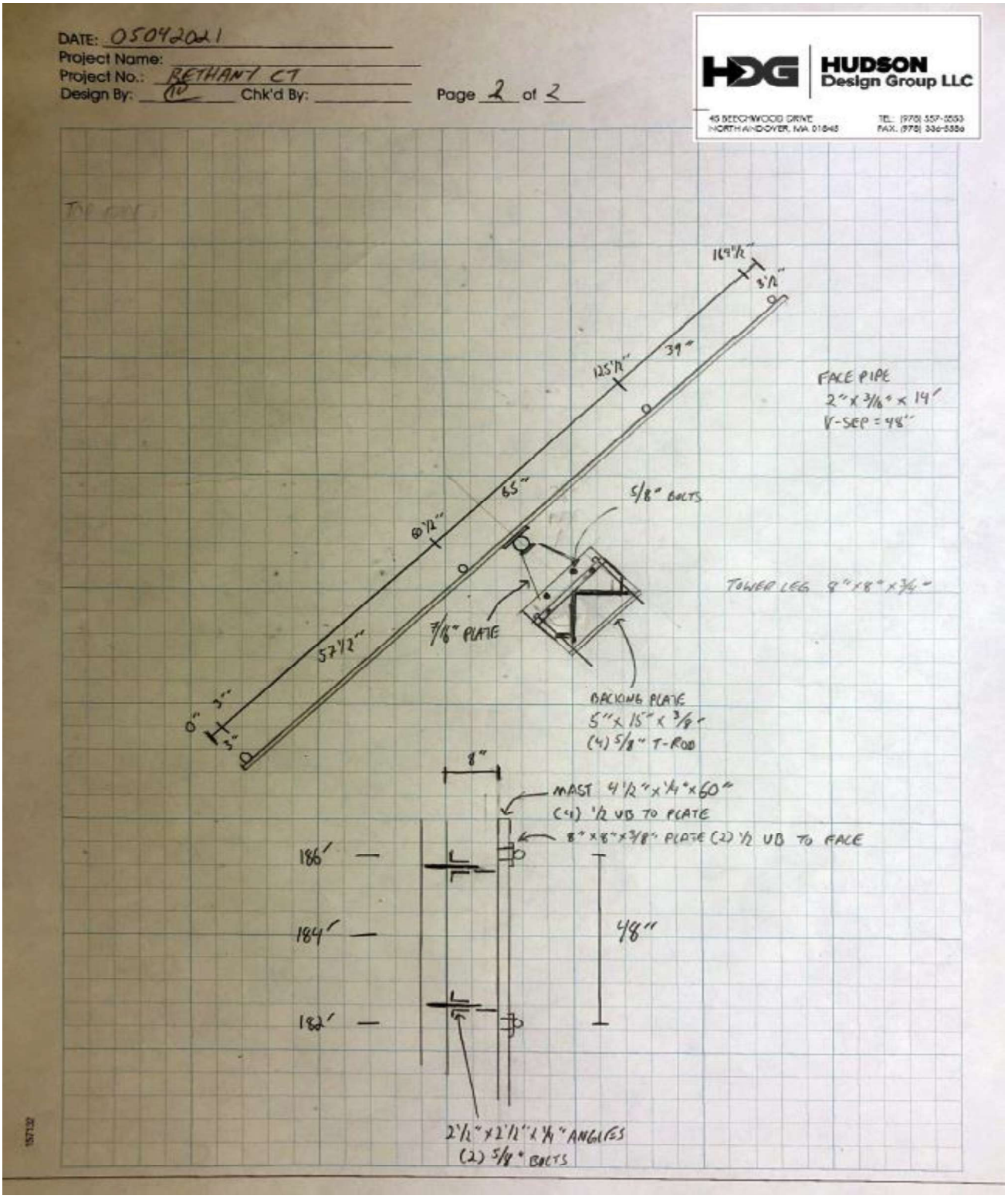
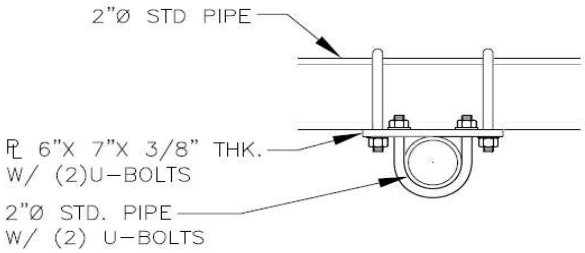
**Please Insert Sketches of the Antenna Mount**



**Please Insert Sketches of the Antenna Mount, cont'd**




ANTENNA PIPE MAST MOUNT CONNECTION

V4.0 Updated on 3-31-2021

# Antenna Mount Mapping Form (PATENT PENDING)

| FCC # |
|---|
| 105492 |

| | | | |
|---|---|---|---|
| **Tower Owner:** | AMERICAN TOWER CO | **Mapping Date:** | 5/5/2021 |
| **Site Name:** | BETHANY CT | **Tower Type:** | Self Support |
| **Site Number or ID:** | 469372 | **Tower Height (Ft.):** | 300 |
| **Mapping Contractor:** | HUDSON DESIGN GROUP,LLC | **Mount Elevation (Ft.):** | 184 |

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**Please enter information about transmission lines.**

| Transmission Line Type (Pick from List) | Quantity | Diameter/Size (in.) Please add a description if using type "Other". | Located on Tower Face | Photo # | Additional Comments |
|---|---|---|---|---|---|
| **All Sectors** | | | | | |
| Coax | 12 | 1-5/8" Ø | C | 39,43 | |
| Coax | 1 | 1/2" Ø | C | 39,43 | |
| | | | | | |
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**Please enter information about additional RF equipment.**

| Equipment Type (Pick from List) | Quantity | Model Numbers if Known | Width (in.) | Depth (in.) | Height (in.) | Location | Photo # | Additional Comments |
|---|---|---|---|---|---|---|---|---|
| **Sector A** | | | | | | | | |
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| **Sector B** | | | | | | | | |
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| **Sector C** | | | | | | | | |
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| Equipment Type (Pick from List) | Quantity | Model Numbers if Known | Width (in.) | Depth (in.) | Height (in.) | Location | Photo # | Additional Comments |
|---|---|---|---|---|---|---|---|---|
| **Sector D** | | | | | | | | |
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| **Ground Equipment** | | | | | | | | |
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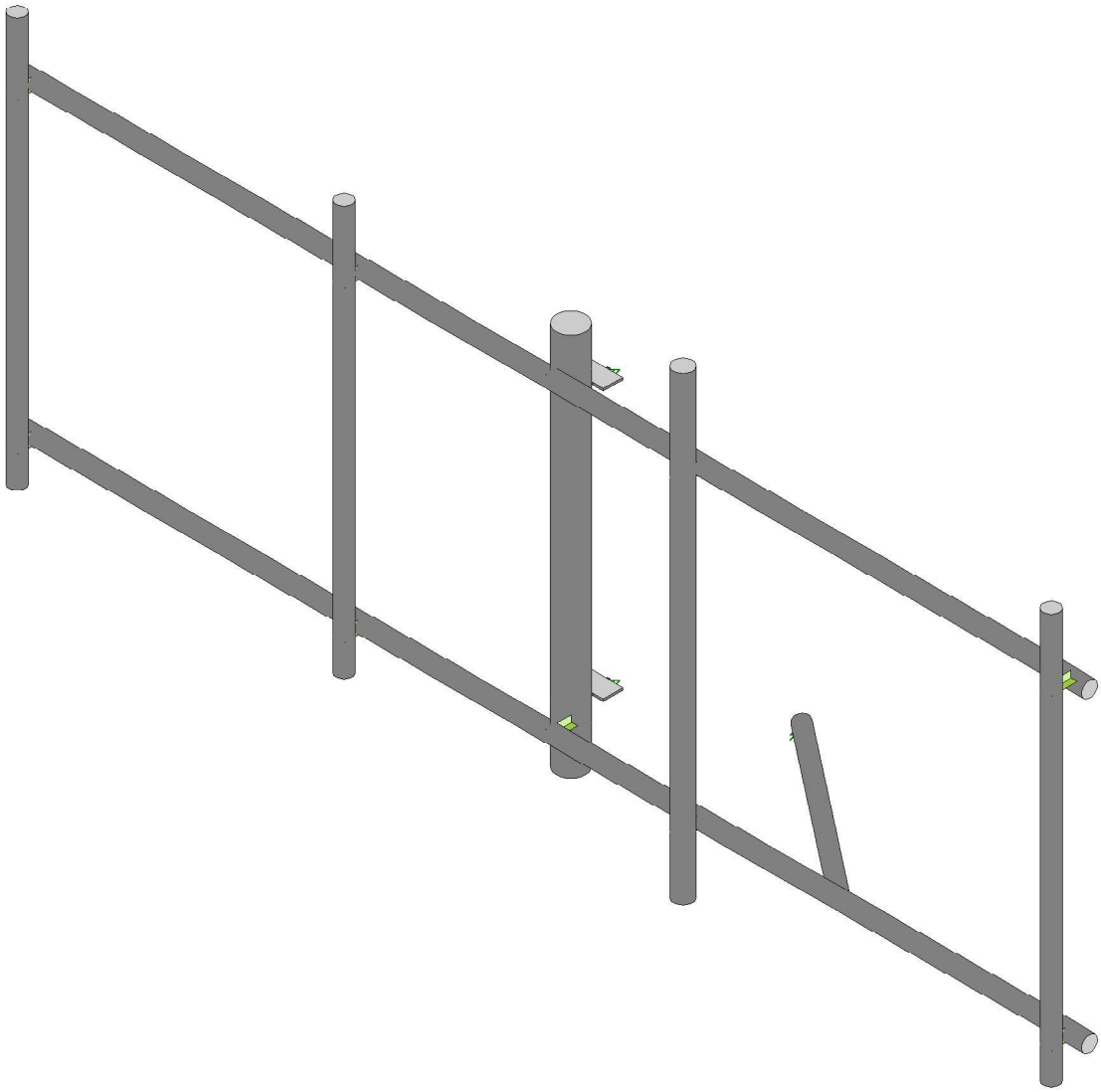
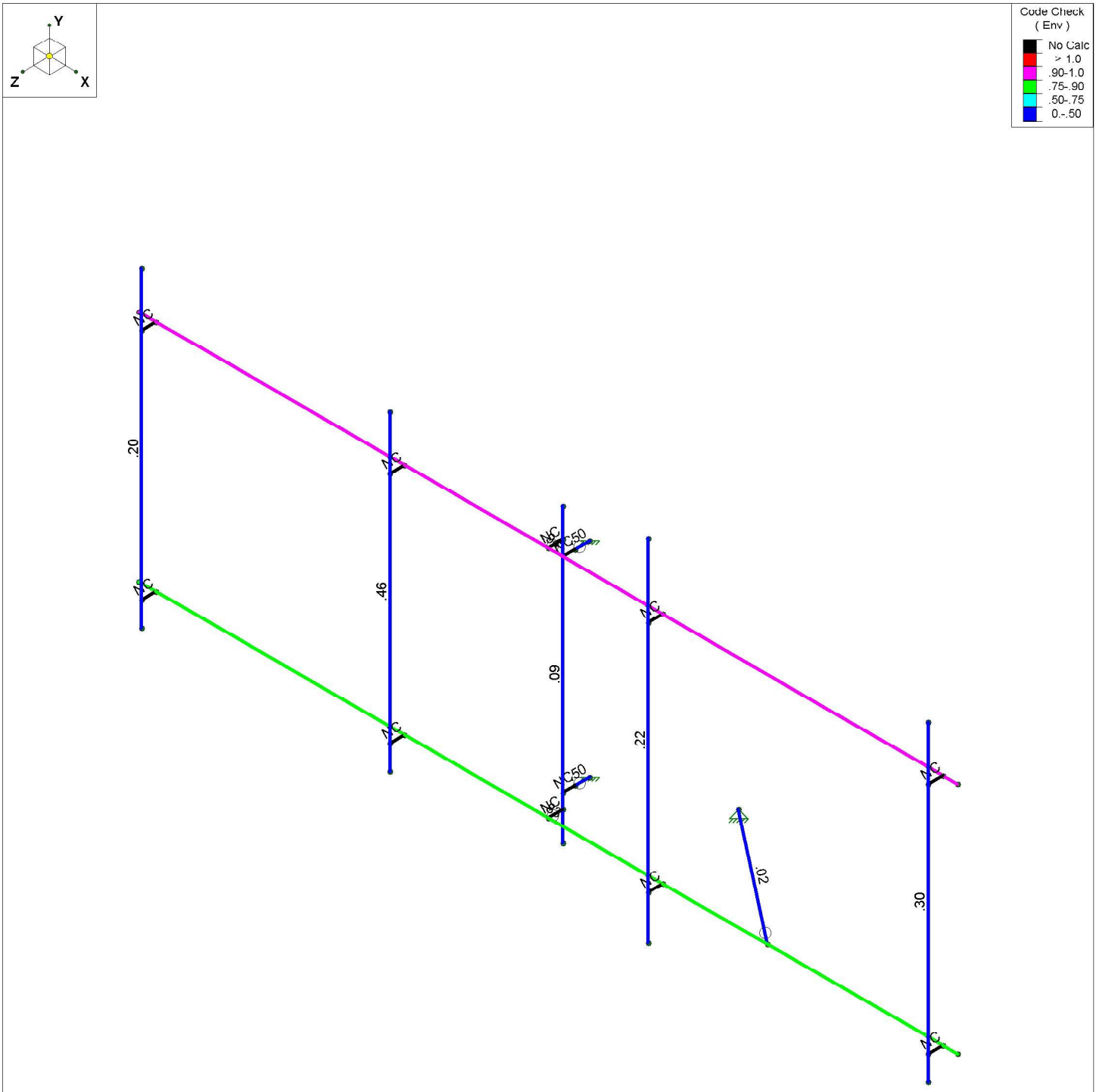


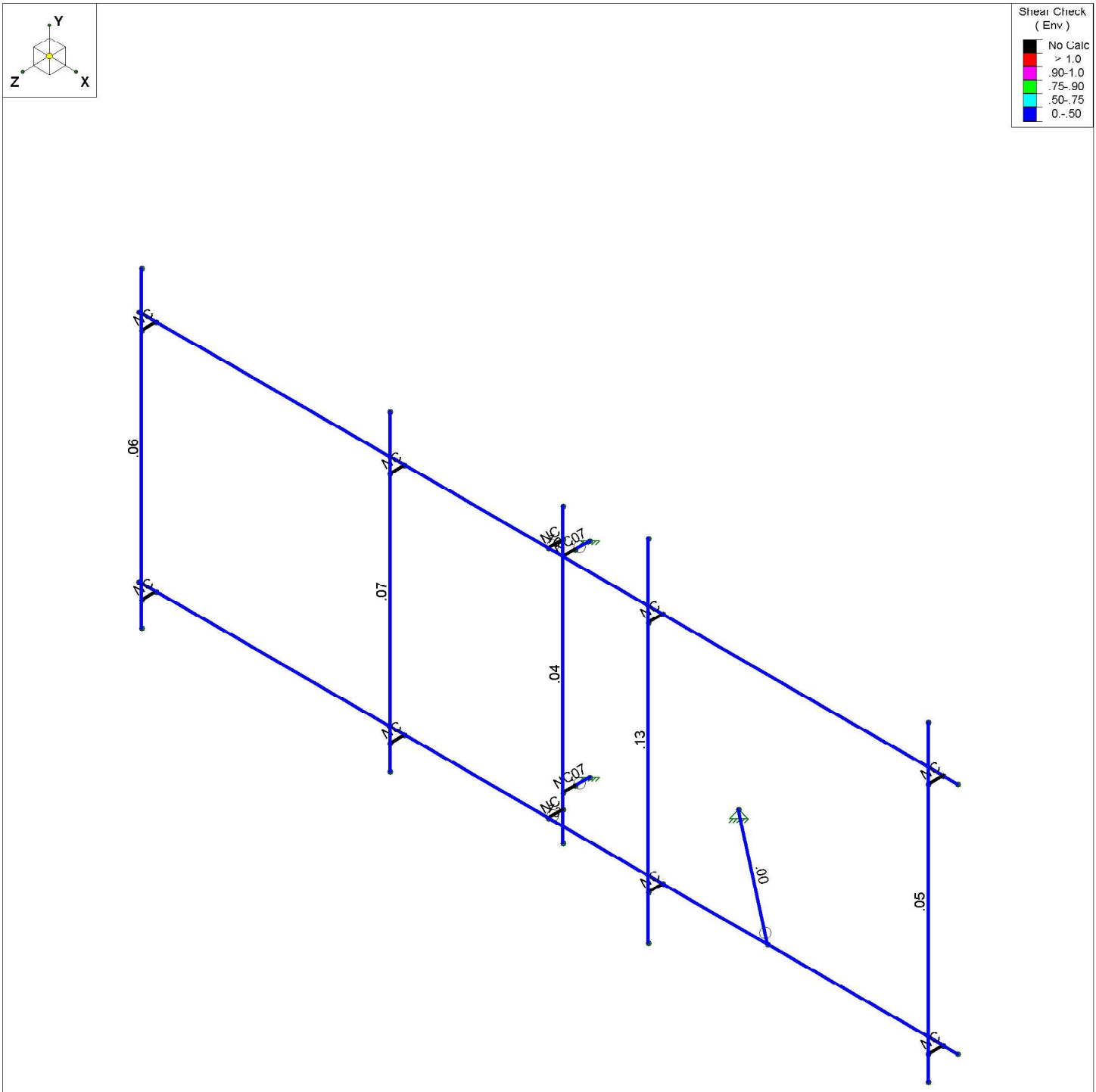

Envelope Only Solution

| | | |
|---|---|---|
| Maser Consulting | 469372-VZW_MT_LOT_SectorA_H | SK - 1 |
| | | July 13, 2021 at 2:36 PM |
| | | 469372-VZW_MT_LOT_A_H.r3d |




Member Code Checks Displayed (Enveloped)
Envelope Only Solution

| | | |
|---|---|---|
| Maser Consulting | 469372-VZW_MT_LOT_SectorA_H | SK - 2 |
| | | July 13, 2021 at 2:36 PM |
| | | 469372-VZW_MT_LOT_A_H.r3d |




Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

| | | |
|---|---|---|
| Maser Consulting | 469372-VZW_MT_LOT_SectorA_H | SK - 3 |
| | | July 13, 2021 at 2:37 PM |
| | | 469372-VZW_MT_LOT_A_H.r3d |

## Member Primary Data

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M1 | N2 | N1 | | | Face Horizont... | Column | Pipe | A53 Gr. B | Typical |
| 2 | M2 | N4 | N3 | | | Face Horizont... | Column | Pipe | A53 Gr. B | Typical |
| 3 | M3 | N5 | N7 | | | RIGID | None | None | RIGID | Typical |
| 4 | M4 | N6 | N8 | | | RIGID | None | None | RIGID | Typical |
| 5 | M5 | N9 | N10 | | | Mast Pipe | Column | Pipe | A53 Gr. B | Typical |
| 6 | M6 | N11 | N41 | | | RIGID | None | None | RIGID | Typical |
| 7 | M7 | N12 | N42 | | | RIGID | None | None | RIGID | Typical |
| 8 | M8 | N17 | N23A | | | RIGID | None | None | RIGID | Typical |
| 9 | M9 | N18 | N24A | | | RIGID | None | None | RIGID | Typical |
| 10 | M10 | N20 | N26 | | | RIGID | None | None | RIGID | Typical |
| 11 | M11 | N19 | N25 | | | RIGID | None | None | RIGID | Typical |
| 12 | M12 | N21 | N27 | | | RIGID | None | None | RIGID | Typical |
| 13 | M13 | N22 | N28 | | | RIGID | None | None | RIGID | Typical |
| 14 | M14 | N24 | N30 | | | RIGID | None | None | RIGID | Typical |
| 15 | M15 | N23 | N29 | | | RIGID | None | None | RIGID | Typical |
| 16 | MP4A | N34 | N38 | | | Antenna Pipe | Column | Pipe | A53 Gr. B | Typical |
| 17 | MP3A | N33 | N37 | | | Antenna Pipe | Column | Pipe | A53 Gr. B | Typical |
| 18 | MP2A | N32 | N36 | | | Dual Antenna ... | Column | Pipe | A53 Gr. B | Typical |
| 19 | MP1A | N31 | N35 | | | Antenna Pipe | Column | Pipe | A53 Gr. B | Typical |
| 20 | M20 | N39 | N40 | | | Tie Back | Column | Pipe | A53 Gr. B | Typical |
| 21 | M21 | N41 | N13 | | 90 | Plate | Column | RECT | A36 Gr.36 | Typical |
| 22 | M22 | N42 | N14 | | 90 | Plate | Column | RECT | A36 Gr.36 | Typical |

## Joint Loads and Enforced Displacements

| Joint Label | L,D,M | Direction | Magnitude[(lb,k-ft), (in,rad), (lb*s^2/... |
|---|---|---|---|
| No Data to Print ... | | | |

## Member Distributed Loads (BLC 40 : Structure Di)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | Y | -5.151 | -5.151 | 0 | %100 |
| 2 | M2 | Y | -5.151 | -5.151 | 0 | %100 |
| 3 | M5 | Y | -8.227 | -8.227 | 0 | %100 |
| 4 | MP4A | Y | -5.151 | -5.151 | 0 | %100 |
| 5 | MP3A | Y | -5.151 | -5.151 | 0 | %100 |
| 6 | MP2A | Y | -5.875 | -5.875 | 0 | %100 |
| 7 | MP1A | Y | -5.151 | -5.151 | 0 | %100 |
| 8 | M20 | Y | -5.151 | -5.151 | 0 | %100 |
| 9 | M21 | Y | -8.971 | -8.971 | 0 | %100 |
| 10 | M22 | Y | -8.971 | -8.971 | 0 | %100 |

## Member Distributed Loads (BLC 41 : Structure Wo (0 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | -8.408 | -8.408 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | -8.408 | -8.408 | 0 | %100 |
| 5 | M5 | X | 0 | 0 | 0 | %100 |
| 6 | M5 | Z | -10.918 | -10.918 | 0 | %100 |
| 7 | MP4A | X | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 41 : Structure Wo (0 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 8 | MP4A | Z | -8.408 | -8.408 | 0 | %100 |
| 9 | MP3A | X | 0 | 0 | 0 | %100 |
| 10 | MP3A | Z | -8.408 | -8.408 | 0 | %100 |
| 11 | MP2A | X | 0 | 0 | 0 | %100 |
| 12 | MP2A | Z | -9.662 | -9.662 | 0 | %100 |
| 13 | MP1A | X | 0 | 0 | 0 | %100 |
| 14 | MP1A | Z | -8.408 | -8.408 | 0 | %100 |
| 15 | M20 | X | 0 | 0 | 0 | %100 |
| 16 | M20 | Z | -4.211 | -4.211 | 0 | %100 |
| 17 | M21 | X | 0 | 0 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 0 | 0 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 42 : Structure Wo (30 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 3.153 | 3.153 | 0 | %100 |
| 2 | M1 | Z | -5.461 | -5.461 | 0 | %100 |
| 3 | M2 | X | 3.153 | 3.153 | 0 | %100 |
| 4 | M2 | Z | -5.461 | -5.461 | 0 | %100 |
| 5 | M5 | X | 5.459 | 5.459 | 0 | %100 |
| 6 | M5 | Z | -9.455 | -9.455 | 0 | %100 |
| 7 | MP4A | X | 4.204 | 4.204 | 0 | %100 |
| 8 | MP4A | Z | -7.282 | -7.282 | 0 | %100 |
| 9 | MP3A | X | 4.204 | 4.204 | 0 | %100 |
| 10 | MP3A | Z | -7.282 | -7.282 | 0 | %100 |
| 11 | MP2A | X | 4.831 | 4.831 | 0 | %100 |
| 12 | MP2A | Z | -8.368 | -8.368 | 0 | %100 |
| 13 | MP1A | X | 4.204 | 4.204 | 0 | %100 |
| 14 | MP1A | Z | -7.282 | -7.282 | 0 | %100 |
| 15 | M20 | X | 3.316 | 3.316 | 0 | %100 |
| 16 | M20 | Z | -5.743 | -5.743 | 0 | %100 |
| 17 | M21 | X | .166 | .166 | 0 | %100 |
| 18 | M21 | Z | -.287 | -.287 | 0 | %100 |
| 19 | M22 | X | .166 | .166 | 0 | %100 |
| 20 | M22 | Z | -.287 | -.287 | 0 | %100 |

## Member Distributed Loads (BLC 43 : Structure Wo (60 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 1.82 | 1.82 | 0 | %100 |
| 2 | M1 | Z | -1.051 | -1.051 | 0 | %100 |
| 3 | M2 | X | 1.82 | 1.82 | 0 | %100 |
| 4 | M2 | Z | -1.051 | -1.051 | 0 | %100 |
| 5 | M5 | X | 9.455 | 9.455 | 0 | %100 |
| 6 | M5 | Z | -5.459 | -5.459 | 0 | %100 |
| 7 | MP4A | X | 7.282 | 7.282 | 0 | %100 |
| 8 | MP4A | Z | -4.204 | -4.204 | 0 | %100 |
| 9 | MP3A | X | 7.282 | 7.282 | 0 | %100 |
| 10 | MP3A | Z | -4.204 | -4.204 | 0 | %100 |
| 11 | MP2A | X | 8.368 | 8.368 | 0 | %100 |
| 12 | MP2A | Z | -4.831 | -4.831 | 0 | %100 |
| 13 | MP1A | X | 7.282 | 7.282 | 0 | %100 |
| 14 | MP1A | Z | -4.204 | -4.204 | 0 | %100 |
| 15 | M20 | X | 5.022 | 5.022 | 0 | %100 |
| 16 | M20 | Z | -2.9 | -2.9 | 0 | %100 |
| 17 | M21 | X | .862 | .862 | 0 | %100 |

## Member Distributed Loads (BLC 43 : Structure Wo (60 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 18 | M21 | Z | -.498 | -.498 | 0 | %100 |
| 19 | M22 | X | .862 | .862 | 0 | %100 |
| 20 | M22 | Z | -.498 | -.498 | 0 | %100 |

## Member Distributed Loads (BLC 44 : Structure Wo (90 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 0 | 0 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 0 | 0 | 0 | %100 |
| 5 | M5 | X | 10.918 | 10.918 | 0 | %100 |
| 6 | M5 | Z | 0 | 0 | 0 | %100 |
| 7 | MP4A | X | 8.408 | 8.408 | 0 | %100 |
| 8 | MP4A | Z | 0 | 0 | 0 | %100 |
| 9 | MP3A | X | 8.408 | 8.408 | 0 | %100 |
| 10 | MP3A | Z | 0 | 0 | 0 | %100 |
| 11 | MP2A | X | 9.662 | 9.662 | 0 | %100 |
| 12 | MP2A | Z | 0 | 0 | 0 | %100 |
| 13 | MP1A | X | 8.408 | 8.408 | 0 | %100 |
| 14 | MP1A | Z | 0 | 0 | 0 | %100 |
| 15 | M20 | X | 2.547 | 2.547 | 0 | %100 |
| 16 | M20 | Z | 0 | 0 | 0 | %100 |
| 17 | M21 | X | 1.328 | 1.328 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 1.328 | 1.328 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 45 : Structure Wo (120 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 1.82 | 1.82 | 0 | %100 |
| 2 | M1 | Z | 1.051 | 1.051 | 0 | %100 |
| 3 | M2 | X | 1.82 | 1.82 | 0 | %100 |
| 4 | M2 | Z | 1.051 | 1.051 | 0 | %100 |
| 5 | M5 | X | 9.455 | 9.455 | 0 | %100 |
| 6 | M5 | Z | 5.459 | 5.459 | 0 | %100 |
| 7 | MP4A | X | 7.282 | 7.282 | 0 | %100 |
| 8 | MP4A | Z | 4.204 | 4.204 | 0 | %100 |
| 9 | MP3A | X | 7.282 | 7.282 | 0 | %100 |
| 10 | MP3A | Z | 4.204 | 4.204 | 0 | %100 |
| 11 | MP2A | X | 8.368 | 8.368 | 0 | %100 |
| 12 | MP2A | Z | 4.831 | 4.831 | 0 | %100 |
| 13 | MP1A | X | 7.282 | 7.282 | 0 | %100 |
| 14 | MP1A | Z | 4.204 | 4.204 | 0 | %100 |
| 15 | M20 | X | .11 | .11 | 0 | %100 |
| 16 | M20 | Z | .063 | .063 | 0 | %100 |
| 17 | M21 | X | .862 | .862 | 0 | %100 |
| 18 | M21 | Z | .498 | .498 | 0 | %100 |
| 19 | M22 | X | .862 | .862 | 0 | %100 |
| 20 | M22 | Z | .498 | .498 | 0 | %100 |

## Member Distributed Loads (BLC 46 : Structure Wo (150 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 3.153 | 3.153 | 0 | %100 |
| 2 | M1 | Z | 5.461 | 5.461 | 0 | %100 |
| 3 | M2 | X | 3.153 | 3.153 | 0 | %100 |

## Member Distributed Loads (BLC 46 : Structure Wo (150 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 4 | M2 | Z | 5.461 | 5.461 | 0 | %100 |
| 5 | M5 | X | 5.459 | 5.459 | 0 | %100 |
| 6 | M5 | Z | 9.455 | 9.455 | 0 | %100 |
| 7 | MP4A | X | 4.204 | 4.204 | 0 | %100 |
| 8 | MP4A | Z | 7.282 | 7.282 | 0 | %100 |
| 9 | MP3A | X | 4.204 | 4.204 | 0 | %100 |
| 10 | MP3A | Z | 7.282 | 7.282 | 0 | %100 |
| 11 | MP2A | X | 4.831 | 4.831 | 0 | %100 |
| 12 | MP2A | Z | 8.368 | 8.368 | 0 | %100 |
| 13 | MP1A | X | 4.204 | 4.204 | 0 | %100 |
| 14 | MP1A | Z | 7.282 | 7.282 | 0 | %100 |
| 15 | M20 | X | .479 | .479 | 0 | %100 |
| 16 | M20 | Z | .83 | .83 | 0 | %100 |
| 17 | M21 | X | .166 | .166 | 0 | %100 |
| 18 | M21 | Z | .287 | .287 | 0 | %100 |
| 19 | M22 | X | .166 | .166 | 0 | %100 |
| 20 | M22 | Z | .287 | .287 | 0 | %100 |

## Member Distributed Loads (BLC 47 : Structure Wo (180 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 8.408 | 8.408 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 8.408 | 8.408 | 0 | %100 |
| 5 | M5 | X | 0 | 0 | 0 | %100 |
| 6 | M5 | Z | 10.918 | 10.918 | 0 | %100 |
| 7 | MP4A | X | 0 | 0 | 0 | %100 |
| 8 | MP4A | Z | 8.408 | 8.408 | 0 | %100 |
| 9 | MP3A | X | 0 | 0 | 0 | %100 |
| 10 | MP3A | Z | 8.408 | 8.408 | 0 | %100 |
| 11 | MP2A | X | 0 | 0 | 0 | %100 |
| 12 | MP2A | Z | 9.662 | 9.662 | 0 | %100 |
| 13 | MP1A | X | 0 | 0 | 0 | %100 |
| 14 | MP1A | Z | 8.408 | 8.408 | 0 | %100 |
| 15 | M20 | X | 0 | 0 | 0 | %100 |
| 16 | M20 | Z | 4.211 | 4.211 | 0 | %100 |
| 17 | M21 | X | 0 | 0 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 0 | 0 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 48 : Structure Wo (210 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -3.153 | -3.153 | 0 | %100 |
| 2 | M1 | Z | 5.461 | 5.461 | 0 | %100 |
| 3 | M2 | X | -3.153 | -3.153 | 0 | %100 |
| 4 | M2 | Z | 5.461 | 5.461 | 0 | %100 |
| 5 | M5 | X | -5.459 | -5.459 | 0 | %100 |
| 6 | M5 | Z | 9.455 | 9.455 | 0 | %100 |
| 7 | MP4A | X | -4.204 | -4.204 | 0 | %100 |
| 8 | MP4A | Z | 7.282 | 7.282 | 0 | %100 |
| 9 | MP3A | X | -4.204 | -4.204 | 0 | %100 |
| 10 | MP3A | Z | 7.282 | 7.282 | 0 | %100 |
| 11 | MP2A | X | -4.831 | -4.831 | 0 | %100 |
| 12 | MP2A | Z | 8.368 | 8.368 | 0 | %100 |
| 13 | MP1A | X | -4.204 | -4.204 | 0 | %100 |

## Member Distributed Loads (BLC 48 : Structure Wo (210 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 14 | MP1A | Z | 7.282 | 7.282 | 0 | %100 |
| 15 | M20 | X | -3.316 | -3.316 | 0 | %100 |
| 16 | M20 | Z | 5.743 | 5.743 | 0 | %100 |
| 17 | M21 | X | -.166 | -.166 | 0 | %100 |
| 18 | M21 | Z | .287 | .287 | 0 | %100 |
| 19 | M22 | X | -.166 | -.166 | 0 | %100 |
| 20 | M22 | Z | .287 | .287 | 0 | %100 |

## Member Distributed Loads (BLC 49 : Structure Wo (240 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -1.82 | -1.82 | 0 | %100 |
| 2 | M1 | Z | 1.051 | 1.051 | 0 | %100 |
| 3 | M2 | X | -1.82 | -1.82 | 0 | %100 |
| 4 | M2 | Z | 1.051 | 1.051 | 0 | %100 |
| 5 | M5 | X | -9.455 | -9.455 | 0 | %100 |
| 6 | M5 | Z | 5.459 | 5.459 | 0 | %100 |
| 7 | MP4A | X | -7.282 | -7.282 | 0 | %100 |
| 8 | MP4A | Z | 4.204 | 4.204 | 0 | %100 |
| 9 | MP3A | X | -7.282 | -7.282 | 0 | %100 |
| 10 | MP3A | Z | 4.204 | 4.204 | 0 | %100 |
| 11 | MP2A | X | -8.368 | -8.368 | 0 | %100 |
| 12 | MP2A | Z | 4.831 | 4.831 | 0 | %100 |
| 13 | MP1A | X | -7.282 | -7.282 | 0 | %100 |
| 14 | MP1A | Z | 4.204 | 4.204 | 0 | %100 |
| 15 | M20 | X | -5.022 | -5.022 | 0 | %100 |
| 16 | M20 | Z | 2.9 | 2.9 | 0 | %100 |
| 17 | M21 | X | -.862 | -.862 | 0 | %100 |
| 18 | M21 | Z | .498 | .498 | 0 | %100 |
| 19 | M22 | X | -.862 | -.862 | 0 | %100 |
| 20 | M22 | Z | .498 | .498 | 0 | %100 |

## Member Distributed Loads (BLC 50 : Structure Wo (270 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 0 | 0 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 0 | 0 | 0 | %100 |
| 5 | M5 | X | -10.918 | -10.918 | 0 | %100 |
| 6 | M5 | Z | 0 | 0 | 0 | %100 |
| 7 | MP4A | X | -8.408 | -8.408 | 0 | %100 |
| 8 | MP4A | Z | 0 | 0 | 0 | %100 |
| 9 | MP3A | X | -8.408 | -8.408 | 0 | %100 |
| 10 | MP3A | Z | 0 | 0 | 0 | %100 |
| 11 | MP2A | X | -9.662 | -9.662 | 0 | %100 |
| 12 | MP2A | Z | 0 | 0 | 0 | %100 |
| 13 | MP1A | X | -8.408 | -8.408 | 0 | %100 |
| 14 | MP1A | Z | 0 | 0 | 0 | %100 |
| 15 | M20 | X | -2.547 | -2.547 | 0 | %100 |
| 16 | M20 | Z | 0 | 0 | 0 | %100 |
| 17 | M21 | X | -1.328 | -1.328 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | -1.328 | -1.328 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 51 : Structure Wo (300 Deg))

| Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|

## Member Distributed Loads (BLC 51 : Structure Wo (300 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -1.82 | -1.82 | 0 | %100 |
| 2 | M1 | Z | -1.051 | -1.051 | 0 | %100 |
| 3 | M2 | X | -1.82 | -1.82 | 0 | %100 |
| 4 | M2 | Z | -1.051 | -1.051 | 0 | %100 |
| 5 | M5 | X | -9.455 | -9.455 | 0 | %100 |
| 6 | M5 | Z | -5.459 | -5.459 | 0 | %100 |
| 7 | MP4A | X | -7.282 | -7.282 | 0 | %100 |
| 8 | MP4A | Z | -4.204 | -4.204 | 0 | %100 |
| 9 | MP3A | X | -7.282 | -7.282 | 0 | %100 |
| 10 | MP3A | Z | -4.204 | -4.204 | 0 | %100 |
| 11 | MP2A | X | -8.368 | -8.368 | 0 | %100 |
| 12 | MP2A | Z | -4.831 | -4.831 | 0 | %100 |
| 13 | MP1A | X | -7.282 | -7.282 | 0 | %100 |
| 14 | MP1A | Z | -4.204 | -4.204 | 0 | %100 |
| 15 | M20 | X | -.11 | -.11 | 0 | %100 |
| 16 | M20 | Z | -.063 | -.063 | 0 | %100 |
| 17 | M21 | X | -.862 | -.862 | 0 | %100 |
| 18 | M21 | Z | -.498 | -.498 | 0 | %100 |
| 19 | M22 | X | -.862 | -.862 | 0 | %100 |
| 20 | M22 | Z | -.498 | -.498 | 0 | %100 |

## Member Distributed Loads (BLC 52 : Structure Wo (330 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -3.153 | -3.153 | 0 | %100 |
| 2 | M1 | Z | -5.461 | -5.461 | 0 | %100 |
| 3 | M2 | X | -3.153 | -3.153 | 0 | %100 |
| 4 | M2 | Z | -5.461 | -5.461 | 0 | %100 |
| 5 | M5 | X | -5.459 | -5.459 | 0 | %100 |
| 6 | M5 | Z | -9.455 | -9.455 | 0 | %100 |
| 7 | MP4A | X | -4.204 | -4.204 | 0 | %100 |
| 8 | MP4A | Z | -7.282 | -7.282 | 0 | %100 |
| 9 | MP3A | X | -4.204 | -4.204 | 0 | %100 |
| 10 | MP3A | Z | -7.282 | -7.282 | 0 | %100 |
| 11 | MP2A | X | -4.831 | -4.831 | 0 | %100 |
| 12 | MP2A | Z | -8.368 | -8.368 | 0 | %100 |
| 13 | MP1A | X | -4.204 | -4.204 | 0 | %100 |
| 14 | MP1A | Z | -7.282 | -7.282 | 0 | %100 |
| 15 | M20 | X | -.479 | -.479 | 0 | %100 |
| 16 | M20 | Z | -.83 | -.83 | 0 | %100 |
| 17 | M21 | X | -.166 | -.166 | 0 | %100 |
| 18 | M21 | Z | -.287 | -.287 | 0 | %100 |
| 19 | M22 | X | -.166 | -.166 | 0 | %100 |
| 20 | M22 | Z | -.287 | -.287 | 0 | %100 |

## Member Distributed Loads (BLC 53 : Structure Wi (0 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | -2.965 | -2.965 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | -2.965 | -2.965 | 0 | %100 |
| 5 | M5 | X | 0 | 0 | 0 | %100 |
| 6 | M5 | Z | -3.686 | -3.686 | 0 | %100 |
| 7 | MP4A | X | 0 | 0 | 0 | %100 |
| 8 | MP4A | Z | -2.965 | -2.965 | 0 | %100 |
| 9 | MP3A | X | 0 | 0 | 0 | %100 |
| 10 | MP3A | Z | -2.965 | -2.965 | 0 | %100 |

## Member Distributed Loads (BLC 53 : Structure Wi (0 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 11 | MP2A | X | 0 | 0 | 0 | %100 |
| 12 | MP2A | Z | -3.186 | -3.186 | 0 | %100 |
| 13 | MP1A | X | 0 | 0 | 0 | %100 |
| 14 | MP1A | Z | -2.965 | -2.965 | 0 | %100 |
| 15 | M20 | X | 0 | 0 | 0 | %100 |
| 16 | M20 | Z | -1.486 | -1.486 | 0 | %100 |
| 17 | M21 | X | 0 | 0 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 0 | 0 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 54 : Structure Wi (30 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 1.112 | 1.112 | 0 | %100 |
| 2 | M1 | Z | -1.926 | -1.926 | 0 | %100 |
| 3 | M2 | X | 1.112 | 1.112 | 0 | %100 |
| 4 | M2 | Z | -1.926 | -1.926 | 0 | %100 |
| 5 | M5 | X | 1.843 | 1.843 | 0 | %100 |
| 6 | M5 | Z | -3.192 | -3.192 | 0 | %100 |
| 7 | MP4A | X | 1.483 | 1.483 | 0 | %100 |
| 8 | MP4A | Z | -2.568 | -2.568 | 0 | %100 |
| 9 | MP3A | X | 1.483 | 1.483 | 0 | %100 |
| 10 | MP3A | Z | -2.568 | -2.568 | 0 | %100 |
| 11 | MP2A | X | 1.593 | 1.593 | 0 | %100 |
| 12 | MP2A | Z | -2.76 | -2.76 | 0 | %100 |
| 13 | MP1A | X | 1.483 | 1.483 | 0 | %100 |
| 14 | MP1A | Z | -2.568 | -2.568 | 0 | %100 |
| 15 | M20 | X | 1.17 | 1.17 | 0 | %100 |
| 16 | M20 | Z | -2.026 | -2.026 | 0 | %100 |
| 17 | M21 | X | .137 | .137 | 0 | %100 |
| 18 | M21 | Z | -.238 | -.238 | 0 | %100 |
| 19 | M22 | X | .137 | .137 | 0 | %100 |
| 20 | M22 | Z | -.238 | -.238 | 0 | %100 |

## Member Distributed Loads (BLC 55 : Structure Wi (60 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | .642 | .642 | 0 | %100 |
| 2 | M1 | Z | -.371 | -.371 | 0 | %100 |
| 3 | M2 | X | .642 | .642 | 0 | %100 |
| 4 | M2 | Z | -.371 | -.371 | 0 | %100 |
| 5 | M5 | X | 3.192 | 3.192 | 0 | %100 |
| 6 | M5 | Z | -1.843 | -1.843 | 0 | %100 |
| 7 | MP4A | X | 2.568 | 2.568 | 0 | %100 |
| 8 | MP4A | Z | -1.483 | -1.483 | 0 | %100 |
| 9 | MP3A | X | 2.568 | 2.568 | 0 | %100 |
| 10 | MP3A | Z | -1.483 | -1.483 | 0 | %100 |
| 11 | MP2A | X | 2.76 | 2.76 | 0 | %100 |
| 12 | MP2A | Z | -1.593 | -1.593 | 0 | %100 |
| 13 | MP1A | X | 2.568 | 2.568 | 0 | %100 |
| 14 | MP1A | Z | -1.483 | -1.483 | 0 | %100 |
| 15 | M20 | X | 1.772 | 1.772 | 0 | %100 |
| 16 | M20 | Z | -1.023 | -1.023 | 0 | %100 |
| 17 | M21 | X | .713 | .713 | 0 | %100 |
| 18 | M21 | Z | -.412 | -.412 | 0 | %100 |
| 19 | M22 | X | .713 | .713 | 0 | %100 |
| 20 | M22 | Z | -.412 | -.412 | 0 | %100 |

## Member Distributed Loads (BLC 56 : Structure Wi (90 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 0 | 0 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 0 | 0 | 0 | %100 |
| 5 | M5 | X | 3.686 | 3.686 | 0 | %100 |
| 6 | M5 | Z | 0 | 0 | 0 | %100 |
| 7 | MP4A | X | 2.965 | 2.965 | 0 | %100 |
| 8 | MP4A | Z | 0 | 0 | 0 | %100 |
| 9 | MP3A | X | 2.965 | 2.965 | 0 | %100 |
| 10 | MP3A | Z | 0 | 0 | 0 | %100 |
| 11 | MP2A | X | 3.186 | 3.186 | 0 | %100 |
| 12 | MP2A | Z | 0 | 0 | 0 | %100 |
| 13 | MP1A | X | 2.965 | 2.965 | 0 | %100 |
| 14 | MP1A | Z | 0 | 0 | 0 | %100 |
| 15 | M20 | X | .899 | .899 | 0 | %100 |
| 16 | M20 | Z | 0 | 0 | 0 | %100 |
| 17 | M21 | X | 1.098 | 1.098 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 1.098 | 1.098 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 57 : Structure Wi (120 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | .642 | .642 | 0 | %100 |
| 2 | M1 | Z | .371 | .371 | 0 | %100 |
| 3 | M2 | X | .642 | .642 | 0 | %100 |
| 4 | M2 | Z | .371 | .371 | 0 | %100 |
| 5 | M5 | X | 3.192 | 3.192 | 0 | %100 |
| 6 | M5 | Z | 1.843 | 1.843 | 0 | %100 |
| 7 | MP4A | X | 2.568 | 2.568 | 0 | %100 |
| 8 | MP4A | Z | 1.483 | 1.483 | 0 | %100 |
| 9 | MP3A | X | 2.568 | 2.568 | 0 | %100 |
| 10 | MP3A | Z | 1.483 | 1.483 | 0 | %100 |
| 11 | MP2A | X | 2.76 | 2.76 | 0 | %100 |
| 12 | MP2A | Z | 1.593 | 1.593 | 0 | %100 |
| 13 | MP1A | X | 2.568 | 2.568 | 0 | %100 |
| 14 | MP1A | Z | 1.483 | 1.483 | 0 | %100 |
| 15 | M20 | X | .039 | .039 | 0 | %100 |
| 16 | M20 | Z | .022 | .022 | 0 | %100 |
| 17 | M21 | X | .713 | .713 | 0 | %100 |
| 18 | M21 | Z | .412 | .412 | 0 | %100 |
| 19 | M22 | X | .713 | .713 | 0 | %100 |
| 20 | M22 | Z | .412 | .412 | 0 | %100 |

## Member Distributed Loads (BLC 58 : Structure Wi (150 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 1.112 | 1.112 | 0 | %100 |
| 2 | M1 | Z | 1.926 | 1.926 | 0 | %100 |
| 3 | M2 | X | 1.112 | 1.112 | 0 | %100 |
| 4 | M2 | Z | 1.926 | 1.926 | 0 | %100 |
| 5 | M5 | X | 1.843 | 1.843 | 0 | %100 |
| 6 | M5 | Z | 3.192 | 3.192 | 0 | %100 |
| 7 | MP4A | X | 1.483 | 1.483 | 0 | %100 |
| 8 | MP4A | Z | 2.568 | 2.568 | 0 | %100 |
| 9 | MP3A | X | 1.483 | 1.483 | 0 | %100 |
| 10 | MP3A | Z | 2.568 | 2.568 | 0 | %100 |

## Member Distributed Loads (BLC 58 : Structure Wi (150 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 11 | MP2A | X | 1.593 | 1.593 | 0 | %100 |
| 12 | MP2A | Z | 2.76 | 2.76 | 0 | %100 |
| 13 | MP1A | X | 1.483 | 1.483 | 0 | %100 |
| 14 | MP1A | Z | 2.568 | 2.568 | 0 | %100 |
| 15 | M20 | X | .169 | .169 | 0 | %100 |
| 16 | M20 | Z | .293 | .293 | 0 | %100 |
| 17 | M21 | X | .137 | .137 | 0 | %100 |
| 18 | M21 | Z | .238 | .238 | 0 | %100 |
| 19 | M22 | X | .137 | .137 | 0 | %100 |
| 20 | M22 | Z | .238 | .238 | 0 | %100 |

## Member Distributed Loads (BLC 59 : Structure Wi (180 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 2.965 | 2.965 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 2.965 | 2.965 | 0 | %100 |
| 5 | M5 | X | 0 | 0 | 0 | %100 |
| 6 | M5 | Z | 3.686 | 3.686 | 0 | %100 |
| 7 | MP4A | X | 0 | 0 | 0 | %100 |
| 8 | MP4A | Z | 2.965 | 2.965 | 0 | %100 |
| 9 | MP3A | X | 0 | 0 | 0 | %100 |
| 10 | MP3A | Z | 2.965 | 2.965 | 0 | %100 |
| 11 | MP2A | X | 0 | 0 | 0 | %100 |
| 12 | MP2A | Z | 3.186 | 3.186 | 0 | %100 |
| 13 | MP1A | X | 0 | 0 | 0 | %100 |
| 14 | MP1A | Z | 2.965 | 2.965 | 0 | %100 |
| 15 | M20 | X | 0 | 0 | 0 | %100 |
| 16 | M20 | Z | 1.486 | 1.486 | 0 | %100 |
| 17 | M21 | X | 0 | 0 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 0 | 0 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 60 : Structure Wi (210 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -1.112 | -1.112 | 0 | %100 |
| 2 | M1 | Z | 1.926 | 1.926 | 0 | %100 |
| 3 | M2 | X | -1.112 | -1.112 | 0 | %100 |
| 4 | M2 | Z | 1.926 | 1.926 | 0 | %100 |
| 5 | M5 | X | -1.843 | -1.843 | 0 | %100 |
| 6 | M5 | Z | 3.192 | 3.192 | 0 | %100 |
| 7 | MP4A | X | -1.483 | -1.483 | 0 | %100 |
| 8 | MP4A | Z | 2.568 | 2.568 | 0 | %100 |
| 9 | MP3A | X | -1.483 | -1.483 | 0 | %100 |
| 10 | MP3A | Z | 2.568 | 2.568 | 0 | %100 |
| 11 | MP2A | X | -1.593 | -1.593 | 0 | %100 |
| 12 | MP2A | Z | 2.76 | 2.76 | 0 | %100 |
| 13 | MP1A | X | -1.483 | -1.483 | 0 | %100 |
| 14 | MP1A | Z | 2.568 | 2.568 | 0 | %100 |
| 15 | M20 | X | -1.17 | -1.17 | 0 | %100 |
| 16 | M20 | Z | 2.026 | 2.026 | 0 | %100 |
| 17 | M21 | X | -.137 | -.137 | 0 | %100 |
| 18 | M21 | Z | .238 | .238 | 0 | %100 |
| 19 | M22 | X | -.137 | -.137 | 0 | %100 |
| 20 | M22 | Z | .238 | .238 | 0 | %100 |

## Member Distributed Loads (BLC 61 : Structure Wi (240 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -.642 | -.642 | 0 | %100 |
| 2 | M1 | Z | .371 | .371 | 0 | %100 |
| 3 | M2 | X | -.642 | -.642 | 0 | %100 |
| 4 | M2 | Z | .371 | .371 | 0 | %100 |
| 5 | M5 | X | -3.192 | -3.192 | 0 | %100 |
| 6 | M5 | Z | 1.843 | 1.843 | 0 | %100 |
| 7 | MP4A | X | -2.568 | -2.568 | 0 | %100 |
| 8 | MP4A | Z | 1.483 | 1.483 | 0 | %100 |
| 9 | MP3A | X | -2.568 | -2.568 | 0 | %100 |
| 10 | MP3A | Z | 1.483 | 1.483 | 0 | %100 |
| 11 | MP2A | X | -2.76 | -2.76 | 0 | %100 |
| 12 | MP2A | Z | 1.593 | 1.593 | 0 | %100 |
| 13 | MP1A | X | -2.568 | -2.568 | 0 | %100 |
| 14 | MP1A | Z | 1.483 | 1.483 | 0 | %100 |
| 15 | M20 | X | -1.772 | -1.772 | 0 | %100 |
| 16 | M20 | Z | 1.023 | 1.023 | 0 | %100 |
| 17 | M21 | X | -.713 | -.713 | 0 | %100 |
| 18 | M21 | Z | .412 | .412 | 0 | %100 |
| 19 | M22 | X | -.713 | -.713 | 0 | %100 |
| 20 | M22 | Z | .412 | .412 | 0 | %100 |

## Member Distributed Loads (BLC 62 : Structure Wi (270 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 0 | 0 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 0 | 0 | 0 | %100 |
| 5 | M5 | X | -3.686 | -3.686 | 0 | %100 |
| 6 | M5 | Z | 0 | 0 | 0 | %100 |
| 7 | MP4A | X | -2.965 | -2.965 | 0 | %100 |
| 8 | MP4A | Z | 0 | 0 | 0 | %100 |
| 9 | MP3A | X | -2.965 | -2.965 | 0 | %100 |
| 10 | MP3A | Z | 0 | 0 | 0 | %100 |
| 11 | MP2A | X | -3.186 | -3.186 | 0 | %100 |
| 12 | MP2A | Z | 0 | 0 | 0 | %100 |
| 13 | MP1A | X | -2.965 | -2.965 | 0 | %100 |
| 14 | MP1A | Z | 0 | 0 | 0 | %100 |
| 15 | M20 | X | -.899 | -.899 | 0 | %100 |
| 16 | M20 | Z | 0 | 0 | 0 | %100 |
| 17 | M21 | X | -1.098 | -1.098 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | -1.098 | -1.098 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 63 : Structure Wi (300 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -.642 | -.642 | 0 | %100 |
| 2 | M1 | Z | -.371 | -.371 | 0 | %100 |
| 3 | M2 | X | -.642 | -.642 | 0 | %100 |
| 4 | M2 | Z | -.371 | -.371 | 0 | %100 |
| 5 | M5 | X | -3.192 | -3.192 | 0 | %100 |
| 6 | M5 | Z | -1.843 | -1.843 | 0 | %100 |
| 7 | MP4A | X | -2.568 | -2.568 | 0 | %100 |
| 8 | MP4A | Z | -1.483 | -1.483 | 0 | %100 |
| 9 | MP3A | X | -2.568 | -2.568 | 0 | %100 |
| 10 | MP3A | Z | -1.483 | -1.483 | 0 | %100 |

## Member Distributed Loads (BLC 63 : Structure Wi (300 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 11 | MP2A | X | -2.76 | -2.76 | 0 | %100 |
| 12 | MP2A | Z | -1.593 | -1.593 | 0 | %100 |
| 13 | MP1A | X | -2.568 | -2.568 | 0 | %100 |
| 14 | MP1A | Z | -1.483 | -1.483 | 0 | %100 |
| 15 | M20 | X | -.039 | -.039 | 0 | %100 |
| 16 | M20 | Z | -.022 | -.022 | 0 | %100 |
| 17 | M21 | X | -.713 | -.713 | 0 | %100 |
| 18 | M21 | Z | -.412 | -.412 | 0 | %100 |
| 19 | M22 | X | -.713 | -.713 | 0 | %100 |
| 20 | M22 | Z | -.412 | -.412 | 0 | %100 |

## Member Distributed Loads (BLC 64 : Structure Wi (330 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -1.112 | -1.112 | 0 | %100 |
| 2 | M1 | Z | -1.926 | -1.926 | 0 | %100 |
| 3 | M2 | X | -1.112 | -1.112 | 0 | %100 |
| 4 | M2 | Z | -1.926 | -1.926 | 0 | %100 |
| 5 | M5 | X | -1.843 | -1.843 | 0 | %100 |
| 6 | M5 | Z | -3.192 | -3.192 | 0 | %100 |
| 7 | MP4A | X | -1.483 | -1.483 | 0 | %100 |
| 8 | MP4A | Z | -2.568 | -2.568 | 0 | %100 |
| 9 | MP3A | X | -1.483 | -1.483 | 0 | %100 |
| 10 | MP3A | Z | -2.568 | -2.568 | 0 | %100 |
| 11 | MP2A | X | -1.593 | -1.593 | 0 | %100 |
| 12 | MP2A | Z | -2.76 | -2.76 | 0 | %100 |
| 13 | MP1A | X | -1.483 | -1.483 | 0 | %100 |
| 14 | MP1A | Z | -2.568 | -2.568 | 0 | %100 |
| 15 | M20 | X | -.169 | -.169 | 0 | %100 |
| 16 | M20 | Z | -.293 | -.293 | 0 | %100 |
| 17 | M21 | X | -.137 | -.137 | 0 | %100 |
| 18 | M21 | Z | -.238 | -.238 | 0 | %100 |
| 19 | M22 | X | -.137 | -.137 | 0 | %100 |
| 20 | M22 | Z | -.238 | -.238 | 0 | %100 |

## Member Distributed Loads (BLC 65 : Structure Wm (0 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | -.534 | -.534 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | -.534 | -.534 | 0 | %100 |
| 5 | M5 | X | 0 | 0 | 0 | %100 |
| 6 | M5 | Z | -.694 | -.694 | 0 | %100 |
| 7 | MP4A | X | 0 | 0 | 0 | %100 |
| 8 | MP4A | Z | -.534 | -.534 | 0 | %100 |
| 9 | MP3A | X | 0 | 0 | 0 | %100 |
| 10 | MP3A | Z | -.534 | -.534 | 0 | %100 |
| 11 | MP2A | X | 0 | 0 | 0 | %100 |
| 12 | MP2A | Z | -.614 | -.614 | 0 | %100 |
| 13 | MP1A | X | 0 | 0 | 0 | %100 |
| 14 | MP1A | Z | -.534 | -.534 | 0 | %100 |
| 15 | M20 | X | 0 | 0 | 0 | %100 |
| 16 | M20 | Z | -.268 | -.268 | 0 | %100 |
| 17 | M21 | X | 0 | 0 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 0 | 0 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 66 : Structure Wm (30 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | .2 | .2 | 0 | %100 |
| 2 | M1 | Z | -.347 | -.347 | 0 | %100 |
| 3 | M2 | X | .2 | .2 | 0 | %100 |
| 4 | M2 | Z | -.347 | -.347 | 0 | %100 |
| 5 | M5 | X | .347 | .347 | 0 | %100 |
| 6 | M5 | Z | -.601 | -.601 | 0 | %100 |
| 7 | MP4A | X | .267 | .267 | 0 | %100 |
| 8 | MP4A | Z | -.463 | -.463 | 0 | %100 |
| 9 | MP3A | X | .267 | .267 | 0 | %100 |
| 10 | MP3A | Z | -.463 | -.463 | 0 | %100 |
| 11 | MP2A | X | .307 | .307 | 0 | %100 |
| 12 | MP2A | Z | -.532 | -.532 | 0 | %100 |
| 13 | MP1A | X | .267 | .267 | 0 | %100 |
| 14 | MP1A | Z | -.463 | -.463 | 0 | %100 |
| 15 | M20 | X | .211 | .211 | 0 | %100 |
| 16 | M20 | Z | -.365 | -.365 | 0 | %100 |
| 17 | M21 | X | .011 | .011 | 0 | %100 |
| 18 | M21 | Z | -.018 | -.018 | 0 | %100 |
| 19 | M22 | X | .011 | .011 | 0 | %100 |
| 20 | M22 | Z | -.018 | -.018 | 0 | %100 |

## Member Distributed Loads (BLC 67 : Structure Wm (60 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | .116 | .116 | 0 | %100 |
| 2 | M1 | Z | -.067 | -.067 | 0 | %100 |
| 3 | M2 | X | .116 | .116 | 0 | %100 |
| 4 | M2 | Z | -.067 | -.067 | 0 | %100 |
| 5 | M5 | X | .601 | .601 | 0 | %100 |
| 6 | M5 | Z | -.347 | -.347 | 0 | %100 |
| 7 | MP4A | X | .463 | .463 | 0 | %100 |
| 8 | MP4A | Z | -.267 | -.267 | 0 | %100 |
| 9 | MP3A | X | .463 | .463 | 0 | %100 |
| 10 | MP3A | Z | -.267 | -.267 | 0 | %100 |
| 11 | MP2A | X | .532 | .532 | 0 | %100 |
| 12 | MP2A | Z | -.307 | -.307 | 0 | %100 |
| 13 | MP1A | X | .463 | .463 | 0 | %100 |
| 14 | MP1A | Z | -.267 | -.267 | 0 | %100 |
| 15 | M20 | X | .319 | .319 | 0 | %100 |
| 16 | M20 | Z | -.184 | -.184 | 0 | %100 |
| 17 | M21 | X | .055 | .055 | 0 | %100 |
| 18 | M21 | Z | -.032 | -.032 | 0 | %100 |
| 19 | M22 | X | .055 | .055 | 0 | %100 |
| 20 | M22 | Z | -.032 | -.032 | 0 | %100 |

## Member Distributed Loads (BLC 68 : Structure Wm (90 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 0 | 0 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 0 | 0 | 0 | %100 |
| 5 | M5 | X | .694 | .694 | 0 | %100 |
| 6 | M5 | Z | 0 | 0 | 0 | %100 |
| 7 | MP4A | X | .534 | .534 | 0 | %100 |
| 8 | MP4A | Z | 0 | 0 | 0 | %100 |
| 9 | MP3A | X | .534 | .534 | 0 | %100 |
| 10 | MP3A | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 68 : Structure Wm (90 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 11 | MP2A | X | .614 | .614 | 0 | %100 |
| 12 | MP2A | Z | 0 | 0 | 0 | %100 |
| 13 | MP1A | X | .534 | .534 | 0 | %100 |
| 14 | MP1A | Z | 0 | 0 | 0 | %100 |
| 15 | M20 | X | .162 | .162 | 0 | %100 |
| 16 | M20 | Z | 0 | 0 | 0 | %100 |
| 17 | M21 | X | .084 | .084 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | .084 | .084 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 69 : Structure Wm (120 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | .116 | .116 | 0 | %100 |
| 2 | M1 | Z | .067 | .067 | 0 | %100 |
| 3 | M2 | X | .116 | .116 | 0 | %100 |
| 4 | M2 | Z | .067 | .067 | 0 | %100 |
| 5 | M5 | X | .601 | .601 | 0 | %100 |
| 6 | M5 | Z | .347 | .347 | 0 | %100 |
| 7 | MP4A | X | .463 | .463 | 0 | %100 |
| 8 | MP4A | Z | .267 | .267 | 0 | %100 |
| 9 | MP3A | X | .463 | .463 | 0 | %100 |
| 10 | MP3A | Z | .267 | .267 | 0 | %100 |
| 11 | MP2A | X | .532 | .532 | 0 | %100 |
| 12 | MP2A | Z | .307 | .307 | 0 | %100 |
| 13 | MP1A | X | .463 | .463 | 0 | %100 |
| 14 | MP1A | Z | .267 | .267 | 0 | %100 |
| 15 | M20 | X | .007 | .007 | 0 | %100 |
| 16 | M20 | Z | .004 | .004 | 0 | %100 |
| 17 | M21 | X | .055 | .055 | 0 | %100 |
| 18 | M21 | Z | .032 | .032 | 0 | %100 |
| 19 | M22 | X | .055 | .055 | 0 | %100 |
| 20 | M22 | Z | .032 | .032 | 0 | %100 |

## Member Distributed Loads (BLC 70 : Structure Wm (150 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | .2 | .2 | 0 | %100 |
| 2 | M1 | Z | .347 | .347 | 0 | %100 |
| 3 | M2 | X | .2 | .2 | 0 | %100 |
| 4 | M2 | Z | .347 | .347 | 0 | %100 |
| 5 | M5 | X | .347 | .347 | 0 | %100 |
| 6 | M5 | Z | .601 | .601 | 0 | %100 |
| 7 | MP4A | X | .267 | .267 | 0 | %100 |
| 8 | MP4A | Z | .463 | .463 | 0 | %100 |
| 9 | MP3A | X | .267 | .267 | 0 | %100 |
| 10 | MP3A | Z | .463 | .463 | 0 | %100 |
| 11 | MP2A | X | .307 | .307 | 0 | %100 |
| 12 | MP2A | Z | .532 | .532 | 0 | %100 |
| 13 | MP1A | X | .267 | .267 | 0 | %100 |
| 14 | MP1A | Z | .463 | .463 | 0 | %100 |
| 15 | M20 | X | .03 | .03 | 0 | %100 |
| 16 | M20 | Z | .053 | .053 | 0 | %100 |
| 17 | M21 | X | .011 | .011 | 0 | %100 |
| 18 | M21 | Z | .018 | .018 | 0 | %100 |
| 19 | M22 | X | .011 | .011 | 0 | %100 |
| 20 | M22 | Z | .018 | .018 | 0 | %100 |

## Member Distributed Loads (BLC 71 : Structure Wm (180 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | .534 | .534 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | .534 | .534 | 0 | %100 |
| 5 | M5 | X | 0 | 0 | 0 | %100 |
| 6 | M5 | Z | .694 | .694 | 0 | %100 |
| 7 | MP4A | X | 0 | 0 | 0 | %100 |
| 8 | MP4A | Z | .534 | .534 | 0 | %100 |
| 9 | MP3A | X | 0 | 0 | 0 | %100 |
| 10 | MP3A | Z | .534 | .534 | 0 | %100 |
| 11 | MP2A | X | 0 | 0 | 0 | %100 |
| 12 | MP2A | Z | .614 | .614 | 0 | %100 |
| 13 | MP1A | X | 0 | 0 | 0 | %100 |
| 14 | MP1A | Z | .534 | .534 | 0 | %100 |
| 15 | M20 | X | 0 | 0 | 0 | %100 |
| 16 | M20 | Z | .268 | .268 | 0 | %100 |
| 17 | M21 | X | 0 | 0 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | 0 | 0 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 72 : Structure Wm (210 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -.2 | -.2 | 0 | %100 |
| 2 | M1 | Z | .347 | .347 | 0 | %100 |
| 3 | M2 | X | -.2 | -.2 | 0 | %100 |
| 4 | M2 | Z | .347 | .347 | 0 | %100 |
| 5 | M5 | X | -.347 | -.347 | 0 | %100 |
| 6 | M5 | Z | .601 | .601 | 0 | %100 |
| 7 | MP4A | X | -.267 | -.267 | 0 | %100 |
| 8 | MP4A | Z | .463 | .463 | 0 | %100 |
| 9 | MP3A | X | -.267 | -.267 | 0 | %100 |
| 10 | MP3A | Z | .463 | .463 | 0 | %100 |
| 11 | MP2A | X | -.307 | -.307 | 0 | %100 |
| 12 | MP2A | Z | .532 | .532 | 0 | %100 |
| 13 | MP1A | X | -.267 | -.267 | 0 | %100 |
| 14 | MP1A | Z | .463 | .463 | 0 | %100 |
| 15 | M20 | X | -.211 | -.211 | 0 | %100 |
| 16 | M20 | Z | .365 | .365 | 0 | %100 |
| 17 | M21 | X | -.011 | -.011 | 0 | %100 |
| 18 | M21 | Z | .018 | .018 | 0 | %100 |
| 19 | M22 | X | -.011 | -.011 | 0 | %100 |
| 20 | M22 | Z | .018 | .018 | 0 | %100 |

## Member Distributed Loads (BLC 73 : Structure Wm (240 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -.116 | -.116 | 0 | %100 |
| 2 | M1 | Z | .067 | .067 | 0 | %100 |
| 3 | M2 | X | -.116 | -.116 | 0 | %100 |
| 4 | M2 | Z | .067 | .067 | 0 | %100 |
| 5 | M5 | X | -.601 | -.601 | 0 | %100 |
| 6 | M5 | Z | .347 | .347 | 0 | %100 |
| 7 | MP4A | X | -.463 | -.463 | 0 | %100 |
| 8 | MP4A | Z | .267 | .267 | 0 | %100 |
| 9 | MP3A | X | -.463 | -.463 | 0 | %100 |
| 10 | MP3A | Z | .267 | .267 | 0 | %100 |

## Member Distributed Loads (BLC 73 : Structure Wm (240 Deg)) (Continued)

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 11 | MP2A | X | -.532 | -.532 | 0 | %100 |
| 12 | MP2A | Z | .307 | .307 | 0 | %100 |
| 13 | MP1A | X | -.463 | -.463 | 0 | %100 |
| 14 | MP1A | Z | .267 | .267 | 0 | %100 |
| 15 | M20 | X | -.319 | -.319 | 0 | %100 |
| 16 | M20 | Z | .184 | .184 | 0 | %100 |
| 17 | M21 | X | -.055 | -.055 | 0 | %100 |
| 18 | M21 | Z | .032 | .032 | 0 | %100 |
| 19 | M22 | X | -.055 | -.055 | 0 | %100 |
| 20 | M22 | Z | .032 | .032 | 0 | %100 |

## Member Distributed Loads (BLC 74 : Structure Wm (270 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | 0 | 0 | 0 | %100 |
| 2 | M1 | Z | 0 | 0 | 0 | %100 |
| 3 | M2 | X | 0 | 0 | 0 | %100 |
| 4 | M2 | Z | 0 | 0 | 0 | %100 |
| 5 | M5 | X | -.694 | -.694 | 0 | %100 |
| 6 | M5 | Z | 0 | 0 | 0 | %100 |
| 7 | MP4A | X | -.534 | -.534 | 0 | %100 |
| 8 | MP4A | Z | 0 | 0 | 0 | %100 |
| 9 | MP3A | X | -.534 | -.534 | 0 | %100 |
| 10 | MP3A | Z | 0 | 0 | 0 | %100 |
| 11 | MP2A | X | -.614 | -.614 | 0 | %100 |
| 12 | MP2A | Z | 0 | 0 | 0 | %100 |
| 13 | MP1A | X | -.534 | -.534 | 0 | %100 |
| 14 | MP1A | Z | 0 | 0 | 0 | %100 |
| 15 | M20 | X | -.162 | -.162 | 0 | %100 |
| 16 | M20 | Z | 0 | 0 | 0 | %100 |
| 17 | M21 | X | -.084 | -.084 | 0 | %100 |
| 18 | M21 | Z | 0 | 0 | 0 | %100 |
| 19 | M22 | X | -.084 | -.084 | 0 | %100 |
| 20 | M22 | Z | 0 | 0 | 0 | %100 |

## Member Distributed Loads (BLC 75 : Structure Wm (300 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -.116 | -.116 | 0 | %100 |
| 2 | M1 | Z | -.067 | -.067 | 0 | %100 |
| 3 | M2 | X | -.116 | -.116 | 0 | %100 |
| 4 | M2 | Z | -.067 | -.067 | 0 | %100 |
| 5 | M5 | X | -.601 | -.601 | 0 | %100 |
| 6 | M5 | Z | -.347 | -.347 | 0 | %100 |
| 7 | MP4A | X | -.463 | -.463 | 0 | %100 |
| 8 | MP4A | Z | -.267 | -.267 | 0 | %100 |
| 9 | MP3A | X | -.463 | -.463 | 0 | %100 |
| 10 | MP3A | Z | -.267 | -.267 | 0 | %100 |
| 11 | MP2A | X | -.532 | -.532 | 0 | %100 |
| 12 | MP2A | Z | -.307 | -.307 | 0 | %100 |
| 13 | MP1A | X | -.463 | -.463 | 0 | %100 |
| 14 | MP1A | Z | -.267 | -.267 | 0 | %100 |
| 15 | M20 | X | -.007 | -.007 | 0 | %100 |
| 16 | M20 | Z | -.004 | -.004 | 0 | %100 |
| 17 | M21 | X | -.055 | -.055 | 0 | %100 |
| 18 | M21 | Z | -.032 | -.032 | 0 | %100 |
| 19 | M22 | X | -.055 | -.055 | 0 | %100 |
| 20 | M22 | Z | -.032 | -.032 | 0 | %100 |

## Member Distributed Loads (BLC 76 : Structure Wm (330 Deg))

| | Member Label | Direction | Start Magnitude[lb/ft,... | End Magnitude[lb/ft,F... | Start Location[ft,%] | End Location[ft,%] |
|---|---|---|---|---|---|---|
| 1 | M1 | X | -.2 | -.2 | 0 | %100 |
| 2 | M1 | Z | -.347 | -.347 | 0 | %100 |
| 3 | M2 | X | -.2 | -.2 | 0 | %100 |
| 4 | M2 | Z | -.347 | -.347 | 0 | %100 |
| 5 | M5 | X | -.347 | -.347 | 0 | %100 |
| 6 | M5 | Z | -.601 | -.601 | 0 | %100 |
| 7 | MP4A | X | -.267 | -.267 | 0 | %100 |
| 8 | MP4A | Z | -.463 | -.463 | 0 | %100 |
| 9 | MP3A | X | -.267 | -.267 | 0 | %100 |
| 10 | MP3A | Z | -.463 | -.463 | 0 | %100 |
| 11 | MP2A | X | -.307 | -.307 | 0 | %100 |
| 12 | MP2A | Z | -.532 | -.532 | 0 | %100 |
| 13 | MP1A | X | -.267 | -.267 | 0 | %100 |
| 14 | MP1A | Z | -.463 | -.463 | 0 | %100 |
| 15 | M20 | X | -.03 | -.03 | 0 | %100 |
| 16 | M20 | Z | -.053 | -.053 | 0 | %100 |
| 17 | M21 | X | -.011 | -.011 | 0 | %100 |
| 18 | M21 | Z | -.018 | -.018 | 0 | %100 |
| 19 | M22 | X | -.011 | -.011 | 0 | %100 |
| 20 | M22 | Z | -.018 | -.018 | 0 | %100 |

## Basic Load Cases

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area(Me... | Surface(P... |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Antenna D | None | | | | | 42 | | | |
| 2 | Antenna Di | None | | | | | 42 | | | |
| 3 | Antenna Wo (0 Deg) | None | | | | | 42 | | | |
| 4 | Antenna Wo (30 Deg) | None | | | | | 42 | | | |
| 5 | Antenna Wo (60 Deg) | None | | | | | 42 | | | |
| 6 | Antenna Wo (90 Deg) | None | | | | | 42 | | | |
| 7 | Antenna Wo (120 Deg) | None | | | | | 42 | | | |
| 8 | Antenna Wo (150 Deg) | None | | | | | 42 | | | |
| 9 | Antenna Wo (180 Deg) | None | | | | | 42 | | | |
| 10 | Antenna Wo (210 Deg) | None | | | | | 42 | | | |
| 11 | Antenna Wo (240 Deg) | None | | | | | 42 | | | |
| 12 | Antenna Wo (270 Deg) | None | | | | | 42 | | | |
| 13 | Antenna Wo (300 Deg) | None | | | | | 42 | | | |
| 14 | Antenna Wo (330 Deg) | None | | | | | 42 | | | |
| 15 | Antenna Wi (0 Deg) | None | | | | | 42 | | | |
| 16 | Antenna Wi (30 Deg) | None | | | | | 42 | | | |
| 17 | Antenna Wi (60 Deg) | None | | | | | 42 | | | |
| 18 | Antenna Wi (90 Deg) | None | | | | | 42 | | | |
| 19 | Antenna Wi (120 Deg) | None | | | | | 42 | | | |
| 20 | Antenna Wi (150 Deg) | None | | | | | 42 | | | |
| 21 | Antenna Wi (180 Deg) | None | | | | | 42 | | | |
| 22 | Antenna Wi (210 Deg) | None | | | | | 42 | | | |
| 23 | Antenna Wi (240 Deg) | None | | | | | 42 | | | |
| 24 | Antenna Wi (270 Deg) | None | | | | | 42 | | | |
| 25 | Antenna Wi (300 Deg) | None | | | | | 42 | | | |
| 26 | Antenna Wi (330 Deg) | None | | | | | 42 | | | |
| 27 | Antenna Wm (0 Deg) | None | | | | | 42 | | | |
| 28 | Antenna Wm (30 Deg) | None | | | | | 42 | | | |
| 29 | Antenna Wm (60 Deg) | None | | | | | 42 | | | |
| 30 | Antenna Wm (90 Deg) | None | | | | | 42 | | | |
| 31 | Antenna Wm (120 Deg) | None | | | | | 42 | | | |
| 32 | Antenna Wm (150 Deg) | None | | | | | 42 | | | |

## Basic Load Cases (Continued)

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area(Me... | Surface(P... |
|---|---|---|---|---|---|---|---|---|---|---|
| 33 | Antenna Wm (180 Deg) | None | | | | | 42 | | | |
| 34 | Antenna Wm (210 Deg) | None | | | | | 42 | | | |
| 35 | Antenna Wm (240 Deg) | None | | | | | 42 | | | |
| 36 | Antenna Wm (270 Deg) | None | | | | | 42 | | | |
| 37 | Antenna Wm (300 Deg) | None | | | | | 42 | | | |
| 38 | Antenna Wm (330 Deg) | None | | | | | 42 | | | |
| 39 | Structure D | None | | -1 | | | | | | |
| 40 | Structure Di | None | | | | | | 10 | | |
| 41 | Structure Wo (0 Deg) | None | | | | | | 20 | | |
| 42 | Structure Wo (30 Deg) | None | | | | | | 20 | | |
| 43 | Structure Wo (60 Deg) | None | | | | | | 20 | | |
| 44 | Structure Wo (90 Deg) | None | | | | | | 20 | | |
| 45 | Structure Wo (120 D... | None | | | | | | 20 | | |
| 46 | Structure Wo (150 D... | None | | | | | | 20 | | |
| 47 | Structure Wo (180 D... | None | | | | | | 20 | | |
| 48 | Structure Wo (210 D... | None | | | | | | 20 | | |
| 49 | Structure Wo (240 D... | None | | | | | | 20 | | |
| 50 | Structure Wo (270 D... | None | | | | | | 20 | | |
| 51 | Structure Wo (300 D... | None | | | | | | 20 | | |
| 52 | Structure Wo (330 D... | None | | | | | | 20 | | |
| 53 | Structure Wi (0 Deg) | None | | | | | | 20 | | |
| 54 | Structure Wi (30 Deg) | None | | | | | | 20 | | |
| 55 | Structure Wi (60 Deg) | None | | | | | | 20 | | |
| 56 | Structure Wi (90 Deg) | None | | | | | | 20 | | |
| 57 | Structure Wi (120 De... | None | | | | | | 20 | | |
| 58 | Structure Wi (150 De... | None | | | | | | 20 | | |
| 59 | Structure Wi (180 De... | None | | | | | | 20 | | |
| 60 | Structure Wi (210 De... | None | | | | | | 20 | | |
| 61 | Structure Wi (240 De... | None | | | | | | 20 | | |
| 62 | Structure Wi (270 De... | None | | | | | | 20 | | |
| 63 | Structure Wi (300 De... | None | | | | | | 20 | | |
| 64 | Structure Wi (330 De... | None | | | | | | 20 | | |
| 65 | Structure Wm (0 Deg) | None | | | | | | 20 | | |
| 66 | Structure Wm (30 De... | None | | | | | | 20 | | |
| 67 | Structure Wm (60 De... | None | | | | | | 20 | | |
| 68 | Structure Wm (90 De... | None | | | | | | 20 | | |
| 69 | Structure Wm (120 D... | None | | | | | | 20 | | |
| 70 | Structure Wm (150 D... | None | | | | | | 20 | | |
| 71 | Structure Wm (180 D... | None | | | | | | 20 | | |
| 72 | Structure Wm (210 D... | None | | | | | | 20 | | |
| 73 | Structure Wm (240 D... | None | | | | | | 20 | | |
| 74 | Structure Wm (270 D... | None | | | | | | 20 | | |
| 75 | Structure Wm (300 D... | None | | | | | | 20 | | |
| 76 | Structure Wm (330 D... | None | | | | | | 20 | | |
| 77 | Lm1 | None | | | | | 1 | | | |
| 78 | Lm2 | None | | | | | 1 | | | |
| 79 | Lv1 | None | | | | | 1 | | | |
| 80 | Lv2 | None | | | | | 1 | | | |

## Load Combinations

| | Description | S... | PDelta | S... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.2D+1.0Wo (0 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 3 | 1 | 41 | 1 | | | | | | | | | | | | |
| 2 | 1.2D+1.0Wo (30... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 4 | 1 | 42 | 1 | | | | | | | | | | | | |
| 3 | 1.2D+1.0Wo (60... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 5 | 1 | 43 | 1 | | | | | | | | | | | | |
| 4 | 1.2D+1.0Wo (90... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 6 | 1 | 44 | 1 | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | S... | PDelta | S... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 1.2D+1.0Wo (12.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 7 | 1 | 45 | 1 | | | | | | | | | | | | |
| 6 | 1.2D+1.0Wo (15.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 8 | 1 | 46 | 1 | | | | | | | | | | | | |
| 7 | 1.2D+1.0Wo (18.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 9 | 1 | 47 | 1 | | | | | | | | | | | | |
| 8 | 1.2D+1.0Wo (21.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 10 | 1 | 48 | 1 | | | | | | | | | | | | |
| 9 | 1.2D+1.0Wo (24.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 11 | 1 | 49 | 1 | | | | | | | | | | | | |
| 10 | 1.2D+1.0Wo (27.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 12 | 1 | 50 | 1 | | | | | | | | | | | | |
| 11 | 1.2D+1.0Wo (30.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 13 | 1 | 51 | 1 | | | | | | | | | | | | |
| 12 | 1.2D+1.0Wo (33.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 14 | 1 | 52 | 1 | | | | | | | | | | | | |
| 13 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 15 | 1 | 53 | 1 | | | | | | | | |
| 14 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 16 | 1 | 54 | 1 | | | | | | | | |
| 15 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 17 | 1 | 55 | 1 | | | | | | | | |
| 16 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 18 | 1 | 56 | 1 | | | | | | | | |
| 17 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 19 | 1 | 57 | 1 | | | | | | | | |
| 18 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 20 | 1 | 58 | 1 | | | | | | | | |
| 19 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 21 | 1 | 59 | 1 | | | | | | | | |
| 20 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 22 | 1 | 60 | 1 | | | | | | | | |
| 21 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 23 | 1 | 61 | 1 | | | | | | | | |
| 22 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 24 | 1 | 62 | 1 | | | | | | | | |
| 23 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 25 | 1 | 63 | 1 | | | | | | | | |
| 24 | 1.2D + 1.0Di + 1.. | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 2 | 1 | 40 | 1 | 26 | 1 | 64 | 1 | | | | | | | | |
| 25 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 27 | 1 | 65 | 1 | | | | | | | | | | |
| 26 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 28 | 1 | 66 | 1 | | | | | | | | | | |
| 27 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 29 | 1 | 67 | 1 | | | | | | | | | | |
| 28 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 30 | 1 | 68 | 1 | | | | | | | | | | |
| 29 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 31 | 1 | 69 | 1 | | | | | | | | | | |
| 30 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 32 | 1 | 70 | 1 | | | | | | | | | | |
| 31 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 33 | 1 | 71 | 1 | | | | | | | | | | |
| 32 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 34 | 1 | 72 | 1 | | | | | | | | | | |
| 33 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 35 | 1 | 73 | 1 | | | | | | | | | | |
| 34 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 36 | 1 | 74 | 1 | | | | | | | | | | |
| 35 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 37 | 1 | 75 | 1 | | | | | | | | | | |
| 36 | 1.2D + 1.5Lm1 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 77 | 1.5 | 38 | 1 | 76 | 1 | | | | | | | | | | |
| 37 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 27 | 1 | 65 | 1 | | | | | | | | | | |
| 38 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 28 | 1 | 66 | 1 | | | | | | | | | | |
| 39 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 29 | 1 | 67 | 1 | | | | | | | | | | |
| 40 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 30 | 1 | 68 | 1 | | | | | | | | | | |
| 41 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 31 | 1 | 69 | 1 | | | | | | | | | | |
| 42 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 32 | 1 | 70 | 1 | | | | | | | | | | |
| 43 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 33 | 1 | 71 | 1 | | | | | | | | | | |
| 44 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 34 | 1 | 72 | 1 | | | | | | | | | | |
| 45 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 35 | 1 | 73 | 1 | | | | | | | | | | |
| 46 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 36 | 1 | 74 | 1 | | | | | | | | | | |
| 47 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 37 | 1 | 75 | 1 | | | | | | | | | | |
| 48 | 1.2D + 1.5Lm2 ... | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 78 | 1.5 | 38 | 1 | 76 | 1 | | | | | | | | | | |
| 49 | 1.2D + 1.5Lv1 | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 79 | 1.5 | | | | | | | | | | | | | | |
| 50 | 1.2D + 1.5Lv2 | Yes | Y | | 1 | 1.2 | 39 | 1.2 | 80 | 1.5 | | | | | | | | | | | | | | |
| 51 | 1.4D | Yes | Y | | 1 | 1.4 | 39 | 1.4 | | | | | | | | | | | | | | | | |
| 52 | Seismic Mass | | Y | | 1 | 1 | 39 | 1 | | | | | | | | | | | | | | | | |
| 53 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | | SY | 1 | SZ | -1 | | | | | | | | | | |
| 54 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | .5 | SY | 1 | SZ | -.866 | | | | | | | | | | |
| 55 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | .866 | SY | 1 | SZ | -.5 | | | | | | | | | | |
| 56 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | 1 | SY | 1 | SZ | | | | | | | | | | | |
| 57 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | .866 | SY | 1 | SZ | .5 | | | | | | | | | | |
| 58 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | .5 | SY | 1 | SZ | .866 | | | | | | | | | | |
| 59 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | | SY | 1 | SZ | 1 | | | | | | | | | | |
| 60 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | -.5 | SY | 1 | SZ | .866 | | | | | | | | | | |
| 61 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | -.866 | SY | 1 | SZ | .5 | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | S... | PDelta | S... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... | B... | Fa... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 62 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | -1 | SY | 1 | SZ | | | | | | | | | | | |
| 63 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | -.866 | SY | 1 | SZ | -.5 | | | | | | | | | | |
| 64 | 1.2D + 1.0Ev + ... | | Y | | 1 | 1.2 | 39 | 1.2 | SX | -.5 | SY | 1 | SZ | -.866 | | | | | | | | | | |

## Envelope Joint Reactions

| | Joint | | X [lb] | LC | Y [lb] | LC | Z [lb] | LC | MX [k-ft] | LC | MY [k-ft] | LC | MZ [k-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | N14 | max | 871.856 | 46 | 929.828 | 13 | 972.591 | 1 | 0 | 51 | .395 | 10 | .005 | 28 |
| 2 | | min | -714.289 | 4 | 320.151 | 7 | -1366.878 | 7 | 0 | 1 | -.334 | 4 | -.013 | 46 |
| 3 | N13 | max | 771.854 | 9 | 924.52 | 19 | 939.206 | 12 | 0 | 51 | .356 | 9 | .006 | 33 |
| 4 | | min | -930.459 | 4 | 318.035 | 1 | -570.984 | 6 | 0 | 1 | -.419 | 4 | -.011 | 39 |
| 5 | N40 | max | 353.121 | 4 | 13.666 | 22 | 277.113 | 4 | 0 | 51 | 0 | 51 | 0 | 51 |
| 6 | | min | -353.9 | 9 | 5.025 | 4 | -284.722 | 9 | 0 | 1 | 0 | 1 | 0 | 1 |
| 7 | Totals: | max | 1291.627 | 10 | 1836.953 | 24 | 1883.972 | 1 | | | | | | |
| 8 | | min | -1291.627 | 4 | 776.682 | 6 | -1883.957 | 7 | | | | | | |

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

| | Member | Shape | Code Check | Loc[ft] | LC | Shear Check | L... | Dir | LC | phi*Pnc... | phi*Pnt ... | phi*Mn ... | phi*Mn ... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M1 | PIPE_2.0 | .938 | 7 | 7 | .100 | 7 | | 6 | 5018.672 | 32130 | 1.872 | 1.872 | 1... | H1-1b |
| 2 | M2 | PIPE_2.0 | .829 | 7 | 1 | .128 | 7 | | 6 | 5018.672 | 32130 | 1.872 | 1.872 | 1... | H1-1b |
| 3 | M21 | PL3/8x5 | .496 | 0 | 18 | .066 | .25 | y | 40 | 58342.8... | 60750 | .475 | 6.328 | 1... | H1-1b |
| 4 | M22 | PL3/8x5 | .496 | 0 | 24 | .072 | .25 | y | 46 | 58342.8... | 60750 | .475 | 6.328 | 1... | H1-1b |
| 5 | MP3A | PIPE_2.0 | .461 | 4.889 | 41 | .069 | 4... | | 6 | 22845.3... | 32130 | 1.872 | 1.872 | 1.9 | H1-1b |
| 6 | MP1A | PIPE_2.0 | .295 | 4.889 | 50 | .047 | .... | | 50 | 22845.3... | 32130 | 1.872 | 1.872 | 1... | H1-1b |
| 7 | MP2A | PIPE_2.5 | .223 | 1.25 | 50 | .132 | 5... | | 9 | 37773.8... | 50715 | 3.596 | 3.596 | 1... | H1-1b |
| 8 | MP4A | PIPE_2.0 | .197 | .944 | 22 | .057 | .... | | 12 | 22845.3... | 32130 | 1.872 | 1.872 | 1... | H1-1b |
| 9 | M5 | PIPE_4.0 | .091 | .781 | 44 | .040 | .... | | 7 | 86073.9... | 93240 | 10.631 | 10.631 | 1... | H1-1b |
| 10 | M20 | PIPE_2.0 | .016 | 0 | 4 | .001 | 0 | | 20 | 29147.6... | 32130 | 1.872 | 1.872 | 1... | H1-1b* |

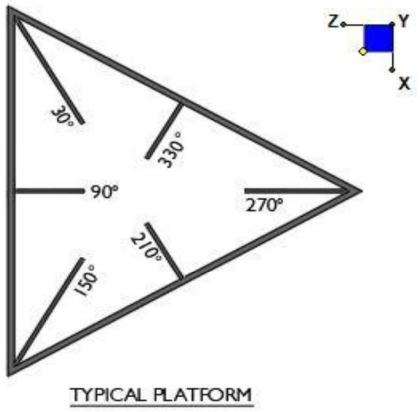
| | | | |
|---|---|---|---|
| Client: | Verizon Wireless | Date: | 7/13/2021 |
| Site Name: | Bethany CT | | |
| Project No. | 21777876A | | |
| Title: | Antenna Mount Analysis | Page: | 1 |

Version 3.1

# I. Mount-to-Tower Connection Check

*RISA Model Data*

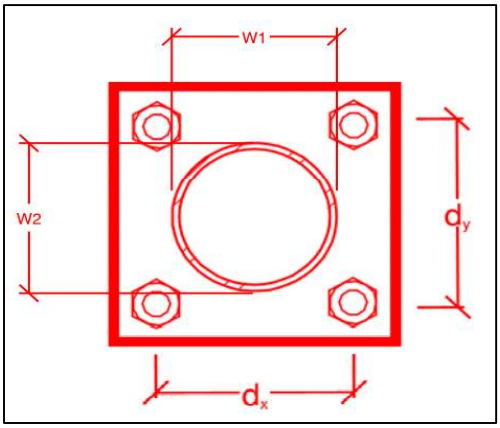
| Nodes *(labeled per RISA)* | Orientation *(per graphic of typical platform)* |
|---|---|
| N14 | 90 |
| N13 | 90 |
| | |
| | |
| | |
| | |
| | |
| | |
| | |



TYPICAL PLATFORM

*Tower Connection Bolt Checks*

| | |
|---|---|
| Any moment resistance?: | yes |
| Bolt Quantity per Reaction: | 4 |
| $d_x$ (in) *(Delta X of typ. bolt config. sketch)* : | 11 |
| $d_y$ (in) *(Delta Y of typ. bolt config. sketch)* : | 3 |
| Bolt Type: | A307 |
| Bolt Diameter (in): | 0.625 |
| Required Tensile Strength (kips): | 1.7 |
| Required Shear Strength (kips): | 1.2 |
| Tensile Strength / bolt (kips): | 10.0 |
| Shear Strength / bolt (kips): | 6.0 |
| Tensile Capacity Overall: | **4.2%*** |
| Shear Capacity Overall: | **5.2%** |




**Note: Tension reduction not required if tension or shear capacity < 30%*

# Mount Desktop – Post Modification Inspection (PMI) Report Requirements

## Documents & Photos Required from Contractor – Passing Mount Analysis

**Purpose** – to provide Maser Consulting Connecticut the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

**Base Requirements:**

- Any special photos outside of the standard requirements will be indicated on the passing MA
- Verification that loading is as communicated in the Passing Mount Analysis. NOTE If loading is different than what is conveyed contact Maser Consulting immediately.
- Each photo should be time and date stamped
- Photos should be high resolution and submitted in a Zip File and should be organized in the file structure as depicted in Schedule A attached.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope.
- The photos in the file structure should be uploaded to ***https://pmi.vzwsmart.com*** as depicted on the drawings

**Photo Requirements:**

- *Base and "During Installation Photos"*
  - Base pictures include
    - Photo of Gate Signs showing the tower owner, site name, and number
    - Photo of carrier shelter showing the carrier site name and number if available
    - Photos of the galvanizing compound and/or paint used (if applicable), clearly showing the label and name
  - "During Installation Photos if provided - must be placed only in this folder
- *Photos taken at ground level*
  - Overall tower structure before and after installation of the equipment modifications
  - Photos of the appropriate mount before and after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed
- *Photos taken at Mount Elevation*
  - Photos showing each individual sector before and also after installation of equipment.

- These photos should also certify that the placement and geometry of the equipment on the mount is as depicted on the sketch and table in the mount analysis
- Photos showing the safety climb wire rope above and below the mount prior to modification.
- Photos showing the climbing facility and safety climb if present.

**Antenna & equipment placement and Geometry Confirmation:**

- The contractor must certify that the antenna & equipment placement and geometry is in accordance with the antenna placement diagrams as included in this mount analysis.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the antenna placement diagrams as included in this mount analysis.

☐ The contractor notes that the equipment on the mount is not in accordance with the antenna placement diagrams and has accordingly marked up the diagrams or provided a diagram outlining the differences.

Certifying Individual: Company _____

Name _____

Signature _____

**Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:**

**Issue:**

| |
|---|
| Remove and replace the pipe in position 2 with a proposed 6' long P2.5 STD to be used for the dual antennas. Connect the proposed pipe to the existing face horizontals using SitePro1 SP219-H crossover plates.<br><br>Contractor to relocate the existing antenna pipe in position 3 to be shifted over 12" to the left when standing behind the mount looking out towards the position 2 pipe in all sectors. |

**Response:**

| |
|---|
| |

## Schedule A – Photo & Document File Structure

- VzW Site Number / Name
  - Base & "During Installation" Photos
  - Pre-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
  - Post-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
    - Photos of climbing facility and safety climb – If Present
  - Certifications – Submission of this document including certifications
  - Specific Required Additional Photos

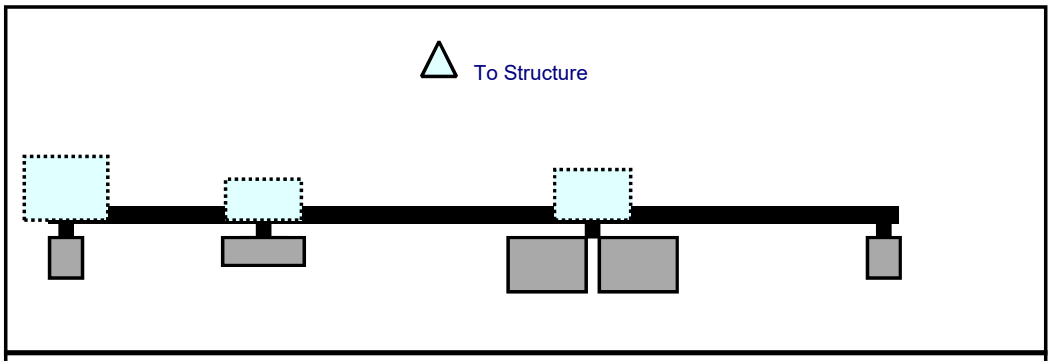
**Structure: 469372-VZW - BETHANY CT**

Sector: **A** 7/13/2021

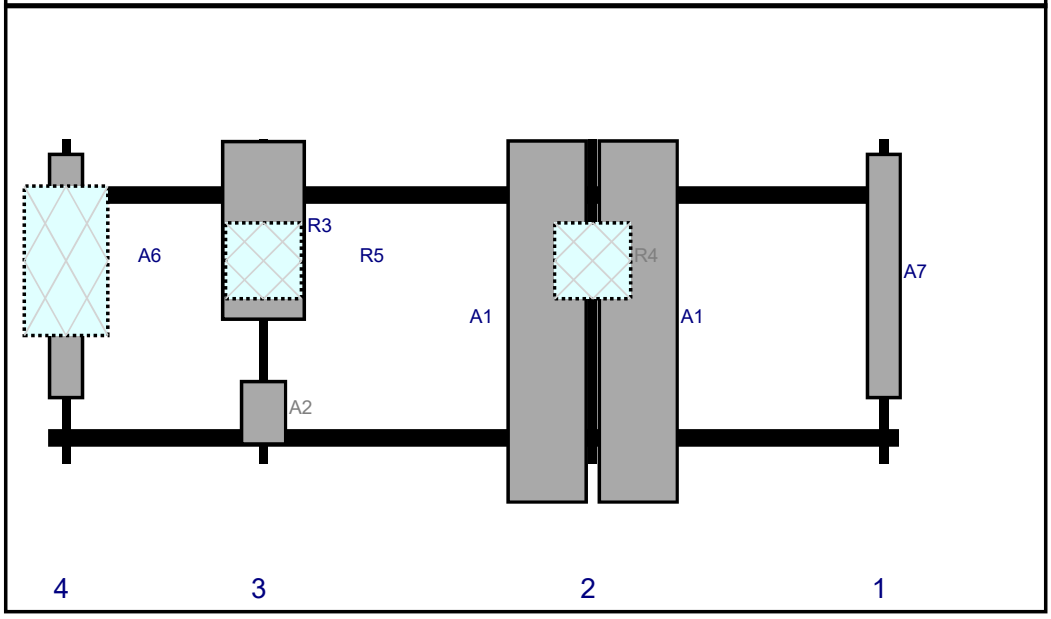
Structure Type: Self Support 10061990

Mount Elev: 179.50 Page: 1

**Plan View**




**Front View**
Looking at Structure




| Ref# | Model | Height (in) | Width (in) | H Dist Frm L. | Pipe # | Pipe Pos V | Ant Pos | C. Ant Frm T. | Ant H Off | Status | Validation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A7 | DB844H90-XY | 48 | 6.5 | 165 | 1 | a | Front | 27 | 0 | Retained | |
| A1 | MX06FRO660-03 | 71.3 | 15.4 | 107.5 | 2 | a | Front | 36 | 9 | Added | |
| A1 | MX06FRO660-03 | 71.3 | 15.4 | 107.5 | 2 | b | Front | 36 | -9 | Added | |
| R4 | B2/B66A RRH-BR049 (RFV01U-D1A) | 15 | 15 | 107.5 | 2 | a | Behind | 24 | 0 | Added | |
| A2 | XXDWMM-12.5-65 | 12.3 | 8.7 | 42.5 | 3 | a | Front | 54 | 0 | Added | |
| R3 | MT6407-77A | 35.1 | 16.1 | 42.5 | 3 | a | Front | 18 | 0 | Added | |
| R5 | B5/B13 RRH-BR04C (RFV01U-D2A) | 15 | 15 | 42.5 | 3 | a | Behind | 24 | 0 | Added | |
| A7 | DB844H90-XY | 48 | 6.5 | 3.5 | 4 | a | Front | 27 | 0 | Retained | |
| A6 | RVZDC-6627-PF-48 | 29.5 | 16.5 | 3.5 | 4 | a | Behind | 24 | 0 | Added | |

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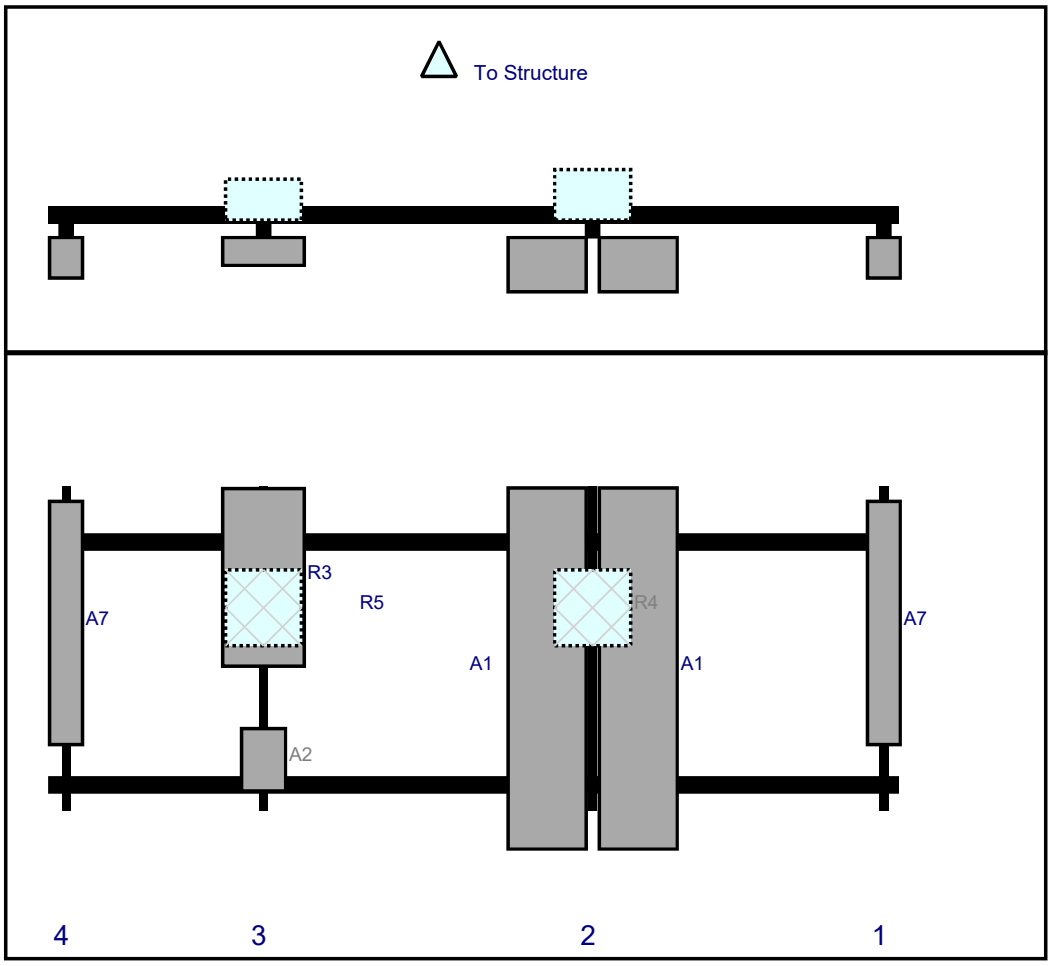
**Plan View**

**Front View**
Looking at Structure




| Ref# | Model | Height (in) | Width (in) | H Dist Frm L. | Pipe # | Pipe Pos V | Ant Pos | C. Ant Frm T. | Ant H Off | Status | Validation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A7 | DB844H90-XY | 48 | 6.5 | 165 | 1 | a | Front | 27 | 0 | Retained | |
| A1 | MX06FRO660-03 | 71.3 | 15.4 | 107.5 | 2 | a | Front | 36 | 9 | Added | |
| A1 | MX06FRO660-03 | 71.3 | 15.4 | 107.5 | 2 | b | Front | 36 | -9 | Added | |
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| A2 | XXDWMM-12.5-65 | 12.3 | 8.7 | 42.5 | 3 | a | Front | 54 | 0 | Added | |
| R3 | MT6407-77A | 35.1 | 16.1 | 42.5 | 3 | a | Front | 18 | 0 | Added | |
| R5 | B5/B13 RRH-BR04C (RFV01U-D2A) | 15 | 15 | 42.5 | 3 | a | Behind | 24 | 0 | Added | |
| A7 | DB844H90-XY | 48 | 6.5 | 3.5 | 4 | a | Front | 27 | 0 | Retained | |

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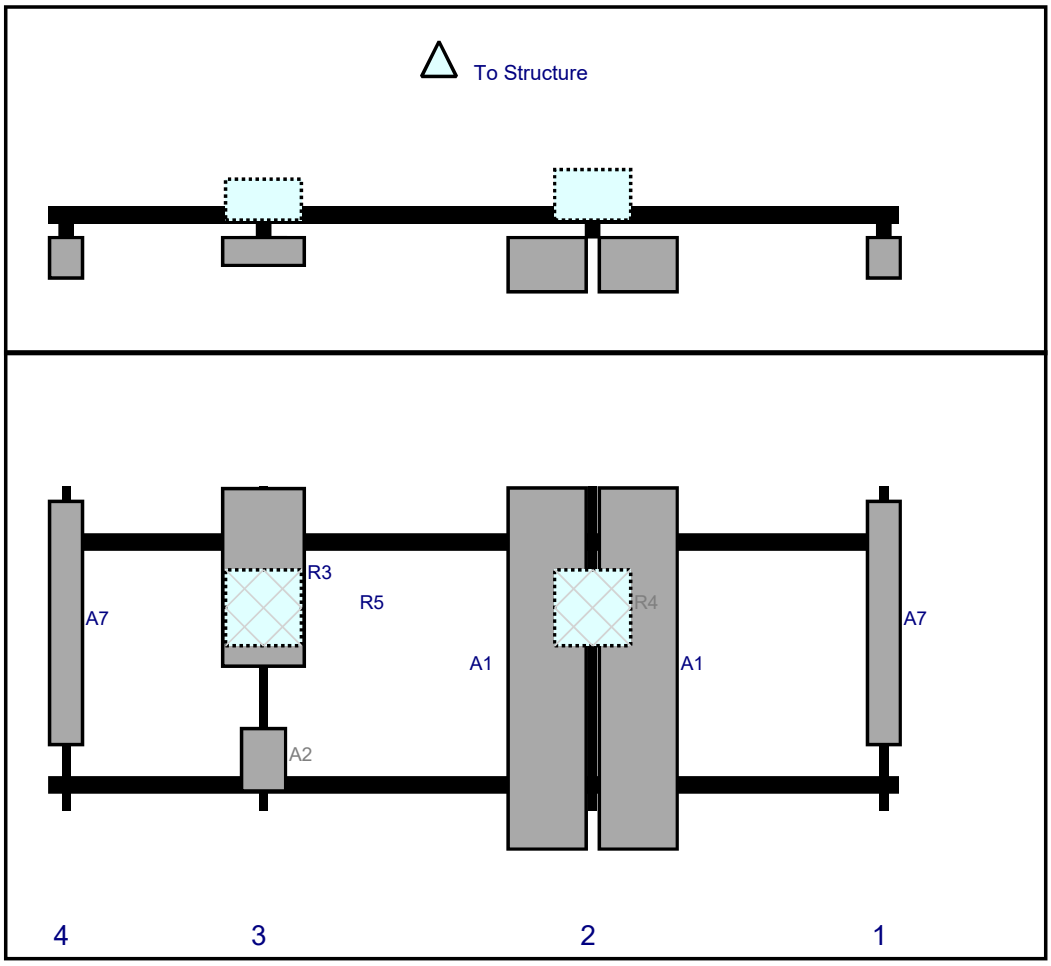
**Plan View**

**Front View**
Looking at Structure




| Ref# | Model | Height (in) | Width (in) | H Dist Frm L. | Pipe # | Pipe Pos V | Ant Pos | C. Ant Frm T. | Ant H Off | Status | Validation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A7 | DB844H90-XY | 48 | 6.5 | 165 | 1 | a | Front | 27 | 0 | Retained | |
| A1 | MX06FRO660-03 | 71.3 | 15.4 | 107.5 | 2 | a | Front | 36 | 9 | Added | |
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| R3 | MT6407-77A | 35.1 | 16.1 | 42.5 | 3 | a | Front | 18 | 0 | Added | |
| R5 | B5/B13 RRH-BR04C (RFV01U-D2A) | 15 | 15 | 42.5 | 3 | a | Behind | 24 | 0 | Added | |
| A7 | DB844H90-XY | 48 | 6.5 | 3.5 | 4 | a | Front | 27 | 0 | Retained | |

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# Maser Consulting Connecticut

***Subject*** TIA-222-H Usage

| | |
|---|---|
| *Site ID:* | *469372-VZW / BETHANY CT* |
| *Site Name:* | *BETHANY CT* |
| *Carrier Name:* | *Verizon Wireless* |
| *Address:* | *93 Old Amity Rd.*<br>*Bethany, Connecticut 06524*<br>*New Haven County* |
| *Latitude:* | *41.404758°* |
| *Longitude:* | *-72.999983°* |
| *Tower Type:* | *300-Ft Self Support* |
| *Mount Type:* | *14.00-Ft T-Frame* |

To Whom It May Concern,

We respectfully submit the above referenced Antenna Mount Structural Analysis report in conformance with ANSI/TIA-222-H, Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures.

The 2015 International Building Code states that, in Section 3108, telecommunication towers shall be designed and constructed in accordance with the provisions of TIA-222. TIA-222-H is the latest revision of the TIA-222 Standard, effective as of January 01, 2018.

As with all ANSI standards and engineering best practice is to apply the most current revision of the standard. This ensures the engineer is applying all updates. As an example, the TIA-222-H Standard includes updates to bring it in line with the latest AISC and ACI standards and it also incorporates the latest wind speed maps by ASCE 7 based on updated studies of the wind data.

The TIA-222-H standard clarifies these specific requirements for the antenna mount analysis such as modeling methods, seismic analysis, 30-degree increment wind directions and maintenance loading. Therefore, it is our opinion that TIA-222-H is the most appropriate standard for antenna mount structural analysis and is acceptable for use at this site to ensure the engineer is taking into account the most current engineering standard available.

Sincerely,

Eric Anderson, PE
Technical Specialist

**Site Name:** ***BETHANY CT***
**Cumulative Power Density**

| Operator | Operating Frequency | Number of Trans. | ERP Per Trans. | Total ERP | Distance to Target | Calculated Power Density | Maximum Permissible Exposure* | Fraction of MPE |
|---|---|---|---|---|---|---|---|---|
| | (MHz) | | (watts) | (watts) | (feet) | (mW/cm^2) | (mW/cm^2) | (%) |
| VZW 700 | 751 | 2 | 692 | 1383 | 180 | 0.0015 | 0.5007 | 0.31% |
| VZW CDMA | 877.26 | 2 | 287 | 574 | 180 | 0.0006 | 0.5848 | 0.11% |
| VZW Cellular | 874 | 2 | 692 | 1383 | 180 | 0.0015 | 0.5827 | 0.26% |
| VZW PCS | 1975 | 2 | 3168 | 6337 | 180 | 0.0070 | 1.0000 | 0.70% |
| VZW AWS | 2120 | 2 | 1659 | 3318 | 180 | 0.0037 | 1.0000 | 0.37% |
| VZW CBRS | 3560.3 | 2 | 468 | 935 | 178 | 0.0011 | 1.0000 | 0.11% |
| VZW CBAND | 3730.08 | 4 | 6531 | 26125 | 181.5 | 0.0285 | 1.0000 | 2.85% |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| **Total Percentage of Maximum Permissible Exposure** | | | | | | | | 4.71% |

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992
**Calculation includes a -10 dB Off Beam Antenna Pattern Adjustment pursuant to Attachments B and C of the Siting Council's November 10, 2015 Memorandum for Exempt Modification filings

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

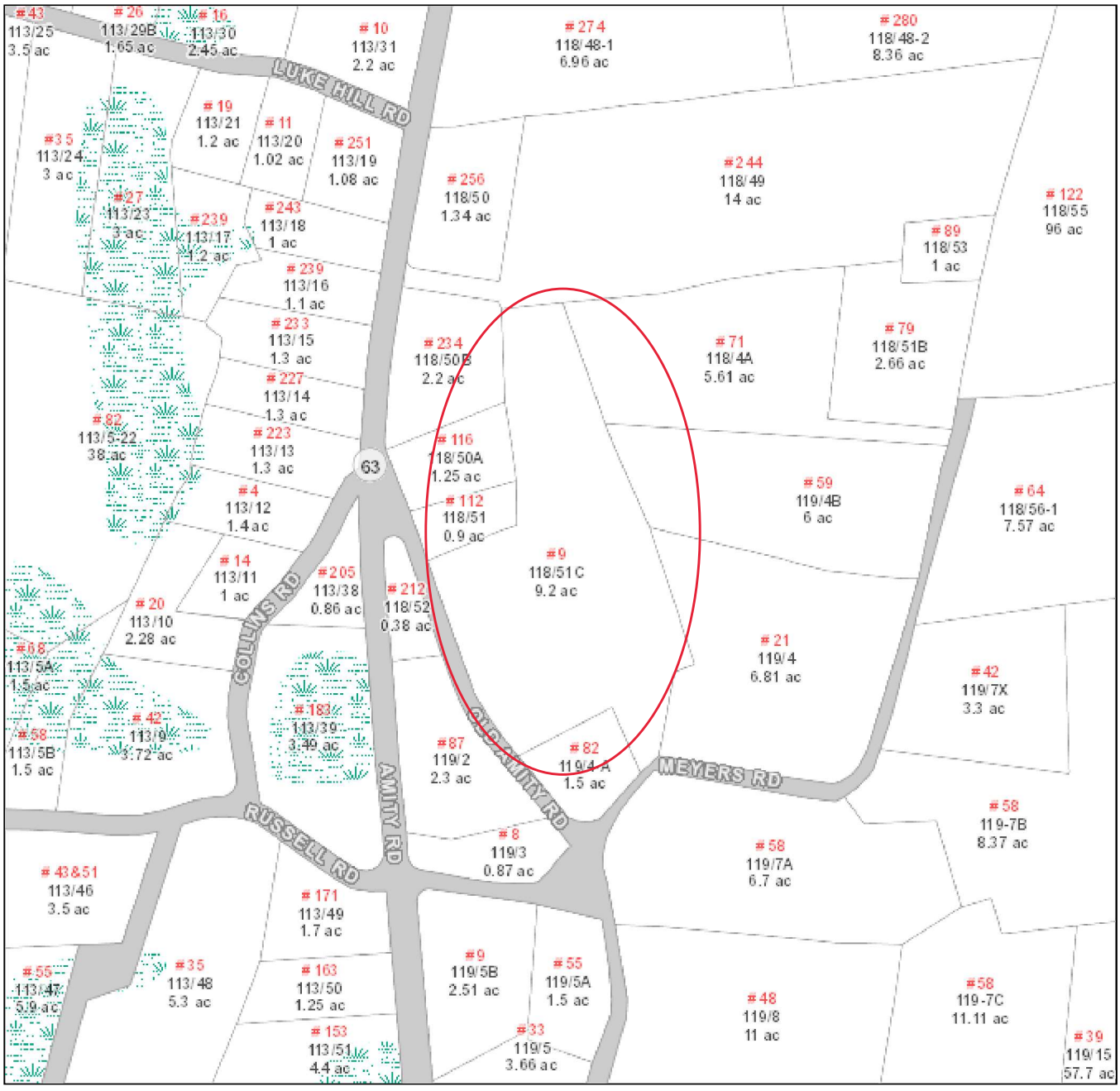
Absolute worst case maximum values used.

# Town of Bethany

Geographic Information System (GIS)

Parcels Updated: June 2014

Date Printed: 10/4/2018




**MAP DISCLAIMER - NOTICE OF LIABILITY**

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Bethany and its mapping contractors assume no legal responsibility for the information contained herein.

0 400 Feet

N W E S

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2013.


Information on the Property Records for the Municipality of Bethany was last updated on 10/4/2018.

## Property Summary Information

Parcel Data And Values | Building | Outbuildings | Sales | Google Map

### Parcel Information

| | | | | | |
|---|---|---|---|---|---|
| Location: | 9 MEYERS RD | Property Use: | Industrial | Primary Use: | Light Industrial |
| Unique ID: | 00002800 | Map Block Lot: | 118/51C | Acres: | 9.20 |
| 490 Acres: | 0.00 | Zone: | R-65 | Volume / Page: | 0000/0000 |
| Developers Map / Lot: | | Census: | | | |

### Value Information

| | Appraised Value | Assessed Value |
|---|---|---|
| Land | 486,450 | 340,520 |
| Buildings | 117,412 | 82,190 |

| | Appraised Value | Assessed Value |
|---|---|---|
| Detached Outbuildings | 15,219 | 10,650 |
| Total | 619,081 | 433,360 |

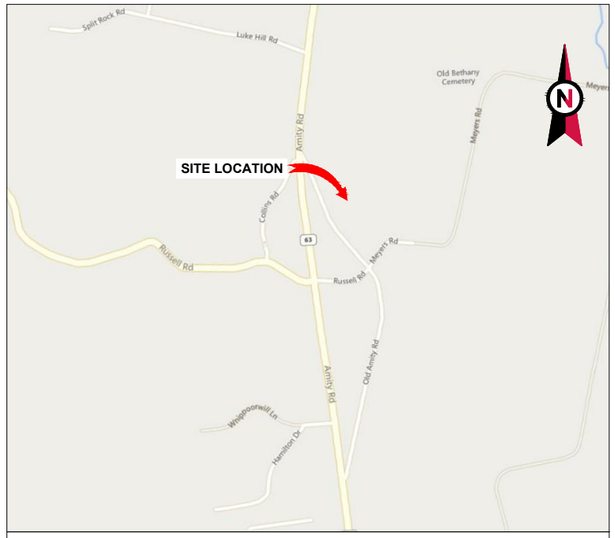
## Owner's Information

| Owner's Data |
|---|
| AMERICAN TOWERS<br>RE: SITE # 88008 STE 205<br>P O BOX 723597<br>ATLANTA GA 31139 |

Back To Search (JavaScript:window.history.back(1);)

Print View (PrintPage.aspx?towncode=008&uniqueid=00002800)

Information Published With Permission From The Assessor




VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: BETHANY CT
ATC SITE NUMBER: 88008
VERIZON SITE NAME: BETHANY CT
VERIZON SITE NUMBER: 469372
SITE ADDRESS: 93 OLD AMITY ROAD
BETHANY, CT 06524


LOCATION MAP

# VERIZON
# ANTENNA AMENDMENT DRAWINGS

## COMPLIANCE CODE

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

1. 2018 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2015 IBC.
2. 2017 NATIONAL ELECTRICAL CODE - NFPA 70
3. 2015 NFPA 101
4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10
5. AMERICAN CONCRETE INSTITUTE
6. 2017 NATIONAL ELECTRICAL SAFETY CODE (NESC)
7. TIA 607 FOR GROUNDING
8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81 IEEE C2
9. TELCORDIA GR-1275
10. ANSI T1.311

## 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:

93 OLD AMITY ROAD

BETHANY, CT 06524

COUNTY: NEW HAVEN

GEOGRAPHIC COORDINATES:

LATITUDE: 41.40475833

LONGITUDE: -72.99998333

GROUND ELEVATION: 620' AMSL

## PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

VERIZON WIRELESS

ENGINEER:

COLLIERS
ENGINEERING & DESIGN CT, P.C.
dba MASER CONSULTING
135 NEW ROAD
MADISON, CT 06443

PROJECT #: 21904026

PROPERTY OWNER:

N/A
93 OLD AMITY ROAD
BETHANY, CT 06524

## PROJECT DESCRIPTION

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

REMOVE (6) ANTENNA(s) AND (6) DIPLEXER(s)

INSTALL (3) DUAL MOUNTING BRACKETS, (9) ANTENNA(s), (9) RRH(s), (1) OVP(s) AND (2) 1-5/8" HYBRID CABLE(s)

EXISTING (6) ANTENNA(s) AND (12) 1-5/8" COAX CABLE(s) 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.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

## PROJECT LOCATION DIRECTIONS

FROM NEW HAVEN, CT TAKE RT 34 WEST TO RT 63 NORTH. FOLLOW RT 63 NORTH TO OLD AMITY ROAD. FORK RIGHT ONTO OLD AMITY ROAD AND FOLLOW UP THE HILL TO THE FORK. FORK RIGHT AGAIN TO DEAD END STREET. ACCESS ROAD ENTRANCE WILL BE ON THE LEFT.

## SHEET INDEX

| SHEET NO: | DESCRIPTION: | REV: | DATE: | BY: |
|---|---|---|---|---|
| G-001 | TITLE SHEET | 0 | 12/20/21 | DR |
| G-002 | GENERAL NOTES | 0 | 12/20/21 | DR |
| C-101 | DETAILED SITE PLAN | 0 | 12/20/21 | DR |
| C-201 | TOWER ELEVATION | 0 | 12/20/21 | DR |
| C-401 | ANTENNA INFORMATION & SCHEDULE | 0 | 12/20/21 | DR |
| C-501 | CONSTRUCTION DETAILS | 0 | 12/20/21 | DR |
| E-501 | GROUNDING DETAILS | 0 | 12/20/21 | DR |
| R-601 | SUPPLEMENTAL | | | |
| R-602 | SUPPLEMENTAL | | | |
| R-603 | SUPPLEMENTAL | | | |

AMERICAN TOWER®

Colliers Engineering & Design
www.colliersengineering.com
Doing Business as MASER CONSULTING
MADISON
135 New Road
Madison, CT 06443
Phone: 860.395.0055
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

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| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| A | PRELIM | DR | 06/16/21 |
| 0 | FOR CONSTRUCTION | AMN | 12/20/21 |
| | | | |
| | | | |
| | | | |

ATC SITE NUMBER:
88008

ATC SITE NAME:
BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:

C.T. JPC.0000131

verizon

| | |
|---|---|
| DATE DRAWN: | 06/16/21 |
| ATC JOB NO: | 13685609_D1 |
| CUSTOMER ID: | BETHANY CT |
| CUSTOMER #: | 469372 |

TITLE SHEET

| SHEET NUMBER: | REVISION: |
|---|---|
| G-001 | 0 |

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## GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, VERIZON "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 VERIZON 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 VERIZON REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON 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 VERIZON 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 VERIZON 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 VERIZON 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 VERIZON 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 VERIZON REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON 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 VERIZON 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 VERIZON REP. ANY WORK FOUND BY THE VERIZON 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. VERIZON FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE VERIZON 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. VERIZON 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 VERIZON OR THEIR ARCHITECT/ENGINEER.

## SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY VERIZON 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 VERIZON SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - 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®


Colliers Engineering & Design
www.colliersengineering.com
Doing Business as MASER CONSULTING
MADISON
135 New Road
Madison, CT 06443
Phone: 860.395.0055
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING



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| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| A | PRELIM | DR | 06/16/21 |
| 0 | FOR CONSTRUCTION | AMN | 12/20/21 |
| | | | |
| | | | |
| | | | |

ATC SITE NUMBER:
88008

ATC SITE NAME:
BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:

C.T. JPC.0000131

verizon

| | |
|---|---|
| DATE DRAWN: | 06/16/21 |
| ATC JOB NO: | 13685609_D1 |
| CUSTOMER ID: | BETHANY CT |
| CUSTOMER #: | 469372 |

GENERAL NOTES

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


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SITE PLAN NOTES:

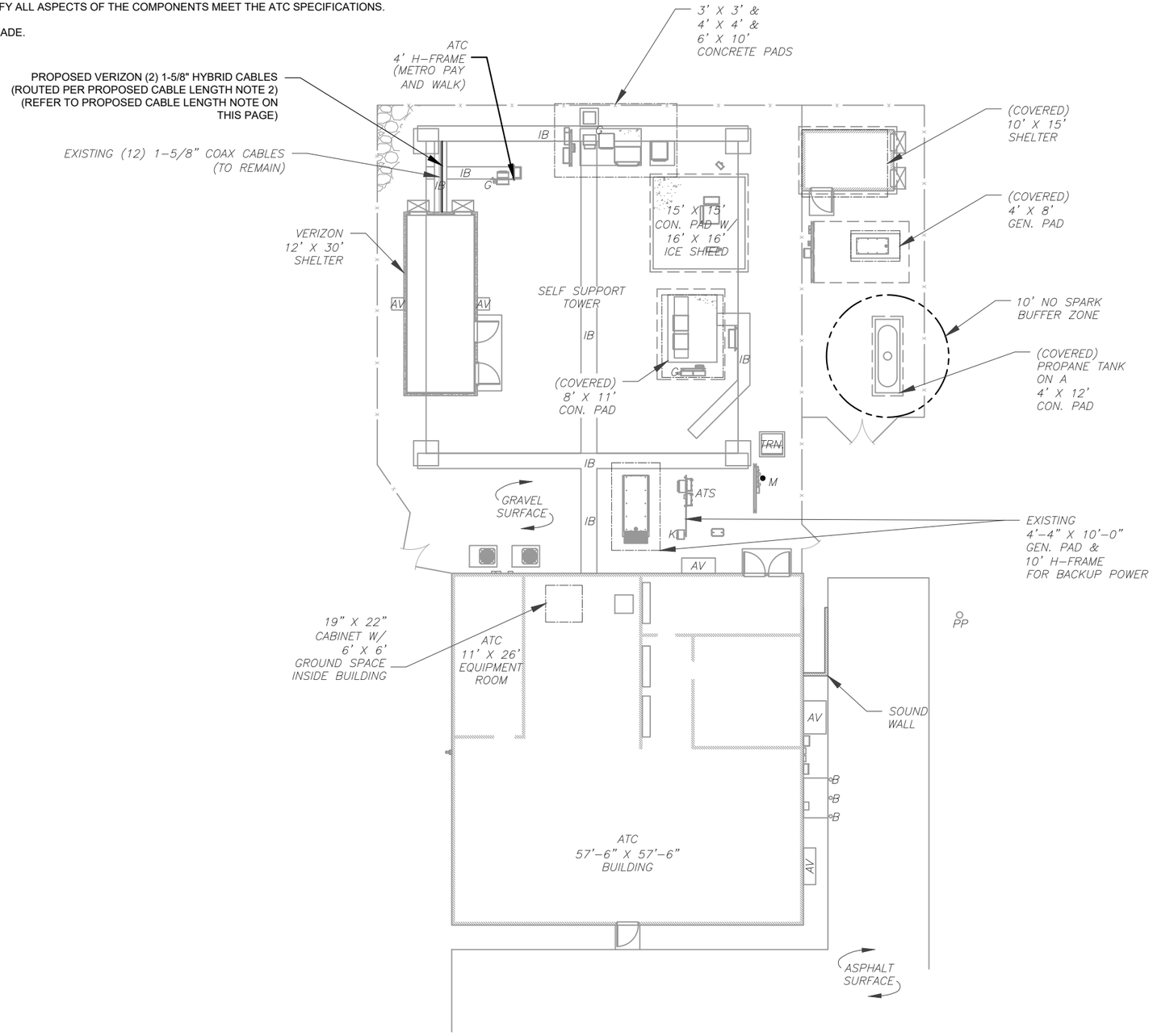
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

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

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

## LEGEND

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




1 DETAILED SITE PLAN

GRAPHIC SCALE

20 0 10 20

( IN FEET )
1 UNIT = 20 FEET

**PROPOSED CABLE LENGTH:**

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **225'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

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135 New Road

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Phone: 860.395.0055

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|---|---|---|---|
| A | PRELIM | DR | 06/16/21 |
| 0 | FOR CONSTRUCTION | AMN | 12/20/21 |
| | | | |
| | | | |
| | | | |

ATC SITE NUMBER:
88008

ATC SITE NAME:
BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:

C.T. JPC.0000131

verizon

| | |
|---|---|
| DATE DRAWN: | 06/16/21 |
| ATC JOB NO: | 13685609_D1 |
| CUSTOMER ID: | BETHANY CT |
| CUSTOMER #: | 469372 |

DETAILED SITE PLAN

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


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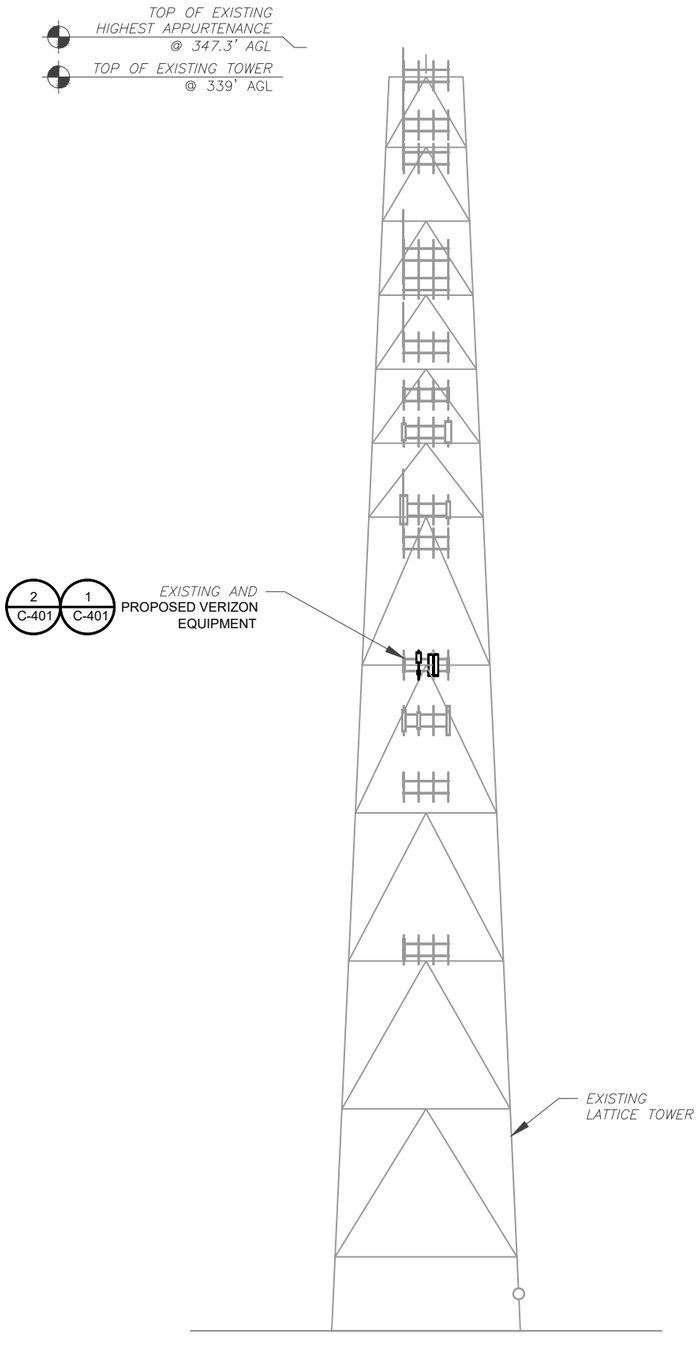
Remove and replace the pipe in position 2 with a proposed 6' long P2.5 STD to be used for the dual antennas. Connect the proposed pipe to the existing face horizontals using SitePro1 SP219-H crossover plates.

Contractor to relocate the existing antenna pipe in position 3 to be shifted over 12" to the left when standing behind the mount looking out towards the position 2 pipe in all sectors.

PER MOUNT ANALYSIS COMPLETED BY MASER CONSULTING CONNECTICUT, DATED 07/13/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.




1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT 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. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

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SEAL:

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| | |
|---|---|
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| ATC JOB NO: | 13685609_D1 |
| CUSTOMER ID: | BETHANY CT |
| CUSTOMER #: | 469372 |

TOWER ELEVATION

| SHEET NUMBER: | REVISION: |
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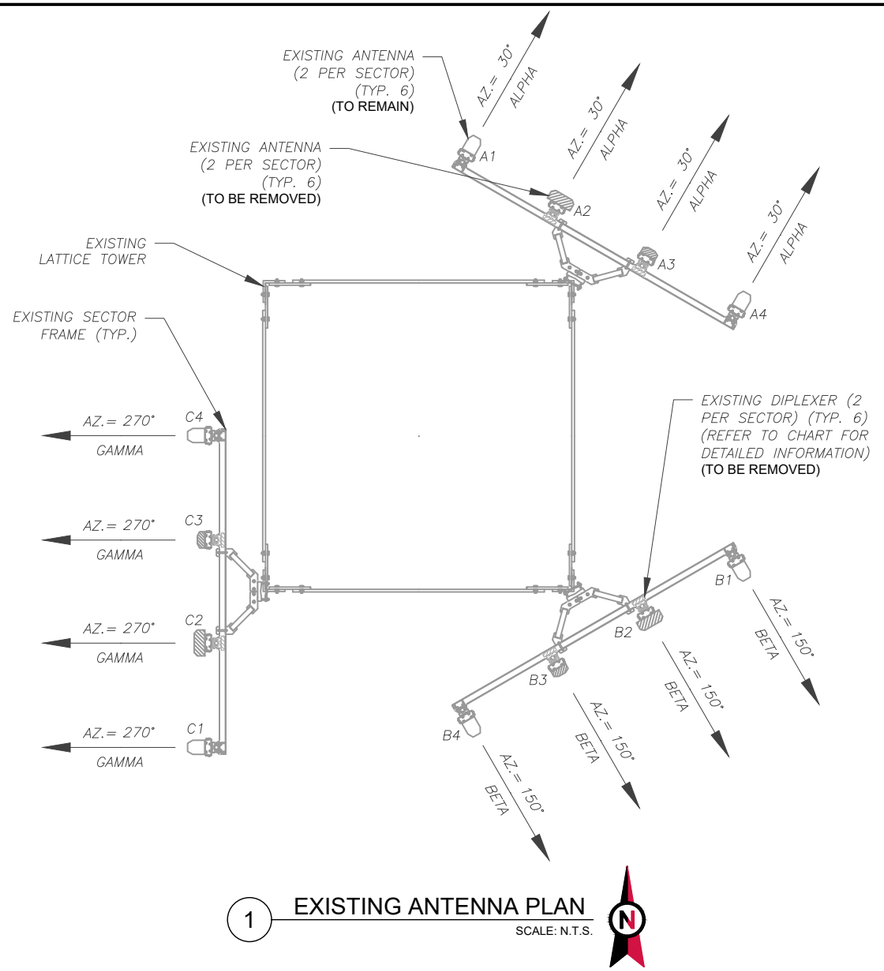
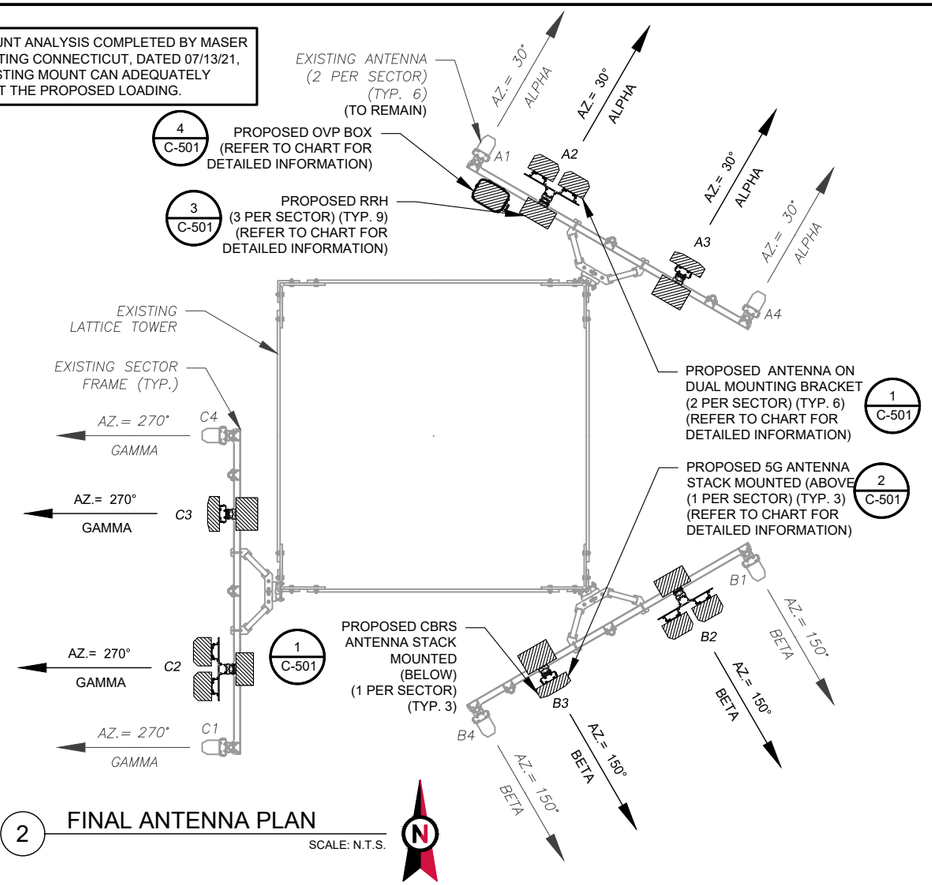



1 EXISTING ANTENNA PLAN
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY MASER CONSULTING CONNECTICUT, DATED 07/13/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.




2 FINAL ANTENNA PLAN
SCALE: N.T.S.

Remove and replace the pipe in position 2 with a proposed 6' long P2.5 STD to be used for the dual antennas. Connect the proposed pipe to the existing face horizontals using SitePro1 SP219-H crossover plates.

Contractor to relocate the existing antenna pipe in position 3 to be shifted over 12" to the left when standing behind the mount looking out towards the position 2 pipe in all sectors.

EXISTING ANTENNA SCHEDULE

| LOCATION | | | ANTENNA SUMMARY | | | | | NON ANTENNA SUMMARY | |
|---|---|---|---|---|---|---|---|---|---|
| SECTOR | RAD | AZ | POS | ANTENNA | BAND | MECH/ELEC D-TILT | STATUS | ADDITIONAL TOWER MOUNTED EQUIPMENT | STATUS |
| ALPHA | 180' | 30° | A1 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | – | – |
| | | | A2 | P65-16-XL-2 | 700-LTE | 5/0 | RMV | FD9R6004/1C-3L | RMV |
| | | | A3 | MGD3-800TX | 850-LTE | 5/0 | RMV | FD9R6004/1C-3L | RMV |
| | | | A4 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | – | – |
| | | | – | – | – | – | – | – | – |
| BETA | 180' | 150° | B1 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | – | – |
| | | | B2 | P65-16-XL-2 | 700-LTE | 4/0 | RMV | FD9R6004/1C-3L | RMV |
| | | | B3 | MGD3-800TX | 850-LTE | 4/0 | RMV | FD9R6004/1C-3L | RMV |
| | | | B4 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | – | – |
| | | | – | – | – | – | – | – | – |
| GAMMA | 180' | 270° | C1 | DB844H90E-XY | 850-CDMA | 4/0 | RMN | – | – |
| | | | C2 | P65-16-XL-2 | 700-LTE | 6/0 | RMV | FD9R6004/1C-3L | RMV |
| | | | C3 | MGD3-800TX | 850-LTE | 6/0 | RMV | FD9R6004/1C-3L | RMV |
| | | | C4 | DB844H90E-XY | 850-CDMA | 4/0 | RMN | – | – |
| | | | – | – | – | – | – | – | – |

NOTES

1. CONFIRM WITH VERIZON 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.

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 ANTENNA SCHEDULE

| LOCATION | | | ANTENNA SUMMARY | | | | | NON ANTENNA SUMMARY | |
|---|---|---|---|---|---|---|---|---|---|
| SECTOR | RAD | AZ | POS | ANTENNA | BAND | MECH/ELEC D-TILT | STATUS | ADDITIONAL TOWER MOUNTED EQUIPMENT | STATUS |
| ALPHA | 180' | 30° | A1 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | - | - |
| | 180' | | A2 | MX06FRO660-03 | 700/850-LTE | 5/6 | ADD | RFV01U-D1A | ADD |
| | | | | MX06FRO660-03 | 1900/2100-LTE | 5/0 | ADD | | |
| | 178'/181.5' | | A3 | MT6407-77A / RT4401-48A | 5G / CBRS | 0/6 | ADD | RFV01U-D2A | ADD |
| | 180' | | A4 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | - | - |
| BETA | 180' | 150° | B1 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | - | - |
| | 180' | | B2 | MX06FRO660-03 | 700/850-LTE | 5/6 | ADD | RFV01U-D1A | ADD |
| | | | | MX06FRO660-03 | 1900/2100-LTE | 5/0 | ADD | | |
| | 178'/181.5' | | B3 | MT6407-77A / RT4401-48A | 5G / CBRS | 0/6 | ADD | RFV01U-D2A | ADD |
| | 180' | | B4 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | - | - |
| GAMMA | 180' | 270° | C1 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | - | - |
| | 180' | | C2 | MX06FRO660-03 | 700/850-LTE | 5/6 | ADD | RFV01U-D1A | ADD |
| | | | | MX06FRO660-03 | 1900/2100-LTE | 5/0 | ADD | | |
| | 178'/181.5' | | C3 | MT6407-77A / RT4401-48A | 5G / CBRS | 0/6 | ADD | RFV01U-D2A | ADD |
| | 180' | | C4 | DB844H90E-XY | 850-CDMA | 0/0 | RMN | - | - |

| EXISTING FIBER DISTRIBUTION/OVP BOX | | EXISTING CABLING SUMMARY | | |
|---|---|---|---|---|
| MODEL NUMBER | STATUS | COAX | HYBRID | STATUS |
| – | – | (12) 1-5/8" | – | RMN |

| FINAL FIBER DISTRIBUTION / OVP BOX | | FINAL CABLING SUMMARY | | |
|---|---|---|---|---|
| MODEL NUMBER | STATUS | COAX | HYBRID | STATUS |
| RCMDC-6627-PF-48 | ADD | (12) 1-5/8" | – | RMN |
| - | - | - | (2) 1-5/8" | ADD |

3 EQUIPMENT SCHEDULES

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88008

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BETHANY CT

VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
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BETHANY, CT 06524

SEAL:

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verizon

| | |
|---|---|
| DATE DRAWN: | 06/16/21 |
| ATC JOB NO: | 13685609_D1 |
| CUSTOMER ID: | BETHANY CT |
| CUSTOMER #: | 469372 |

ANTENNA INFORMATION & SCHEDULE

| SHEET NUMBER: | REVISION: |
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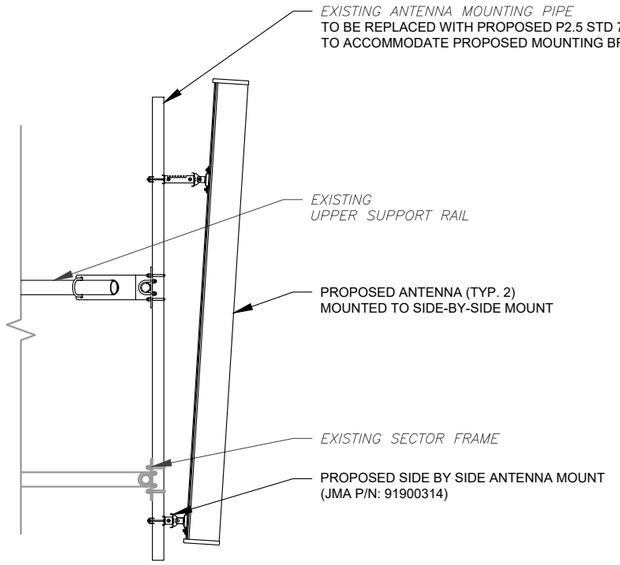
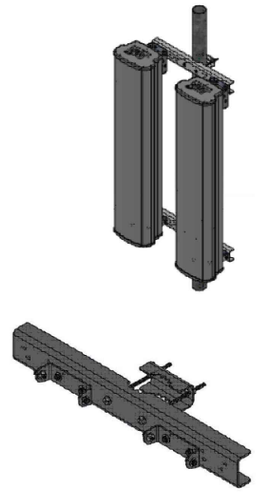


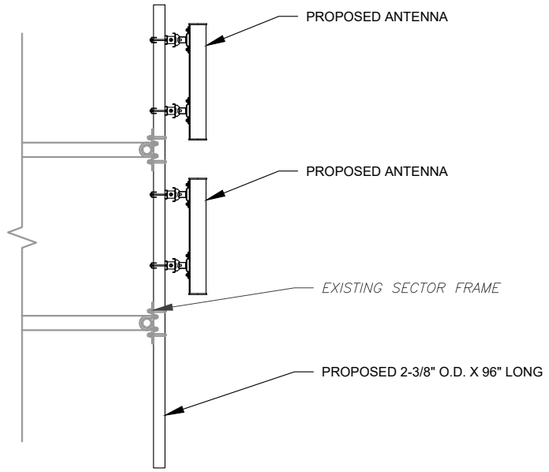

PROFILE VIEW



ISOMETRIC VIEW (BY MANUFACTURER)

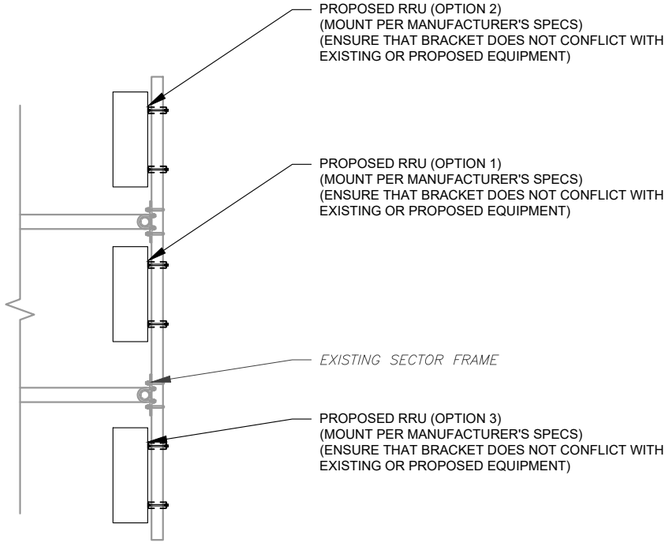
## 1 PROPOSED SIDE-BY-SIDE MOUNT

SCALE: NOT TO SCALE



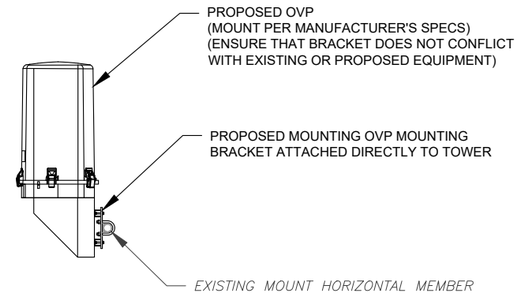

## 2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.




## 3 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.




## 4 PROPOSED OVP MOUNTING

SCALE: N.T.S.

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ATC SITE NAME:
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VERIZON SITE NAME:
BETHANY CT

SITE ADDRESS:
93 OLD AMITY ROAD
BETHANY, CT 06524

SEAL:

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verizon

| | |
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| ATC JOB NO: | 13685609_D1 |
| CUSTOMER ID: | BETHANY CT |
| CUSTOMER #: | 469372 |

CONSTRUCTION DETAILS

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

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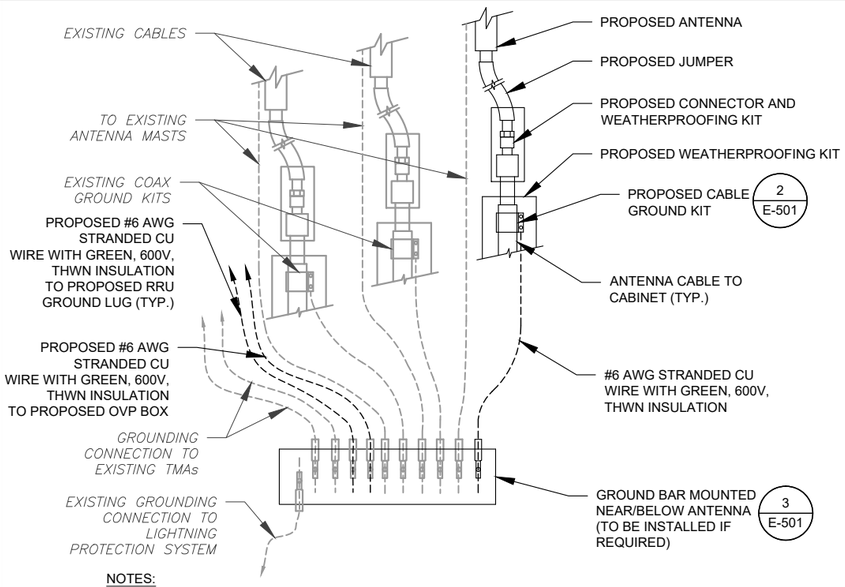
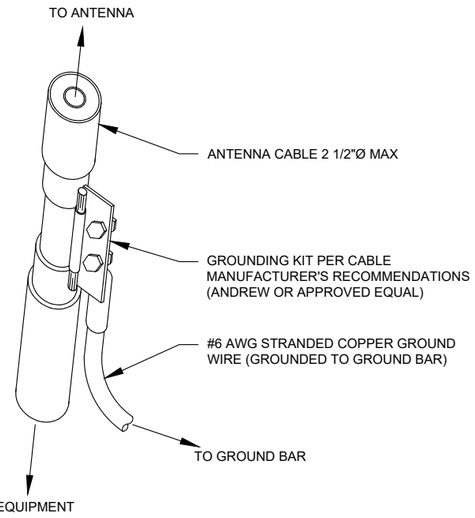



NOTES:

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 VERIZON GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

## 1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

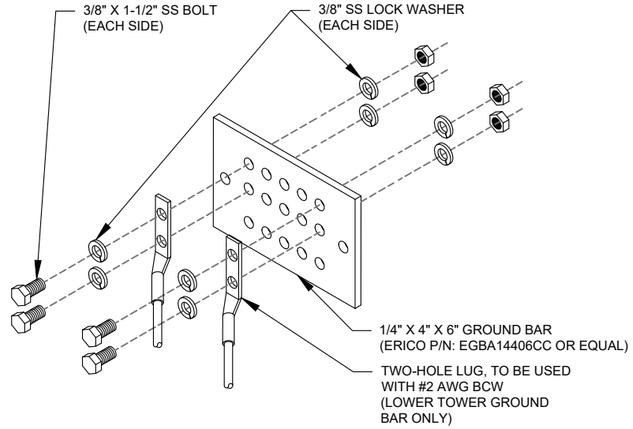



GROUND KIT NOTES:

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

## 2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.




GROUND BAR NOTES:

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

## 3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

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GROUNDING DETAILS

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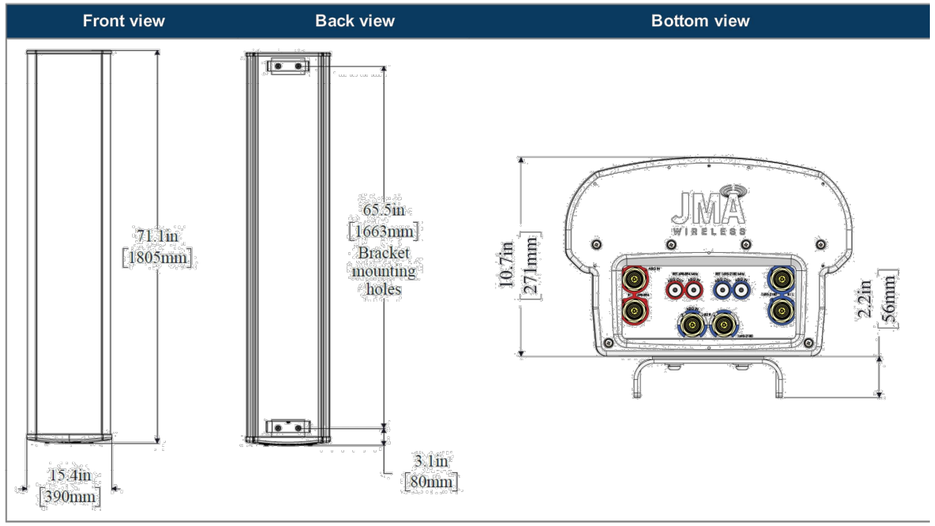
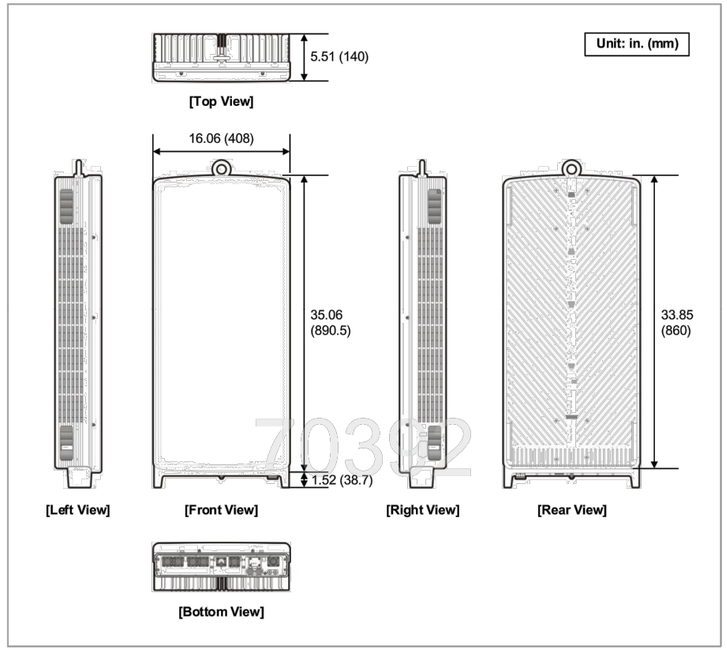



MX06FRO660-03

The following figures depict the physical views of the MT6407-77A.

*Figure 1. Appearance*




MT6407-77A

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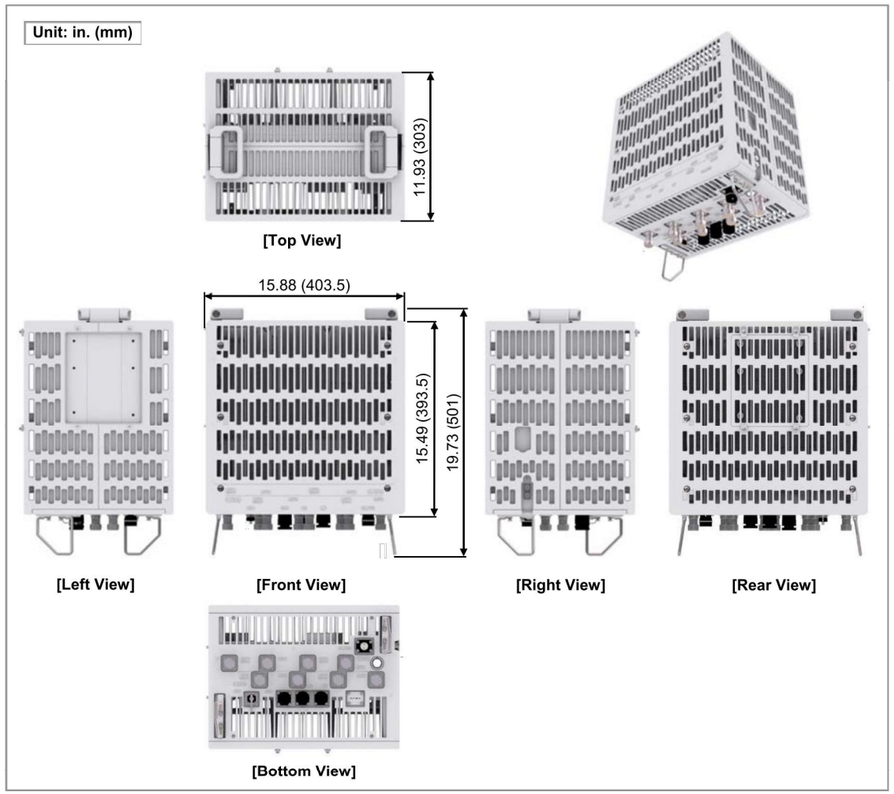
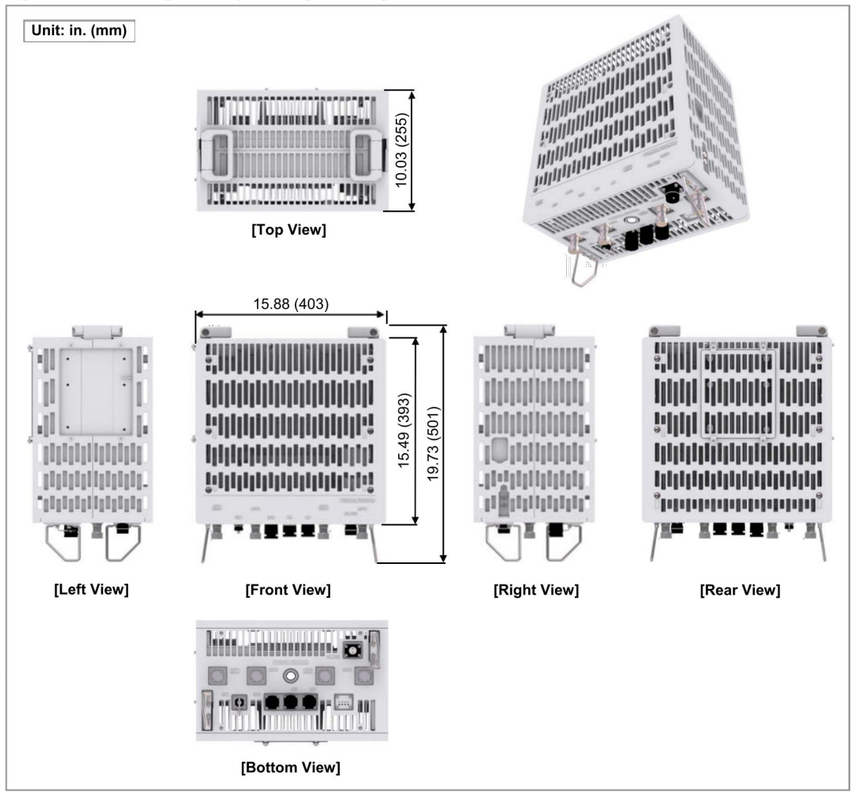
SUPPLEMENTAL

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




RFV01U-D1A

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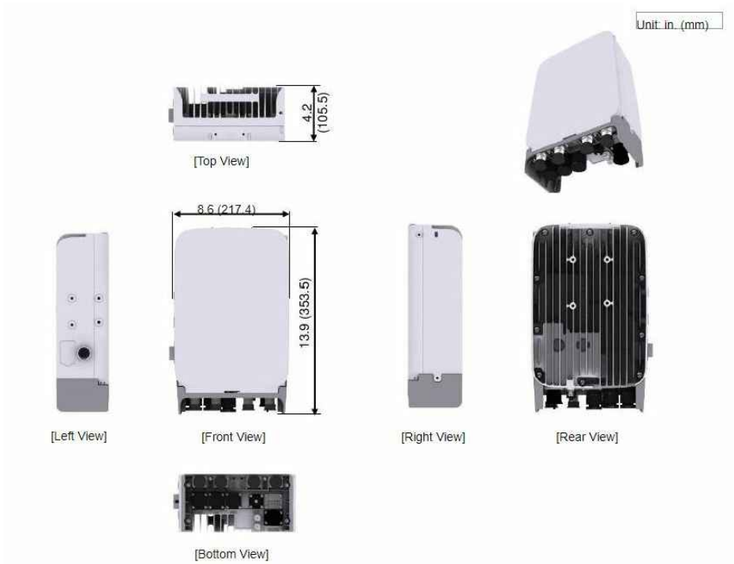


RT4401-48A

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: -

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2000 Midlantic Drive, Suite 100
Mt. Laurel, NJ 08054
(856) 797-0412
Peter.Albano@Colliersengineering.com

# Antenna Mount Analysis Report and PMI Requirements

Mount Analysis

SMART Tool Project #: 10061990
Maser Consulting Connecticut Project #: 21777876A

July 13, 2021

***Site Information***

| | |
|---|---|
| *Site ID:* | *469372-VZW / BETHANY CT* |
| *Site Name:* | *BETHANY CT* |
| *Carrier Name:* | *Verizon Wireless* |
| *Address:* | *93 Old Amity Rd.* |
| | *Bethany, Connecticut 06524* |
| | *New Haven County* |
| *Latitude:* | *41.404758°* |
| *Longitude:* | *-72.999983°* |

***Structure Information***

| | |
|---|---|
| *Tower Type:* | *300-Ft Self Support* |
| *Mount Type:* | *14.00-Ft T-Frame* |

**FUZE ID # 15288115**

## Analysis Results

T-Frame: **93.8% Pass**

***Contractor PMI Requirements*:**
***Included at the end of this MA report***
***Available & Submitted via portal at https://pmi.vzwsmart.com***
***Contractor - Please Review Specific Site PMI Requirements Upon Award***
***Requirements also Noted on Mount Modification Drawings***
***Requirements may also be Noted on A & E drawings***

Report Prepared By: Lauren Luzier

STATE OF CONNECTICUT · ERIC T. ANDERSON · LICENSED PROFESSIONAL ENGINEER
Digitally signed by Eric Anderson
Date: 2021.07.16 18:32:43-04'00'



6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
   - Channel, Solid Round, Angle, Plate — ASTM A36 (Gr. 36)
   - HSS (Rectangular) — ASTM 500 (Gr. B-46)
   - Pipe — ASTM A53 (Gr. B-35)
   - Threaded Rod — F1554 (Gr. 36)
   - Bolts — ASTM A325

**Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Maser Consulting Connecticut.**

## Analysis Results:

| Component | Utilization % | Pass/Fail |
|---|---|---|
| Face Horizontals | 93.8 % | Pass |
| Mast Pipe | 9.1 % | Pass |
| Antenna Pipe | 46.1 % | Pass |
| Tie Back | 1.6 % | Pass |
| Mount Plate | 49.6 % | Pass |
| Mount Connection | 5.2 % | Pass |

| **Structure Rating – *(Controlling Utilization of all Components)*** | **93.8%** |
|---|---|

## Recommendation:

The existing mounts are **SUFFICIENT** for the final loading configuration and do not require modifications.

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

## Attachments:

1. Mount Photos
2. Mount Mapping Report (for reference only)
3. Analysis Calculations
4. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
5. Antenna Placement Diagrams
6. TIA Adoption and Wind Speed Usage Letter

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 VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONSTRUCTION.

SUPPLEMENTAL

SHEET NUMBER: R-603
REVISION: -

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