

## LICENSE AGREEMENT

**THIS LICENSE AGREEMENT** (“Agreement”) is made, effective as of the date set forth in section 2.01(a) below (“Effective Date”), by and between the **CITY AND COUNTY OF DENVER, a municipal corporation** (“City”), and **CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS**, a Delaware General Partnership authorized to conduct business in Colorado, whose principal office is located at One Verizon Way, Basking Ridge NJ 07920 (“Licensee”).

### DEFINITIONS

All capitalized terms or phrases in this Agreement, except for proper names, shall have the meanings as set forth below:

**A.** Agreement means this License Agreement during the Term or Term Extension of the Agreement.

**B.** ADA means federal Americans with Disabilities Act and any other federal or state laws requiring access for the disabled to public accommodations.

**C.** Applicable Law means all federal, state, and local laws applicable in the context of the specific matter addressed in this Agreement, including but not limited to: 1) the constitutions, laws, and rules and regulations of the United States of America and the State of Colorado; 2) the City Charter, the Denver Revised Municipal Code, and building, fire, electrical, plumbing and other applicable codes, as they may be amended from time to time; 3) rules and regulations, including any standards and specifications, promulgated or amended by the Denver Department of Safety and the Denver Fire Department; 4) any rules and regulations promulgated or amended by other City departments and agencies applicable to this Agreement; 5) executive orders issued by the Mayor; 6) any court order, judgment, or decree or any appellate decision applicable to this Agreement; 7) any federal, state, or local administrative decision or order applicable to this Agreement; 8) any anti-discrimination laws; and 9) the requirements of the ADA.

**D.** Cancellation means the revocation of the License and the termination or cancellation of the Agreement, including mutual termination by the parties, in the manner specified in this Agreement.

**E.** City means the City and County of Denver as represented by the Denver Fire Department and its Fire Chief.

**F.** City Representative means the Fire Chief’s designee(s) who will oversee and direct all activities of Licensee under this Agreement. The City Representative(s) may be employees or contractors of the Denver Fire Department, Denver’s Technology Services, the Electronic Engineering Bureau of the Department of Safety, and/or Denver’s Division of Real Estate. Contact information for the City Representative and the assigned responsibilities, if there is more than one City Representative, shall be provided to Licensee upon execution of this Agreement. The City may identify, change, add or delete City Representative(s) by written notice to Licensee.

**G.** City System means all existing and future communication and other electronic facilities,

equipment and instrumentation and related infrastructure and utility connections that the City requires for the operation of the Fire Station or the provision of emergency services from the Fire Station, including, but not limited to, public safety channels, radio system or other electronic means of sending, receiving, processing and recording information and data for public safety purposes.

**H.** DRMC means the Denver Revised Municipal Code as it may be amended from time to time.

**I.** Effective Date means the date this Agreement goes into effect, as specified in section 2.01(a) below.

**J.** Emergency means an occurrence or incident that presents an imminent threat of widespread or severe damage, injury, or loss of life or property resulting from any natural cause or cause of human origin, including but not limited to fire, explosion, flood, earthquake, wind, storm, structural failure, hazardous substance, environmental contamination, civil disturbance, vandalism, or breach of security.

**K.** FCC means the Federal Communications Commission.

**L.** Fire Chief means the head of the Denver Fire Department.

**M.** Fire Station means the specific fire station operated by the Denver Fire Department to which this Agreement applies, as specified in section 1.01(a).

**N.** Interference Study means a site and technical interference study, **Exhibit B**, field tests or other activities or investigations related to the resolution of RF Interference that may be associated with the Licensed System as specified in section 5.02.

**O.** License means the license granted as specified in section 1.01(a) which is exclusive only to the extent specified in this Agreement and which is restricted and revocable as specified in this Agreement. No property or leasehold interest or right is granted by the License.

**P.** Licensed Area means the location at the Fire Station where Licensee is authorized to install and operate the Licensed System, as specified in section 1.01(a).

**Q.** Licensed System means the radio frequency equipment and wireless communication facility, and related equipment, infrastructure and utility communications authorized by the City and installed and operated by Licensee within the Licensed Area of the Fire Station, as specified in section 1.01(a).

**R.** Licensee means the legal entity to which the License is granted under and in accordance with this Agreement, as identified in opening paragraph of this Agreement. To the extent that Licensee retains contractors or consultants to perform any of Licensee's rights and obligations under the Agreement, Licensee shall also mean those contractors and consultants.

**S.** License Fee means the compensation to be paid by Licensee to the City for the use of the Licensed Area and the operation of the Licensed System at the Fire Station as specified in section 3.01.

**T.** Minimum Technical Standards mean those standards set forth in **Exhibit C** as these Minimum Technical Standards may be updated from time-to-time, as needed, to address the state-of-the-art.

**U.** Party means either the City or Licensee, as appropriate in the context, and Parties means both the City and Licensee.

**V.** Permitted Use means the uses (subject to restrictions) as specified in section 1.02, which Licensee may make of the Licensed Area in the installation and operation of the Licensed System.

**W.** RF (Radio Frequency) Interference means any emission, radiation or induction from or associated with the Licensed System that affects the functioning of or degrades, obstructs, or interrupts radio or other wireless communications being made by the City or other authorized parties to or from the Fire Station or the operation of any communication system located at the Fire Station.

**X.** Point of Contact means the Chief Deputy for the Technical Services Division of the Denver Fire Department, or the Chief Deputy's designated representative, during regular business hours of the Denver Fire Department and the Denver Fire Department's non-emergency Dispatch for Licensee's urgent need for access after regular business hours of the Denver Fire Department.

**Y.** Term means the duration of the Agreement running from the Effective Date of the Agreement, as specified in section 2.01(a).

**Z.** Term Extension means any approved amendment to the Agreement allowing the duration of the Agreement for another five-year period subject to any new or changed terms or conditions, as specified in section 2.02.

**AA.** Tower means the communication structure or structures authorized by the City on which the Licensed System and the City System are located, as specified in 1.01(b).

## **SECTION 1 LICENSE; PERMITTED USE; and ACCESS**

### **1.01 Grant of License.**

(a) City owns property located within the City and County of Denver, State of Colorado, known as Fire Station #29, which is located at 4800 N. Himalaya Road, Denver 80249 ("Fire Station"). City hereby grants a License to Licensee for the use of certain designated areas at the Fire Station as depicted on **Exhibit A** (the "Licensed Area") for the installation and operation by Licensee of the Licensed System, as the Licensed System is technically described in **Exhibit A**. The Licensed System shall be situated within the Licensed Area and shall be located in relation to the City System, if any, as depicted in **Exhibit A**. The Licensed Area shall not include the City System. Any proposed change to the Licensed Area depicted in **Exhibit A** shall require an amendment to this Agreement.

(b) Licensee was granted a license under a previous agreement, Contract Control #RC95006, dated February 17, 2010, and known by Licensee as the “Gibraltar” site 103476 (“2010 License Agreement”). The Parties acknowledge and agree that this Agreement revokes the 2010 License Agreement upon the effective date of the Agreement.

(c) As a condition of the grant of the License, Licensee shall construct and install, at its sole cost and expense, the Licensed System and location, as described in the attached **Exhibit A**, for shared use by the City and Licensee. The Licensed Area shall not include the City System.

## **1.02 Permitted Use/Restrictions.**

(a) The Licensed Area at the Fire Station shall be used for the installation, maintenance, alteration, repair, replacement, operation, and removal of the Licensed System within the Licensed Area, in accordance with this Agreement (“Permitted Use”). The Licensed System shall be owned by Licensee. Except as expressly provided in this Agreement, the City may not disturb or modify the Licensed System without the prior written permission of Licensee.

(b) Licensee may access the Fire Station site, use the Licensed Area, and install and operate the Licensed System only as set forth in this Agreement. The Permitted Use does not authorize any activity that would conflict or interfere with the public health, safety or welfare purpose or operation of the Fire Station or City System. Such prohibited conflict or interference includes RF Interference as set forth in this Agreement and **Exhibit B**. Licensee shall likewise take every reasonable measure to promptly and effectively avoid or remedy any emergency situation within its control that could adversely impact the Fire Station, the City System, the Licensed Area, or the Licensed System. Licensee must also coordinate with the Denver Fire Department and gain Denver Fire Department approval prior to all concrete cuts.

(c) Licensee must acquire City Approval, prior to making any change to the Licensed System as shown in **Exhibit A** and may trigger a change in license fee and a license amendment. Notwithstanding the foregoing, Licensee may add base station equipment to the Licensed System within the Licensed Area and may also repair or replace any other equipment comprising the Licensed System with “like-for-like” equipment upon notice to Licensor.

## **1.03 Access.**

(a) Provided that Licensee gives at least forty-eight (48) hours prior notice to the Point of Contact, Licensee has the reasonable right of access, ingress to and egress from the Licensed Area during regular business hours for Licensee’s employees, contractors and agents, including suppliers of materials and furnishers of service (collectively “Licensee’s Personnel”).

(b) In the event of an urgent situation where Licensee needs prompt access to the Licensed System during or outside of regular business hours, which shall be deemed to include any failure of Licensed System or any portion thereof, Licensee shall communicate with the Point of Contact to arrange for access by Licensee’s Personnel.

(c) With respect to all access to the Fire Station, Licensee’s Personnel must present legally sufficient identification, preferably in the form of a badge with picture ID issued by Licensee; will be

subject to escort by Fire Department staff and search and inspection of items brought onto the Fire Station site; and will comply with all restrictions and security protocols set by the Fire Chief and the direction of the City Representative. All equipment, vehicles, machinery and other materials brought onto the Fire Station site must be necessary for the work authorized to be performed.

(d) Should Licensee require access into a secure area of the Fire Station which may require prior approval or escort, then the permission of the City Representative must be obtained and any security protocols must be strictly observed by Licensee.

(e) The exercise of access by Licensee or Licensee's personnel shall not conflict or interfere with the operations of the Fire Station or the City System and may not block access at or the use of the Fire Station nor be in violation of the ADA. In addition, the exercise of access shall not conflict or interfere with the City System unless prior written permission is obtained from the City Representative.

(f) Any particular access on the Fire Station site may, at any time, temporarily or permanently, be closed, so long as an alternative means of access is made available to Licensee within a reasonable time. During the duration of any state of Emergency declared by the President of the United States, the Governor of the State of Colorado, or the Mayor of the City and County of Denver, access may be denied for security and public safety reasons. Licensee hereby releases and discharges the City from any and all claims, demands or causes of action which Licensee may now, or at any time hereafter, have against the City, arising or alleged to arise out of the closing of any point of access on the Fire Station site or the temporary unavailability of access to a Fire Station site.

## **SECTION 2 TERM and TERM EXTENSION**

### **2.01 Term.**

The Term of this Agreement shall be effective as of the first day of the month after the date of mutual execution of this Agreement (the "Effective Date"), and shall expire on ten years from that date, unless Licensee terminates the Agreement upon sixty (60) days written notice.

### **2.02 Term Extension.**

Licensee may exercise one (1) option to renew the License for one additional ten-year period at the end of the term. Licensee shall provide written notice to the City of its intent to exercise the renewal option by no sooner than one hundred and eighty (180) days and no later than sixty (60) days before the end of the Term. All terms and conditions shall remain in effect in accordance with this Agreement during the renewal period, including the percentage fee increase under Section 3.01, unless otherwise modified by mutual written agreement. Modifications, if any, must be set forth in an amendment to this Agreement and processed for approval in the same manner as the Agreement.

## **SECTION 3 LICENSE FEE**

### **3.01 License Fee.**

(a) Licensee agrees to pay City a monthly License Fee of **Three Thousand Eight Hundred and Twenty Dollars and Zero Cents (\$3,820.00)**, payable in equal monthly installments beginning on the Effective Date, and continuing on the first day of each month thereafter for the Term of the Agreement and any Term renewal. The License Fee shall increase three percent (3%) each year, with the increased License Fee taking effect on the anniversary of the Effective Date of this Agreement each year.

(b) Any License Fee paid to the City shall not be refundable in the event of Cancellation, as provided in this Agreement.

### **3.02 Place and Manner of Payments.**

All sums payable to City, including the License Fee and other costs and expenses incurred by the City and reimbursable by Licensee under this Agreement, shall be made payable, without notice, to the “Manager of Finance for the City and County of Denver” and delivered to:

City and County of Denver  
Division of Real Estate  
201 West Colfax Avenue, Dept. 1010  
Denver, Colorado 80202

All payments shall be made in legal tender of the United States. Any payment not made to City accrues interest at the lesser of (i) 18% per annum, or (ii) the maximum interest rate allowed under law, commencing on the fifth (5<sup>th</sup>) calendar day after the date such amount is due and owing until paid to City. Licensee agrees to pay any charges, fees, or costs incurred by the City for collection of unpaid License Fees or other unpaid costs and expenses of Licensee specified in this Agreement, including reasonable attorney’s fees.

## **SECTION 4 DESIGN, CONSTRUCTION AND INSTALLATION**

### **4.01 General.**

(a) On or after the Effective Date of this Agreement, Licensee shall, at its sole cost and expense, install within the Licensed Area, the Licensed System in accordance with **Exhibit A** (unless changes are authorized under section 4.02), and in accordance with the terms and conditions of this Agreement.

(b) The Licensed System shall in all respects be designed and installed in accordance with Applicable Law, and pursuant to any required building permit and zoning permit to be obtained by Licensee from the City, and according to requirements or design guidelines of the Denver’s Technology Services division, the Denver Department of Safety and the Denver Fire Department.

(c) The implementation of the design and installation of the Licensed System, as described and depicted in **Exhibit A**, as well as any changes, elaborations or additions to the design,

construction and installation of the Licensed System beyond those described and depicted in **Exhibit A** shall be subject to the oversight and approval of the City Representative as well as any other approvals required in this Agreement.

#### **4.02 Plans and Specifications.**

(a) Prior to any installation of any portion of the Licensed System, four (4) copies of complete and accurate plans and specifications for the Licensed System must be submitted to the City Representative for review. These plans and specifications must include complete specifications of transmitter power, operating frequencies, filter passband and rejection characteristics, antenna model numbers and radiation patterns (both horizontal and vertical plane patterns), antenna height and location, and placement of utilities servicing the Licensed System.

(b) Licensee shall cooperate with the City Representative in the review of the plans and specifications and shall make any reasonable modifications required by the City Representative. Upon completion of the review and any required modifications, the City Representative, in consultation with the Fire Chief, will approve the plans and specifications.

(c) To the extent that the approved plans and specifications are different from the information contained in **Exhibit A**, Licensee shall prepare, to the reasonable satisfaction of the City Representative, new exhibits reflecting such changes, and the changed exhibits will replace and supersede the corresponding exhibits attached to this Agreement.

(d) Installation work shall not commence, nor shall continue, until Licensee has established to the City Representative's reasonable satisfaction that the work will proceed in conformance with the approved plans and specifications and that all Applicable Law has been or will be fully and appropriately satisfied. Licensee also cannot commence any cutting of concrete without the express written permission from the Denver Fire Department.

#### **4.03 Installation.**

(a) Licensee is responsible for undertaking all measures necessary and appropriate under Applicable Law to protect the health and safety of the public, City employees, and Licensee's employees and contractors and to lawfully conduct the work associated with the installation. Prior to the commencement of installation, Licensee or its contractor shall obtain and pay for all required permits, licenses and approvals. Good and workmanlike standards of design, construction and installation shall be required in connection with all such work.

(b) To the extent that building codes or other City requirements mandate that modifications be made to the roof or other infrastructure of the Fire Station as part of the installation, Licensee shall be required to include those modifications in its **Exhibit A** plans (unless changes are authorized under section 4.02) and to make such modifications, at its sole cost and expense and subject to prior written approval of such modifications by the City Representative and the City Representative's oversight of the modifications as they are being made. The City is not obligated to make any modifications to the Fire Station, including the Licensed Area, to support the installation.

(c) Licensee shall include in Licensee's contract(s) with its consultants and contractors

provisions whereby such consultants and contractors shall defend and hold harmless the City from all costs, liens, damages and expenses related to the design, construction and installation work.

(d) Licensee shall be responsible for obtaining utility locates prior to starting any authorized digging on City property. If damage should occur to any existing underground utilities or other underground facilities on City property, whether or not a utility locate was obtained, Licensee shall immediately report the damage to the City Representative and shall take all actions and incur all costs and expenses necessary to repair the damage in a manner satisfactory to the City Representative.

(e) Upon completion of the installation, Licensee shall timely furnish to the City Representative with documented evidence of payment, contractor's affidavits and full and final waivers of all liens for labor, services, or materials.

(f) Equipment shall be located in designated locations as depicted on **Exhibit A** within the Licensed Area. The temporary placement of any equipment or materials outside of the Licensed Area shall require the prior written approval of the City Representative. No equipment or materials shall be placed so as to block access at or use of the Fire Station or in violation of the ADA.

(g) Licensee is responsible for acquiring land lines required for the installation and operation of the Licensed System. The installation of land lines at the Fire Station shall be subject to the prior written approval of the City Representative. Licensee shall be solely responsible for paying any fees, charges, surcharges, taxes, assessments, and similar costs and expenses associated with the land lines.

(h) With respect to utilities, Licensee shall comply with section 5.07 and the installation requirements of this section 4.03.

(i) The City is not responsible for the Licensed System or Licensee's other authorized installations. Licensee shall be responsible for securing the Licensed System and Licensee's other authorized installations and keeping them in good working order.

## **SECTION 5 USE AND OPERATION**

### **5.01 Authorized Frequencies.**

In the operation of the Licensed System, Licensee is authorized to operate in the FCC-licensed radio bands and frequencies set forth in **Exhibit B**. Operation in any unlicensed radio band (as defined by the FCC) or any radio band used by a City System is prohibited.

### **5.02 RF (Radio Frequency) Interference.**

(a) Licensee acknowledges that City's unimpeded use and operation of the Fire Station is critical to the health, safety and welfare of the City and County of Denver and its inhabitants. Licensee shall use its best efforts, at all times, to avoid any RF Interference or interference of any kind with the operation or use of the Fire Station and the City System as set forth in this Agreement and **Exhibit B**. Licensee shall diligently work to prevent and, in the event of failure to do so, immediately correct

radio frequency interference to the City System and any component elements, including the City's WiFi system, and to cooperate with, and comply with the directions from, the City Representative assigned to deal with RF Interference matters. To help achieve this goal, Licensee shall comply with the following:

(a) Licensee agrees to comply with all federal, state, local, or other government regulations applicable to Licensee and its activities operating or using the Licensed System, including, but not limited to, regulations and standards published by the FCC.

(b) Upon written request by the City Representative, not to exceed once per five (5) year period, Licensee agrees to conduct an Interference Study prior to commencing operations and/or during the entire Term or Term Extension of this Agreement, and to furnish the City Representative with the results of the Site Study and to include it as part of Licensee's System Plans and Specifications. If Licensee should fail within a period specified by the City Representative to undertake or complete an Interference Study, the City may arrange for such an Interference Study and Licensee shall reimburse the City for the cost and expense of conducting and preparing the Interference Study. Notwithstanding any provision of this section, if Licensee requests equipment modification, the City may request a new interference study.

(c) Licensee agrees to comply with the most recent edition of the Minimum Technical Standards, with the current Minimum Technical Standards attached hereto as **Exhibit C**.

(d) In order to prevent interference, Licensee shall maintain and repair, at no cost to the City, the Licensed System, in order to comply with FCC rules and the reasonable requirements of the City Representative. If this maintenance should necessitate changing out or replacing existing antennas, the requirements of section 5.04 shall be applicable.

(e) If authorized to make changes, Licensee shall notify the City Representative of the specific changes to associated RF equipment, transmit and receive frequencies, transmitter output power, antenna configurations, and effective radiated power before making the changes. An Interference Study shall be conducted by Licensee, as directed by the City Representative and at Licensee's sole cost and expense, prior to any proposed frequency changes. The requirements of section 5.04 shall be applicable to the changes addressed herein.

(f) To extent there are more than one licensee operating at the Fire Station, Licensees are encouraged to resolve potential or real interference problems amongst themselves. Licensee agrees to cooperate fully with City and other licensees to diagnose and correct interference problems. Such cooperation may require Licensee to temporarily reduce or shut down transmit power to help diagnose problems.

(g) When the City Representative, based on inquiry and evaluation, becomes aware of a potential or existing interference problem caused directly or indirectly, wholly or partially, by the Licensed System, the City may require Licensee to reimburse City for the cost of an Interference Study to include radio frequency measurements. The purpose of this Interference Study is to identify the problem and determine if the problem is caused directly or indirectly, wholly or partially, by the Licensed System. This Interference Study shall be conducted by a consulting engineer selected by

the Fire Chief after consultation with Licensee and the City Representative. In the event there are additional licensees operating at the Fire Station, Licensee shall pay for a pro rata share of the costs of the Interference Study, unless Licensee is determined to be solely responsible for the interference, in which case Licensee shall pay all costs and expenses. Pro rata share shall be determined by dividing the costs by the number of non-City licensees operating at the Fire Station.

(h) When necessary to correct interference problems, as determined by the Chief in the Chief's reasonable discretion, Licensee agrees, at its sole cost and expense, to install cavity-type bandpass filters, notch filters, isolators, or other state-of-the-art equipment. These equipment items are in addition to the minimum equipment of the Minimum Technical Standards. The minimum equipment items shall be installed regardless.

(i) Licensee shall ensure that its frequencies used for the operation of the Licensed System do not interfere with any operation of the Fire Station, including without limitation interference with public safety or the City System. Licensee shall provide documentation of the frequencies that it is authorized to use and is using for the Licensed System. Licensee shall not occupy any frequencies that they are not using for the purposes of blocking other licensees from operating. Licensee shall be responsible for conducting an RF scan to verify there will be no interference with other systems. This shall occur prior to Licensee turning on the Licensed System and shall be documented by a third-party vendor and submitted to the City Representative. Once City Representative has reviewed this documentation, the City Representative will give notice to Licensee that it can turn on its Licensed System. If the City Representative is not satisfied with the details of the study, the City Representative will give notification to Licensee as to what needs to be remedied before notice to proceed will be given.

(j) If Licensee's equipment or operations cause RF Interference, as determined by the Fire Chief in the Fire Chief's reasonable discretion, including without limitation interference with the City System, and if the interference is not eliminated within ten (10) days after written notice from the Fire Chief, then City may, at Licensee's sole cost and expense, temporarily turn off the power to the Licensed System. The City Representative shall contact Licensee at the time the Licensed System needs to be deactivated so Licensee can facilitate the effort to deactivate the Licensed System, isolate any interference, and turn the Licensed System back on with minimal interruption. Licensee, at its sole cost and expense and subject to the requirements of section 5.06, shall (i) have the right to make such repairs, maintenance, replacements or adjustments to the Licensed System as may be reasonably necessary to prevent such interference, and (ii) have the right to conduct intermittent tests of the Licensed System at times mutually agreeable to the City Representative to determine if the Licensed System will continue to cause such interference.

(k) The City requires that Licensee operate its Licensed System with no interference to other licensees' systems. Any unresolved disputes regarding the cause or resolution of specific interference problems or complaints must be evaluated by an independent third party selected by the Fire Chief who is competent to evaluate the potential causes of the interference and the measures required for its resolution. If it is determined that interference to the equipment, frequencies or channels of Licensee or other licensees operating at the Fire Station is a result of the non-compliance of those facilities with the Minimum Technical Standards, it shall be the responsibility of Licensee or other licensees to resolve the interference in accordance with the Minimum Technical Standards. If the interference continues when these facilities are brought into compliance with the Minimum

Technical Standards, then it shall be Licensee's responsibility to take whatever measures are necessary to resolve the interference promptly and effectively or disengage the operation of the Licensed System until the interference is resolved to the satisfaction of the City Representative.

### **5.03 Operational Test Procedures.**

The following test procedures shall be approved by City prior to or during, whichever is applicable, Licensee's operation of the Licensed System.

- (a) Perform a desktop interference study to include all frequencies to be used by Licensee to ensure no interference is likely from intermodulation products or out-of-band emissions.
- (b) Verify the results of the Interference Study by conducting appropriate measurements of the installed systems.
- (c) If problems are found, make recommendations for additional filtering, channel changes, greater antenna separation, or other fixes, as necessary.

### **5.04 Changes to Licensed System.**

- (a) Licensee shall provide prior written notice to the Fire Chief of any proposed change that would require cutting through existing concrete. All reviews of proposed changes shall be subject to such process as prescribed by the Fire Chief and undertaken by the City Representative.
- (b) Any proposed changes which are significant (as reasonably determined by the Fire Chief) will require a review of the current lease rate and may result in an additional License Fee being charged to Licensee and possible other changes to the terms and conditions of the Agreement. These changes, along with any addition, relocation or replacement of antennae or other equipment outside the Licensed Property, shall require an amendment to the Agreement which must be approved in the same manner as this Agreement. Notwithstanding the foregoing, Licensee's addition of ground/base station equipment to the Licensed System within the Licensed Area as well as any maintenance actions, repair or replacement any other equipment comprising the Licensed System with "like-for-like" equipment shall not be considered significant and thus requiring an amendment to this Agreement Changes or occupation or use of areas outside of the Licensed Property which are not authorized as provided herein will be considered to be in breach of this Agreement.
- (c) All such changes shall be subject to the Minimum Technical Standards and the installation and operational conditions set forth in this Agreement. The approval form must be attached to the scope of work and stamped structural drawings sheets (not separate). All contractors, subcontractors and vendors must have a copy of the signed approval sheets to present to the officer in charge of the Fire Station, before any work may begin.

### **5.05 Repairs and Maintenance; Removal.**

- (a) The maintenance, care, repair, alteration, enhancement or replacement of the Licensed System or infrastructure within the Licensed Area shall be made by Licensee at its sole cost and

expense. Licensee covenants and agrees during the Term or Term Extension of this Agreement, after the installation of the Licensed System and occupancy of the Licensed Area, that Licensee:

(1) shall keep the System in good order and condition, and will make all necessary and appropriate repairs or changes thereof if approved as required in section 5.04 above;

(2) shall not permit rubbish, debris, waste materials or anything unsightly or detrimental to health, or likely to create a fire or explosion hazard, or conducive to deterioration, to remain in any part of the Licensed Area or the Fire Station or to be disposed of improperly;

(3) shall at all times maintain the Licensed System in accordance with Applicable Law, the Minimum Technical Standards, FCC requirements, and manufacturer's specifications;

(4) shall promptly repair any and all damage to, among other things, the structures, equipment and surrounding property at the Fire Station which result from Licensee's installation and operation of its Licensed System including, but not limited to, any leaks or physical damage as a result of roof penetrations or other physical penetrations or structural damage to the building or structures, including the significant reduction in the useful life of buildings or structures or any parts thereof, caused by the Licensed System or its operation and/or other workmen and maintenance and repair activities involving the Licensed System;

(5) shall store tools, test equipment and work materials only in areas at the Fire Station approved by the City Representative; and

(6) shall restore any damage resulting from roof or other building penetrations and actions or omissions of the License in the Licensed Area or at the Fire Station so that the damaged property is restored to original condition.

(b) Removal of the Licensed System by Licensee may only occur only upon expiration of the Agreement or Cancellation, as provided by this Agreement or as part of the process of a replacement of the Licensed System as authorized under this Agreement.

(c) If Licensee should be of the opinion that repair, alteration or replacement of the tower is needed ("Alteration"), Licensee shall submit in writing a request to the Fire Chief explaining the perceived need for the Alteration. The Fire Chief shall determine whether such Alteration is warranted and, if so, who should make and pay for or the Alteration or how the cost of the Alteration is to be shared. Any obligation of the City to perform the work shall be strictly contingent upon approvals, including contracts, required by Applicable Law and obtaining all funding needed for the Alteration. If Licensee proposes to make and pay for the Alterations, it should provide plans and a budget with the request submitted to the Fire Chief.

#### **5.06 Right to Enter, Inspect and Make Repairs and Improvements.**

(a) The City and its authorized officers, employees, agents, contractors, subcontractors and other representatives shall have the right (at such times as may be reasonable under the circumstances and with as little interruption of Licensee's operations as is reasonably practicable) to access Licensee's equipment for the following purposes:

(1) to inspect such equipment at reasonable intervals during regular business hours (or at any time in case of Emergency or urgent need to protect the City System) to determine whether Licensee has complied and is complying with the terms and conditions of this Agreement;

(2) to perform maintenance and make repairs and replacements in cases where Licensee is obligated but has failed to do so, after the City has given Licensee reasonable notice so to do and an opportunity to cure. In the event that Licensee fails to cure within thirty (30) days of receipt of such notice (unless the nature of the cure is such that an extension of said period is necessary beyond thirty (30) days is necessary this period may be extended if Licensee diligently pursues completion of said cure) then City can proceed with repairs. In such event, event Licensee shall reimburse the City for the reasonable cost thereof within thirty (30) days of Licensee's receipt of City's invoice accompanied by reasonable substantiation of the costs incurred. The City shall have the right to seek recovery of the cost of the maintenance or repair by any judicial remedy available should Licensee fail to pay the cost of the repair. Under no circumstances will City attempt to repair or alter in any way Licensee's operational equipment such as base station radios, other electronic equipment, alarm systems, antennas, coaxial cable, DAS, UPS, etc.; however, this restriction shall not limit the City in performing inspections and repairs and protecting the City System and the Fire Station as provided in this Agreement.

(b) The City reserves the right at all times to take any action it deems necessary, in its sole discretion, to repair, maintain, alter, expand, or improve the City System and the Fire Station and the improvements thereon in connection with their use and operation. The City agrees to give reasonable advance notice of any such activities to Licensee and to reasonably cooperate with Licensee to carry out such activities with a minimum amount of interference to Licensee's use of the Licensed Area. Licensee agrees to cooperate with the City respect to such repairs, maintenance, alterations, expansions, or improvements and to accommodate such work to the extent the City deems necessary and at Licensee's sole expense.

#### **5.07 Utilities.**

(a) Licensee shall be responsible for arranging for all utility services needed for the Licensed System, including separately metered electrical service, and for paying for all service, connection, taxes, fees, surcharges and other charges associated with or resulting from the utility services for the Licensed System. Licensee shall be responsible to install all utility service locations in compliance with all applicable laws, codes and regulations and subject to the requirements of section 5.04 above and the installation requirements of section 4.03 above.

(b) Licensee shall be responsible for providing and properly maintaining and replacing, subject to the requirements of section 5.04 above and the installation requirements of section 4.03 above, an independent ventilation, heating and air conditioning system for those portions of the Licensed System, if any, that are expressly required by the manufacturer of the System to maintain manufacturer's warranties based upon Licensee's installation of the Licensed System at the Fire Station.

#### **5.08 Interruption of Utility Services.**

(a) Licensee agrees that City shall not be liable for failure of any utility services to be supplied to the Licensed System or for any interruption of utility services to the Licensed System caused by third parties.

(b) The City reserves the right to temporarily interrupt utility services at such time as may be necessary by reason of accident, unavailability of employees, repairs, alterations or improvements or whenever by reason of *force majeure*, including any state of Emergency declared by the President of the United States, the Governor of the State of Colorado, or the Mayor of the City and County of Denver for which such interruption is reasonable for security and public safety reasons. The City shall not be liable for operational or business losses or for damages to persons or property due to such interruptions. Nor shall such interruptions in any way be construed as cause for abatement of the License Fee, unless caused by the demonstrated gross negligence or intentional misconduct of the City or its agents, contractors or employees.

(c) No backup power supplies shall be placed within the Licensed Area or elsewhere on City property without the prior, written approval of the City Representative and after obtaining any required permits, licenses or approvals for such backup power supplies.

## **SECTION 6**

### **INSURANCE; INDEMNITY and DEFENSE; GOVERNMENTAL IMMUNITY; LIMITS ON LIABILITY; and TAXES, LICENSES, LIENS AND FEES**

#### **6.01 Insurance.**

(a) (1) General Conditions: Licensee agrees to secure, at or before the time of execution of this Agreement, the following insurance covering all operations, goods or services provided pursuant to this Agreement. Lessee shall keep the required insurance coverage in force at all times during the term of the Agreement, including any extension thereof, and during any warranty period. The required insurance shall be underwritten by an insurer licensed or authorized to do business in Colorado and rated by A.M. Best Company as "A-VII" or better. Upon receipt of notice from its insurer(s), Licensee shall provide the City with thirty (30) days prior written notice of cancellation of any required coverage. Such notice shall be sent by first class mail and shall reference the City's contract number. Licensee shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Agreement and these requirements do not lessen or limit the liability of the Licensee. The Licensee shall maintain, at its own expense, any additional kinds or amounts of insurance that it may deem necessary to cover its obligations and liabilities under this Agreement.

(b) Proof of Insurance: Licensee shall provide a copy of this Agreement to its insurance agent or broker. Licensee may not commence work or uses relating to the Agreement prior to placement of coverage. Licensee certifies that the certificate of insurance attached as **Exhibit D**, preferably an ACORD certificate, provided by Licensee complies with all insurance requirements of this Agreement. The City requests that the City's contract number be referenced on the certificate of insurance. The City's acceptance of a certificate of insurance or other proof of insurance that does not comply with all insurance requirements set forth in this Agreement shall not act as a waiver of Licensee's breach of this Agreement or of any of the City's rights or remedies

under this Agreement. In the event of a claim arising out of this Agreement, the Denver Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements.

(c) Additional Insureds: For Commercial General Liability and Auto Liability, Licensee's insurer(s) shall include the City and County of Denver, its elected and appointed officials, employees and volunteers as additional insured as their interest may appear under this Agreement.

(d) Waiver of Subrogation: For all required coverages, Licensee's insurer shall waive subrogation rights against the City.

(e) Subcontractors: Licensee shall require all subcontractors and subconsultants (including independent contractors, suppliers or other entities providing goods or services under this Agreement) to obtain and maintain substantially the same coverages required of Licensee. Licensee agrees to provide proof of insurance for all such subcontractors and subconsultants upon request by City.

(f) Workers' Compensation/Employer's Liability Insurance: Licensee shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of \$100,000 per accident for bodily injury, \$100,000 disease each employee, and \$500,000 disease policy limit.

(g) Commercial General Liability: Licensee shall maintain a Commercial General Liability insurance policy with combined single limits of \$1,000,000 per occurrence for bodily injury and property damage including contractual liability, \$2,000,000 for each personal and advertising injury claim, \$2,000,000 products and completed operations aggregate, and \$2,000,000 general aggregate.

(h) Automobile Liability: Lessee shall maintain Automobile Liability in an amount of \$1,000,000 combined single limit each accident for bodily injury and property damage covering all owned, hired and non-owned vehicles used at the Leased Premises.

(i) Property Insurance: Lessee shall provide 100% replacement cost for Lessee's tenant improvements and personal property. Business Interruption coverage shall be included with limits not less than the annual payments due to the City under the term of the agreement. Lessee understands and acknowledges that the City does not provide any insurance coverage for any property of the Lessee, its agents, employees or assignees located in the Leased Premises and Lessee acknowledges and agrees that the Lessee, its agents, employees and assignees have no claim against the City for any damage or loss of personal property and belongings of Lessee, its agents, employees or assignees in the Leased Premises

(j) Failure to comply with the requirements of this section 6.01 shall be legal grounds under this Agreement for work by Licensee at the Fire Station to be ordered to cease or to be restricted, as deemed appropriate by the Fire Chief or the Denver Risk Management Office, until compliance is achieved and any unpaid claims are resolved to the reasonable satisfaction of the

City Representative and the Denver Risk Management Office. These insurance obligations shall survive the expiration of the Agreement and Cancellation.

## **6.02 Indemnification & Defense.**

(a) Licensee hereby agrees to defend, indemnify, and hold harmless City, its appointed and elected officials, agents and employees against all liabilities, claims, judgments, suits or demands for damages to persons or property arising out of, resulting from, or relating to regarding the use and occupancy of, and activities and operations on, the Fire Station site by Licensee (including its officers, employees, representatives, suppliers, contractors, subcontractors and agents) under this Agreement (“Claims”), unless such Claims have been specifically determined by the trier of fact to be the sole negligence or willful misconduct of City. This indemnity shall be interpreted in the broadest possible manner to indemnify City for any acts or omissions of Licensee (including its officers, employees, representatives, suppliers, contractors, subcontractors and agents) either passive or active, irrespective of fault, including City’s concurrent negligence whether active or passive, except for the sole negligence or willful misconduct of City.

(b) Licensee’s duty to defend and indemnify City shall arise at the time written notice of the Claim is first provided to City regardless of whether an action has been filed in court on the Claim. Licensee’s duty to defend and indemnify the City shall arise even if City is the only party sued and/or it is alleged that City’s negligence or willful misconduct was the sole cause of the alleged damages.

(c) Licensee will defend any and all Claims which may be brought or threatened against City and will pay on behalf of City any expenses incurred by reason of such Claims including, but not limited to, court costs and attorney fees incurred in defending and investigating such Claims or seeking to enforce this indemnity obligation. Such payments on behalf of City shall be in addition to any other legal remedies available to City and shall not be considered City’s exclusive remedy.

(d) Insurance coverage requirements specified in this Agreement shall in no way lessen or limit the liability of Licensee under the terms of this indemnification obligation. Licensee shall obtain, at its own expense, any additional insurance that it deems necessary for City’s protection.

(e) This indemnification and defense obligation shall survive the expiration of this Agreement and Cancellation.

## **6.03 Colorado Governmental Immunity Act.**

Licensee understands and agrees that City is relying upon, and has not waived, the monetary limitations and all other rights, immunities and protection provided by the Colorado Governmental Act, § 24-10-101 *et seq.*, C.R.S., and any related statutory protections against liability.

## **6.04 Limitation on Liability.**

Licensee agrees that no liability shall attach to the City for any damages or losses incurred or claimed by Licensee or any other person or party on account of the installation, construction or operation of the Licensed System by Licensee. Licensee agrees that it shall not in any way seek damages or make any claims against the City for any interference or delay caused by construction in

adjacent areas, other businesses or operations, including without limitation damages or losses in the nature of delay damages, lost labor productivity, and impact damages.

#### **6.05 Environmental Requirements.**

(a) Licensee and its contractor(s) and subcontractor(s) shall obtain all federal, state, and local environmental permits necessary for the work to be performed and shall comply with all applicable federal, state, and local environmental permit requirements applicable to the work. Licensee and its contractor(s) and subcontractor(s) shall comply with all applicable local, state, and federal environmental guidelines, rules, regulations, statutes, laws, and orders applicable to the work (collectively, “Environmental Requirements”), including but not limited to Environmental Requirements regarding the storage, use, transportation, and disposal of Hazardous Materials and regarding releases or threatened releases of Hazardous Materials to the environment.

(b) The term “Hazardous Materials” shall mean asbestos, asbestos-contaminated soils, and asbestos-containing materials, special wastes, polychlorinated biphenyls (PCBs), any petroleum products, natural gas, radioactive source material, pesticides, any hazardous waste as defined at 42 U.S.C. § 6903(5) of the Solid Waste Disposal Act, any hazardous substance as defined at 42 U.S.C. § 9601(14) of the Comprehensive Environmental Response, Compensation and Liability Act, and chemical substance as defined at 15 U.S.C. § 2602(2) of the Toxic Substances Control Act, and any guidelines issued and rules or regulations promulgated pursuant to such statutes, or any other applicable federal or state statute.

(c) No Hazardous Materials shall be brought onto, or stored on, the Fire Station site without the prior, written approval of the City Representative and, if required by the City Representative, the prior, written approval of the Denver Department of Environmental Health and/or the Colorado Department of Public Health and Environment.

(d) The obligations of Licensee set out in this section 6.04 shall survive the expiration of the Agreement and Cancellation. Licensor represents, warrants and agrees that Licensor will not, and will not permit any third party to use, generate, store or dispose of any Hazardous Material on, under, about or within the Fire Station in violation of any law or regulation.

#### **6.05 Taxes, Licenses, Liens and Fees.**

(a) Licensee agrees to promptly pay all taxes, excises, license fees and permit fees of whatever nature applicable to its operations hereunder and to take out and keep current all municipal, state or federal licenses required for the conduct of its business or operations under this Agreement and further agrees not to permit any of said taxes, excises, license fees or permit fees to become delinquent.

(b) Licensee also agrees not to permit any mechanic’s or materialman’s or any other lien to become attached or be foreclosed upon the Fire Station or the tower, or improvements thereto, or any part or parcel thereof, by reason of any work or labor performed or materials furnished by any mechanic or materialman for Licensee, as contractors or subcontractors.

(c) Licensee further agrees to promptly pay when due all bills, debts and obligations incurred by it in connection with its operations hereunder, and not to permit the same to become delinquent and to suffer no lien, mortgage, judgment or execution to be filed against the Fire Station, the tower, the City System, the Licensed System, or related improvements, which may in any way impair the rights of the City under this Agreement or to the City's property.

(d) The obligations of Licensee set out in this section 6.05 shall survive the expiration of the Agreement and Cancellation.

#### **6.06 No Waiver.**

No failure of the City to insist upon the strict performance of a term, covenant or agreement contained in this Agreement shall be deemed or taken to be a waiver by the City of any succeeding failure to perform or any breach or default.

### **SECTION 7 CITY RIGHTS**

#### **7.01 City's Rights.**

(a) City shall retain all the rights to the use, occupancy and ownership of the tower; and such use, occupancy and ownership by the City shall be the primary use of the Fire Station and shall not be interfered with by the exercise of the rights granted hereunder during the Term or Term Extension of the Agreement, except to the extent interference shall be a result of Licensee's reasonable uses and actions in the installation, inspection, maintenance, alteration, repair, replacement, operation and removal of the Licensed System as authorized under this Agreement; provided, however, that Licensee shall be liable to the City for any damage to improvements that may result from such installation, inspection, maintenance, alteration, repair, replacement, operation and removal.

(b) If the City desires Licensee to leave in place any modifications made by Licensee to the tower and so states in a written notice to Licensee, then Licensee shall leave such modifications in place without compensation from or to the City. If Licensee is required to remove the modifications and does not restore damage resulting from said removal and thereby causing the City to have to undertake the restoration, then Licensee shall promptly reimburse the City for the work.

(c) The City specifically reserves for itself, other lessees, licensees and assignees of City, all rights which do not materially and adversely interfere with Licensee's exercise of its License under this Agreement; provided, however, the City will not materially and adversely interfere with, and will not knowingly permit or allow other licensees to materially and adversely interfere with, the rights of Licensee under the terms of this Agreement except to the extent expressly provided in this Agreement.

(d) Upon expiration of the Agreement or Cancellation or on the date specified in any

demand for possession by the City after any default by Licensee (after any applicable notice and cure periods), Licensee covenants and agrees to surrender possession of the Licensed Area and all other parts of the Fire Station site to the City in the same condition as when first occupied, ordinary wear and tear excepted but subject to the repair and restoration requirements provided in this Agreement.

(e) Licensee shall remove, at its sole cost, upon expiration of the Agreement or Cancellation, the Licensed System and all of Licensee's personal property within thirty (30) calendar days after expiration or Cancellation, as applicable. If such removal should damage the or Tower, Licensee agrees, at its sole cost, to immediately repair such damage in a good and workmanlike manner and to put the property in the same condition as it would have been if the Licensed System had not been installed, reasonable wear and tear excepted but subject to the repair and restoration requirements provided in this Agreement. If Licensee fails to remove the Licensed System and Licensee's personal property within thirty (30) calendar days after the expiration of this Agreement or Cancellation, as applicable, the City, at its option, may remove, store and/or dispose of same and retain any proceeds therefrom, and further is entitled to recover any cost incurred by the City in removing same and in restoring the Tower.

(f) If Licensee holds over after the expiration of this Agreement or Cancellation, and so long as the Licensed System is still situated on the Fire Station site (even if it has been disconnected), Licensee shall pay to City a holdover fee equal to 200% of the then total License Fee prorated from the effective expiration or Cancellation date, whichever is applicable, to the date the Licensed System is properly and completely removed from the property. Nothing herein shall be construed to give Licensee the right to hold over at any time, and the City may exercise any and all remedies at law or in equity to recover possession of the Property, as well as any damages caused by Licensee.

**SECTION 8  
LOSS OF AND LIABILITIES  
PERTAINING TO THE LICENSED SYSTEM**

**8.01 Damage or Destruction and Restoration.**

In case of damage or loss of all or any portion of the Licensed System or the Tower, Licensee will give prompt notice thereof to the City; and, except as otherwise provided herein, Licensee shall promptly commence and complete with due diligence (subject to delays beyond its control), the restoration of the Licensed System or the Tower as nearly as reasonably practicable to the value and condition thereof immediately prior to such damage or destruction. In the event of such damage or destruction, Licensee shall be entitled to use or receive reimbursement from the proceeds of all property insurance policy or policies held by Licensee for the Licensed System or by the City for the Tower and shall be obligated to provide any additional moneys necessary for such restoration. The License Fee payable under section 3.01 shall continue to be due and owing.

**8.02 Licensee's Election Not to Restore Damaged Licensed System.**

In case of the damage or destruction of all or any part of the Licensed System, Licensee, within ninety (90) days thereafter, may elect not to restore or replace the Licensed System, and this Agreement shall be terminated. Licensee must notify the City within said 90 days of the

damage or destruction to all or any part of the Licensed System of its intentions not to restore or replace the Licensed System and shall pay the City, in full, six (6) months of payments for the License Fee under section 3.01 from the date that the notice not to restore or replace is provided to the City. Licensee shall promptly proceed to remove the Licensed System from the Licensed Property and to repair and restore the Tower in accordance with Section 4 and section 7.01 and as otherwise provided in this Agreement within thirty (30) days after Licensee elects not to restore or replace the Licensed System. If Licensee should fail to repair or restore the Tower as required, the City may restore the Tower, at Licensee's cost and expense, as nearly as reasonably practicable to the value and condition thereof prior to the damage or destruction, and Licensee shall be obligated to timely and fully reimburse the City for the costs and expenses of such repairs and restoration. The obligations of Licensee under this section 8.02 shall survive the expiration of this Agreement and Cancellation.

## **SECTION 9 DEFAULT; REMEDIES; and DISPUTES**

### **9.01 Default.**

Licensee shall be in substantial default under this Agreement if Licensee:

(a) Fails to timely pay to the City on the fifth (5<sup>th</sup>) calendar day after the date License Fee or any other payments are due and owing under this Agreement; provided, however, default shall not occur until the fifth (5<sup>th</sup>) calendar day after written notice is provided by the City to Licensee; or

(b) Becomes insolvent, or takes the benefit of any present or future insolvency or bankruptcy statute, or makes a general assignment for the benefit of creditors, or consents to the appointment of a receiver, trustee or liquidator of any or substantially all of its property; or

(c) Transfers its interest under this Agreement, unless such transfer is specifically authorized pursuant to section 10.01; or

(d) Fails to submit or fails to timely submit complete and accurate plans and specifications, bonds, proof of insurance and other submittals as required by the express terms of this Agreement, and such failure continues for a period of fifteen (15) calendar days after Licensee has received written notice from the City of such failure; or

(e) Abandons, deserts or vacates the Licensed System or Licensed Area; or

(f) Suffers any materialmen's or mechanic's lien or attachment to be filed against the Licensed System, the City System, the Tower, or the Fire Station because of any act or omission of Licensee, and such lien or attachment is not discharged or contested by Licensee in good faith by proper legal proceedings within thirty (30) calendar days after Licensee's receipt of written notice thereof from City; or

(g) Fails to keep, perform and observe any other promise, covenant or agreement set forth

in this Agreement and such failure continues for a period of more than thirty (30) calendar days after delivery by City of a written notice of such breach or default, except where a shorter period is specified herein, or where fulfillment of its obligation requires activity over a period of time and Licensee within thirty (30) days of Licensee notice Licensee commences in good faith to perform whatever may be required to correct its failure to perform and continues such performance without interruption except for causes beyond its control (which must be documented in a written notice to the City); or

(h) Gives its permission to any person to use for any illegal or unauthorized purpose any portion of the City's property made available to Licensee for its use under this Agreement.

(i) Or any of its officers or employees are convicted, plead nolo contendere, enter into a formal agreement in which they admit guilt, enter a plea of guilty, or otherwise admit culpability to criminal offenses of bribery, kickbacks, collusive bidding, bid-rigging, antitrust, fraud, undue influence, theft, racketeering, extortion or any offense of a similar nature, in connection with the Licensee's business or operations in the State of Colorado.

City shall be in substantial default under this Agreement if Licensor fails to keep, perform and observe any other promise, covenant or agreement set forth in this Agreement and such failure continues for a period of more than thirty (30) calendar days after delivery by Licensee of a written notice of such breach or default, except where a shorter period is specified herein, or where fulfillment of its obligation requires activity over a period of time and City within thirty (30) days of City's notice City commences in good faith to perform whatever may be required to correct its failure to perform and continues such performance without interruption except for causes beyond its control (which must be documented in a written notice to the Licensee).

## **9.02 Remedies.**

If Licensee substantially defaults in any of the covenants, terms and conditions herein and such default is not cured within any applicable notice and cure periods, the City may exercise any one or more of the following remedies:

(a) The City may elect to allow this Agreement to continue in full force and effect and to enforce all of City's rights and remedies hereunder, including without limitation the right to collect compensation as it becomes due together with interest or recover any damages or losses resulting from the action or inaction of Licensee.

(b) The City may engage in Cancellation and repossess the Licensed Area, without liability for so doing and without having to comply with any eviction process under state law, upon giving thirty (30) calendar days written notice to Licensee of the intended Cancellation, at the end of which time all the rights hereunder of Licensee shall terminate, unless the default shall have been cured as prescribed in section 9.01 or elsewhere in this Agreement. Licensee shall be liable to the City for all amounts owing to the City or any other party with respect to Licensee's operations at the Fire Station or under this Agreement.

(c) The remedies provided in this Agreement shall be cumulative and shall in no way affect any other remedy available to the City under law or equity. The obligations of Licensee under

this section 9.02 shall survive the expiration of the Agreement and Cancellation.

(d) In the event of a Licensor default, Licensee may terminate the Agreement and/or pursue any remedy now or hereafter available to it under the laws or judicial decisions of the state in which the Licensed Area is located.

### **9.03 Dispute Resolution.**

The Parties agree to work diligently together and in good faith, using reasonable efforts to resolve any unforeseen issues and disputes and to expeditiously take such actions as are necessary and appropriate to perform the duties and obligations of this Agreement. Any dispute between the City and Licensee, including whether a default by Licensee is substantial or has been timely and effectively cured, shall be taken to administrative hearing, pursuant to the procedure established by Section 56-106, DRMC. For the purpose of that procedure, the City official rendering a final determination shall be the Executive Director of the Denver Department of Safety.

## **SECTION 10 MISCELLANEOUS PROVISIONS**

### **10.01 Assignments.**

(a) Licensee shall not assign or otherwise transfer its interest in this Agreement, in whole or in part, or otherwise transfer any rights or interest in or to the License granted under this Agreement, without the prior written consent of the Fire Chief, which consent can be given or denied in Fire Chief's sole discretion, and subject to approval, under section 10.16 below, of an amendment to this Agreement authorizing the assignment. The Fire Chief may require any proposed assignee to demonstrate that it is appropriately licensed and authorized to provide the same services as Licensee and has the ability to perform the terms and conditions of this Agreement including any financial obligations under this Agreement.

(b) Notwithstanding the foregoing, Licensee may assign this Agreement, and the License granted herein, in whole, to any business entity which is parent, subsidiary, affiliate of Licensee, or to any party that acquires all or substantially all of Licensee's radio spectrum assets in the Denver market area, by reason of a merger, acquisition or other business reorganization. The burden shall be on Licensee to demonstrate, to the satisfaction of the Fire Chief, that any proposed assignment qualifies under this sub-section 10.01(b).

(c) The License granted under this Agreement may not be sold under any circumstances. Any contract entered by Licensee to sell or convey the License granted herein shall not be binding on the City and shall be grounds for terminating the Agreement, at the discretion of the Fire Chief.

(d) Under no circumstances shall Licensee be authorized to allow any other licensee or sub-licensee to co-locate or operate any system at the Fire Station or the Tower.

### **10.02 Fair Dealing; Further Assurances.**

(a) In all cases where the consent or approval of one Party is required before the other may act, or where the agreement or cooperation of the Parties is separately or mutually required as a legal or practical matter, then in that event the Parties agree that each will act in a fair and reasonable manner with a view to carrying out the intents and goals of this Agreement as the same are set forth herein, subject to the terms hereof.

(b) From time to time, upon the request of a Party, the other Party agrees to make, execute and deliver or cause to be made, executed and delivered to the requesting Party any and all further instruments, certificates and documents consistent with the provisions of this Agreement as may, in the reasonable opinion of the requesting Party, be necessary or desirable in order to effectuate, complete or perfect the rights of said Party under this Agreement, provided said requesting Party is currently in full compliance with the provisions of this Agreement and has tendered or offered to tender any reciprocal instruments, certificates and documents to which the other Party is entitled under the Agreement.

### **10.03 Bond Ordinance.**

This Agreement and the rights granted or conveyed hereby are in all respects subject and subordinate to any and all City bond ordinances related to the Fire Station and to any other bond ordinances which should amend, supplement or replace such bond ordinances. The parties agree that, the Bond Ordinances permit the terms of this Agreement as written and that Licensee shall comply with all IRS regulations and take no action that would jeopardize the tax exempt status of the Bonds. This Agreement has been approved by the City's Bond Counsel, attached hereto as **Exhibit E**. This Agreement may not be executed and may not be amended in the future without prior written approval of the City's Bond Counsel.

### **10.04 Financial Interests.**

Except for financial interests authorized by the City in accordance with the City Charter and ordinances, any financial interests created in, or used to secure financing and payment for the costs of, any work performed or improvements made under this Agreement, including but not limited to any bonds, certificates of participation, purchase agreements, and Uniform Commercial Code filings, shall expressly exclude from such debt or financial security contained in such financial instrument(s) any title, rights and interests held by the City in the property subject to this Agreement. The terms and conditions of this Agreement must be expressly recognized in any such financial instrument(s) created or entered by or on behalf of Licensee, which must specifically acknowledge and affirm that any financial interests created by the financial instrument(s) are subordinate to this Agreement and may not encumber the City's title, rights and interests in the subject property or under this Agreement.

### **10.05 Appropriation.**

Notwithstanding any provision of this Agreement to the contrary, the rights and obligations of the City under this Agreement are contingent upon all funds necessary for work or expenditures contemplated under this Agreement being budgeted, appropriated and otherwise made available by the City. The Parties acknowledge that this Agreement is not intended to create a multiple-fiscal year direct or indirect debt or financial obligation of the City, except to the extent that capital improvement

funds that are lawfully appropriated can be lawfully carried over to subsequent years.

#### **10.06 Contracting or Subcontracting.**

Any work that is allowed to be contracted or subcontracted under this Agreement shall be subject, by the terms of the contract or subcontract, to every provision of this Agreement. Compliance with this provision shall be the responsibility of the Party who arranged the contract or authorized the subcontract. Except as otherwise expressly stated in this Agreement, no Party shall be liable or have a financial obligation to or for any contractor, subcontractor, supplier, or other person or entity with which the other Party contracts or has a contractual arrangement.

#### **10.07 Third Parties.**

This Agreement does not, and shall not be deemed or construed to, confer upon or grant to any third party or parties any right to claim damages or to bring any suit, action or other proceeding against either the City or Licensee because of any breach hereof or because of any of the terms, covenants, agreements and conditions herein.

#### **10.08 Force Majeure.**

Neither Party hereto shall be liable to the other for any failure, delay or interruption in the performance of any of the terms, covenants or conditions of this Agreement due to causes beyond the reasonable control of that Party, including without limitation strikes, boycotts, labor disputes, embargoes, shortages of materials, acts of God, acts of the public enemy, acts of superior governmental authority, severe weather conditions, fire, floods, riots, rebellion, sabotage or any other circumstance for which such Party is not responsible or which is not in its power to control, but in no event shall this section be construed so as to allow Licensee to reduce or abate its obligation to pay the License Fee prescribed in this Agreement.

#### **10.09 No Discrimination in Employment.**

In connection with the performance of work under the Agreement, the Subrecipient may not refuse to hire, discharge, promote, demote, or discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, ethnicity, citizenship, immigration status, gender, age, sexual orientation, gender identity, gender expression, marital status, source of income, military status, protective hairstyle, or disability. The Subrecipient shall insert the foregoing provision in all subcontracts.

#### **10.10 Conflict of Interest.**

The Parties agree that no official, officer or employee of the City shall have any personal or beneficial interest whatsoever in the services or property described herein, and Licensee further agrees not to hire or contract for services any official, officer or employee of the City or any other person which would be in violation of the Denver Revised Municipal Code Chapter 2, Article IV, Code of Ethics, or Denver City Charter provisions 1.2.9 and 1.2.12.

#### **10.11 Applicable Law; Authority; Venue; Enforcement; and Claims.**

(a) The Parties agree to comply with all Applicable Law in existence as of the Effective Date of this Agreement or as may be subsequently enacted or adopted and become applicable.

(b) This Agreement shall be construed and enforced in accordance with the laws of the United States, the State of Colorado, and the applicable provisions of the Charter and Revised Municipal Code of the City and County of Denver.

(c) Venue for any legal action relating to this Agreement shall lie in the District Court in and for the City and County of Denver.

(d) The Parties agree that this Agreement may be enforced in law or in equity for specific performance, injunctive, or other appropriate relief, including actual damages (notwithstanding Cancellation), as may be available according to the laws and statutes of the State of Colorado; provided, however, the Parties agree to and hereby release any claims for incidental, consequential, or punitive damages; provided, further, no provision of this Agreement may be enforced by the creation or recording of any type of lien against real property owned by the City, nor may any foreclosure process be utilized to recover any moneys owed by the City to Licensee. It is specifically understood that, by executing this Agreement, each Party commits itself to perform pursuant to these terms and conditions contained in this Agreement, and that any failure to comply which results in any recoverable damages shall not cause, by itself, the revocation or termination of any rights or obligations under this Agreement.

(e) Nothing in this section 10.11 shall be construed as a waiver, release, reduction or modification of any insurance, bond, indemnification or other liability obligations of Licensee or Licensee's design professional, contractor or sub-contractor expressly provided for in this Agreement.

(f) No official, officer, director, agent, or employee of either Party shall be charged personally or held contractually liable to the other Party or its officials, officers, directors, agents, or employees under any term or condition of this Agreement or for any breach, default, or violation under this Agreement.

(g) In the event that any claim, demand, suit, or action is made or brought in writing by any person or entity against one of the Parties related in any way to this Agreement, the Party in receipt of same shall promptly notify and provide a copy of said claim, demand, suit, or action to the other Party.

#### **10.12 Use, Possession or Sale of Alcohol or Drugs; Smoking Policy.**

(a) Licensee and its officers, agents, employees, and contractors shall cooperate and comply with the provisions of the City and County of Denver's policy or order or any successor policy or order concerning the use, possession or sale of alcohol or drugs on City property.

(b) Licensee and its officers, agents, employees, and contractors shall cooperate and comply with the provisions of the City's policy or order prohibiting smoking in buildings and certain

facilities, and Licensee agrees it will take reasonable action to prohibit smoking by its employees in the public areas of the Fire Station.

**10.13 Notices.**

All notices hereunder must be in writing and shall be deemed validly given if sent by certified mail, return receipt requested or by commercial courier, provided the courier's regular business is delivery service and provided further that it guarantees delivery to the addressee by the end of the next business day following the courier's receipt from the sender, addressed as follows (or any other address that the Party to be notified may have designated to the sender by like notice):

To the City:

Fire Chief of the Denver Fire Department  
City and County of Denver  
745 West Colfax Avenue  
Denver, CO 80204

City Attorney's Office  
City and County of Denver  
1437 Bannock Street, Room 353  
Denver, Colorado 80202

To Licensee:

**VERIZON WIRELESS**

Cellco Partnership  
d/b/a Verizon Wireless  
180 Washington Valley Road  
Bedminster, New Jersey 07921  
Attention: Network Real Estate

Notice shall be effective upon actual receipt or refusal as shown on the receipt obtained pursuant to the foregoing. All proposed amendments to the Agreement, letter approvals for proposed actions by Licensee, proposed changes to the exhibits, and any document or affidavit seeking the signature of the Fire Chief or the Executive Director of Safety, shall be provided to both the Fire Chief and the City Attorney's Office. Licensee and City shall designate local contact personnel for operational and otherwise day-to-day business communications which may be made by telephone or email. Any changes to this contact information shall be provided immediately once known.

**10.14 Examination of Records.**

Licensee agrees that any duly authorized representative of the City, including the City

Auditor or his representative, until the expiration of three (3) years after expiration of this Agreement or Cancellation, shall have access to and the right to examine any directly pertinent books, documents, papers and records of Licensee related to this Agreement, excluding Licensor's technical and proprietary information.

#### **10.15 Parties' Obligation Regarding Confidential Information.**

The Parties agree that issues governing the use and disclosure of Confidential Information, as defined below, provided to or made available to the City by Licensee will be governed by the following provisions:

(a) As used herein, the term "Confidential Information" means all information, of any nature and in any form, regardless of when given, that (i) is disclosed or provided by or through Licensee to the City pursuant to performance of this Agreement; and (ii) has been clearly marked or indicated in writing as being confidential by Licensee; provided, that no part of this Agreement or the exhibits attached to this Agreement shall be deemed to contain Confidential Information. Information falling within this definition shall be treated by the City as confidential proprietary information of Licensee pursuant to the provisions of the Colorado Open Records Act and under any rule of court. Information not so marked or indicated will not be so considered.

(b) Except as expressly provided in this Agreement or as otherwise mandated by the Colorado Open Records Act or other applicable law, the City will not disclose Confidential Information to anyone other than individuals designated by the Fire Chief, including the City Representative, without the prior written consent of Licensee. The City will not use, or permit others to use, Confidential Information for any purpose other than actions incidental to the performance and enforcement of this Agreement between the City and Licensee, including but not limited to auditing of records of Licensee by the City Auditor and/or other representatives of the City. The City will take all reasonable measures to avoid disclosure, dissemination or unauthorized use of Confidential Information, including, at a minimum, those measures that it takes to protect its own Confidential Information of a similar nature.

(c) The Parties recognize that the mere marking of a document as "Confidential" does not render it conclusively confidential under the Colorado Open Records Act. Consequently, in the event that the City is served with an Open Records Request or subpoena from any third party requesting all or part of any Confidential Information as defined herein, the City shall give timely notice to Licensee of such request or subpoena within the time parameters of the Colorado Open Records Act or of any applicable court rule. In that event, Licensee agrees upon receipt of actual notice from the City of such Open Records Request or subpoena to immediately undertake, at its own cost and expense, to defend such Confidential Information from disclosure pursuant to the Colorado Open Records Act or applicable court rule and shall defend, save and hold harmless and indemnify the City and its agents and employees with respect to such issues.

(d) Licensee shall not at any time or in any manner, either directly or indirectly, divulge, disclose or communicate to any person, firm or corporation in any manner whatsoever any information concerning any matters which are not subject to public disclosure, including

without limitation the trade secrets of businesses or entities doing business with the City, security measures utilized by the City, and other privileged or confidential information.

**10.16 Entire Agreement; Amendment.**

The Parties acknowledge and agree that the provisions contained herein, including all exhibits attached hereto, constitute the entire agreement and that all representations made by any officer, agent or employee of the respective Parties unless included herein are null and void and of no effect. No alterations, amendments, changes or modifications, unless expressly reserved to the City herein, shall be valid unless executed by an instrument in writing by all the Parties with the same formality as this Agreement.

**10.17 Severability.**

If any term or provision of this Agreement is held by a court of law (following all legal rights of appeal or the expiration of time therefore) to be illegal or unenforceable or in conflict with any law of the State of Colorado or the City Charter or City ordinance, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the Parties shall be construed and enforced as if the Agreement did not contain the particular term or provision held to be invalid; provided, however, if the invalidated term or provision was a critical or material consideration of either Party in entering this Agreement, the Parties shall work together, in good faith, to come up with an amendment to this Agreement that substantially satisfies the previously intended consideration while being in compliance with Applicable Law and the judgment of the court. Judicial invalidation of the License Fee, in whole or part, shall result in a failure of consideration and termination of this Agreement.

**10.18 Time of Essence.**

The Parties agree that in the performance of the terms and requirements of this Agreement by Licensee and the City, time is of the essence.

**10.19 Section Headings.**

The section headings herein are for convenience in reference only and are not intended to define or limit the scope of any provision of this Agreement.

#### **10.20 Approval and Execution of Agreement.**

This Agreement is expressly subject to and shall not be or become effective or binding on the City until City Council approval, if required by Charter, is obtained and the Agreement is fully executed by all required City signatories and all required Licensee signatories.

#### **10.21 Authority.**

Each Party represents and warrants that it has taken all actions that are necessary or that are required by its applicable law to legally authorize the undersigned signatories to execute this Agreement on behalf of the Party and to bind the Party to its terms. The person(s) executing this Agreement on behalf of each Party warrants that he/she/they have full authorization to execute this Agreement. The City shall have the right, in its discretion, to either temporarily suspend or permanently terminate the Agreement if there is any valid dispute as to the legal authority of Licensee or the person signing this Agreement on behalf of Licensee to enter into this Agreement.

#### **10.22 Electronic Signatures and Electronic Records.**

Licensee consents to the use of electronic signatures by the City. The Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

**Contract Control Number:**  
**Contractor Name:**

FINAN-202366867-00  
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at  
Denver, Colorado as of:

**SEAL**

**CITY AND COUNTY OF DENVER:**

**ATTEST:**

By:

\_\_\_\_\_

\_\_\_\_\_

**APPROVED AS TO FORM:**

**REGISTERED AND COUNTERSIGNED:**

Attorney for the City and County of Denver

By:

By:

\_\_\_\_\_

\_\_\_\_\_

By:

\_\_\_\_\_

**Contract Control Number:**  
**Contractor Name:**

FINAN-202366867-00  
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

By:           Please see attached signature page          

Name: \_\_\_\_\_  
(please print)

Title: \_\_\_\_\_  
(please print)

ATTEST: [if required]

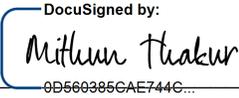
By: \_\_\_\_\_

Name: \_\_\_\_\_  
(please print)

Title: \_\_\_\_\_  
(please print)

**Contract Control Number:**  
**Contractor Name:**

FINAN-202366867-00  
CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

By:  \_\_\_\_\_  
0D560385CAE744G...

Name: Mithun Thakur  
(please print)

Title: Executive Director Network Engineering  
(please print)

ATTEST: [if required]

By: \_\_\_\_\_

Name: \_\_\_\_\_  
(please print)

Title: \_\_\_\_\_  
(please print)

# EXHIBIT A – LICENSED SYSTEM AND LOCATION



**SITE NAME: DEN GIBRALTER**  
**PROJECT SMR - LS6**  
**SITE I.D.#: 028**  
**PROJECT #: 20212223571**  
**LOCATION #: 181602**  
**SITE ADDRESS: 4800 HIMALAYA RD. DENVER, CO 80249**

**verizon**  
 VERIZON WIRELESS SERVICES  
 10000 PARK MEADOWS DR., STE. 300  
 LONE TREE, CO 80124  
**PROJECT INFORMATION**  
 SITE NAME  
**DEN GIBRALTER**  
 SITE I.D.  
**028**  
 4800 HIMALAYA RD.  
 DENVER, CO 80249  
 CONSULTANT

PENETRATIONS  
 ANTENNAS  
 LEASE AREA  
 EXISTING EASEMENT  
 ACCESS/UTILITY EASEMENT  
 GEN. CONST./UTILITY EASEMENT  
 O/P/IELEC. EQ.  
 POWER/GROUNDING  
 MW/FIBER EQ.  
 FIBER  
 BB/URR/H  
 HYBRID & COAX CABLES

**EXISTING CONDITIONS**



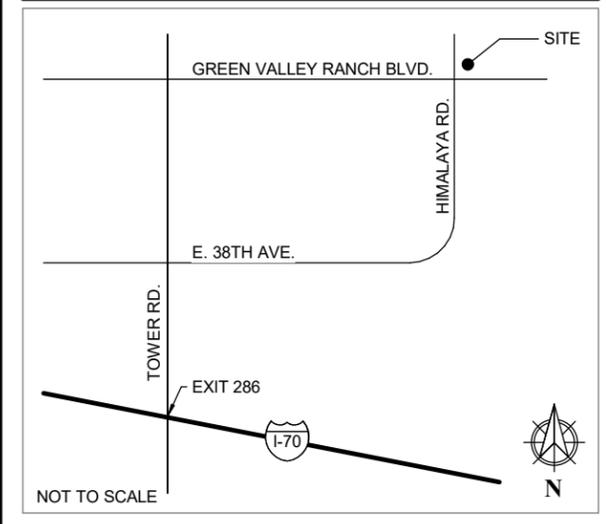
**PROJECT DESCRIPTION**

- REMOVE (9) EXISTING ANTENNAS AND REPLACE WITH (12) NEW VERIZON WIRELESS ANTENNAS ON EXISTING TOWER
- REMOVE, REPLACE AND ADD EQUIPMENT AT ANTENNAS AND INSIDE EXISTING CABINETS
- REMOVE AND REPLACE EXISTING BATTERIES IN EXISTING BATTERY CABINET
- RECONFIGURE EXISTING CABINETS FOR NEW BATTERY RACKS AND SHELVES
- INSTALL (2) NEW 50A RECTIFIERS IN EXISTING PDF
- REMOVE (1) EXISTING 6x12 HYBRID CABLE AND REPLACE WITH (2) NEW 12x24 HYBRID CABLES
- REMOVE (12) VERIZON WIRELESS COAX

**PROJECT TEAM**

<b>OWNER</b> CITY & COUNTY OF DENVER MIKE STUTZ 201 W. COLFAX AVE. SUITE 401 DENVER, CO PHONE: 720.913.2404	<b>CLIENT</b> VERIZON WIRELESS CONSTRUCTION ENGINEER BRYAN WIDMAN 10000 PARK MEADOWS DR. SUITE 300 LONE TREE, CO 80124 PHONE: 816.519.2202	<b>RF ENGINEER</b> VERIZON WIRELESS DANG LE 10000 PARK MEADOWS SUITE 300 LONE TREE CO, 80124 PHONE: 720.585.9175	<b>SITE ACQUISITIONIST</b> Q3 CONSULTING, INC HERB QUINTANA PHONE: 303.915.4556	<b>ARCHITECT</b> CSAI SEAN PENDLETON, NCARB 5935 S. ZANG STREET SUITE 280 LITTLETON, CO 80127 CELL: 303.519.4707 OFFICE: 303.932.9974	<b>STRUCTURAL</b> OTEGUI STRUCTURAL SERVICES, LLC MICHAEL OTEGUI 8842 WEST POWERS PLACE LITTLETON, CO 80123 PHONE: 720.981.5333
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**VICINITY MAP**



**DIRECTIONS**

- FROM DENVER, CO
- I-25 N. TO I-70 E.
  - EXIT 214A FOR I-70 E.
  - RIGHT AT FORK FOR I-70 E./LIMON
  - STAY LEFT TO CONTINUE ON EXIT 275B AND MERGE ON I-70 E.
  - STAY LEFT TO SAY ON I-70 E.
  - EXIT 286 FOR TOWER RD.
  - RIGHT ON GREEN VALLEY RANCH BLVD.
  - STAY RIGHT TO CONTINUE ON GREEN VALLEY RANCH BLVD.
  - LEFT ONTO HIMALAYA RD.
  - SITE IS BEHIND FIREHOUSE

**PROJECT DATA**

JURISDICTION	CITY & COUNTY OF DENVER
APN	00221100021000
ZONING DESIGNATION	C-MU-20

<b>EXISTING CABINETS</b>	U
OCCUPANCY GROUP	V-B, NEMA -R
CONSTRUCTION TYPE	NO
FULLY SPRINKLERED	NO

GOVERNING CODES:  
 2018 IBC, 2018 IFC, 2018 IMC, 2018 IECC, 2020 NEC & 2019 DBCA

A.D.A. COMPLIANCE  
 THIS FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

**DRAWING INDEX**

SHEET	DESCRIPTION
T1.00	TITLE SHEET
T1.10	PROJECT PHOTOS
G1.00	GENERAL NOTES
G1.10	BATTERY HAZMAT REVIEW
A1.00	SITE PLAN & HYBRID CABLE DIAGRAM
A2.00	EQUIPMENT PLAN
A2.10	ANTENNA PLANS & NOTES
A3.00	NORTH ELEVATION
A3.10	EAST ELEVATION
A4.00	DETAILS
A4.10	RACK ELEVATIONS
A5.00	GROUNDING SCHEMATIC

**ATTACHMENTS:**  
 TOPOGRAPHIC SURVEY  
 BY: CALVADA SURVEYING, INC.  
 DATE: 05/24/06

STRUCTURAL AMA  
 BY: MASER CONSULTING  
 DATED: 05/23/22

STRUCTURAL ANALYSIS  
 BY: OTEGUI STRUCTURAL SERVICES, LLC.  
 DATED: 04/04/22

**NOTE:**  
 DRAWING PREPARED PER RFDS PROVIDED  
 BY VERIZON WIRELESS 05/16/22

**CONTRACTOR PMI REQUIREMENTS**

PMI ACCESSED AT	HTTPS://PMI.VZWSMART.COM
SMART TOOL VENDOR PROJECT NUMBER	10147479
V2W LOCATION CODE (PSLC)	181602
*** PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT	
MOUNT MODIFICATION	YES

**V2W APPROVED SMART KIT VENDORS**

REFER TO MOUNT MODIFICATION DRAWINGS PAGE FOR V2W SMART KIT APPROVED VENDORS

**BATTERY UPGRADE DATA**

BATTERY UPGRADE REQUIRED	YES	NOTES	ATTACHMENTS
	YES	RE: G1.10 & A2.00	N/A
STRUCTURAL LOADING REQUIRED	NO	CONCRETE SLAB ON GRADE	N/A

**EME COMPLIANCE**

EXISTING POSTING	COMPLIANT	BY	DATE
	YES	OTHERS	UNKNOWN
UPGRADES	NEEDED	BY	DATE
	NO	WATERFORD	07/25/22

A	07/15/21	CD REVIEW	GOB
B	04/13/22	CLIENT COMMENTS	JT
C	04/28/22	CLIENT COMMENT	JT
D	08/02/22	CLIENT COMMENTS	JDC
0	08/11/22	CLIENT COMMENTS	JDC

1st REVIEW NRD 2nd REVIEW SGP



**TITLE SHEET**

**T1.00**

PROJECT INFORMATION  
SITE NAME  
**DEN GIBRALTER**  
SITE I.D.  
**028**  
4800 HIMALAYA RD.  
DENVER, CO 80249  
CONSULTANT

A	07/15/21	CD REVIEW	GOB
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1st REVIEW NRD 2nd REVIEW SGP

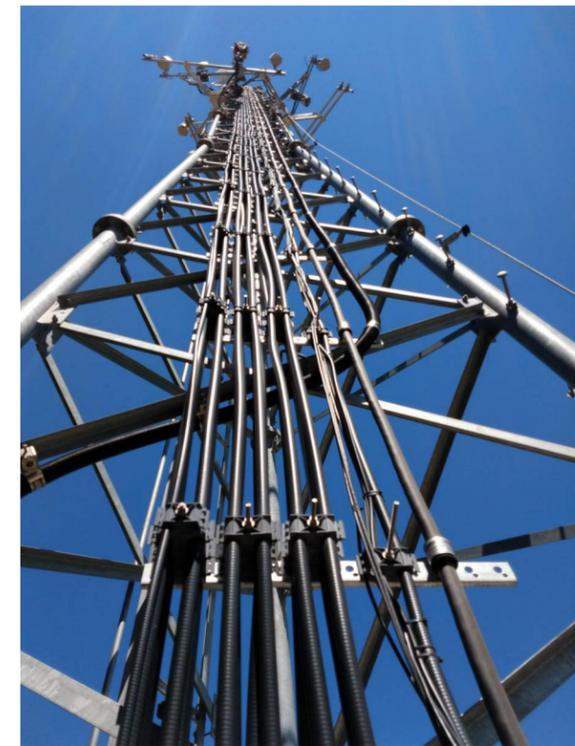


5935 SOUTH ZANG STREET, SUITE 280  
LITTLETON, COLORADO 80127  
OFFICE: 303.932.9974

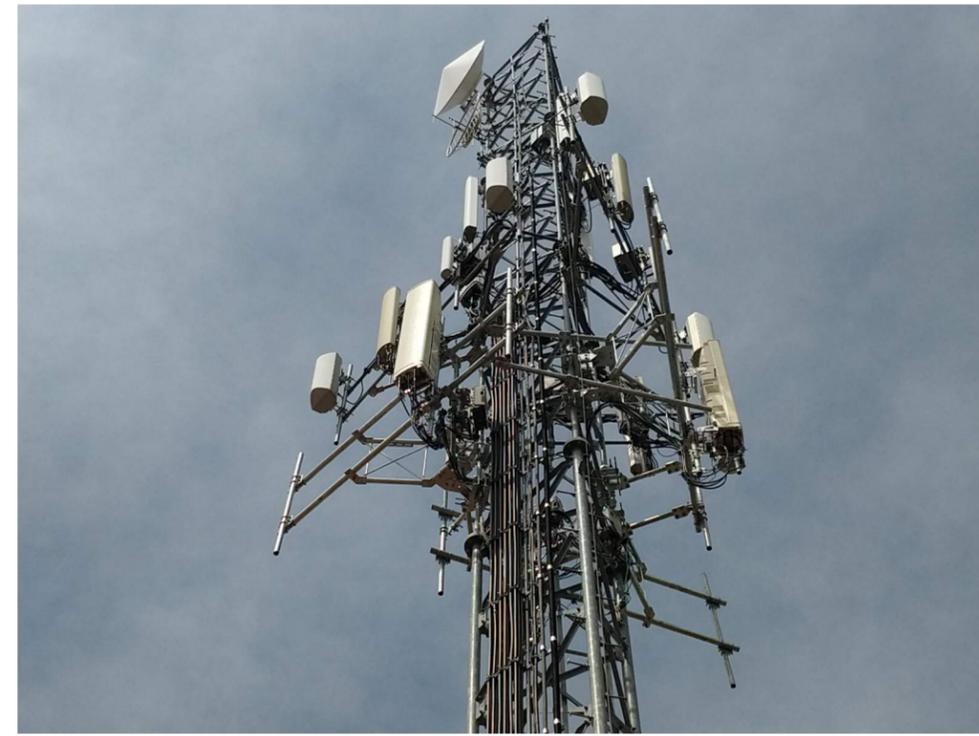


PROJECT PHOTOS

**T1.10**



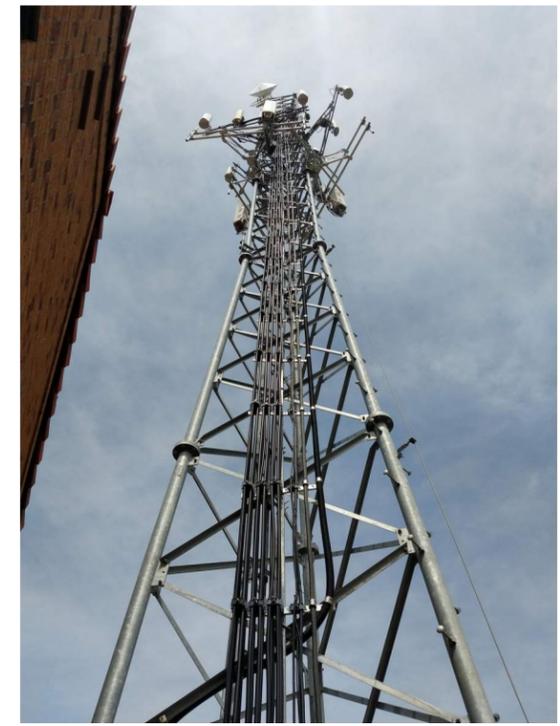
2 - VERTICAL COAX RUN



1 - TYPICAL SECTOR



4 - CABINETS



3 - TOWER

- BBU/RRH HYBRID & COAX CABLES
- MW/FIBER EQ. FIBER
- OV/PELEC. EQ. POWER/GROUNDING
- ACCESS/UTILITY EASEMENT GEN. CONST./UTILITY EASEMENT
- LEASE AREA EXISTING EASEMENT
- ANTENNAS
- PENETRATIONS



VERIZON WIRELESS SERVICES  
10000 PARK MEADOWS DR. STE. 300  
LONE TREE, CO 80124

PROJECT INFORMATION

SITE NAME  
**DEN GIBRALTER**  
SITE I.D.  
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4800 HIMALAYA RD.  
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0	08/11/22	CLIENT COMMENTS	JDC

1st REVIEW NRD 2nd REVIEW SGP



5935 SOUTH ZANG STREET, SUITE 280  
LITTLETON, COLORADO 80127  
OFFICE: 303.932.9974



GENERAL NOTES

**G1.00**

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, AND THIS SET OF PLANS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSES ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, AND ANYTHING ELSE DEEMED NECESSARY TO COMPLETE INSTALLATIONS AS DESCRIBED HEREIN. REFER TO BID PACKAGE FOR MORE DATA.

2. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT WITH THE CONSTRUCTION AND CONTRACT DOCUMENTS, FIELD CONDITIONS AND CONFIRM THAT THE PROJECT MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY ERRORS, OMISSIONS, OR DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/CONSTRUCTION ENGINEER IN WRITING.

3. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.

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

5. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S, VENDOR'S, & SPECIFIC CARRIER SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE NOTIFY CONSTRUCTION ENGINEER.

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

7. THE STRUCTURAL COMPONENTS OF THIS PROJECT SITE/FACILITY ARE NOT TO BE ALTERED BY THIS CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.

8. NEW TOWERS ARE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION SUBCONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF PERSONNEL AND PROPERTY FROM HAZARDOUS EXPOSURE TO OVERHEAD DANGERS.

9. GENERAL CONTRACTOR SHALL PROVIDE AT THE PROJECT SITE A FULL SET OF PERMITTED CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

10. DETAILS INCLUDED HEREIN ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS OR SITUATIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE SCOPE OF WORK.

11. THE FACILITY IS CELLULAR RADIO EQUIPMENT, ANTENNAS, & SUPPORTING UTILITIES.

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

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

14. THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. CONTRACTORS BIDDING THE JOB ARE NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CONSTRUCTION ENGINEER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL.

15. SPECIAL INSPECTION TESTING REQUIRING SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT SPECIAL INSPECTOR PER SECTION 1704 OF THE INTERNATIONAL BUILDING CODE (IBC) FOR ITEMS NOTED ON S1.00 IF INCLUDED IN CONSTRUCTION DOCUMENTS. THE INSPECTOR SHALL BE HIRED BY THE CONTRACTOR & COORDINATION SHALL BE ARRANGED BY THE CONTRACTOR FOR REQUIRED INSPECTIONS.



UNDERGROUND SERVICE ALERT  
UTILITY NOTIFICATION CENTER OF COLORADO  
1-800-922-1987  
WWW.UNCC.ORG

3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

ABBREVIATIONS

°@	AT	H.M.	HOLLOW METAL
	CENTERLINE	HORZ.	HORIZONTAL
	DEGREES	HR.	HOUR
∅	DIAMETER	HT.	HEIGHT
A/C	AIR CONDITIONER	ILC	INTEGRATED LOAD CENTER
APPROX.	APPROXIMATE	INT.	INTERIOR
ARCH.	ARCHITECTURAL		
A.F.F.	ABOVE FINISH FLOOR	L.F.	LINEAR FEET
A.F.G.	ABOVE FINISH GRADE	LTE	LIMIT TO EXTEND
ALU	ALCATEL LUCENT		
ATS	AUTOMATIC TRANSFER SWITCH	MAX.	MAXIMUM
AWS	ADVANCED WIRELESS SYSTEM	MECH.	MECHANICAL
		MFR.	MANUFACTURER
BBU	BASE BAND UNIT	MGB	MAIN GROUND BAR
BCEM	BASE CHANNEL ELEMENT	MIN.	MINIMUM
	MODULE	MSDS	MATERIAL SAFETY DATA SHEET
BLDG.	BUILDING	MTL.	METAL
B.O.	BOTTOM OF	MTS	MANUAL TRANSFER SWITCH
CLG.	CEILING	N.T.S.	NOT TO SCALE
COL.	COLUMN		
CONC.	CONCRETE	O.C.	ON CENTER
		O.D.	OUTSIDE DIAMETER
		OVP	OVER VOLTAGE PROTECTION
DBL.	DOUBLE		
DIA.	DIAMETER		
DIM.	DIMENSION	PCS	PERSONAL COMMUNICATIONS SERVICE
DISC.	DISCONNECT		
DN.	DOWN		
DWG.	DRAWING	RAD.	RADIUS
		R.O.	ROUGH OPENING
		RRH	REMOTE RADIO HEAD
(E)	EXISTING		
EA.	EACH		
ELEV.	ELEVATION	SHTG.	SHEATHING
ELEC.	ELECTRICAL	SIM.	SIMILAR
EQ.	EQUAL	SPEC.	SPECIFICATION
EXT.	EXTERIOR	S.S.	STAINLESS STEEL
		STL.	STEEL
		STRUCT.	STRUCTURAL
F.E.	FIRE EXTINGUISHER		
FIN.	FINISH		
FLR.	FLOOR	T.C.	TEMPERATURE CONTROL
FUT.	FUTURE	TELCO	TELECOMMUNICATIONS
		T.O.	TOP OF
		TYP.	TYPICAL
GA.	GAUGE		
GALV.	GALVANIZED	U.G.	UNDERGROUND
GEN.	GENERATOR	U.N.O.	UNLESS NOTED OTHERWISE
GPS	GLOBAL POSITIONING SYSTEM		
GWB.	GYPSUM WALLBOARD		
		VERT.	VERTICAL
		V.I.F.	VERIFY IN FIELD
		W/	WITH

SYMBOLS LEGEND

---	EASEMENT	
---	LEASE LINE	
---	PROPERTY LINE	
	WOODEN FENCE	
---	CHAIN LINK FENCE	
---	OH (E) OVERHEAD UTILITY	
---	OHE (E) OVERHEAD ELEC.	
---	SS (E) SANITARY SEWER	
---	W (E) WATER LINE	
---	T (E) TELCO CABLE	
---	FIBER (E) FIBER CABLE	
---	E (E) ELECTRICAL	
---	COAX (E) COAX CABLE	

NEW WORK COLOR LEGEND

GENERAL CONSTRUCTION SOW	
HYBRID & COAX CABLES	
DC POWER	
FIBER	
ANTENNAS	
RRH/BBU	
PENETRATIONS	

4 - ABBREVIATIONS, SYMBOLS AND LEGEND

3 - NOT USED

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

THESE DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11X17 SHEET.

CALL BEFORE YOU DIG - COLORADO LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE.

THESE DRAWINGS MAY NOT SHOW ALL UNDERGROUND PIPING AND UTILITIES. THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING ALL EXCAVATION AND OTHER CONSTRUCTION ACTIVITIES.

UTILITY NOTIFICATION CENTER OF COLORADO - 1-800-922-1987

THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES AND UTILITY RELOCATIONS REQUIRED FOR THIS INSTALLATION. THE CONTRACTOR WILL SCHEDULE AND COORDINATE ALL WORK WITH THE OWNER TO ENSURE NO DISRUPTION TO OWNERS OPERATIONS.

SUBCONTRACTORS SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME

2 - GENERAL CONTRACTOR NOTES

1 - GENERAL NOTES

A	07/15/21	CD REVIEW	GOB
B	04/13/22	CLIENT COMMENTS	JT
C	04/28/22	CLIENT COMMENT	JT
D	08/02/22	CLIENT COMMENTS	JDC
0	08/11/22	CLIENT COMMENTS	JDC

1st REVIEW NRD 2nd REVIEW SGP



5935 SOUTH ZANG STREET, SUITE 280  
LITTLETON, COLORADO 80127  
OFFICE: 303.932.9974



**BATTERY HAZMAT REVIEW**

**G1.10**

**KILOWATT CAPACITY AT THIS INSTALLATION**

**27.36 KILOWATT HOURS**

**IFC 1206.2 NOT REQUIRED**

**(IFC 1206.2) STATIONARY LEAD-ACID BATTERY SYSTEMS AND VALVE-REGULATED LEAD-ACID BATTERY SYSTEMS CONTAINING MORE THAN 70 KILOWATT HOURS SHALL COMPLY WITH IFC 1206:**

SPECIFICATIONS AND CONDITIONS

**1. SPILL CONTROL & NEUTRALIZATION (IFC 1206.2.11.5)**

**A. BATTERY NEUTRALIZATION:** FOR VRLA OR OTHER TYPES OF SEALED BATTERIES WITH IMMOBILIZED ELECTROLYTE, THE METHOD AND MATERIAL SHALL BE CAPABLE OF NEUTRALIZING A SPILL OF 3.0 PERCENT OF THE CAPACITY OF THE LARGEST BLOCK IN THE ROOM (SEE CHART) TO A PH BETWEEN 5.0 AND 9.0. **PROVIDE:** ENER-SYS EMERGENCY SPILL KIT MODELS:853620-853615 (OR EQUAL)

**2. THERMAL RUNAWAY:** (IFC 1206.2.10.7) WHERE REQUIRED BY SECTION 1206.2.12, STORAGE BATTERIES SHALL BE PROVIDED WITH A LISTED DEVICE OR OTHER APPROVED METHOD TO PREVENT, DETECT AND CONTROL THERMAL RUNWAY

**3. ROOM VENTILATION:** (IFC 1206.2.11.3) FOR FLOODED LEAD-ACID, FLOODED Ni-CAD AND VRLA BATTERIES, THE VENTILATION SYSTEM SHALL BE DESIGNED TO LIMIT THE MAXIMUM CONCENTRATION OF FAMMABLE GAS TO 25 PERCENT OF THE LOWER FLAMMABILITY LIMIT, OR FOR HYDROGEN, 1.0 PERCENT OF THE TOTAL VOLUME OF THE ROOM.  
PER IEEE 1635 HYDROGEN GENERATION FOR VRLA BATTERIES IS DETERMINED AS:

$$H_{2-RATE} (CFM) = N_c \times C_8 \times 2.82 \times 10^{-7} \quad N_c = \text{NUMBER OF BATTERY CELLS}$$

$$C_8 = 8H \text{ AMPERE CELL RATING TO } 1.75V @ 25^{\circ}C$$

HYDROGEN GENERATION RATE OF THIS INSTALLATION IS (0.002) CFM  
REQUIRED FAN SIZE TO KEEP HYDROGEN BELOW 1% = (0.2) CFM

**4. SIGNAGE:** (IFC 1206.2.8.6) DOORS INTO ROOMS AND BUILDINGS CONTAINING STORED EMERGENCY POWER SUPPLY SYSTEMS SHALL BE PROVIDED WITH APPROVED SIGNS. THE SIGNS SHALL STATE:  
A. THE ROOM CONTAINS ENERGIZED BATTERY SYSTEMS  
B. THE ROOM CONTAINS ENERGIZED ELECTRICAL CIRCUIT  
C. THE BATTERY ELECTROLYTE SOLUTIONS ARE CORROSIVE LIQUIDS.

**5. SEISMIC PROTECTION:** (IFC 1206.2.4) BOLT DOWN / ANCHOR BATTERY BASE W/ (4) 5/8" MASONRY ANCHORS, MIN 4" EMBED INTO CONCRETE FLOOR. MODULAR STEEL SEISMIC FRAME PROVIDED WITH BATTERIES.

**6. SMOKE DETECTION:** (IFC 1206.2.11.2) AN APPROVED AUTOMATIC SMOKE DETECTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 907.2 IN ROOMS CONTAINING STATIONARY BATTERY SYSTEMS.

**7. NO SMOKING SIGNS** SHALL BE PROVIDED ON DOORS LEADING INTO BATTERY ROOMS. PLACARDS SHALL BE PROVIDED ACCORDING TO NFPA 704. PLACARDS POSTED ON THE INTERIOR OF THE FACILITY SHALL BE A MINIMUM 10 INCHES EACH SIDE AND PLACARDS POSTED ON THE EXTERIOR SHALL BE A MINIMUM 15 INCHES EACH SIDE. RE: A5.00



**8. SAFETY CAPS** (IFC 1206.2.10.6) VRLA BATTERIES SHALL BE EQUIPPED WITH SELF-RESEALING FLAME ARRESTING SAFETY VENTS.

**1 - BATTERY HAZMAT REVIEW**

CABINET VENTILATION NOTE:

**1206.2.8.7 OUTDOOR INSTALLATIONS.**

STATIONARY STORAGE BATTERY SYSTEMS LOCATED OUTDOORS SHALL COMPLY WITH SECTIONS 1206.2.8.7 THROUGH 1206.2.8.7.4, IN ADDITION TO ALL APPLICABLE REQUIREMENTS OF SECTION 1206.2. INSTALLATIONS IN OUTDOOR ENCLOSURES OR CONTAINERS THAT CAN BE OCCUPIED FOR SERVICING, TESTING, MAINTENANCE AND OTHER FUNCTIONS SHALL BE TREATED AS BATTERY STORAGE ROOMS.

**EXCEPTION:** STATIONARY BATTERY ARRAYS IN NONCOMBUSTIBLE CONSTRAINTERS SHALL NOT BE REQUIRED TO BE SPACED 3 FEET (914 MM) FROM THE CONTAINER WALLS.

**1206.2.8.7.1 SEPARATION.**

STATIONARY STORAGE BATTERY SYSTEMS LOCATED OUTDOORS SHALL BE SEPARATED BY MINIMUM 5 FEET (1524 MM) FROM THE FOLLOWING:

1. LOT LINES.
2. PUBLIC WAYS.
3. BUILDINGS.
4. STORED COMBUSTIBLE MATERIALS.
5. HAZARDOUS MATERIALS.
6. HIGH-PILED STOCK.
7. OTHER EXPOSURE HAZARDS.

**EXCEPTION:** THE FIRE CODE OFFICIAL IS AUTHORIZED TO APPROVE SMALLER SEPARATION DISTANCES IF LARGE-SCALE FIRE AND FAULT CONDITION TESTING CONDUCTED OR WITNESSED AND REPORTED BY AN APPROVED TESTING LABORATORY IS PROVIDED SHOWING THAT A FIRE INVOLVING THE SYSTEM WILL NOT ADVERSELY IMPACT OCCUPANT EGRESS FROM ADJACENT BUILDINGS, ADVERSELY IMPACT ADJACENT STORED MATERIALS OR STRUCTURES.

**1206.2.8.7.2 MEANS OF EGRESS.**

STATIONARY STORAGE SYSTEMS LOCATED OUTDOORS SHALL BE SEPARATED FROM ANY MEANS OF EGRESS AS REQUIRED BY THE FIRE CODE OFFICIAL TO ENSURE SAFE EGRESS UNDER FIRE CONDITIONS, BUT NOT LESS THAN 10 FEET (3048 MM).

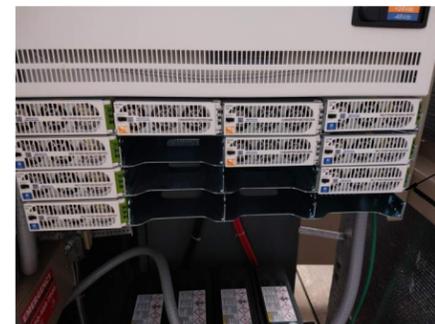
**EXCEPTION:** THE FIRE CODE OFFICIAL IS AUTHORIZED TO APPROVE LESSER SEPARATION DISTANCES IF LARGE-SCALE FIRE AND FAULT CONDITION TESTING CONDUCTED OR WITNESSED AND REPORTED BY AN APPROVED TESTING LABORATORY IS PROVIDED SHOWING THAT A FIRE INVOLVING THE SYSTEM WILL NOT ADVERSELY IMPACT OCCUPANT EGRESS.

**1206.8.7.3 SECURITY OF OUTDOOR AREAS.**

OUTDOOR AREAS IN WHICH STATIONARY STORAGE BATTERY SYSTEMS ARE LOCATED SHALL BE SECURED AGAINST UNAUTHORIZED ENTRY AND SAFEGUARDED IN AN APPROVED MANNER.

**3 - EXTERIOR BATTERY NOTES**

(E) HAZMAT SIGNAGE



INSTALL (2) NEW 50A RECTIFIERS IN (E) PDF



REMOVE & REPLACE (E) BATTERIES WITH NEW DEKA HT200ET RE: 2/G1.10

**4 - HAZMAT & EQUIPMENT IMAGE**

PDF INFORMATION	
RECTIFIERS	CONVERTERS
TYPE: GE INFINITY MODEL: AC/48V 50A	TYPE: GE INFINITY MODEL: DC/24V 75A
(9) RECTIFIERS (4) SPACES	(3) CONVERTERS (4) SPACES
BATTERY SPECIFICATION	
(DEKA FAHRENHEIT HT200ET) EACH CELL HAS A CAPACITY OF (190) AMP-HOURS AND (12) VOLTS PER CELL (12) CELLS IN THIS OCCUPANCY RESULTING IN (27.36) KILOWATT HOURS	
DATE INSTALLED: T.B.D.	

**2 - DATA BLOCK**

PENETRATIONS  
 ANTENNAS  
 LEASE AREA  
 EXISTING EASEMENT  
 ACCESS/UTILITY EASEMENT  
 GEN. CONST. UTILITY EASEMENT  
 OVP/ELEC. EQ.  
 POWER/GROUNDING  
 MW/FIBER EQ.  
 FIBER  
 BB/URRH  
 HYBRID & COAX CABLES

A	07/15/21	CD REVIEW	GOB
B	04/13/22	CLIENT COMMENTS	JT
C	04/28/22	CLIENT COMMENT	JT
D	08/02/22	CLIENT COMMENTS	JDC
0	08/11/22	CLIENT COMMENTS	JDC

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**SITE PLAN & HYBRID CABLE DIAGRAM**

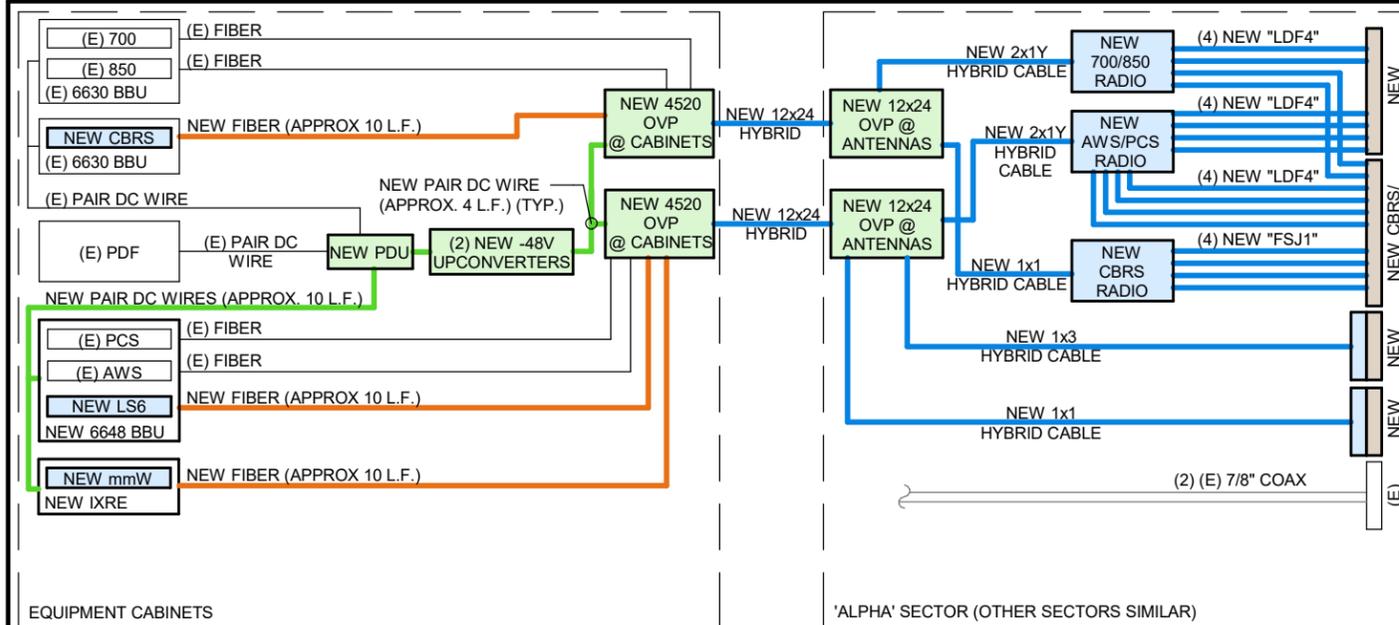
**A1.00**



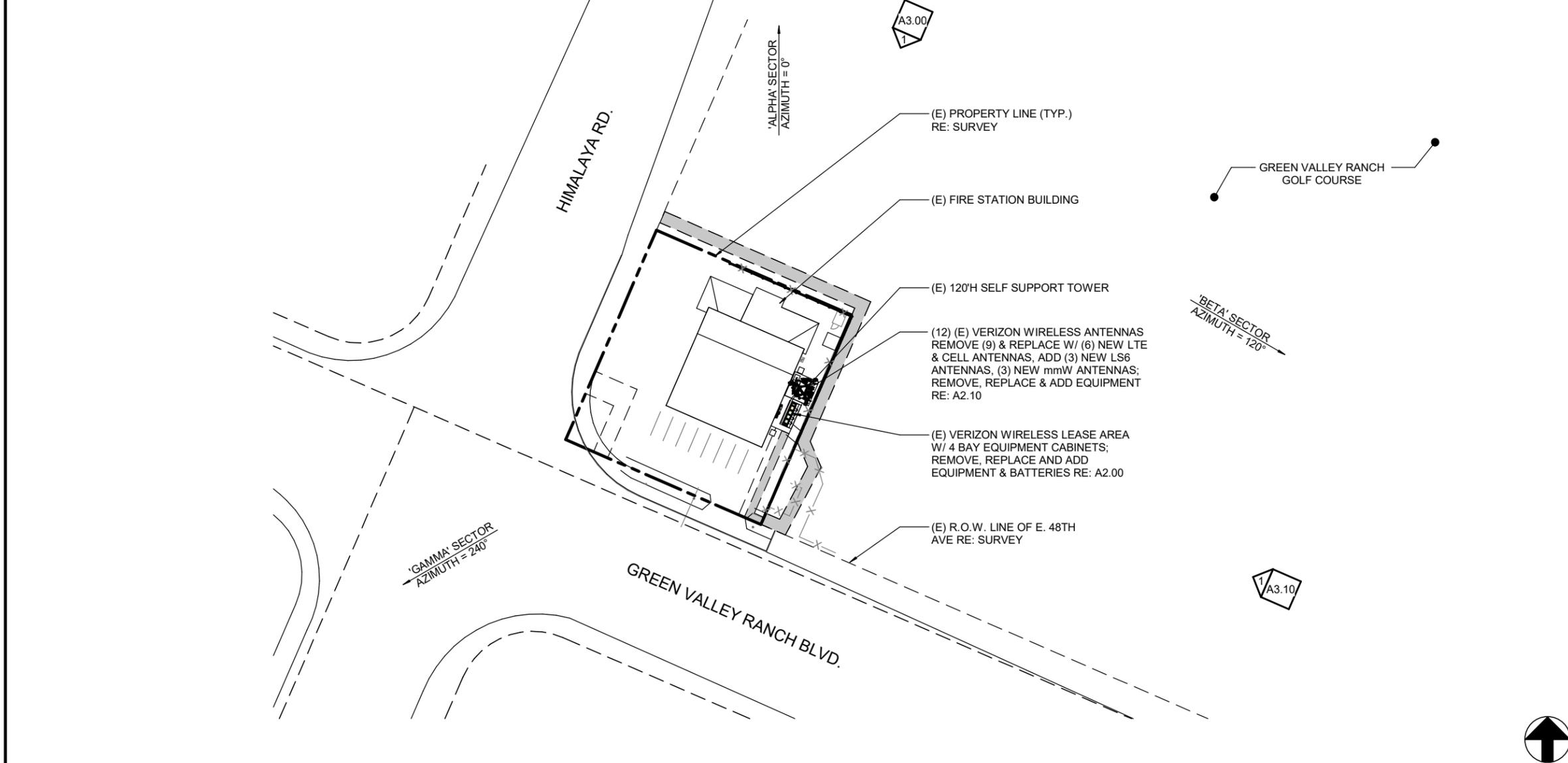
1" = 80'-0"

		RACK OVP @ CABINETS TO MAIN OVP @ ANTENNAS				MAIN OVP TO RRH CONNECTION						
		RACK OVP @ CABINET		MAIN OVP @ ANTENNAS		HYBRID CABLE		CBRs RADIO	AWS/PCS RRH	700/850 RRH	mmW	LS6 ANTENNA/RADIO
SECTOR	QTY.	LENGTH	QTY.	TOTAL WEIGHT	QTY.	LENGTH	QTY.	QTY.	QTY.	QTY.	QTY.	QTY.
'ALPHA'						14'-0"	(5)	(1)	(1)	(1)	(1)	(1)
'BETA'	(2)	130'	(2)	416 LBS	(2)	14'-0"	(5)	(1)	(1)	(1)	(1)	(1)
'GAMMA'						14'-0"	(5)	(1)	(1)	(1)	(1)	(1)

NOTES:  
1. RE: A2.10 FOR NEW ANTENNA CONFIGURATION.  
2. MOUNT CBRs RADIO AS CLOSE TO THE ANTENNA AS POSSIBLE.  
3. HYBRID LENGTH FOR STRUCTURAL CALCULATIONS ONLY. G.C. TO VFY. LENGTH OF HYBRIDS.  
4. USE LOW PIM HARDWARE WITHIN 10' - 0" OF LS6 ANTENNAS.  
5. REMOVE (12) VERIZON WIRELESS COAX.



**2 - HYBRID CABLE DIAGRAM**



**1 - SITE PLAN**

PENETRATIONS  
 ANTENNAS  
 LEASE AREA  
 ACCESS/UTILITY EASEMENT  
 GEN. CONST./UTILITY EASEMENT  
 OVP/ELEC. EQ.  
 POWER/GROUNDING  
 MW/FIBER EQ.  
 FIBER  
 BB/RRH  
 HYBRID & COAX CABLES

PROJECT INFORMATION

SITE NAME

**DEN GIBRALTER**

SITE I.D.

**028**

4800 HIMALAYA RD.  
DENVER, CO 80249

CONSULTANT

A	07/15/21	CD REVIEW	GOB
B	04/13/22	CLIENT COMMENTS	JT
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1st REVIEW NRD 2nd REVIEW SGP



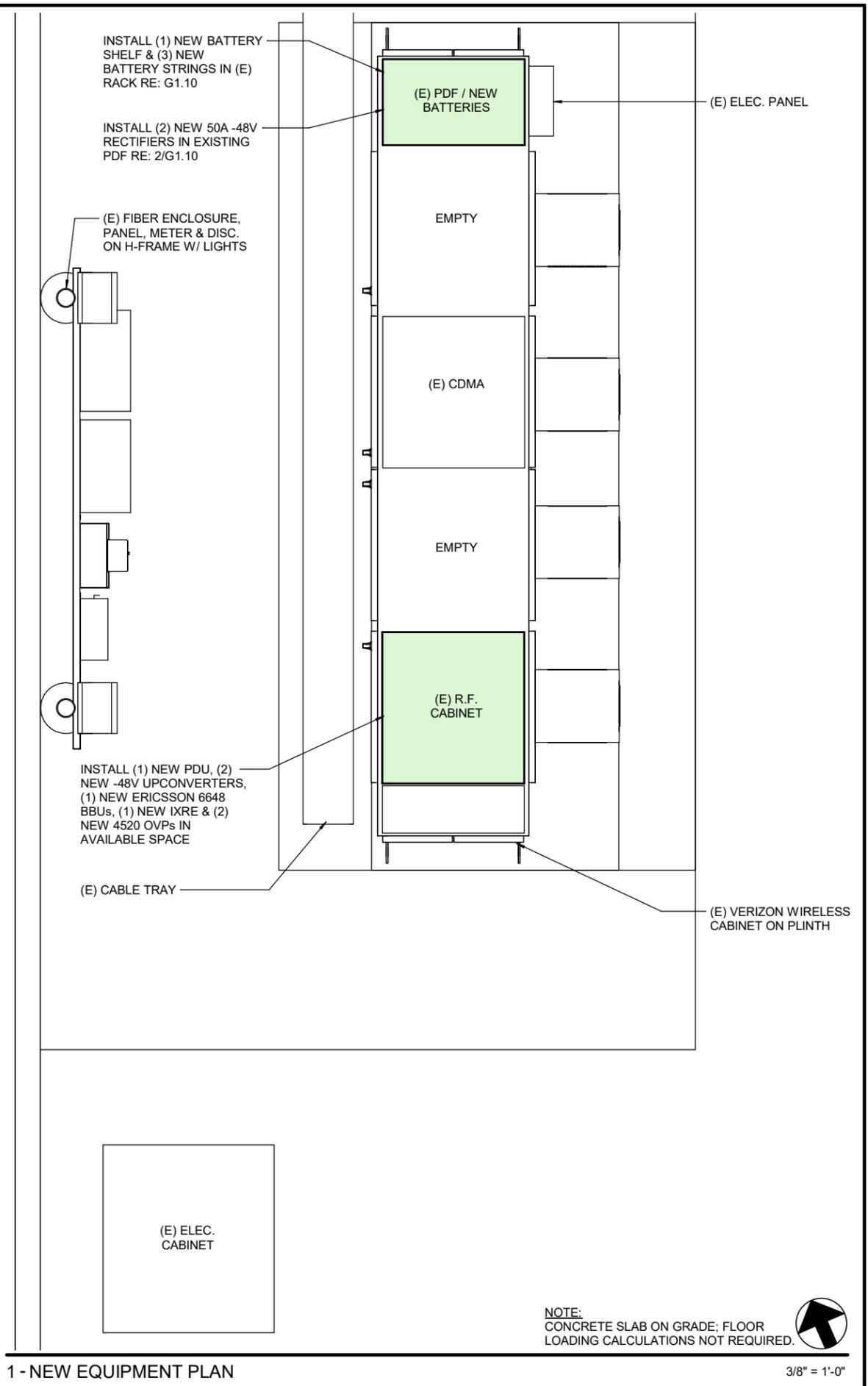
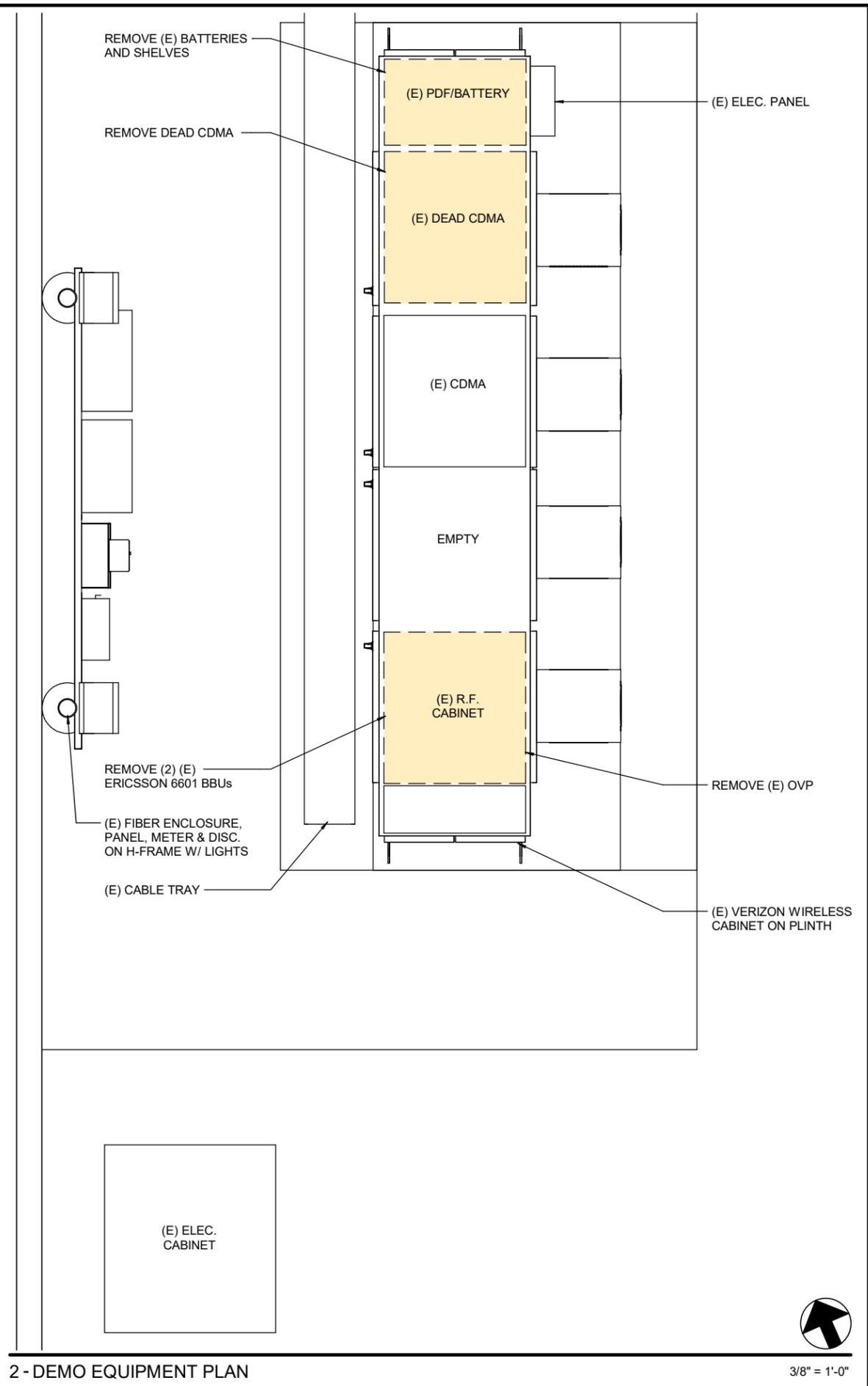
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**EQUIPMENT PLAN**

**A2.00**

■ PENETRATIONS  
■ ANTENNAS  
■ EXISTING EASEMENT  
■ LEASE AREA  
■ ACCESS/UTILITY EASEMENT  
■ GEN. CONST./UTILITY EASEMENT  
■ OVP/ELEC. EQ.  
■ POWER/GROUNDING  
■ MW/FIBER EQ.  
■ FIBER  
■ BB/RRH  
■ HYBRID & COAX CABLES



NOTE:  
CONCRETE SLAB ON GRADE; FLOOR  
LOADING CALCULATIONS NOT REQUIRED.

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ANTENNA PLANS & NOTES

**A2.10**

1. GENERAL:  
PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR RECEIVING, INSTALLING, TESTING AND ADJUSTING ANTENNA CABLES FROM THE ANTENNA TO THE CONNECTORS AT THE BASE TRANSMISSION SYSTEM (BTS). THIS SHALL INCLUDE ALL EQUIPMENT SHOWN OR REQUIRED FOR A COMPLETE OPERATING SYSTEM. ANTENNA, ANTENNA CABLES, CONNECTORS, AND FITTINGS SHALL BE THIRD PARTY FURNISHED COMPONENTS AS SHOWN ON THE BILL OF MATERIALS.

2. MATERIALS:  
A. RE: HYBRID CABLE DIAGRAM FOR ADDITIONAL INFORMATION  
B. CABLE HANGERS: INSTALLED AT MAXIMUM 4' SPACING  
C. GROUND EQUIPMENT PER VERIZON WIRELESS SPECS

3. INSTALLATION:  
A. ANTENNA CABLE LENGTHS SHALL BE FIELD MEASURED PRIOR TO PURCHASE OF CABLE. INSTALLER SHALL NOTIFY VERIZON WIRELESS OF THE OVERALL LENGTH REQUIRED.

B. CABLES SHALL BE LABELED IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS.

C. ALL OUTSIDE CABLE CONNECTIONS SHALL BE COVERED WITH WEATHERPROOFING TAPE.

D. THE MINIMUM BENDING RADIUS FOR ALL ANTENNA CABLES SHALL BE AS SHOWN BELOW OR AS PER THE MANUFACTURER, WHICHEVER IS MORE CONSERVATIVE:

ANTENNAS CABLE	IN AIR/ CABLE TRAY	IN CONDUIT
1/2"	5"	10"
7/8"	10"	18"
1 5/8"	20"	28"
1X1 HYBRID	5"	10"
6X12 HYBRID	12"	16"
12X24 HYBRID	12"	16"

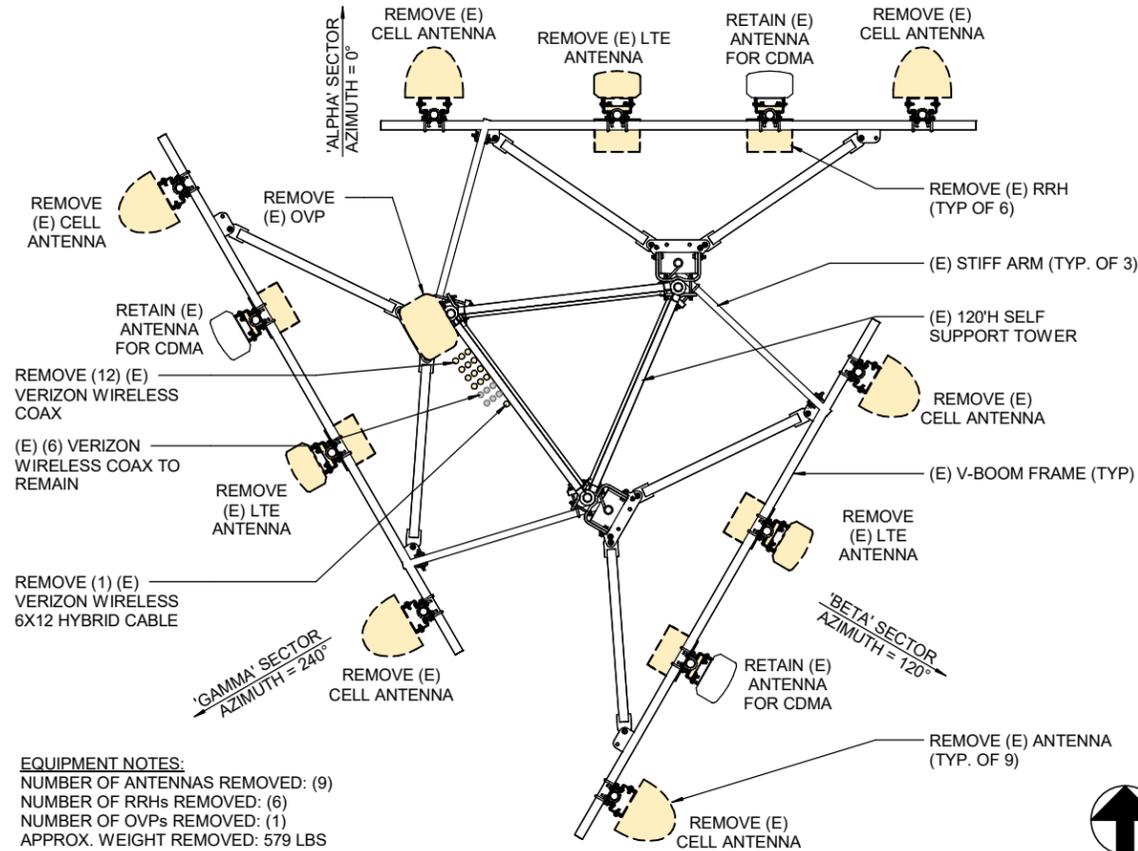
  

MW CABLE	WITHOUT REBENDING	WITH REBENDING
ELLIPTICAL WAVEGUIDE	6" E PLAN 13" H PLAN	7" E PLAN 19" H PLAN

E. CABLES SHALL BE INSTALLED WITH THE MINIMUM NUMBER OF BENDS. CABLES SHALL NOT BE LEFT UNTERMINATED IN THE FIELD.

F. GROUNDING KITS - AFTER INSTALLATION OF GROUND STRAPS, THE CONNECTION SHALL BE MADE WEATHER TIGHT USING WEATHERPROOFING KITS AS IDENTIFIED ABOVE. GROUND PIGTAILS SHALL BE BROUGHT OUT IN THE DOWNWARD DIRECTION FROM THE CONNECTIONS TO THE ANTENNA CABLE WITHOUT ANY SHARP BENDS (MINIMUM BEND RADIUS 10") AND CONNECTION SHALL BE MADE TO GROUNDING SYSTEM

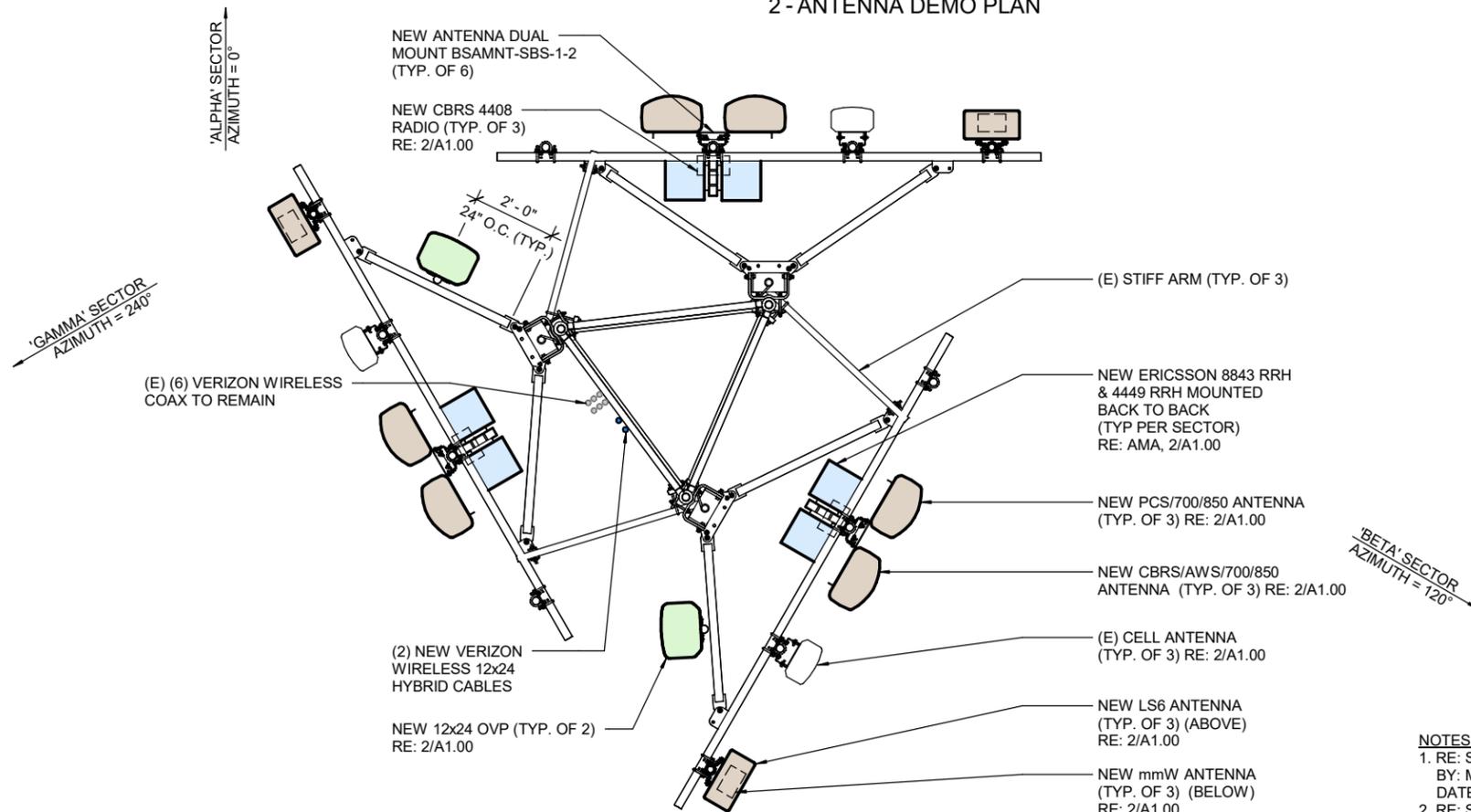
G. USE LOW PIM HARDWARE WITHIN 10' - 0" OF LS6 ANTENNAS.



2 - ANTENNA DEMO PLAN

1/4" = 1'-0"

3 - ANTENNA NOTES



EQUIPMENT NOTES:  
NUMBER OF ANTENNAS ADDED: (12)  
NUMBER OF RRHs ADDED: (9)  
NUMBER OF OVPS ADDED: (2)  
APPROX. WEIGHT ADDED: 1,253 LBS

1 - NEW ANTENNA PLAN

1/4" = 1'-0"

PENETRATIONS  
 ANTENNAS  
 LEASE AREA  
 EXISTING EASEMENT  
 ACCESS/UTILITY EASEMENT  
 GEN. CONST. UTILITY EASEMENT  
 OVP/ELEC. EQ.  
 POWER/GROUNDING  
 MW/FIBER EQ.  
 FIBER  
 BB/RRH  
 HYBRID & COAX CABLES

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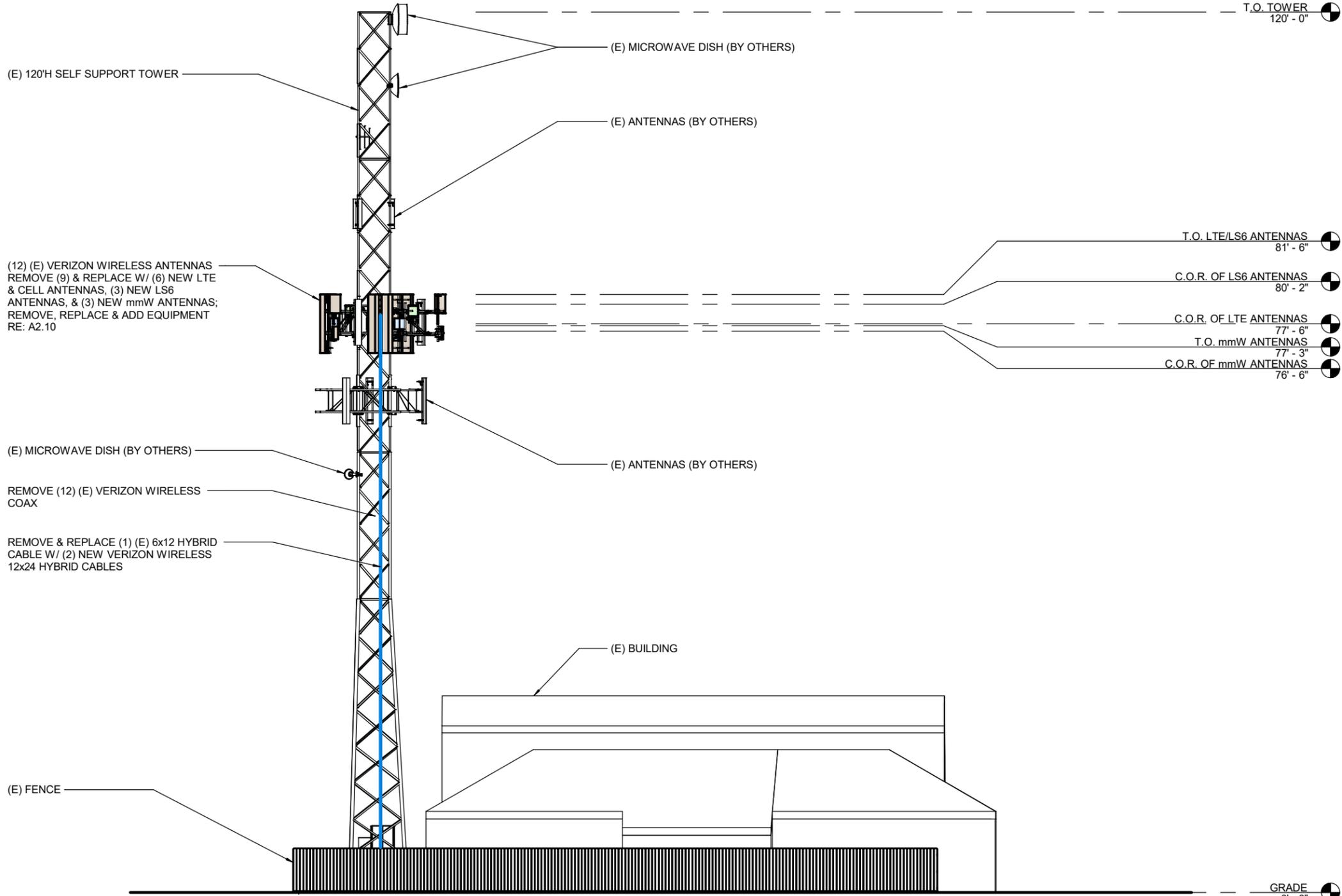
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NORTH ELEVATION

**A3.00**

- BBU/RRH HYBRID & COAX CABLES
- MW/FIBER EQ. FIBER
- OV/PLEEC. EQ. POWER/GROUNDING
- ACCESS/UTILITY EASEMENT GEN. CONST. UTILITY EASEMENT
- LEASE AREA EXISTING EASEMENT
- ANTENNAS
- PENETRATIONS



1 - NORTH ELEVATION

NOTES:  
1. RE: STRUCTURAL AMA  
BY: MASER CONSULTING  
DATED: 05/23/22  
2. RE: STRUCTURAL ANALYSIS  
BY: OTEGUI STRUCTURAL SERVICES, LLC.  
DATED: 04/04/22

1/16" = 1'-0"

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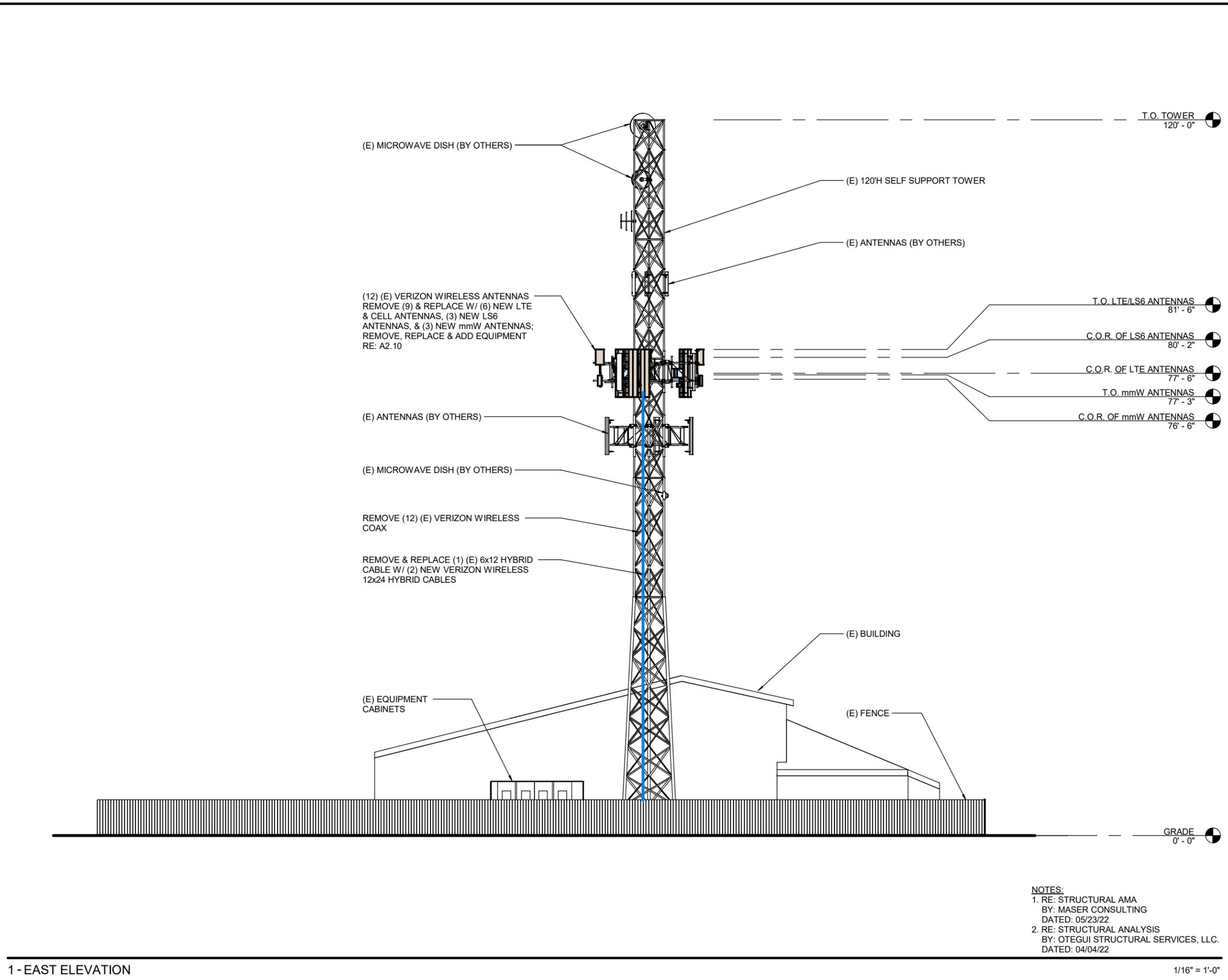
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EAST ELEVATION

**A3.10**

■ PENETRATIONS  
■ ANTENNAS  
■ EXISTING EASEMENT  
■ LEASE AREA  
■ ACCESS/UTILITY EASEMENT  
■ GEN. CONST./UTILITY EASEMENT  
■ OVP/ELEC. EQ.  
■ POWER/GROUNDING  
■ MW/FIBER EQ.  
■ FIBER  
■ BB/RRH  
■ HYBRID & COAX CABLES



1 - EAST ELEVATION

NOTES:  
1. RE: STRUCTURAL AMA  
BY: MASER CONSULTING  
DATED: 05/23/22  
2. RE: STRUCTURAL ANALYSIS  
BY: OTEGUI STRUCTURAL SERVICES, LLC.  
DATED: 04/04/22

1/16" = 1'-0"

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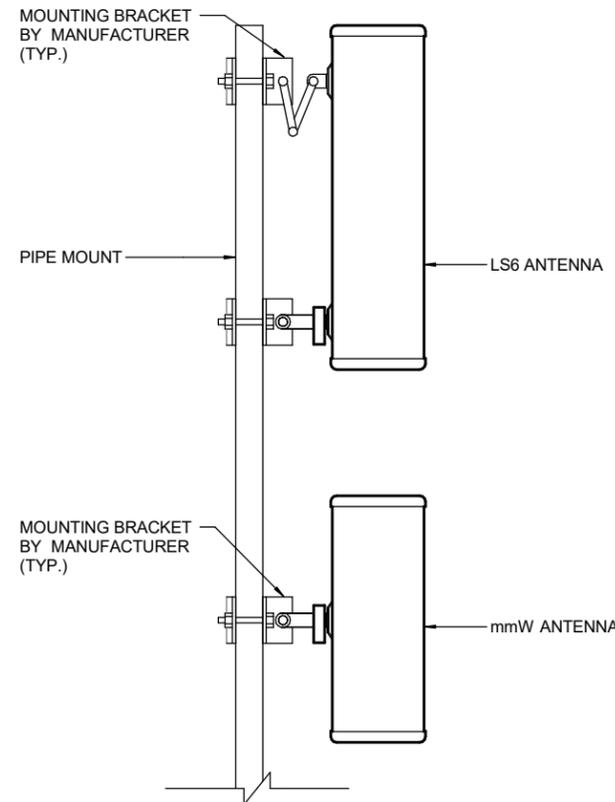


DETAILS

**A4.00**

PENETRATIONS  
 ANTENNAS  
 EXISTING EASEMENT  
 LEASE AREA  
 ACCESS/UTILITY EASEMENT  
 GEN. CONST./UTILITY EASEMENT  
 OVP/ELEC. EQ.  
 POWER/GROUNDING  
 MW/FIBER EQ.  
 FIBER  
 BB/RRH  
 HYBRID & COAX CABLES

6 - NOT USED



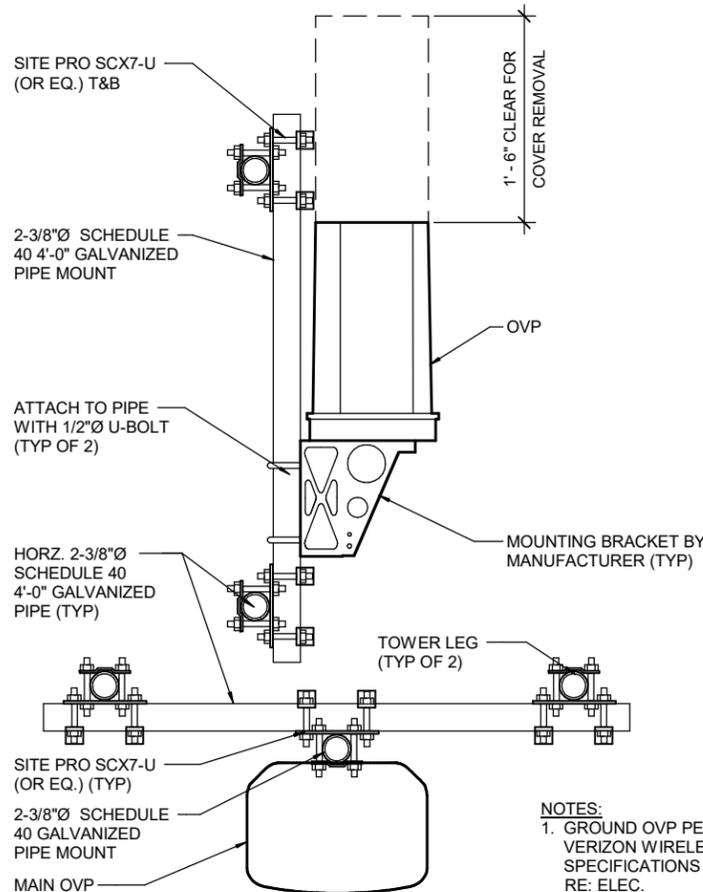
NOTE:  
REFER TO ANTENNA MANUFACTURER SPEC FOR QUANTITY OF MOUNTING BRACKETS REQUIRED.

5 - LS6 & mmW ANTENNA MOUNTING DETAIL

3/4" = 1'-0"

4 - ANTENNA MOUNTING DETAIL

1/2" = 1'-0"

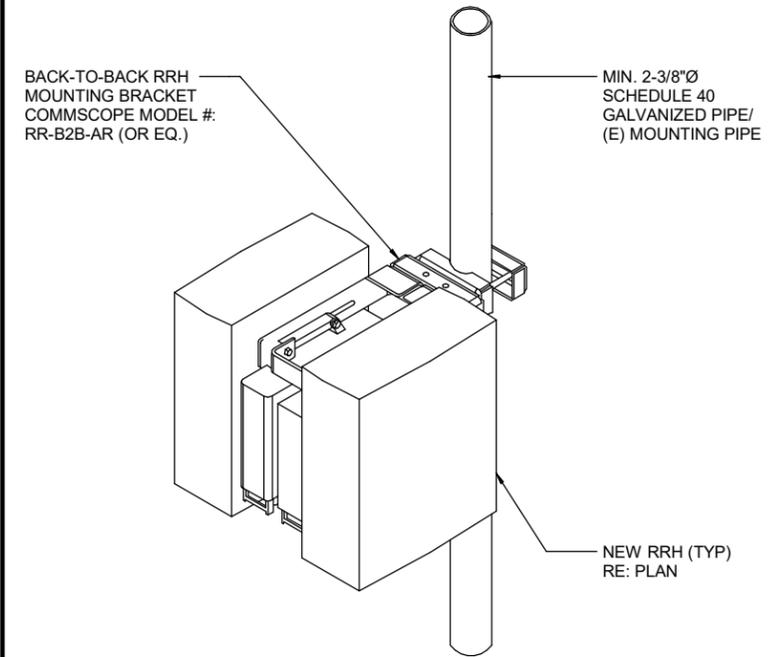


3 - OVP MOUNTING DETAIL

3/4" = 1'-0"

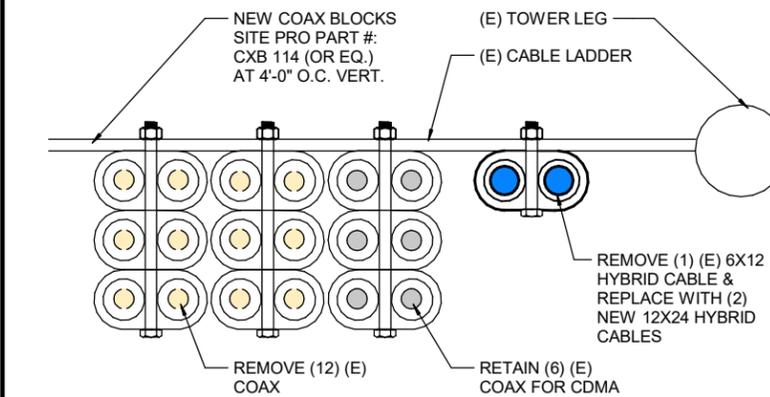
2 - RRH MOUNTING DETAIL

1" = 10'-0"



1 - COAX MOUNTING DETAIL

1 1/2" = 1'-0"



	NEW		EXISTING ACTIVE		DEMO/ REMOVED		EXISTING INACTIVE
--	-----	--	-----------------	--	---------------	--	-------------------

NOTE:  
CONTRACTOR TO VERIFY & REMOVE INACTIVE COAX

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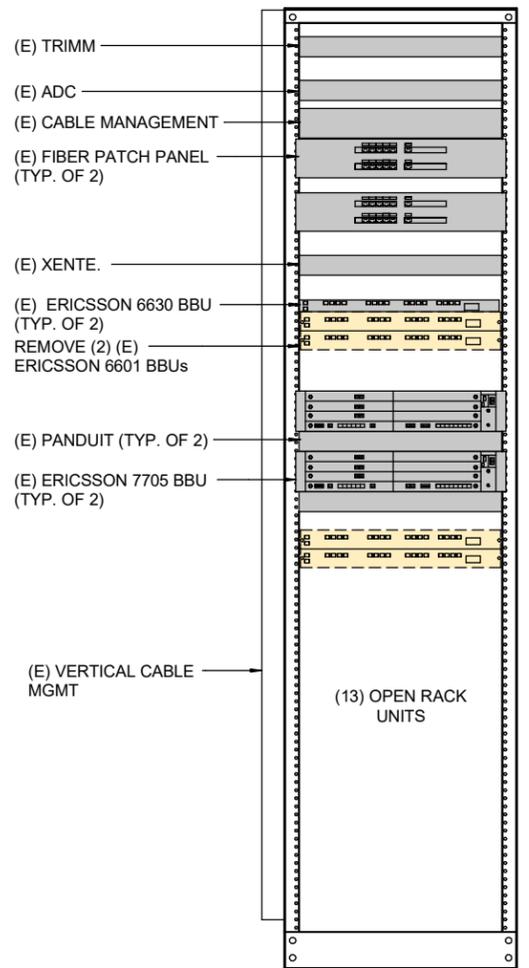
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**RACK ELEVATIONS**

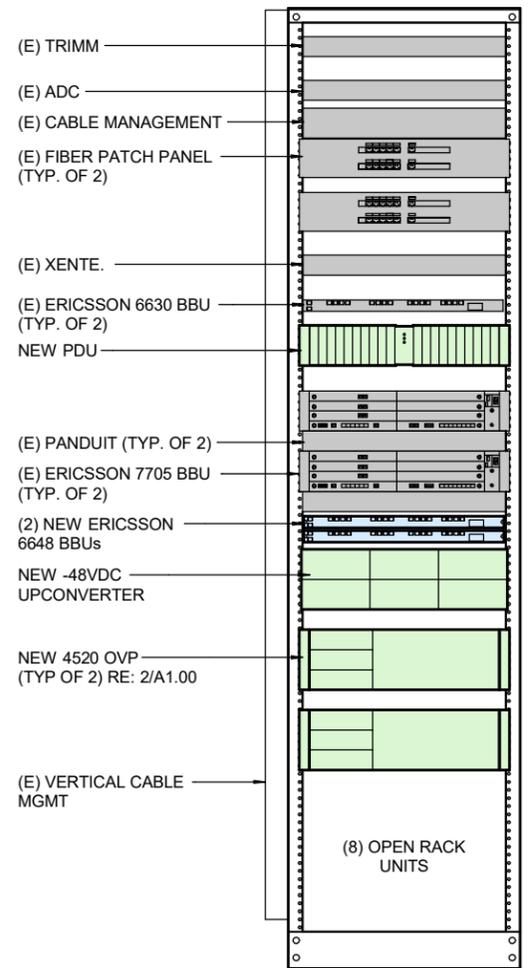
**A4.10**

- BBU/RRH HYBRID & COAX CABLES
- MW/FIBER EQ. FIBER
- OVP/ELEC. EQ. POWER/GROUNDING
- ACCESS/UTILITY EASEMENT GEN. CONST. UTILITY EASEMENT
- LEASE AREA EXISTING EASEMENT
- ANTENNAS
- PENETRATIONS



2 - DEMO RACK ELEVATION

3/4" = 1'-0"



1 - NEW RACK ELEVATION

3/4" = 1'-0"

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**GROUNDING SCHEMATIC**

**A5.00**

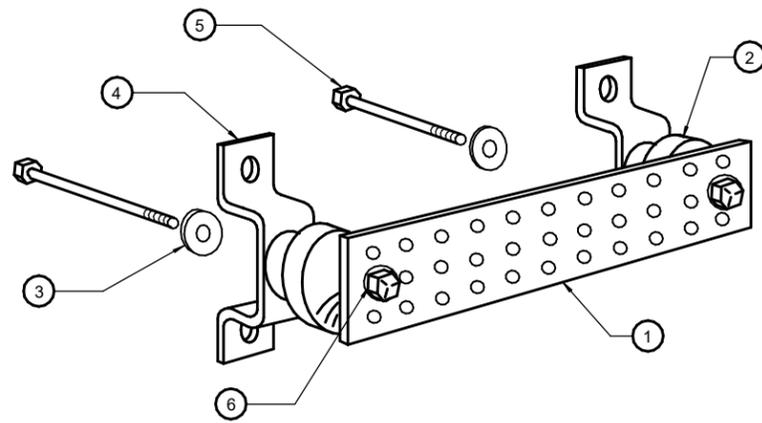
PENETRATIONS  
 ANTENNAS  
 EXISTING EASEMENT  
 LEASE AREA  
 ACCESS/UTILITY EASEMENT  
 GEN. CONST. UTILITY EASEMENT  
 POWER/GROUNDING  
 MV/FIBER EQ.  
 FIBER  
 BB/RRH  
 HYBRID & COAX CABLES

**GROUNDING NOTES**

- REFER TO VERIZON WIRELESS GROUNDING SPECIFICATIONS FOR ALL GROUNDING REQUIREMENTS.
- BOND AND GROUND ANY PROPOSED STRUCTURAL STEEL, CONCRETE REINFORCING AND OTHER METALLIC BUILDING ELEMENTS, REFER TO VERIZON WIRELESS SPECIFICATIONS FOR EXACT REQUIREMENTS.
- THE ELECTRICAL CONTRACTOR SHALL PERFORM ALL BONDING AND GROUNDING TO THE SITE'S OUTER GROUNDING SYSTEM DURING THE CONSTRUCTION PHASE OF THE BUILDING.
- CONTRACTOR IS TO CONDUCT FREQUENT INSPECTIONS DURING THE CONSTRUCTION PHASE TO ENSURE THAT ALL GROUNDING ARRANGEMENTS ARE MADE ACCORDING TO THE GROUNDING DESIGN SPECIFICATIONS.
- DO NOT RETROFIT (OR UPGRADE) ESTABLISHED SITES THAT DO NOT MEET ALL THE REQUIREMENTS OF VERIZON WIRELESS GROUNDING STANDARD UNLESS THERE ARE DOCUMENTED OCCURRENCES OF EQUIPMENT DAMAGES AND/OR SERVICE AFFECTING CONDITIONS.
- USE ONLY VERIZON WIRELESS-APPROVED MATERIALS SUCH AS COPPER FOR MOST ELECTRICAL WORK AND ALUMINUM FOR CERTAIN APPLICATIONS FOR SITE GROUNDING SYSTEM, ELECTRICAL PROTECTION COMPONENTS AND AC WIRING.
- USE THE SAME METAL THROUGHOUT THE GROUND SYSTEM WHEN POSSIBLE.
- IF DIFFERENT METALS MUST BE CONNECTED, BOND THEM BY EXOTHERMICALLY WELDING THEM TOGETHER.
- USE TINNED COPPER WHEN CONNECTING TO GALVANIZED STEEL.
- DO NOT BOND COPPER AND ALUMINUM TOGETHER UNLESS USING SPECIFICALLY DESIGNED EXOTHERMIC MATERIALS DESIGNED FOR THIS APPLICATION ARE USED OR A BIMETALLIC TRANSITIONAL CONNECTION IS UTILIZED.
- MAKE ALL BONDING ATTACHMENTS TO CLEAN, UNPAINTED METAL SURFACES OR USE APPROVED PAINT PIERCING WASHERS.
- PAINTED SURFACES MUST BE SCRAPED, CLEANED, AND LIGHTLY COATED WITH THE APPLICABLE COMPOUND.
- ALL INDOOR OR OUTDOOR POWER OR GROUNDING CONNECTIONS SHALL BE PROTECTED AGAINST CORROSION BY USE OF A THIN COATING OF ANTI-OXIDATION COMPOUND. A COPPER COSMOLINE GREASE BASED COMPOUND (NO OX-ID) SHALL BE USED ON ALL COPPER TO COPPER CONNECTIONS. A ZINC BASED (GREY COLORED) COMPOUND SHALL BE USED ON ALL COPPER TO STEEL CONNECTIONS. WHERE OTHER COMPOUNDS SUCH AS KOPPER-SHIELD ETC EXIST, THEY MAY BE 'GRANDFATHERED' IN PLACE. PENTROX GREASE OR AN APPROVED EQUAL SHALL BE USED ON ALUMINUM CONNECTIONS.
- DO NOT WELD GROUNDING CONDUCTORS TO THE STRUCTURAL MEMBERS OF TOWERS, INCLUDING DOWN GUYS AND ANCHOR RODS.
- BOND ALL METALLIC OBJECTS (SUCH AS WATER PIPES, CONDUITS, METAL FUEL TANKS WITHOUT CATHODIC PROTECTION, METAL FENCES, HVAC, ETC.) THAT ARE WITHIN 6 FEET (1.8 M) OF THE GROUND RING, OR FROM ANY OTHER GROUNDED CONDUCTOR, TO GROUND RING OR TO THE GROUNDED CONDUCTOR. HARDWARE
- ALL OUTDOOR HARDWARE (BOLTS, SCREWS, NUTS, WASHERS) SHALL BE 18-8 STAINLESS STEEL TYPE GRADE. INDOORS, GRADE 5 STEEL HARDWARE MAY BE USED. CHOOSE BOLT LENGTH TO ALLOW THE EXPOSURE OF AT LEAST TWO THREADS.
- WHEN BONDING TO A METALLIC OBJECT WHERE ACCESS IS LIMITED TO ONLY ONE SURFACE, USE DRILLING & TAPPING OR SELF DRILLING SCREWS. DO NOT USE SHEET METAL SCREWS.
- ALL GROUNDING CONDUCTORS SHOULD PRESERVE A DOWNWARD TO HORIZONTAL COURSE AND BE AS STRAIGHT AS POSSIBLE AND AVOID SHARP TURNS.
- DO NOT USE U-SHAPED GROUNDING CONDUCTOR RUNS (U-TURNS IN THE WIRING) OR BONDING LAYOUTS TO REDUCE ARC-OVERS
- ALL GROUNDING CONDUCTS MUST BE RUN IN NONMETALLIC CONDUIT. ROUTE ALL CONDUCTORS THROUGH NONMETALLIC SLEEVES WHEN PENETRATING FLOORS, CEILINGS, AND WALLS.
- IF THE USE OF METALLIC CONDUIT CANNOT BE AVOIDED, BOND BOTH ENDS OF THE CONDUIT TO THE GROUNDING CONDUCTOR BEING ROUTED THROUGH THE CONDUIT
- KEEP LENGTHS OF CONDUCTORS TO A MINIMUM
- USE MULTIPLE CONDUCTING PATHS. PARALLEL PATHS ARE ONLY DESIRABLE WHEN SENSITIVE ELECTRONIC EQUIPMENT IS NOT PART OF THE CONDUCTOR PATH
- KEEP BENDS IN CONDUCTORS TO A MINIMUM.
- THE MINIMUM INSIDE BENDING RADIUS IS:
  - 6 INCHES (0.15M) FOR CONDUCTORS UP TO #6 GAUGE.
  - 12 INCHES (0.3M) FOR CONDUCTORS #6 TO #4/0 GAUGE.
  - 24 INCHES (0.6M) FOR CONDUCTORS #4/0 GAUGE AND LARGER
- GROUND CONDUCTORS MUST NEVER BE ENCIRCLED WITH FERROUS METAL CLAMPS, PLACED THROUGH METAL WALLS, METAL PLATES, OR SHORT SECTIONS OF METAL CONDUIT, AND MUST NEVER BE PLACE IN THE SAME CABLE RACK AS DC POWER CABLES, HIGH FREQUENCY CABLES, ETC.
- WHEN ATTACHING PVC CONDUITS TO ANY SURFACE UTILIZE NONCONDUCTIVE FASTENERS OR NONFERROUS FASTENERS ONLY.
- IF CONNECTIONS BETWEEN ALUMINUM CONDUCTORS AND STEEL OBJECTS MUST BE MADE, TINNED LUGS AND PENTROX SHALL BE USED. WHERE THERE ARE CONCERNS THAT THE PENTROX MAY NOT PROVIDE ADEQUATE INTERFACING, THEN A BIMETAL SPLICE BETWEEN THE ALUMINUM CONDUCTOR AND A SHORT LENGTH OF COPPER CONDUCTOR MAY BE USED.
- ALL OF THE BONDING AND GROUNDING CONDUCTORS SPECIFIED FOR ROOFTOP CELL AND MICROWAVE SYSTEMS IS BARE WIRE. INSULATED WIRE SHALL NOT BE SPECIFIED OR SUBSTITUTED FOR THE BONDING AND GROUNDING CONDUCTORS OF ROOFTOP INSTALLATIONS.

4 - GROUNDING NOTES

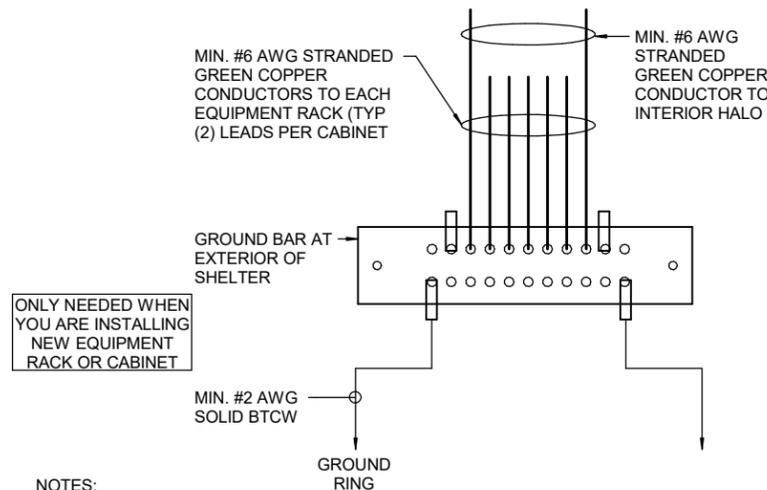
- KEY NOTES:**
- COPPER GROUND BAR OR APPROVED EQUAL, 1/4" x 4" X 12".HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
  - SPACERS AS REQUIRED
  - 5/8" LOCKWASHERS
  - WALL MOUNTING BRACKET
  - 5/8" -11 H.H.C.S. BOLTS (VERIFY LENGTH)
  - USE TAMPER RESISTANT MOUNTING HARDWARE



**NOTE:**  
THE DISTANCE BETWEEN COAXIAL CABLE SHIELD CIGBE BARS SHALL NOT EXCEED 100'. THIS MAY REQUIRE BONDING AT THE TOP, BOTTOM AND TWO LOCATIONS IN THE MIDDLE OF THE TOWER FOR TALLER TOWERS. EACH RF CABLE SHIELD SHALL BE BONDED AT A MINIMUM OF TWO (2) POINTS ON THE TOWER (TOP AND BOTTOM).

3 - GROUND BAR DETAIL

N.T.S.



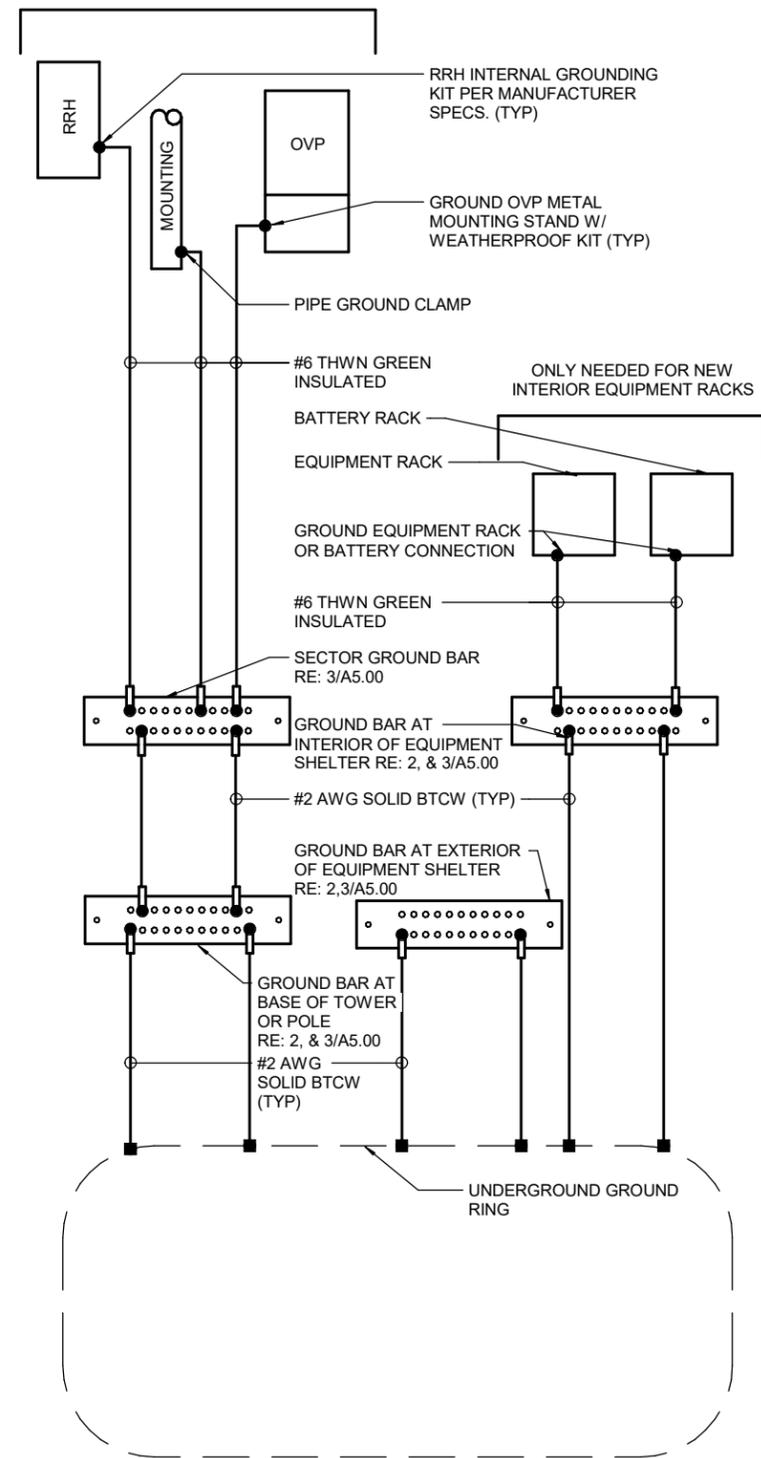
**NOTES:**

- VERIFY EXISTING INTERIOR GROUNDING IS SUFFICIENT FOR NEW EQUIPMENT INSTALLATION AND GROUND ALL NEW INSTALLED EQUIPMENT AS REQUIRED BY VERIZON WIRELESS STANDARDS
- CONNECT THE EQUIPMENT FRAMES TO THE MGB/FGB, USING A MINIMUM OF #6 AWG STRANDED COPPER, GREEN-INSULATED CONDUCTOR. TO ASSURE A GOOD CONNECTION AT THE FRAME, CLEAN THE CONNECTION POINT ON THE FRAME TO BARE METAL, APPLY AN ANTI-OXIDATION COMPOUND, AND CONNECT USING A TWO-HOLE, LONG-BARREL COMPRESSION LUG. SOME EXISTING SITES MAY BE USING SINGLE HOLE LUGS FOR THESE PURPOSES. THESE CONNECTIONS SHOULD NOT BE REPLACED "IF" THE RUNS ARE TO SHORT AND THERE IS NO LIKELIHOOD OF MECHANICAL STRESS ON THE CABLE THAT WOULD LOOSEN THESE CONNECTIONS.
- DC DISTRIBUTION PANELS, CHASSIS, BATTERY RACKS, FRAMES AND CHASSIS OF RECTIFIERS AND RECTIFIERS SHOULD BE BONDED DIRECTLY TO THE MGB/FGB. WHEN UTILIZING AN INTEGRATED DC/DC CONVERTER SYSTEM, THE 48-VOLT RETURN DISTRIBUTION BAR SHALL BE BONDED TO THE 24-VOLT RETURN DISTRIBUTION BAR WITH A MINIMUM CONDUCTOR SIZE OF A #2, STRANDED COPPER CONDUCTOR, IN A WIRELESS SHELTER WITH A DEDICATED 48-VOLT PLANT, THE 48-VOLT RETURN DISTRIBUTION BAR SHALL BE BONDED TO THE MGB. ALL BATTERY FRAMES SHALL BE BONDED TO THE MGB WITH A #6 GREEN THWN INSULATED CONDUCTOR. (ONLY APPLICABLE WHEN MODIFICATIONS ARE REQUIRED TO THE BATTERY OR POWER PLANT.)
- VERIFY (E) SYSTEM IS PER ATTACHED NOTES AND DETAILS AND IF NOT NOTIFY P.M. FOR REQUIRED UPGRADES.

2 - INTERIOR GROUNDING

N.T.S.

**TYPICAL ANTENNA SECTOR**

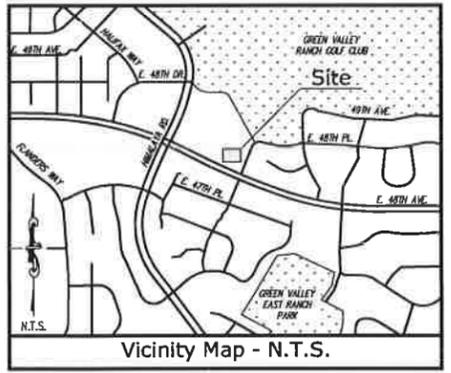
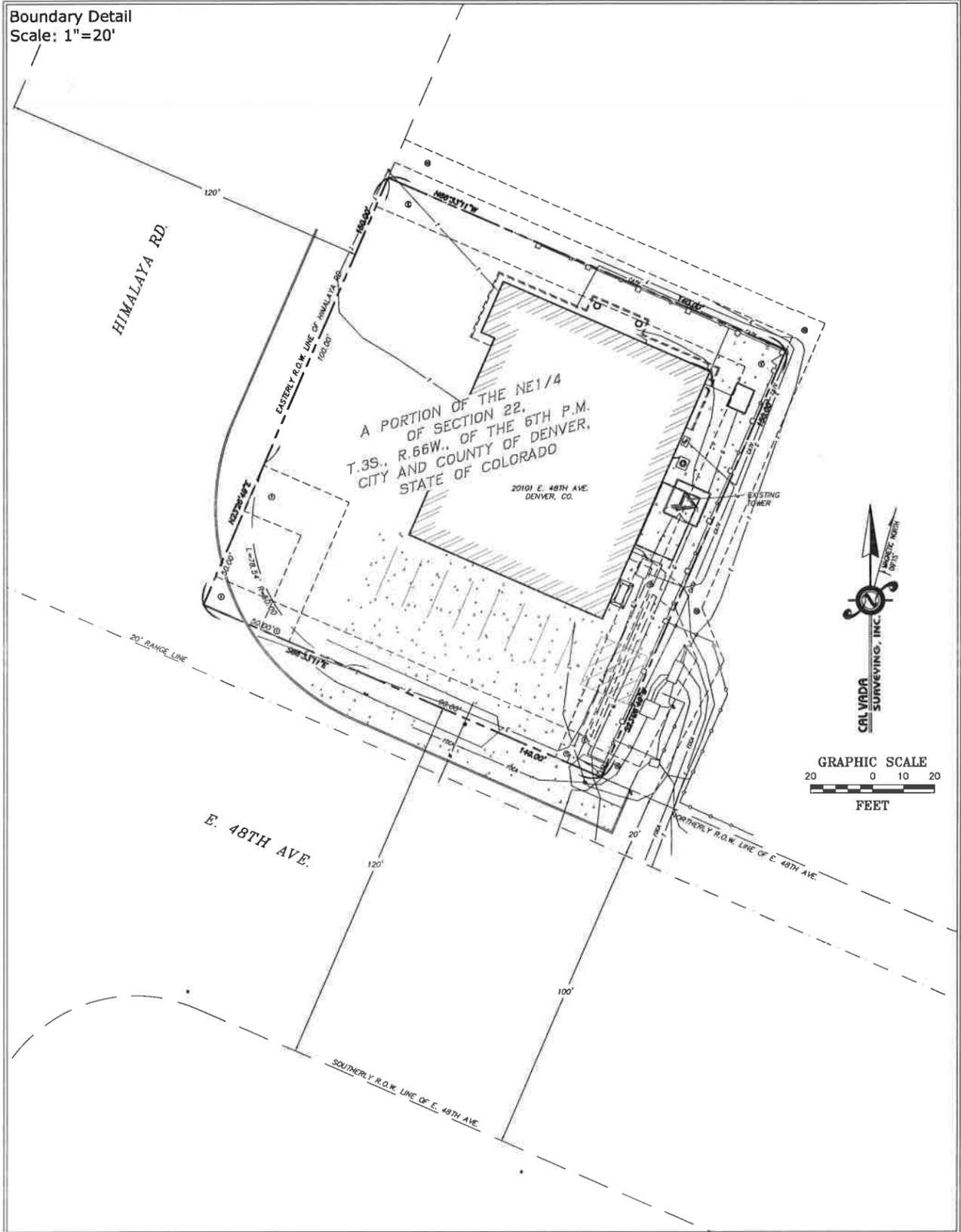


- COMPRESSION TYPE CONNECTION
- EXOTHERMIC WELD

**NOTE:**  
GROUNDING SCHEMATIC IS DIAGRAMMATIC AND DOES NOT REFLECT ACTUAL EQUIPMENT LAYOUT ORIENTATION. REFER TO PLANS FOR DIRECTION.

1 - GROUNDING SCHEMATIC

N.T.S.



**Title Report**  
 PREPARED BY: LAND TITLE GUARANTEE COMPANY  
 ORDER NO.: ACT70224475  
 DATED: SEPTEMBER 15, 2008

**Legal Description**  
 A PARCEL OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 22, TOWNSHIP 3 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY AND COUNTY OF DENVER, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:  
 COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 22 THENCE WESTERLY ALONG THE NORTH LINE OF SAID SECTION 22 A DISTANCE OF 441.08 FEET, THENCE ON A DEFLECTION ANGLE TO THE LEFT OF 90 DEGREES 00 MINUTES 00 SECONDS A DISTANCE OF 137.55 FEET TO THE POINT OF BEGINNING SAID POINT BEING ON THE PROPOSED EAST RIGHT-OF-WAY OF HIMALAYA ROAD; THENCE ON A DEFLECTION ANGLE TO THE LEFT OF 66 DEGREES 49 MINUTES 14 SECONDS A DISTANCE OF 140.00 FEET; THENCE ON A DEFLECTION ANGLE TO THE RIGHT OF 90 DEGREES 00 MINUTES 00 SECONDS A DISTANCE OF 150.00 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY OF 48TH AVE.; THENCE WESTERLY ALONG SAID RIGHT-OF-WAY A DEFLECTION ANGLE TO THE RIGHT OF 90 DEGREES 00 MINUTES 00 SECONDS A DISTANCE OF 140.00 FEET TO A POINT ON THE PROPOSED EAST RIGHT-OF-WAY OF HIMALAYA ROAD, THENCE NORTHERLY ALONG SAID RIGHT-OF-WAY ON A DEFLECTION ANGLE TO THE RIGHT OF 90 DEGREES 00 MINUTES 00 SECONDS A DISTANCE OF 150.00 FEET TO THE POINT OF BEGINNING.

**Assessor's Parcel No.**  
002210021000

- Easements**
- AN UNDIVIDED 1/16 ROYALTY INTEREST IN ANY OIL, GAS, CASING HEAD GAS AND OTHER MINERALS THAT MAY BE PRODUCED, IF ANY, AS RESERVED BY FERN GARDINEER AND D.J. GARDINEER IN DEED RECORDED MARCH 9, 1955 IN BOOK 539 AT PAGE 93. (BLANKET IN NATURE).
  - ANY TAX, LIEN, FEE, OR ASSESSMENT BY REASON OF INCLUSION OF SUBJECT PROPERTY IN THE CITY METROPOLITAN DISTRICT, AS EVIDENCE BY INSTRUMENT RECORDED SEPTEMBER 22, 1983 IN BOOK 2914 AT PAGE 592. (NOT AN EASEMENT).
  - RESERVATIONS AS CONTAINED IN WARRANTY DEED RECORDED JUNE 28, 1984 IN BOOK 3135 AT PAGE 382. (BLANKET IN NATURE).
  - RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTED CLAUSE, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS CONTAINED IN INSTRUMENT RECORDED OCTOBER 30, 1984, UNDER RECEPTION NO. 10366850. (NOT AN EASEMENT).
  - TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN LETTER RECORDED IN NOVEMBER 24, 1998, UNDER RECEPTION NO. 9800197190 & 9800197191. (BLANKET IN NATURE).
  - TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS AND EASEMENTS SET FORTH AND GRANTED IN EASEMENT AGREEMENT RECORDED IN JANUARY 5, 1999 UNDER RECEPTION NO. 9900002089. (PLOTTED HEREON).
  - TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN ORDINANCE RECORDED OCTOBER 18, 2000 UNDER RECEPTION NO. 2000152645. (NOT AN EASEMENT).
  - EASEMENT GRANTED TO PUBLIC SERVICE COMPANY OF COLORADO, FOR UTILITIES, AND INCIDENTAL PURPOSES, BY INSTRUMENT RECORDED SEPTEMBER 26, 2001, UNDER RECEPTION NO. 2001162373. (PLOTTED HEREON).

**Geographic Coordinates as Shown**  
1983 DATUM: LATITUDE 39°46'59.10"N LONGITUDE 104°45'16.39"W

**Date of Survey**  
MAY 24, 2006

**Basis of Bearings**  
THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE (NAD83).  
CLASSIFICATION MINIMUM GEOMETRIC ACCURACY STANDARD  
THIRD 5.0 cm + 1: 10,000

**Bench Mark**  
NGS CONTROL POINT "PENA", ELEVATION = 5415 FEET (NAVD 88)

**Legend**

CONCRETE PAVEMENT	NG	NATURAL GROUND
CONIFEROUS TREE	•	PARKING BOLLARD
DIAMETER	POB	POINT OF BEGINNING
DECIDUOUS TREE	POC	POINT OF COMMENCEMENT
EDGE OF ASPHALT	—OE—	OVERHEAD ELECTRIC LINE
FINISHED FLOOR	—P—	POWER POLE
FINISH SURFACE	---	PROPERTY LINE
FIRE HYDRANT	—R.O.W.—	RIGHT OF WAY
FLOW LINE	—S.M.—	SEWER MANHOLE
FOUND MONUMENT AS NOTED	⊙	SIGN POST
FOUND SECTION MONUMENT	⊙	STREET LIGHT STANDARD
GEOGRAPHIC LOCATION	⊙	TELEPHONE PEDESTAL
GAS METER	7YP	TYPICAL
IRRIGATION CONTROL VALVE	⊙	WATER METER
	⊙	WATER VALVE

**Certificate of Survey**  
 JESUS A. LUGO, PLS  
 11/6/08  
 No. 238081  
 THIS SURVEY DOES NOT REPRESENT AN UNMENTED SURVEY.  
 THIS SURVEY IS MADE TO A GUARANTEE OF TITLE INSURANCE, NUMBER ACT70224475, ISSUED BY LAND TITLE GUARANTEE COMPANY, USING AN EFFECTIVE DATE OF SEPTEMBER 15, 2008 THIS SURVEY HAS BEEN CONDUCTED BY AN INVESTIGATOR OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIONS, COVENANTS, OWNERSHIP TITLE EVIDENCE, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT SURVEY MAY DISCLOSE. THE LESSOR'S LEGAL DESCRIPTION AND RECORD BOUNDARY ARE SHOWN HEREON FOR REFERENCE ONLY.  
 THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE LESSOR'S PROPERTY.

PROPRIETARY INFORMATION  
NOT FOR USE OR DISCLOSURE OUTSIDE VERIZON EXCEPT UNDER WRITTEN AGREEMENT

**CSAI**  
 CHARLES STRECHLY ARCHITECTURE, INC.  
 ARCHITECTURE - PLANNING - DESIGN  
 ARCHITECTURE - INTERIOR DESIGN  
 5635 UTE AVENUE, SUITE 200  
 URBAN, COLORADO 80132  
 OFFICE: 303.632.9874  
 FAX: 303.632.6561

Engineer/Consultant:  
**CALVARDA SURVEYING, INC.**  
 54 Avenue, One Mile East  
 Denver, Colorado 80204  
 Phone: (720) 441-1433 Fax: (720) 448-1338  
 Drawn By: PH  
 Job No.: 08248

Architect:  
**verizon wireless**  
 P.O. Box 19707  
 Irvine, CA 92623-9707  
 (949) 222-7000

**DEN GIBALTAR**  
 4800 HIMALAYA WAY  
 DENVER, CO 80204  
 DENVER COUNTY  
 TOPOGRAPHIC SURVEY

REVISIONS	DATE	BY	REASON
0	11/17/08	PH	SUBMITTAL
1	4/7/09	JT	ADD USE AREA

Sheet:  
**LS1**





## **Otegui Structural Services, LLC**

10812 West Powers Place Littleton, CO 80127

Phone: 720-981-5333

e-mail: mikeo@oteguieng.com

April 4, 2022

Stephanie Bodie  
CSAi  
5935 S. Zang St  
Suite 280  
Littleton, CO 80127

RE: DEN Gibraltar-New Loading  
4800 Himalaya Rd  
Denver, CO 80294  
Verizon Wireless Site: 28

Dear Stephanie:

I am writing you this letter in response to your request for analysis of an existing 120ft Sabre three-sided self-supporting tower to verify tower is adequate with addition of new flat panels and RRH.

Analysis was done using the following: TIA/EIA-222-H code/ International Building Code (1609.1.1 Exception 5, 3108), Vasd = 90 mph, Vult = 116 mph (3-sec gust), Exposure C, topographic category 1, or 50 mph with 1/2" ice for maximum stress calculations, and a 60-mph wind speed for deflection calculations.

Our analysis, based on the information in the attached report, finds that the tower the tower will have a **rating of 75%, or satisfactory** for the new loading condition. Please refer to the attached report for more details.

Please feel free to call us with any questions or concerns.

Sincerely:

Michael A. Otegui, P.E.  
Otegui Structural Services, LLC



## **GENERAL**

The purpose of this report is to analyze an existing 120ft, three-sided self-supported tower for new antenna loading. Analysis is to verify that the loading complies with the TIA/EIA-222-H code and the current International Building Code (1609.1.1 Exception 5, 3108).

The tower is 120 tall, Sabre self-supported three-legged tower with steel pipe legs and single angle diagonal braces. See attached output for a more detailed description of geometry.

The existing tower is located in Denver County, Colorado. Our design wind load is 116 mph (3-sec gust), exposure C with a topographic category of 1.

## **INFORMATION PROVIDED FOR ANALYSIS**

The original tower Sabre drawings dated September 2009 were used for the analysis. This report is also based on a previous report by Otegui Structural Services LLC dated February 27, 2020. Existing antenna information provided by a site mapping by Structural Components dated 2/16/22. **Antenna loading from RFDS report dated 3/31/22**

## **ASSUMPTIONS**

Only information from the Sabre drawings was used in the calculations. No field verification of sizes or configuration was done. The tower is assumed to be in good condition with no deterioration or alterations. Sizes of mounting brackets and appurtenances not specifically described were assumed.

## **DESIGN CRITERIA**

The following is the design criteria used for this report:

- Tower is located in Denver County, Colorado.
- Basic wind speed of 90 mph. (Vult=115 mph)
- Structure Class III.
- Exposure Category C.
- Topographic Category 1.
- Nominal ice thickness of 0.50 in.
- Ice thickness is considered to increase with height.
- A wind speed of 50 mph is used in combination with ice.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Stress ratio used in tower member design is 1.

**APPURTENANCES**

Description	Model	Owner	Dimensions	#	Coax	Elev.	Exist/ New
Dish	6ft HP	VW	6ft	1	5/16	117'-0"	E
Misc.	Panel	VW	12"x12'	1	7/8	112'-0"	E
Dish	Grid Dish	VW	4ft	1	3/8	110'-0"	E
Yagi	3ft Yagi Antenna	VW	3ft	1	5/16	105'-0"	E
Flat Panel	Antenna	FS	96"x12"x3"	3	2-1/4	96'-0"	E
RRH	RRH	FS	25"x11"x7"	3	---	96'-0"	E
Misc.	GPS	FS	12"	1	---	96'-0"	E
Flat Panel	Misc.,	VW	18"x18"x1"	1	5/16	86'-0"	E
OVP	DB-B1	VW	22"x16"x10"	2	----	78'-0"	N
Flat Panel	NHHSS- 65C-R2B	VW	96"x12"x7"	6	(1) Hyb.	78'-0"	N
Flat Panel	Air 6449	VW	31"x16"x11"	3	---	78'-0"	N
Flat Panel	VZ-SM6701	VW	20"x5"x8"	3	---	78'-0"	N
Mount	12' Antenna Mount	VW	12ft	3	(6) * 7/8	78'-0"	E
Flat Panel	CWX063x19 M00	VW	26"x12"x7"	3	---	78'-0"	E
Flat Panel	Ericsson 4408	VW	9"x8"x5"	3	---	78'-0"	N
RRH	Ericsson 4449	VW	18"x14"x10"	3	---	78'-0"	N
RRH	Ericsson 8843	VW	18"x13"x11"	3	---	78'-0"	N
Misc.	Raycap BRODC	VW	16"x14"x8"	1	---	82'-0"	E
Mount	12' Box Arm	TM	12'-0"	3	---	67'-0"	E
Flat Panel	Panel	TM	27"x20"x6"	3	---	67'-0"	E
Flat Panel	Commscope FFV4-65C- R3-V1	TM	96"x25"x9"	3	(2) 1-1/2	67'-0"	E
RRH	Nokia AHLOA	TM	22"x12"x7"	6	---	65'-0"	E
Misc.	Raycap RTMDC	VW	16"x14"x8"	2	---	61'-0"	E
Misc.	Airmax AM- 5G16	VW	12"x12"	1	1/4	61'-0"	E
Misc.	LOCO M5	VW	12"x12"	1	1/4	61'-0"	E
Antenna	GPS	VW	12"	1	1/2	41'-0"	E
Feed Ladder	--	--	--	1	--	Full Ht	E
Step Bolts	--	--	--	1	--	Full Ht	E

Safety Line	--	--	--	1	--	Full Ht	E
-------------	----	----	----	---	----	---------	---

Note: VW = Verizon Wireless, ATT = AT&T, SP = Sprint, FS = Fire Station; TM = T-Mobile  
 (\*) = 12 existing coax to be removed

## **RESULTS**

The analysis finds that the tower will have a rating of **75%**. That is, the highest stress on any one member is at 75% of its code allowed maximum.

Highest stressed members are as follows :

Elevation (ft)	Legs (%)	Diagonals (%)
120-100	17	23
100-80	64	36
80-60	75	61
60-40	63	52
40-20	52	33
20-0	57	31

Maximum deflections at service loading can be expected as follows:

Elevation	Deflection	Tilt	Twist
120ft	4.6"	0.4°	0.1°

## **Existing Foundations**

The original foundations were designed for a factored overturning moment of 1,939-kip ft. Desired configuration has an overturning moment of 1,000 kip-ft. Therefore, it can be assumed that the foundations are adequate.

## **CONCLUSIONS**

In our opinion the tower is **adequate** for the new loading described above.

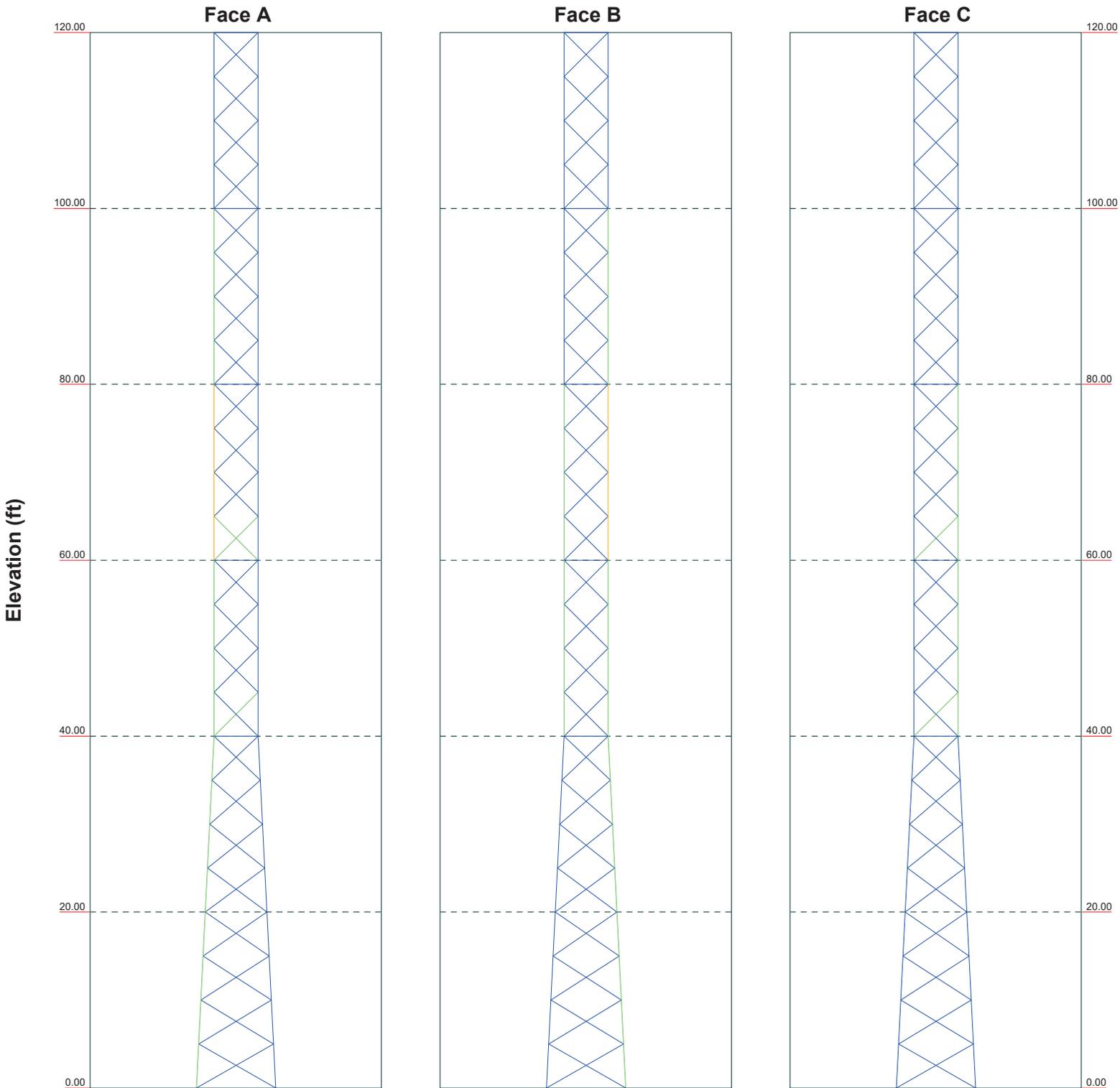
No attempt was made by Otegui Structural Services LLC to verify sizes, elevations or condition of the existing tower or framing. All framing information used in this report was provided by others. It is assumed that the tower is in good condition with no deterioration. Owner should verify that the tower is in good condition. This report does not imply a warranty for the tower.



# Stress Distribution Chart

0' - 120'

■ > 100% 
 ■ 90%-100% 
 ■ 75%-90% 
 ■ 50%-75% 
 ■ < 50% Overstress



**Otegui Structural Services, LLC**

8842 West Powers Place

Littleton, CO 80123

Phone: 720-981-5333

FAX:

Job: **DEN Gibraltar**

Project: **220040**

Client: Verizon Wireless

Drawn by: Mike Otegui

App'd:

Code: TIA-222-H

Date: 04/04/22

Scale: NTS

Path:

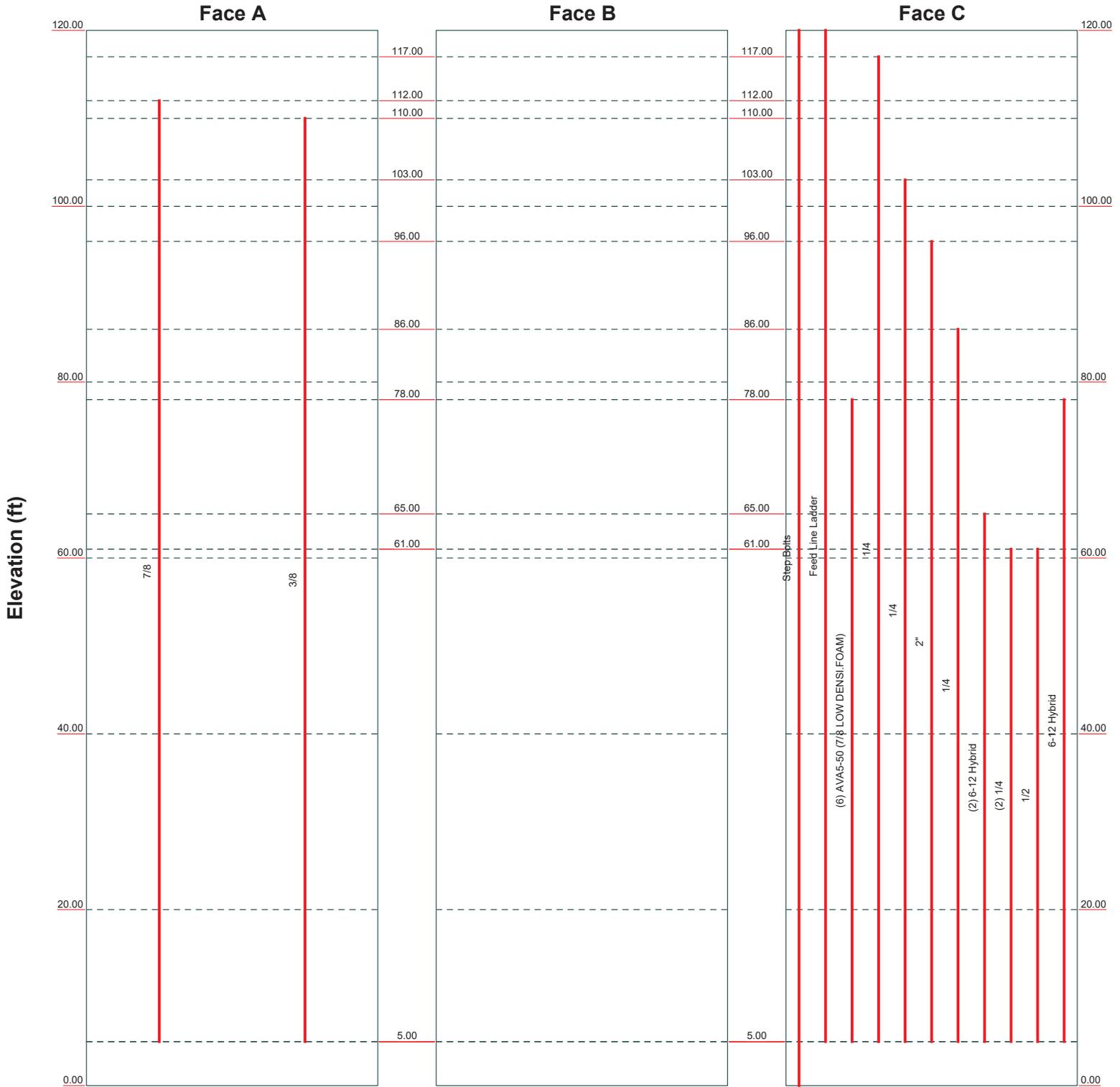
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Dwg No. E-8

# Feed Line Distribution Chart

## 0' - 120'

— Round   
 — Flat   
 — App In Face   
 — App Out Face   
 — Truss Leg



<b>Otegui Structural Services, LLC</b>			Job: <b>DEN Gibraltar</b>		
8842 West Powers Place			Project: <b>220040</b>		
Littleton, CO 80123			Client: Verizon Wireless		Drawn by: Mike Otegui
Phone: 720-981-5333			Code: TIA-222-H		Date: 04/04/22
FAX:			Path:		App'd: _____
			E:\Otegui Structural Services\Job Files\222111-CSA-DEN Gibraltar_SA\222111-DEN Gibraltar.en		Scale: NTS
					Dwg No. E-7

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 1 of 28
	<b>Project</b> 220040	<b>Date</b> 10:55:33 04/04/22
	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

## Tower Input Data

The main tower is a 3x free standing tower with an overall height of 120.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 5.00 ft at the top and 9.00 ft at the base.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower base elevation above sea level: 5000.00 ft.

Basic wind speed of 116 mph.

Risk Category III.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 0.500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used:  $K_{es}(F_w) = 1.0$ ,  $K_{es}(t_i) = 1.0$ .

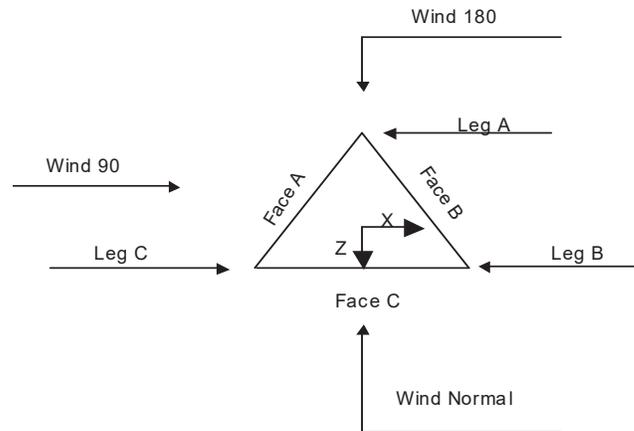
Maximum demand-capacity ratio is: 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Options

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>√ Include Bolts In Member Capacity</li> <li>√ Leg Bolts Are At Top Of Section</li> <li>√ Secondary Horizontal Braces Leg</li> <li>Use Diamond Inner Bracing (4 Sided)</li> <li>SR Members Have Cut Ends</li> <li>SR Members Are Concentric</li> </ul> | <ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>√ Use Clear Spans For KL/r</li> <li>√ Retension Guys To Initial Tension</li> <li>Bypass Mast Stability Checks</li> <li>√ Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurt.</li> <li>√ Autocalc Torque Arm Areas</li> <li>Add IBC .6D+W Combination</li> <li>Sort Capacity Reports By Component</li> <li>√ Triangulate Diamond Inner Bracing</li> <li>Treat Feed Line Bundles As Cylinder</li> <li>Ignore KL/ry For 60 Deg. Angle Legs</li> </ul> | <ul style="list-style-type: none"> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>√ Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>SR Leg Bolts Resist Compression</li> <li>√ All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feed Line Torque</li> <li>Include Angle Block Shear Check</li> <li>Use TIA-222-H Bracing Resist. Exemption</li> <li>Use TIA-222-H Tension Splice Exemption</li> <li style="text-align: center;">Poles</li> <li>Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> <li>Pole Without Linear Attachments</li> <li>Pole With Shroud Or No Appurtenances</li> <li>Outside and Inside Corner Radii Are Known</li> </ul> |
|--|---|---|

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	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui



**Triangular Tower**

**Tower Section Geometry**

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	120.00-100.00			5.00	1	20.00
T2	100.00-80.00			5.00	1	20.00
T3	80.00-60.00			5.00	1	20.00
T4	60.00-40.00			5.00	1	20.00
T5	40.00-20.00			5.00	1	20.00
T6	20.00-0.00			7.00	1	20.00

**Tower Section Geometry (cont'd)**

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	120.00-100.00	5.00	X Brace	No	No	0.000	0.000
T2	100.00-80.00	5.00	X Brace	No	No	0.000	0.000
T3	80.00-60.00	5.00	X Brace	No	No	0.000	0.000
T4	60.00-40.00	5.00	X Brace	No	No	0.000	0.000
T5	40.00-20.00	5.00	X Brace	No	No	0.000	0.000
T6	20.00-0.00	5.00	X Brace	No	No	0.000	0.000

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### Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 120.00-100.00	Pipe	HSS2.375x.154	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T2 100.00-80.00	Pipe	HSS2.375x.154	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T3 80.00-60.00	Pipe	HSS2.875x0.276	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 60.00-40.00	Pipe	HSS4.5x.337	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T5 40.00-20.00	Pipe	HSS5.5x.375	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T6 20.00-0.00	Pipe	HSS5.5x.375	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)

### Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 120.00-100.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T2 100.00-80.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T3 80.00-60.00	Equal Angle	L2x2x3/16	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T4 60.00-40.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T5 40.00-20.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

### Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Gusset Area <i>(per face)</i> <i>ft<sup>2</sup></i>	Gusset Thickness <i>in</i>	Gusset Grade	Adjust. Factor <i>A<sub>f</sub></i>	Adjust. Factor <i>A<sub>r</sub></i>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals <i>in</i>	Double Angle Stitch Bolt Spacing Horizontals <i>in</i>	Double Angle Stitch Bolt Spacing Redundants <i>in</i>
T1 120.00-100.00	0.50	0.250	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T2 100.00-80.00	0.50	0.250	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T3 80.00-60.00	0.50	0.250	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T4 60.00-40.00	0.50	0.250	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T5 40.00-20.00	0.50	0.250	A36 (36 ksi)	1	1	1	36.000	36.000	36.000
T6 20.00-0.00	0.50	0.250	A36 (36 ksi)	1	1	1	36.000	36.000	36.000



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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T5 40.00-20.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 20.00-0.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

### Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
				Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.						
120.00-100.00	T1 Flange	0.750	4	0.625	1	0.625	1	0.625	0	0.625	0	0.625	0	0.625	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
100.00-80.00	T2 Flange	0.750	4	0.625	1	0.625	1	0.625	0	0.625	0	0.625	0	0.625	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3 80.00-60.00	Flange	0.750	4	0.625	1	0.625	1	0.625	0	0.625	0	0.625	0	0.625	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4 60.00-40.00	Flange	1.000	4	0.625	1	0.625	1	0.625	0	0.625	0	0.625	0	0.625	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5 40.00-20.00	Flange	1.000	4	0.625	1	0.625	1	0.625	0	0.625	0	0.625	0	0.625	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6 20.00-0.00	Flange	1.000	4	0.625	1	0.625	1	0.625	0	0.625	0	0.625	0	0.625	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
Step Bolts	C	No	No	Ar (CaAa)	120.00 - 0.00	1	1	0.729	0.729		0.00
Feed Line Ladder	C	No	No	Ar (CaAa)	120.00 - 5.00	1	1	0.500	0.500		0.01
AVA5-50 (7/8 LOW DENSE.FOAM)	C	No	No	Ar (CaAa)	78.00 - 5.00	6	6	1.100	1.100		0.00
1/4	C	No	No	Ar (CaAa)	117.00 - 5.00	1	1	0.250	0.250		0.00
7/8	A	No	No	Ar (CaAa)	112.00 - 5.00	1	1	0.875	0.875		0.00
3/8	A	No	No	Ar (CaAa)	110.00 - 5.00	1	1	0.375	0.375		0.00
1/4	C	No	No	Ar (CaAa)	103.00 - 5.00	1	1	0.250	0.250		0.00
2"	C	No	No	Ar (CaAa)	96.00 - 5.00	1	1	2.000	2.000		0.00
1/4	C	No	No	Ar (CaAa)	86.00 - 5.00	1	1	0.250	0.250		0.00
6-12 Hybrid	C	No	No	Ar (CaAa)	65.00 - 5.00	2	2	1.250	1.250		0.00
1/4	C	No	No	Ar (CaAa)	61.00 - 5.00	2	2	0.250	0.250		0.00
1/2	C	No	No	Ar (CaAa)	61.00 - 5.00	1	1	0.500	0.500		0.00
6-12 Hybrid	C	No	No	Ar (CaAa)	78.00 - 5.00	1	1	1.250	1.250		0.00

### Feed Line/Linear Appurtenances Section Areas

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Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
T1	120.00-100.00	A	0.000	0.000	1.425	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.958	0.000	0.22
T2	100.00-80.00	A	0.000	0.000	2.500	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.808	0.000	0.28
T3	80.00-60.00	A	0.000	0.000	2.500	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	23.438	0.000	0.37
T4	60.00-40.00	A	0.000	0.000	2.500	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	30.658	0.000	0.47
T5	40.00-20.00	A	0.000	0.000	2.500	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	30.658	0.000	0.47
T6	20.00-0.00	A	0.000	0.000	1.875	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	23.358	0.000	0.36

**Feed Line/Linear Appurtenances Section Areas - With Ice**

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
T1	120.00-100.00	A	0.649	0.000	0.000	4.279	0.000	0.05
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	10.741	0.000	0.27
T2	100.00-80.00	A	0.636	0.000	0.000	7.585	0.000	0.09
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	19.776	0.000	0.38
T3	80.00-60.00	A	0.620	0.000	0.000	7.459	0.000	0.09
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	60.765	0.000	0.70
T4	60.00-40.00	A	0.599	0.000	0.000	7.295	0.000	0.09
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	80.245	0.000	0.88
T5	40.00-20.00	A	0.570	0.000	0.000	7.056	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	78.670	0.000	0.86
T6	20.00-0.00	A	0.510	0.000	0.000	4.937	0.000	0.06
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	51.698	0.000	0.59

**Feed Line Center of Pressure**

Section	Elevation ft	$CP_X$ in	$CP_Z$ in	$CP_X$ Ice in	$CP_Z$ Ice in
T1	120.00-100.00	-0.308	0.618	-0.659	1.621
T2	100.00-80.00	-0.506	1.453	-1.042	2.701
T3	80.00-60.00	-0.403	2.819	-0.742	4.511
T4	60.00-40.00	-0.347	3.331	-0.618	5.557
T5	40.00-20.00	-0.378	3.580	-0.674	6.008
T6	20.00-0.00	-0.354	3.375	-0.665	5.791

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### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
T1	1	Step Bolts	100.00 - 120.00	0.6000	0.6000
T1	2	Feed Line Ladder	100.00 - 120.00	0.6000	0.6000
T1	4	1/4	100.00 - 117.00	0.6000	0.6000
T1	5	7/8	100.00 - 112.00	0.6000	0.6000
T1	6	3/8	100.00 - 110.00	0.6000	0.6000
T1	7	1/4	100.00 - 103.00	0.6000	0.6000
T2	1	Step Bolts	80.00 - 100.00	0.6000	0.6000
T2	2	Feed Line Ladder	80.00 - 100.00	0.6000	0.6000
T2	4	1/4	80.00 - 100.00	0.6000	0.6000
T2	5	7/8	80.00 - 100.00	0.6000	0.6000
T2	6	3/8	80.00 - 100.00	0.6000	0.6000
T2	7	1/4	80.00 - 100.00	0.6000	0.6000
T2	8	2"	80.00 - 96.00	0.6000	0.6000
T2	9	1/4	80.00 - 86.00	0.6000	0.6000
T3	1	Step Bolts	60.00 - 80.00	0.6000	0.6000
T3	2	Feed Line Ladder	60.00 - 80.00	0.6000	0.6000
T3	3	AVA5-50 (7/8 LOW DENSIFOAM)	60.00 - 78.00	0.6000	0.6000
T3	4	1/4	60.00 - 80.00	0.6000	0.6000
T3	5	7/8	60.00 - 80.00	0.6000	0.6000
T3	6	3/8	60.00 - 80.00	0.6000	0.6000
T3	7	1/4	60.00 - 80.00	0.6000	0.6000
T3	8	2"	60.00 - 80.00	0.6000	0.6000
T3	9	1/4	60.00 - 80.00	0.6000	0.6000
T3	10	6-12 Hybrid	60.00 - 65.00	0.6000	0.6000
T3	11	1/4	60.00 - 61.00	0.6000	0.6000
T3	12	1/2	60.00 - 61.00	0.6000	0.6000
T3	13	6-12 Hybrid	60.00 - 78.00	0.6000	0.6000
T4	1	Step Bolts	40.00 - 60.00	0.6000	0.6000
T4	2	Feed Line Ladder	40.00 - 60.00	0.6000	0.6000
T4	3	AVA5-50 (7/8 LOW DENSIFOAM)	40.00 - 60.00	0.6000	0.6000
T4	4	1/4	40.00 - 60.00	0.6000	0.6000
T4	5	7/8	40.00 - 60.00	0.6000	0.6000
T4	6	3/8	40.00 - 60.00	0.6000	0.6000
T4	7	1/4	40.00 - 60.00	0.6000	0.6000
T4	8	2"	40.00 - 60.00	0.6000	0.6000
T4	9	1/4	40.00 - 60.00	0.6000	0.6000
T4	10	6-12 Hybrid	40.00 - 60.00	0.6000	0.6000
T4	11	1/4	40.00 - 60.00	0.6000	0.6000
T4	12	1/2	40.00 - 60.00	0.6000	0.6000
T4	13	6-12 Hybrid	40.00 - 60.00	0.6000	0.6000
T5	1	Step Bolts	20.00 - 40.00	0.6000	0.6000
T5	2	Feed Line Ladder	20.00 - 40.00	0.6000	0.6000
T5	3	AVA5-50 (7/8 LOW DENSIFOAM)	20.00 - 40.00	0.6000	0.6000
T5	4	1/4	20.00 - 40.00	0.6000	0.6000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T5	5	7/8	20.00 - 40.00	0.6000	0.6000
T5	6	3/8	20.00 - 40.00	0.6000	0.6000
T5	7	1/4	20.00 - 40.00	0.6000	0.6000
T5	8	2"	20.00 - 40.00	0.6000	0.6000
T5	9	1/4	20.00 - 40.00	0.6000	0.6000
T5	10	6-12 Hybrid	20.00 - 40.00	0.6000	0.6000
T5	11	1/4	20.00 - 40.00	0.6000	0.6000
T5	12	1/2	20.00 - 40.00	0.6000	0.6000
T5	13	6-12 Hybrid	20.00 - 40.00	0.6000	0.6000
T6	1	Step Bolts	0.00 - 20.00	0.6000	0.6000
T6	2	Feed Line Ladder	5.00 - 20.00	0.6000	0.6000
T6	3	AVA5-50 (7/8 LOW DENSIFOAM)	5.00 - 20.00	0.6000	0.6000
T6	4	1/4	5.00 - 20.00	0.6000	0.6000
T6	5	7/8	5.00 - 20.00	0.6000	0.6000
T6	6	3/8	5.00 - 20.00	0.6000	0.6000
T6	7	1/4	5.00 - 20.00	0.6000	0.6000
T6	8	2"	5.00 - 20.00	0.6000	0.6000
T6	9	1/4	5.00 - 20.00	0.6000	0.6000
T6	10	6-12 Hybrid	5.00 - 20.00	0.6000	0.6000
T6	11	1/4	5.00 - 20.00	0.6000	0.6000
T6	12	1/2	5.00 - 20.00	0.6000	0.6000
T6	13	6-12 Hybrid	5.00 - 20.00	0.6000	0.6000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	$C_A A_A$ Front	$C_A A_A$ Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
Ericsson AIR 6449 (VW)	A	From Leg	4.00	0.00	0.000	78.00	No Ice	5.68	2.83	0.11
			-6.00				1/2" Ice	5.98	3.19	0.16
			0.00							
Ericsson AIR 6449 (VW)	B	From Leg	4.00	0.00	0.000	78.00	No Ice	5.68	2.83	0.11
			-6.00				1/2" Ice	5.98	3.19	0.16
			0.00							
Ericsson AIR 6449 (VW)	C	From Leg	4.00	0.00	0.000	78.00	No Ice	5.68	2.83	0.11
			-6.00				1/2" Ice	5.98	3.19	0.16
			0.00							
12ft HD Sector Mount (VW)	A	From Leg	4.00	0.00	0.000	78.00	No Ice	13.07	9.57	0.15
			0.00				1/2" Ice	18.42	13.39	0.33
			0.00							
12ft HD Sector Mount (VW)	B	From Leg	4.00	0.00	0.000	78.00	No Ice	13.07	9.57	0.15
			0.00				1/2" Ice	18.42	13.39	0.33
			0.00							
12ft HD Sector Mount (VW)	C	From Leg	4.00	0.00	0.000	78.00	No Ice	13.07	9.57	0.15
			0.00				1/2" Ice	18.42	13.39	0.33
			0.00							
3' Yagi	C	From Leg	0.50	0.00	0.000	105.00	No Ice	2.08	2.08	0.03
			0.00				1/2" Ice	3.79	3.79	0.05
			0.00							
CWWX063X19x00	A	From Leg	4.00	0.00	0.000	78.00	No Ice	8.60	6.42	0.05



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	<b>Project</b>		220040				<b>Date</b>		10:55:33 04/04/22
	<b>Client</b>		Verizon Wireless				<b>Designed by</b>		Mike Otegui

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
			0.00			1/2" Ice	12.08	6.03	0.09	
			0.00							
8'x1'x3"	B	From Leg	0.50		0.000	96.00	No Ice	11.47	4.87	0.02
			0.00				1/2" Ice	12.08	6.03	0.09
			0.00							
8'x1'x3"	C	From Leg	0.50		0.000	96.00	No Ice	11.47	4.87	0.02
			0.00				1/2" Ice	12.08	6.03	0.09
			0.00							
GPS 1 ft	C	From Leg	0.50		0.000	96.00	No Ice	0.33	0.33	0.01
			0.00				1/2" Ice	0.48	0.48	0.02
			0.00							
1x1 panel	A	From Leg	0.50		0.000	112.00	No Ice	1.20	0.41	0.03
			0.00				1/2" Ice	1.34	0.50	0.03
			0.00							
1x1 panel	C	From Leg	0.50		0.000	86.00	No Ice	1.20	0.41	0.03
			0.00				1/2" Ice	1.34	0.50	0.03
			0.00							
12ft HD Sector Mount	A	From Leg	4.00		0.000	65.00	No Ice	13.07	9.57	0.15
			0.00				1/2" Ice	18.42	13.39	0.33
			0.00							
12ft HD Sector Mount	B	From Leg	4.00		0.000	65.00	No Ice	13.07	9.57	0.15
			0.00				1/2" Ice	18.42	13.39	0.33
			0.00							
12ft HD Sector Mount	C	From Leg	4.00		0.000	65.00	No Ice	13.07	9.57	0.15
			0.00				1/2" Ice	18.42	13.39	0.33
			0.00							
FFV4-65C-R3-V1	A	From Leg	4.00		0.000	67.00	No Ice	21.11	10.54	0.33
			6.00				1/2" Ice	21.77	11.48	0.46
			0.00							
FFV4-65C-R3-V1	B	From Leg	4.00		0.000	67.00	No Ice	21.11	10.54	0.33
			6.00				1/2" Ice	21.77	11.48	0.46
			0.00							
FFV4-65C-R3-V1	C	From Leg	4.00		0.000	67.00	No Ice	21.11	10.54	0.33
			6.00				1/2" Ice	21.77	11.48	0.46
			0.00							
27"x20"x6" panel	A	From Leg	4.00		0.000	67.00	No Ice	4.50	1.45	0.05
			-6.00				1/2" Ice	4.76	1.63	0.08
			0.00							
27"x20"x6" panel	B	From Leg	4.00		0.000	67.00	No Ice	4.50	1.45	0.05
			-6.00				1/2" Ice	4.76	1.63	0.08
			0.00							
27"x20"x6" panel	C	From Leg	4.00		0.000	67.00	No Ice	4.50	1.45	0.05
			-6.00				1/2" Ice	4.76	1.63	0.08
			0.00							
(2) AHOLA 4T4R B12/71	A	From Leg	0.50		0.000	65.00	No Ice	2.25	1.73	0.09
			0.00				1/2" Ice	2.45	2.02	0.11
			0.00							
(2) AHOLA 4T4R B12/71	B	From Leg	0.50		0.000	65.00	No Ice	2.25	1.73	0.09
			0.00				1/2" Ice	2.45	2.02	0.11
			0.00							
(2) AHOLA 4T4R B12/71	C	From Leg	0.50		0.000	65.00	No Ice	2.25	1.73	0.09
			0.00				1/2" Ice	2.45	2.02	0.11
			0.00							
Raycap RDIC-9181-PF-48	A	From Leg	0.50		0.000	61.00	No Ice	1.87	1.22	0.03
			0.00				1/2" Ice	2.04	1.43	0.05
			0.00							
1x1 panel	A	From Leg	0.50		0.000	60.00	No Ice	1.20	0.41	0.03

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	<b>Client</b>	Verizon Wireless	<b>Designed by</b>	Mike Otegui

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
			0.00			1/2" Ice	1.34	0.50	0.03	
1x1 panel	C	From Leg	0.00		0.000	61.00	No Ice	1.20	0.41	0.03
			0.50			1/2" Ice	1.34	0.50	0.03	
Ericsson 6701 (VW)	A	From Leg	0.00		0.000	78.00	No Ice	1.45	1.27	0.04
			4.00			1/2" Ice	1.62	1.55	0.05	
Ericsson 6701 (VW)	B	From Leg	0.00		0.000	78.00	No Ice	1.45	1.27	0.04
			4.00			1/2" Ice	1.62	1.55	0.05	
Ericsson 6701 (VW)	C	From Leg	0.00		0.000	78.00	No Ice	1.45	1.27	0.04
			4.00			1/2" Ice	1.62	1.55	0.05	
Ericsson 4408/6514 (VW)	A	From Leg	0.00		0.000	78.00	No Ice	0.52	0.42	0.02
			4.00			1/2" Ice	0.63	0.56	0.03	
Ericsson 4408/6514 (VW)	B	From Leg	0.00		0.000	78.00	No Ice	0.52	0.42	0.02
			4.00			1/2" Ice	0.63	0.56	0.03	
Ericsson 4408/6514 (VW)	C	From Leg	0.00		0.000	78.00	No Ice	0.52	0.42	0.02
			4.00			1/2" Ice	0.63	0.56	0.03	

### Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral							
				ft	ft	°	°	ft	ft	ft <sup>2</sup>	K	
4ft Grid Dish	C	Grid	From Leg	0.50		0.000		110.00	2.00	No Ice	3.14	0.20
				0.00						1/2" Ice	3.41	0.22
6ft dish w/o Radome	C	Paraboloid w/o Radome	From Leg	1.50		0.000		117.00	6.00	No Ice	28.27	0.25
				0.00						1/2" Ice	29.07	0.40

### Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F <sub>a</sub>	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>AA</sub> In Face	C <sub>AA</sub> Out Face
ft	ft		ksf	ft <sup>2</sup>	c	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	%	ft <sup>2</sup>	ft <sup>2</sup>
T1	110.00	1.291	0.03	103.958	A	10.355	7.917	7.917	43.33	1.425	0.000

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	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> ksf	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A A</sub> In Face ft <sup>2</sup>	C <sub>A A</sub> Out Face ft <sup>2</sup>
120.00-100.00					B	10.355	7.917		43.33	0.000	0.000
					C	10.355	7.917		43.33	2.958	0.000
T2 100.00-80.00	90.00	1.238	0.03	103.958	A	10.355	7.917	7.917	43.33	2.500	0.000
					B	10.355	7.917		43.33	0.000	0.000
					C	10.355	7.917		43.33	6.808	0.000
T3 80.00-60.00	70.00	1.174	0.03	104.792	A	10.270	9.583	9.583	48.27	2.500	0.000
					B	10.270	9.583		48.27	0.000	0.000
					C	10.270	9.583		48.27	23.438	0.000
T4 60.00-40.00	50.00	1.094	0.03	107.500	A	9.992	15.000	15.000	60.02	2.500	0.000
					B	9.992	15.000		60.02	0.000	0.000
					C	9.992	15.000		60.02	30.658	0.000
T5 40.00-20.00	30.00	0.982	0.02	129.178	A	10.884	18.364	18.364	62.79	2.500	0.000
					B	10.884	18.364		62.79	0.000	0.000
					C	10.884	18.364		62.79	30.658	0.000
T6 20.00-0.00	10.00	0.85	0.02	169.178	A	12.364	18.364	18.364	59.76	1.875	0.000
					B	12.364	18.364		59.76	0.000	0.000
					C	12.364	18.364		59.76	23.358	0.000

### Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> ksf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A A</sub> In Face ft <sup>2</sup>	C <sub>A A</sub> Out Face ft <sup>2</sup>
T1 120.00-100.00	110.00	1.291	0.01	0.649	106.120	A	10.355	18.785	12.240	42.01	4.279	0.000
						B	10.355	18.785		42.01	0.000	0.000
						C	10.355	18.785		42.01	10.741	0.000
T2 100.00-80.00	90.00	1.238	0.01	0.636	106.077	A	10.355	18.569	12.155	42.02	7.585	0.000
						B	10.355	18.569		42.02	0.000	0.000
						C	10.355	18.569		42.02	19.776	0.000
T3 80.00-60.00	70.00	1.174	0.01	0.620	106.858	A	10.270	19.918	13.716	45.44	7.459	0.000
						B	10.270	19.918		45.44	0.000	0.000
						C	10.270	19.918		45.44	60.765	0.000
T4 60.00-40.00	50.00	1.094	0.00	0.599	109.498	A	9.992	24.827	18.996	54.56	7.295	0.000
						B	9.992	24.827		54.56	0.000	0.000
						C	9.992	24.827		54.56	80.245	0.000
T5 40.00-20.00	30.00	0.982	0.00	0.570	131.079	A	10.884	28.216	22.167	56.69	7.056	0.000
						B	10.884	28.216		56.69	0.000	0.000
						C	10.884	28.216		56.69	78.670	0.000
T6 20.00-0.00	10.00	0.85	0.00	0.510	170.881	A	12.364	27.946	21.771	54.01	4.937	0.000
						B	12.364	27.946		54.01	0.000	0.000
						C	12.364	27.946		54.01	51.698	0.000

### Tower Pressure - Service

$G_H = 0.850$

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 13 of 28
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	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> ksf	A <sub>G</sub> ft <sup>2</sup>	F <sub>a</sub> c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
T1 120.00-100.00	110.00	1.291	0.01	103.958	A	10.355	7.917	7.917	43.33	1.425	0.000
					B	10.355	7.917		43.33	0.000	0.000
					C	10.355	7.917		43.33	2.958	0.000
T2 100.00-80.00	90.00	1.238	0.01	103.958	A	10.355	7.917	7.917	43.33	2.500	0.000
					B	10.355	7.917		43.33	0.000	0.000
					C	10.355	7.917		43.33	6.808	0.000
T3 80.00-60.00	70.00	1.174	0.01	104.792	A	10.270	9.583	9.583	48.27	2.500	0.000
					B	10.270	9.583		48.27	0.000	0.000
					C	10.270	9.583		48.27	23.438	0.000
T4 60.00-40.00	50.00	1.094	0.01	107.500	A	9.992	15.000	15.000	60.02	2.500	0.000
					B	9.992	15.000		60.02	0.000	0.000
					C	9.992	15.000		60.02	30.658	0.000
T5 40.00-20.00	30.00	0.982	0.01	129.178	A	10.884	18.364	18.364	62.79	2.500	0.000
					B	10.884	18.364		62.79	0.000	0.000
					C	10.884	18.364		62.79	30.658	0.000
T6 20.00-0.00	10.00	0.85	0.01	169.178	A	12.364	18.364	18.364	59.76	1.875	0.000
					B	12.364	18.364		59.76	0.000	0.000
					C	12.364	18.364		59.76	23.358	0.000

### Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F <sub>a</sub> c e	e	C <sub>F</sub>	q <sub>z</sub> ksf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w klf	Ctrl. Face
T1 120.00-100.00	0.26	0.51	A	0.176	2.679	0.03	1	1	14.873	1.14	0.06	C
			B	0.176	2.679		1	1	14.873			
			C	0.176	2.679		1	1	14.873			
T2 100.00-80.00	0.34	0.51	A	0.176	2.679	0.03	1	1	14.873	1.17	0.06	C
			B	0.176	2.679		1	1	14.873			
			C	0.176	2.679		1	1	14.873			
T3 80.00-60.00	0.44	0.88	A	0.189	2.632	0.03	1	1	15.758	1.39	0.07	C
			B	0.189	2.632		1	1	15.758			
			C	0.189	2.632		1	1	15.758			
T4 60.00-40.00	0.53	1.44	A	0.232	2.491	0.03	1	1	18.592	1.50	0.08	C
			B	0.232	2.491		1	1	18.592			
			C	0.232	2.491		1	1	18.592			
T5 40.00-20.00	0.53	1.49	A	0.226	2.51	0.02	1	1	21.019	1.48	0.07	C
			B	0.226	2.51		1	1	21.019			
			C	0.226	2.51		1	1	21.019			
T6 20.00-0.00	0.41	1.53	A	0.182	2.658	0.02	1	1	22.489	1.32	0.07	C
			B	0.182	2.658		1	1	22.489			
			C	0.182	2.658		1	1	22.489			
Sum Weight:	2.52	6.44						OTM	460.62 kip-ft	8.01		

### Tower Forces - No Ice - Wind 60 To Face

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 14 of 28
	<b>Project</b> 220040	<b>Date</b> 10:55:33 04/04/22
	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> ksf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w klf	Ctrl. Face
T1 120.00-100.00	0.26	0.51	A	0.176	2.679	0.03	0.8	1	12.802	0.99	0.05	C
			B	0.176	2.679		0.8	1	12.802			
			C	0.176	2.679		0.8	1	12.802			
T2 100.00-80.00	0.34	0.51	A	0.176	2.679	0.03	0.8	1	12.802	1.03	0.05	C
			B	0.176	2.679		0.8	1	12.802			
			C	0.176	2.679		0.8	1	12.802			
T3 80.00-60.00	0.44	0.88	A	0.189	2.632	0.03	0.8	1	13.704	1.26	0.06	A
			B	0.189	2.632		0.8	1	13.704			
			C	0.189	2.632		0.8	1	13.704			
T4 60.00-40.00	0.53	1.44	A	0.232	2.491	0.03	0.8	1	16.593	1.39	0.07	A
			B	0.232	2.491		0.8	1	16.593			
			C	0.232	2.491		0.8	1	16.593			
T5 40.00-20.00	0.53	1.49	A	0.226	2.51	0.02	0.8	1	18.842	1.37	0.07	A
			B	0.226	2.51		0.8	1	18.842			
			C	0.226	2.51		0.8	1	18.842			
T6 20.00-0.00	0.41	1.53	A	0.182	2.658	0.02	0.8	1	20.017	1.21	0.06	A
			B	0.182	2.658		0.8	1	20.017			
			C	0.182	2.658		0.8	1	20.017			
Sum Weight:	2.52	6.44						OTM	412.04 kip-ft	7.24		

**Tower Forces - No Ice - Wind 90 To Face**

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> ksf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w klf	Ctrl. Face
T1 120.00-100.00	0.26	0.51	A	0.176	2.679	0.03	0.85	1	13.320	1.03	0.05	C
			B	0.176	2.679		0.85	1	13.320			
			C	0.176	2.679		0.85	1	13.320			
T2 100.00-80.00	0.34	0.51	A	0.176	2.679	0.03	0.85	1	13.320	1.06	0.05	C
			B	0.176	2.679		0.85	1	13.320			
			C	0.176	2.679		0.85	1	13.320			
T3 80.00-60.00	0.44	0.88	A	0.189	2.632	0.03	0.85	1	14.218	1.29	0.06	B
			B	0.189	2.632		0.85	1	14.218			
			C	0.189	2.632		0.85	1	14.218			
T4 60.00-40.00	0.53	1.44	A	0.232	2.491	0.03	0.85	1	17.093	1.42	0.07	B
			B	0.232	2.491		0.85	1	17.093			
			C	0.232	2.491		0.85	1	17.093			
T5 40.00-20.00	0.53	1.49	A	0.226	2.51	0.02	0.85	1	19.387	1.40	0.07	B
			B	0.226	2.51		0.85	1	19.387			
			C	0.226	2.51		0.85	1	19.387			
T6 20.00-0.00	0.41	1.53	A	0.182	2.658	0.02	0.85	1	20.635	1.24	0.06	B
			B	0.182	2.658		0.85	1	20.635			
			C	0.182	2.658		0.85	1	20.635			
Sum Weight:	2.52	6.44						OTM	424.18 kip-ft	7.43		

**Tower Forces - With Ice - Wind Normal To Face**

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 15 of 28
	<b>Project</b> 220040	<b>Date</b> 10:55:33 04/04/22
	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				ksf			ft <sup>2</sup>	K	klf	
T1 120.00-100.00	0.35	1.16	A	0.275	2.366	0.01	1	1	21.375	0.30	0.01	C
			B	0.275	2.366		1	1	21.375			
			C	0.275	2.366		1	1	21.375			
T2 100.00-80.00	0.50	1.15	A	0.273	2.371	0.01	1	1	21.239	0.32	0.02	C
			B	0.273	2.371		1	1	21.239			
			C	0.273	2.371		1	1	21.239			
T3 80.00-60.00	0.82	1.52	A	0.283	2.344	0.01	1	1	22.008	0.42	0.02	C
			B	0.283	2.344		1	1	22.008			
			C	0.283	2.344		1	1	22.008			
T4 60.00-40.00	0.99	2.12	A	0.318	2.249	0.00	1	1	24.920	0.46	0.02	C
			B	0.318	2.249		1	1	24.920			
			C	0.318	2.249		1	1	24.920			
T5 40.00-20.00	0.96	2.22	A	0.298	2.301	0.00	1	1	27.688	0.44	0.02	C
			B	0.298	2.301		1	1	27.688			
			C	0.298	2.301		1	1	27.688			
T6 20.00-0.00	0.67	2.23	A	0.236	2.48	0.00	1	1	28.550	0.34	0.02	C
			B	0.236	2.48		1	1	28.550			
			C	0.236	2.48		1	1	28.550			
Sum Weight:	4.29	10.49						OTM	129.95 kip-ft	2.27		

### Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				ksf			ft <sup>2</sup>	K	klf	
T1 120.00-100.00	0.35	1.16	A	0.275	2.366	0.01	0.8	1	19.304	0.27	0.01	C
			B	0.275	2.366		0.8	1	19.304			
			C	0.275	2.366		0.8	1	19.304			
T2 100.00-80.00	0.50	1.15	A	0.273	2.371	0.01	0.8	1	19.168	0.30	0.01	C
			B	0.273	2.371		0.8	1	19.168			
			C	0.273	2.371		0.8	1	19.168			
T3 80.00-60.00	0.82	1.52	A	0.283	2.344	0.01	0.8	1	19.954	0.40	0.02	A
			B	0.283	2.344		0.8	1	19.954			
			C	0.283	2.344		0.8	1	19.954			
T4 60.00-40.00	0.99	2.12	A	0.318	2.249	0.00	0.8	1	22.921	0.44	0.02	A
			B	0.318	2.249		0.8	1	22.921			
			C	0.318	2.249		0.8	1	22.921			
T5 40.00-20.00	0.96	2.22	A	0.298	2.301	0.00	0.8	1	25.511	0.42	0.02	A
			B	0.298	2.301		0.8	1	25.511			
			C	0.298	2.301		0.8	1	25.511			
T6 20.00-0.00	0.67	2.23	A	0.236	2.48	0.00	0.8	1	26.077	0.32	0.02	A
			B	0.236	2.48		0.8	1	26.077			
			C	0.236	2.48		0.8	1	26.077			
Sum Weight:	4.29	10.49						OTM	121.91 kip-ft	2.14		

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 16 of 28
	<b>Project</b> 220040	<b>Date</b> 10:55:33 04/04/22
	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

### Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> ksf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w klf	Ctrl. Face
T1 120.00-100.00	0.35	1.16	A	0.275	2.366	0.01	0.85	1	19.822	0.28	0.01	C
			B	0.275	2.366	0.85	1	19.822				
			C	0.275	2.366	0.85	1	19.822				
T2 100.00-80.00	0.50	1.15	A	0.273	2.371	0.01	0.85	1	19.686	0.30	0.02	C
			B	0.273	2.371	0.85	1	19.686				
			C	0.273	2.371	0.85	1	19.686				
T3 80.00-60.00	0.82	1.52	A	0.283	2.344	0.01	0.85	1	20.468	0.38	0.02	B
			B	0.283	2.344	0.85	1	20.468				
			C	0.283	2.344	0.85	1	20.468				
T4 60.00-40.00	0.99	2.12	A	0.318	2.249	0.00	0.85	1	23.421	0.43	0.02	B
			B	0.318	2.249	0.85	1	23.421				
			C	0.318	2.249	0.85	1	23.421				
T5 40.00-20.00	0.96	2.22	A	0.298	2.301	0.00	0.85	1	26.055	0.41	0.02	B
			B	0.298	2.301	0.85	1	26.055				
			C	0.298	2.301	0.85	1	26.055				
T6 20.00-0.00	0.67	2.23	A	0.236	2.48	0.00	0.85	1	26.695	0.33	0.02	B
			B	0.236	2.48	0.85	1	26.695				
			C	0.236	2.48	0.85	1	26.695				
Sum Weight:	4.29	10.49						OTM	121.40 kip-ft	2.12		

### Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> ksf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w klf	Ctrl. Face
T1 120.00-100.00	0.26	0.51	A	0.176	2.679	0.01	1	1	14.873	0.30	0.02	C
			B	0.176	2.679	1	1	14.873				
			C	0.176	2.679	1	1	14.873				
T2 100.00-80.00	0.34	0.51	A	0.176	2.679	0.01	1	1	14.873	0.31	0.02	C
			B	0.176	2.679	1	1	14.873				
			C	0.176	2.679	1	1	14.873				
T3 80.00-60.00	0.44	0.88	A	0.189	2.632	0.01	1	1	15.758	0.37	0.02	C
			B	0.189	2.632	1	1	15.758				
			C	0.189	2.632	1	1	15.758				
T4 60.00-40.00	0.53	1.44	A	0.232	2.491	0.01	1	1	18.706	0.40	0.02	C
			B	0.232	2.491	1	1	18.706				
			C	0.232	2.491	1	1	18.706				
T5 40.00-20.00	0.53	1.49	A	0.226	2.51	0.01	1	1	21.528	0.40	0.02	C
			B	0.226	2.51	1	1	21.528				
			C	0.226	2.51	1	1	21.528				
T6 20.00-0.00	0.41	1.53	A	0.182	2.658	0.01	1	1	22.859	0.36	0.02	C
			B	0.182	2.658	1	1	22.859				
			C	0.182	2.658	1	1	22.859				
Sum Weight:	2.52	6.44						OTM	123.58 kip-ft	2.16		

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	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

### Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> ksf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w klf	Ctrl. Face
T1 120.00-100.00	0.26	0.51	A	0.176	2.679	0.01	0.8	1	12.802	0.26	0.01	C
			B	0.176	2.679	0.8	1	12.802				
			C	0.176	2.679	0.8	1	12.802				
T2 100.00-80.00	0.34	0.51	A	0.176	2.679	0.01	0.8	1	12.802	0.27	0.01	C
			B	0.176	2.679	0.8	1	12.802				
			C	0.176	2.679	0.8	1	12.802				
T3 80.00-60.00	0.44	0.88	A	0.189	2.632	0.01	0.8	1	13.704	0.34	0.02	A
			B	0.189	2.632	0.8	1	13.704				
			C	0.189	2.632	0.8	1	13.704				
T4 60.00-40.00	0.53	1.44	A	0.232	2.491	0.01	0.8	1	16.707	0.37	0.02	A
			B	0.232	2.491	0.8	1	16.707				
			C	0.232	2.491	0.8	1	16.707				
T5 40.00-20.00	0.53	1.49	A	0.226	2.51	0.01	0.8	1	19.351	0.37	0.02	A
			B	0.226	2.51	0.8	1	19.351				
			C	0.226	2.51	0.8	1	19.351				
T6 20.00-0.00	0.41	1.53	A	0.182	2.658	0.01	0.8	1	20.387	0.33	0.02	A
			B	0.182	2.658	0.8	1	20.387				
			C	0.182	2.658	0.8	1	20.387				
Sum Weight:	2.52	6.44						OTM	110.58 kip-ft	1.95		

### Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> ksf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w klf	Ctrl. Face
T1 120.00-100.00	0.26	0.51	A	0.176	2.679	0.01	0.85	1	13.320	0.27	0.01	C
			B	0.176	2.679	0.85	1	13.320				
			C	0.176	2.679	0.85	1	13.320				
T2 100.00-80.00	0.34	0.51	A	0.176	2.679	0.01	0.85	1	13.320	0.28	0.01	C
			B	0.176	2.679	0.85	1	13.320				
			C	0.176	2.679	0.85	1	13.320				
T3 80.00-60.00	0.44	0.88	A	0.189	2.632	0.01	0.85	1	14.218	0.35	0.02	B
			B	0.189	2.632	0.85	1	14.218				
			C	0.189	2.632	0.85	1	14.218				
T4 60.00-40.00	0.53	1.44	A	0.232	2.491	0.01	0.85	1	17.207	0.38	0.02	B
			B	0.232	2.491	0.85	1	17.207				
			C	0.232	2.491	0.85	1	17.207				
T5 40.00-20.00	0.53	1.49	A	0.226	2.51	0.01	0.85	1	19.895	0.38	0.02	B
			B	0.226	2.51	0.85	1	19.895				
			C	0.226	2.51	0.85	1	19.895				
T6 20.00-0.00	0.41	1.53	A	0.182	2.658	0.01	0.85	1	21.005	0.34	0.02	B
			B	0.182	2.658	0.85	1	21.005				
			C	0.182	2.658	0.85	1	21.005				
Sum Weight:	2.52	6.44						OTM	113.83 kip-ft	2.00		

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 18 of 28
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	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

### Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, $M_x$ kip-ft	Sum of Overturning Moments, $M_z$ kip-ft	Sum of Torques kip-ft
Leg Weight	4.00					
Bracing Weight	2.36					
Total Member Self-Weight	6.35			3.12	3.40	
Gusset Weight	0.09					
Total Weight	14.46			3.12	3.40	
Wind 0 deg - No Ice		1.00	-14.56	-987.06	-114.72	-1.06
Wind 90 deg - No Ice		13.63	-0.61	-69.58	-949.95	0.99
Wind 180 deg - No Ice		-0.12	13.48	908.03	19.42	2.84
Member Ice	4.05					
Gusset Ice	0.06					
Total Weight Ice	24.48			5.54	4.84	
Wind 0 deg - Ice		0.21	-4.03	-264.75	-20.18	-0.32
Wind 90 deg - Ice		3.72	-0.13	-9.88	-252.76	0.60
Wind 180 deg - Ice		-0.03	3.84	259.96	8.08	0.68
Total Weight	14.46			3.12	3.40	
Wind 0 deg - Service		0.27	-3.91	-265.53	-28.58	-0.28
Wind 90 deg - Service		3.66	-0.16	-19.73	-252.38	0.26
Wind 180 deg - Service		-0.03	3.62	242.16	7.31	0.76

### Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	1.2D+1.0W (pattern 1) 0 deg - No Ice
4	1.2D+1.0W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.0 Wind 0 deg - No Ice
6	1.2 Dead+1.0 Wind 90 deg - No Ice
7	1.2D+1.0W (pattern 1) 90 deg - No Ice
8	1.2D+1.0W (pattern 2) 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 180 deg - No Ice
11	1.2D+1.0W (pattern 1) 180 deg - No Ice
12	1.2D+1.0W (pattern 2) 180 deg - No Ice
13	0.9 Dead+1.0 Wind 180 deg - No Ice
14	1.2 Dead+1.0 Ice+1.0 Temp
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
16	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
17	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
18	Dead+Wind 0 deg - Service
19	Dead+Wind 90 deg - Service
20	Dead+Wind 180 deg - Service

### Maximum Member Forces

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b>	DEN Gibraltar	<b>Page</b>	19 of 28
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	<b>Client</b>	Verizon Wireless	<b>Designed by</b>	Mike Otegui

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
T1	120 - 100	Leg	Max Tension	9	4.87	-0.02	0.01		
			Max. Compression	2	-4.91	-0.02	0.01		
			Max. Mx	8	-0.03	0.35	0.10		
			Max. My	10	-0.54	-0.04	0.36		
			Max. Vy	9	0.28	-0.21	0.11		
		Diagonal	Max. Vx	10	0.29	-0.04	-0.21		
			Max Tension	2	1.16	0.00	0.00		
			Max. Compression	2	-1.14	0.00	0.00		
			Max. Mx	2	0.29	0.01	0.00		
			Max. My	10	-0.88	0.00	-0.00		
			Max. Vy	17	-0.01	0.01	-0.00		
			Max. Vx	10	-0.00	0.00	0.00		
		Top Girt	Max Tension	5	0.04	0.00	0.00		
			Max. Compression	2	-0.04	0.00	0.00		
			Max. Mx	14	-0.02	-0.01	0.00		
			Max. My	10	-0.01	0.00	-0.00		
			Max. Vy	14	0.01	0.00	0.00		
		T2	100 - 80	Leg	Max Tension	9	17.80	0.01	-0.02
					Max. Compression	2	-18.71	-0.04	-0.04
Max. Mx	9				17.78	-0.26	0.04		
Max. My	2				-18.70	0.02	0.28		
Max. Vy	6				0.20	-0.12	-0.00		
Diagonal	Max. Vx			2	-0.20	-0.02	0.12		
	Max Tension			2	1.83	0.00	0.00		
	Max. Compression			2	-1.99	0.00	0.00		
	Max. Mx			2	0.83	0.03	0.00		
	Max. My			10	-1.73	-0.00	-0.01		
	Max. Vy			2	-0.01	0.03	0.00		
	Max. Vx			10	-0.00	0.00	0.00		
Top Girt	Max Tension			8	0.13	0.00	0.00		
	Max. Compression			4	-0.10	0.00	0.00		
	Max. Mx			14	-0.01	-0.01	0.00		
	Max. My			10	-0.01	0.00	-0.00		
	Max. Vy			14	0.01	0.00	0.00		
T3	80 - 60			Leg	Max Tension	9	45.32	-0.27	-0.06
					Max. Compression	2	-52.81	0.03	0.23
		Max. Mx	7		-4.89	0.86	-0.01		
		Max. My	11		-7.48	0.04	0.86		
		Max. Vy	7		-0.58	-0.19	0.02		
		Diagonal	Max. Vx	2	0.61	0.02	0.28		
			Max Tension	10	4.72	0.00	0.00		
			Max. Compression	2	-5.09	0.00	0.00		
			Max. Mx	2	3.09	0.05	0.00		
			Max. My	6	-4.71	-0.03	0.01		
			Max. Vy	2	-0.02	0.05	0.00		
			Max. Vx	6	-0.00	-0.03	0.01		
		Top Girt	Max Tension	8	0.21	0.00	0.00		
			Max. Compression	4	-0.21	0.00	0.00		
			Max. Mx	14	-0.01	-0.02	0.00		
			Max. My	10	-0.01	0.00	-0.00		
			Max. Vy	14	0.01	0.00	0.00		
		T4	60 - 40	Leg	Max Tension	9	86.69	-0.39	-0.32
					Max. Compression	2	-103.25	-0.00	1.30
Max. Mx	6				-13.76	-1.21	-0.06		
Max. My	2				-103.25	-0.00	1.30		
Max. Vy	6				0.29	-1.21	-0.06		
Diagonal	Max. Vx			2	-0.27	-0.00	1.30		
	Max Tension			13	5.43	0.04	0.00		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T5	40 - 20	Top Girt	Max. Compression	2	-5.90	0.00	0.00	
			Max. Mx	2	3.35	0.07	0.01	
			Max. My	6	-5.28	-0.04	0.01	
			Max. Vy	2	-0.02	0.07	0.01	
			Max. Vx	6	-0.00	-0.04	0.01	
			Max Tension	6	1.27	0.00	0.00	
			Max. Compression	5	-1.30	0.00	0.00	
			Max. Mx	14	0.11	-0.02	0.00	
			Max. My	10	-0.57	0.00	0.00	
			Max. Vy	14	0.02	0.00	0.00	
			Max. Vx	10	-0.00	0.00	0.00	
			Max Tension	13	102.83	-0.66	-0.02	
		Leg	Max. Compression	2	-121.52	0.67	0.10	
			Max. Mx	2	-112.05	1.30	0.00	
			Max. My	6	-14.80	-0.01	1.37	
			Max. Vy	2	0.19	1.30	0.00	
			Max. Vx	6	-0.30	-0.01	1.37	
			Max Tension	13	1.69	0.00	0.00	
			Diagonal	Max. Compression	3	-1.63	0.00	0.00
				Max. Mx	2	1.17	0.02	0.00
				Max. My	10	-1.06	-0.01	-0.01
				Max. Vy	17	0.01	0.01	-0.00
				Max. Vx	10	0.00	0.00	0.00
				Max Tension	13	0.37	0.00	0.00
Top Girt	Max. Compression	2	-0.46	0.00	0.00			
	Max. Mx	14	-0.01	-0.01	0.00			
	Max. My	17	-0.08	0.00	0.00			
	Max. Vy	14	-0.01	0.00	0.00			
	Max. Vx	17	0.00	0.00	0.00			
	Max Tension	13	111.61	-0.55	-0.02			
T6	20 - 0	Leg	Max. Compression	2	-131.82	0.00	0.00	
			Max. Mx	15	-41.56	1.08	0.02	
			Max. My	6	-14.73	0.01	1.01	
			Max. Vy	16	-0.31	-0.75	-0.06	
			Max. Vx	6	0.22	0.01	1.01	
			Max Tension	13	1.62	0.00	0.00	
		Diagonal	Max. Compression	3	-1.67	0.00	0.00	
			Max. Mx	2	1.03	0.02	0.00	
			Max. My	10	-1.33	-0.00	-0.00	
			Max. Vy	17	0.01	0.02	-0.00	
			Max. Vx	17	0.00	0.00	0.00	
			Max Tension	17	0.00	0.00	0.00	

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	10	66.75	4.08	-2.71
	Max. H <sub>x</sub>	10	66.75	4.08	-2.71
	Max. H <sub>z</sub>	9	-106.34	-6.81	3.75
	Min. Vert	9	-106.34	-6.81	3.75
	Min. H <sub>x</sub>	9	-106.34	-6.81	3.75
	Min. H <sub>z</sub>	10	66.75	4.08	-2.71
Leg B	Max. Vert	6	107.56	-6.90	-3.94
	Max. H <sub>x</sub>	5	-46.47	3.32	1.93
	Max. H <sub>z</sub>	5	-46.47	3.32	1.93
	Min. Vert	5	-46.47	3.32	1.93

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg A	Min. H <sub>x</sub>	6	107.56	-6.90	-3.94
	Min. H <sub>z</sub>	6	107.56	-6.90	-3.94
	Max. Vert	2	133.26	0.03	9.93
	Max. H <sub>x</sub>	13	-112.74	0.17	-8.58
	Max. H <sub>z</sub>	2	133.26	0.03	9.93
	Min. Vert	13	-112.74	0.17	-8.58
	Min. H <sub>x</sub>	7	10.96	-0.10	0.66
	Min. H <sub>z</sub>	13	-112.74	0.17	-8.58

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	14.46	0.00	-0.00	3.13	3.41	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	17.35	1.00	-14.56	-993.55	-115.15	-1.10
1.2D+1.0W (pattern 1) 0 deg - No Ice	17.35	0.59	-13.48	-875.98	-67.50	-0.83
1.2D+1.0W (pattern 2) 0 deg - No Ice	17.35	1.00	-9.80	-712.21	-115.10	-1.05
0.9 Dead+1.0 Wind 0 deg - No Ice	13.01	1.00	-14.56	-992.69	-115.89	-1.09
1.2 Dead+1.0 Wind 90 deg - No Ice	17.35	13.63	-0.61	-69.65	-956.22	1.01
1.2D+1.0W (pattern 1) 90 deg - No Ice	17.35	12.51	-0.36	-40.33	-833.22	1.07
1.2D+1.0W (pattern 2) 90 deg - No Ice	17.35	9.29	-0.61	-69.59	-695.10	1.15
0.9 Dead+1.0 Wind 90 deg - No Ice	13.01	13.63	-0.61	-70.41	-955.49	1.00
1.2 Dead+1.0 Wind 180 deg - No Ice	17.35	-0.12	13.48	915.13	20.33	2.90
1.2D+1.0W (pattern 1) 180 deg - No Ice	17.35	-0.07	12.59	818.99	13.91	1.90
1.2D+1.0W (pattern 2) 180 deg - No Ice	17.35	-0.13	8.97	646.75	20.27	2.84
0.9 Dead+1.0 Wind 180 deg - No Ice	13.01	-0.12	13.48	912.55	19.25	2.88
1.2 Dead+1.0 Ice+1.0 Temp	27.38	0.00	-0.00	6.23	5.61	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	27.38	0.21	-4.03	-267.20	-19.80	-0.34
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	27.38	3.72	-0.13	-9.41	-255.04	0.61
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	27.38	-0.03	3.84	263.63	8.93	0.70
Dead+Wind 0 deg - Service	14.46	0.27	-3.91	-263.71	-28.43	-0.29
Dead+Wind 90 deg - Service	14.46	3.66	-0.16	-16.46	-253.53	0.27
Dead+Wind 180 deg - Service	14.46	-0.03	3.62	247.03	7.76	0.77

### Solution Summary

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-14.46	0.00	-0.00	14.46	0.00	0.001%
2	1.00	-17.35	-14.56	-1.00	17.35	14.56	0.003%
3	0.59	-17.35	-13.48	-0.59	17.35	13.48	0.003%
4	1.00	-17.35	-9.81	-1.00	17.35	9.80	0.003%
5	1.00	-13.01	-14.56	-1.00	13.01	14.56	0.003%
6	13.63	-17.35	-0.61	-13.63	17.35	0.61	0.004%
7	12.51	-17.35	-0.36	-12.51	17.35	0.36	0.003%
8	9.29	-17.35	-0.61	-9.29	17.35	0.61	0.003%
9	13.63	-13.01	-0.61	-13.63	13.01	0.61	0.003%
10	-0.12	-17.35	13.48	0.12	17.35	-13.48	0.003%
11	-0.07	-17.35	12.59	0.07	17.35	-12.59	0.003%
12	-0.13	-17.35	8.97	0.13	17.35	-8.97	0.003%
13	-0.12	-13.01	13.48	0.12	13.01	-13.48	0.003%
14	0.00	-27.38	0.00	-0.00	27.38	0.00	0.000%
15	0.21	-27.38	-4.03	-0.21	27.38	4.03	0.001%
16	3.72	-27.38	-0.13	-3.72	27.38	0.13	0.001%
17	-0.03	-27.38	3.84	0.03	27.38	-3.84	0.001%
18	0.27	-14.46	-3.91	-0.27	14.46	3.91	0.001%
19	3.66	-14.46	-0.16	-3.66	14.46	0.16	0.001%
20	-0.03	-14.46	3.62	0.03	14.46	-3.62	0.001%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	8	0.0000001	0.00014724
2	Yes	12	0.0000001	0.00011589
3	Yes	12	0.0000001	0.00011335
4	Yes	12	0.0000001	0.00012163
5	Yes	12	0.0000001	0.00008427
6	Yes	12	0.0000001	0.00012779
7	Yes	12	0.0000001	0.00012258
8	Yes	12	0.0000001	0.00013141
9	Yes	12	0.0000001	0.00009575
10	Yes	12	0.0000001	0.00013031
11	Yes	12	0.0000001	0.00012554
12	Yes	12	0.0000001	0.00013223
13	Yes	12	0.0000001	0.00009845
14	Yes	10	0.0000001	0.00012707
15	Yes	13	0.0000001	0.00008491
16	Yes	13	0.0000001	0.00008614
17	Yes	13	0.0000001	0.00008736
18	Yes	12	0.0000001	0.00009828
19	Yes	12	0.0000001	0.00010146
20	Yes	12	0.0000001	0.00010181

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 100	4.410	18	0.294	0.053

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T2	100 - 80	3.178	18	0.288	0.043
T3	80 - 60	2.033	18	0.244	0.030
T4	60 - 40	1.099	18	0.181	0.022
T5	40 - 20	0.451	18	0.110	0.015
T6	20 - 0	0.112	18	0.049	0.005

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.00	6ft dish w/o Radome	18	4.223	0.295	0.051	234257
112.00	1x1 panel	18	3.913	0.295	0.049	146411
110.00	4ft Grid Dish	18	3.789	0.295	0.048	117129
105.00	3' Yagi	18	3.482	0.293	0.046	78086
96.00	Dual Band Eric 8843	18	2.938	0.282	0.041	45719
86.00	1x1 panel	18	2.359	0.260	0.034	26513
80.00	OVP	18	2.033	0.244	0.030	21443
78.00	Ericsson AIR 6449	18	1.928	0.238	0.029	20607
67.00	FFV4-65C-R3-V1	18	1.396	0.205	0.024	17914
65.00	12ft HD Sector Mount	18	1.308	0.198	0.023	17500
61.00	Raycap RDIC-9181-PF-48	18	1.140	0.185	0.022	16763
60.00	1x1 panel	18	1.099	0.181	0.022	16612
48.00	9'x3' Ice Shield	18	0.674	0.138	0.018	15418
40.00	2x2 panel	18	0.451	0.110	0.015	14942

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 100	16.826	2	1.141	0.198
T2	100 - 80	12.072	2	1.109	0.161
T3	80 - 60	7.692	2	0.928	0.114
T4	60 - 40	4.150	2	0.686	0.081
T5	40 - 20	1.700	2	0.415	0.055
T6	20 - 0	0.421	2	0.185	0.020

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.00	6ft dish w/o Radome	2	16.105	1.141	0.193	54922
112.00	1x1 panel	2	14.906	1.140	0.184	34326
110.00	4ft Grid Dish	2	14.428	1.138	0.181	27461
105.00	3' Yagi	2	13.242	1.129	0.172	18307
96.00	Dual Band Eric 8843	2	11.151	1.084	0.152	10410
86.00	1x1 panel	2	8.938	0.994	0.128	6490

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
80.00	OVP	2	7.692	0.928	0.114	5385
78.00	Ericsson AIR 6449	2	7.294	0.906	0.110	5206
67.00	FFV4-65C-R3-V1	2	5.275	0.775	0.091	4650
65.00	12ft HD Sector Mount	2	4.940	0.751	0.088	4558
61.00	Raycap RDIC-9181-PF-48	2	4.303	0.699	0.083	4389
60.00	1x1 panel	2	4.150	0.686	0.081	4354
48.00	9'x3' Ice Shield	2	2.539	0.522	0.067	4059
40.00	2x2 panel	2	1.700	0.415	0.055	3941

### Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria	
T1	120	Leg	A325N	0.750	4	0.07	30.10	0.002	✓	1	Bolt Tension
		Diagonal	A325N	0.625	1	1.16	5.22	0.222	✓	1	Member Bearing
		Top Girt	A325N	0.625	1	0.04	5.22	0.007	✓	1	Member Bearing
T2	100	Leg	A325N	0.750	4	1.87	30.10	0.062	✓	1	Bolt Tension
		Diagonal	A325N	0.625	1	1.83	5.22	0.351	✓	1	Member Bearing
		Top Girt	A325N	0.625	1	0.32	5.22	0.062	✓	1	Member Bearing
T3	80	Leg	A325N	0.750	4	5.68	30.10	0.189	✓	1	Bolt Tension
		Diagonal	A325N	0.625	1	4.72	7.83	0.603	✓	1	Member Bearing
		Top Girt	A325N	0.625	1	0.91	7.83	0.117	✓	1	Member Bearing
T4	60	Leg	A325N	1.000	4	13.84	54.52	0.254	✓	1	Bolt Tension
		Diagonal	A325N	0.625	1	5.43	10.44	0.520	✓	1	Member Bearing
		Top Girt	A325N	0.625	1	1.79	10.44	0.171	✓	1	Gusset Bearing
T5	40	Leg	A325N	1.000	4	23.65	54.52	0.434	✓	1	Bolt Tension
		Diagonal	A325N	0.625	1	1.69	5.22	0.324	✓	1	Member Bearing
		Top Girt	A325N	0.625	1	2.11	5.22	0.404	✓	1	Member Bearing
T6	20	Leg	A325N	1.000	4	26.30	54.52	0.482	✓	1	Bolt Tension
		Diagonal	A325N	0.625	1	1.62	5.22	0.310	✓	1	Member Bearing

### Compression Checks

### Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	HSS2.375x.154	20.00	5.00	75.9 K=1.00	1.003	-4.91	29.62	0.166 <sup>1</sup>
T2	100 - 80	HSS2.375x.154	20.00	5.00	75.9 K=1.00	1.003	-18.71	29.62	0.632 <sup>1</sup>
T3	80 - 60	HSS2.875x0.276	20.00	5.00	64.5 K=1.00	2.114	-52.81	70.16	0.753 <sup>1</sup>
T4	60 - 40	HSS4.5x.337	20.00	5.00	40.4 K=1.00	4.141	-103.25	165.37	0.624 <sup>1</sup>
T5	40 - 20	HSS5.5x.375	20.03	5.01	32.9 K=1.00	5.648	-121.52	234.78	0.518 <sup>1</sup>
T6	20 - 0	HSS5.5x.375	20.03	5.01	32.9 K=1.00	5.648	-131.82	234.78	0.561 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	L2x2x1/8	7.07	3.28	104.2 K=1.05	0.484	-1.14	11.29	0.101 <sup>1</sup>
T2	100 - 80	L2x2x1/8	7.07	3.28	104.2 K=1.05	0.484	-1.99	11.29	0.176 <sup>1</sup>
T3	80 - 60	L2x2x3/16	7.07	3.25	104.2 K=1.05	0.715	-5.09	16.96	0.300 <sup>1</sup>
T4	60 - 40	L2x2x1/4	7.07	3.15	102.5 K=1.06	0.938	-5.90	22.61	0.261 <sup>1</sup>
T5	40 - 20	L2x2x1/8	7.25	3.39	106.8 K=1.04	0.484	-1.63	11.01	0.148 <sup>1</sup>
T6	20 - 0	L2x2x1/8	10.08	4.80	144.9 K=1.00	0.484	-1.67	6.60	0.253 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	L2x2x1/8	5.00	4.56	137.7 K=1.00	0.484	-0.04	7.31	0.005 <sup>1</sup>
T2	100 - 80	L2x2x1/8	5.00	4.56	137.7 K=1.00	0.484	-0.32	7.31	0.044 <sup>1</sup>
T3	80 - 60	L2x2x3/16	5.00	4.52	137.7 K=1.00	0.715	-0.91	10.79	0.085 <sup>1</sup>
T4	60 - 40	L2x2x1/4	5.00	4.39	134.6	0.938	-1.79	14.82	0.121 <sup>1</sup>

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T5	40 - 20	L2x2x1/8	5.00	4.30	K=1.00 129.9 K=1.00	0.484	-2.11	8.22	0.256 <sup>1</sup> ✓ ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Tension Checks

### Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	HSS2.375x.154	20.00	5.00	75.9	1.003	4.84	45.12	0.107 <sup>1</sup> ✓
T2	100 - 80	HSS2.375x.154	20.00	5.00	75.9	1.003	17.80	45.12	0.395 <sup>1</sup> ✓
T3	80 - 60	HSS2.875x0.276	20.00	5.00	64.5	2.114	45.03	95.12	0.473 <sup>1</sup> ✓
T4	60 - 40	HSS4.5x.337	20.00	5.00	40.4	4.141	86.69	186.37	0.465 <sup>1</sup> ✓
T5	40 - 20	HSS5.5x.375	20.03	5.01	32.9	5.648	102.83	254.14	0.405 <sup>1</sup> ✓
T6	20 - 0	HSS5.5x.375	20.03	5.01	32.9	5.648	111.61	254.14	0.439 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	L2x2x1/8	7.07	3.28	65.1	0.293	1.16	12.74	0.091 <sup>1</sup> ✓
T2	100 - 80	L2x2x1/8	7.07	3.28	65.1	0.293	1.83	12.74	0.144 <sup>1</sup> ✓
T3	80 - 60	L2x2x3/16	7.07	3.25	65.5	0.431	4.72	18.74	0.252 <sup>1</sup> ✓
T4	60 - 40	L2x2x1/4	7.07	3.15	64.4	0.563	5.43	24.49	0.222 <sup>1</sup> ✓
T5	40 - 20	L2x2x1/8	7.25	3.39	67.3	0.293	1.69	12.74	0.133 <sup>1</sup> ✓
T6	20 - 0	L2x2x1/8	10.08	4.80	94.3	0.293	1.62	12.74	0.127 <sup>1</sup> ✓

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 27 of 28
	<b>Project</b> 220040	<b>Date</b> 10:55:33 04/04/22
	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
-------------	-----------------	------	---------	----------------------	------	----------------------	---------------------	----------------------	---------------------------------

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	L2x2x1/8	5.00	4.56	92.0	0.293	0.04	12.74	0.003 <sup>1</sup> ✓
T2	100 - 80	L2x2x1/8	5.00	4.56	92.0	0.293	0.32	12.74	0.025 <sup>1</sup> ✓
T3	80 - 60	L2x2x3/16	5.00	4.52	92.6	0.431	0.91	18.74	0.049 <sup>1</sup> ✓
T4	60 - 40	L2x2x1/4	5.00	4.39	91.1	0.563	1.79	24.49	0.073 <sup>1</sup> ✓
T5	40 - 20	L2x2x1/8	5.00	4.30	87.0	0.293	2.11	12.74	0.165 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP <sub>allow</sub> K	% Capacity	Pass Fail
T1	120 - 100	Leg	HSS2.375x.154	3	-4.91	29.62	16.6	Pass
		Diagonal	L2x2x1/8	11	-1.14	11.29	10.1	Pass
		Top Girt	L2x2x1/8	6	-0.04	7.31	22.2 (b) 0.5	Pass
T2	100 - 80	Leg	HSS2.375x.154	33	-18.71	29.62	63.2	Pass
		Diagonal	L2x2x1/8	41	-1.99	11.29	17.6	Pass
		Top Girt	L2x2x1/8	35	-0.32	7.31	35.1 (b) 4.4	Pass
T3	80 - 60	Leg	HSS2.875x0.276	63	-52.81	70.16	6.2 (b) 75.3	Pass
		Diagonal	L2x2x3/16	71	-5.09	16.96	30.0	Pass
		Top Girt	L2x2x3/16	65	-0.91	10.79	60.3 (b) 8.5	Pass
T4	60 - 40	Leg	HSS4.5x.337	93	-103.25	165.37	11.7 (b) 62.4	Pass
		Diagonal	L2x2x1/4	101	-5.90	22.61	26.1	Pass
		Top Girt	L2x2x1/4	95	-1.79	14.82	52.0 (b) 12.1	Pass
T5	40 - 20	Leg	HSS5.5x.375	123	-121.52	234.78	17.1 (b) 51.8	Pass
		Diagonal	L2x2x1/8	148	-1.63	11.01	14.8	Pass
		Top Girt	L2x2x1/8	125	-2.11	8.22	32.4 (b) 25.6	Pass
						40.4 (b)		

<b>tnxTower</b>  <b>Otegui Structural Services, LLC</b> 8842 West Powers Place Littleton, CO 80123 Phone: 720-981-5333 FAX:	<b>Job</b> DEN Gibraltar	<b>Page</b> 28 of 28
	<b>Project</b> 220040	<b>Date</b> 10:55:33 04/04/22
	<b>Client</b> Verizon Wireless	<b>Designed by</b> Mike Otegui

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail	
T6	20 - 0	Leg Diagonal	HSS5.5x.375 L2x2x1/8	153 158	-131.82 -1.67	234.78 6.60	56.1 25.3	Pass Pass	
							31.0 (b) Summary		
							Leg (T3)	75.3	Pass
							Diagonal (T3)	60.3	Pass
							Top Girt (T5)	40.4	Pass
							Bolt Checks	60.3	Pass
							<b>RATING =</b>	<b>75.3</b>	<b>Pass</b>



Maser Consulting  
 7110 W Jefferson Ave, Suite 100  
 Lakewood, CO 80235  
 303.731.6216  
 matthew.graubart@colliersengineering.com

## Antenna Mount Analysis Report with Hardware Upgrades and PMI Requirements

Mount ReAnalysis-VZW

SMART Tool Project #: 10147479  
 Maser Consulting Project #: 21779089A

May 23, 2022

**Site Information**

Site ID:	181602-VZW / GIBRALTER
Site Name:	GIBRALTER
Carrier Name:	Verizon Wireless
Address:	4800 Himalaya Way Denver, Colorado 80249 Denver County
Latitude:	39.783083°
Longitude:	-104.754553°

**Structure Information**

Tower Type:	120-Ft Self Support
Mount Type:	13.00-Ft Sector Frame

**FUZE ID # 16374880**

### **Analysis Results**

Sector Frame: **69.5% Pass w/ Hardware Upgrades\***

**\* Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

**\*\*\*Contractor PMI Requirements:**

**Included at the end of this MA report  
 Available & Submitted via portal at <https://pmi.vzwsmart.com>  
 For additional questions and support, please reach out to:  
[pmisupport@colliersengineering.com](mailto:pmisupport@colliersengineering.com)**

Report Prepared By: Madison Shell



Digitally signed by Gilberto Martinez  
 Date: 2022.05.23 17:29:20-05'00'

**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
<i>Radio Frequency Data Sheet (RFDS)</i>	<i>Verizon RFDS, Site ID: 394191, dated May 16, 2022</i>
<i>Mount Specification</i>	<i>Sabre, P/N # C10852260, dated May 27, 2008</i>
<i>Construction Drawings</i>	<i>CSAi, Site ID: 28, dated March 5, 2020</i>
<i>Previous Mount Analysis</i>	<i>Engineered Tower Solutions, PLLC, Job #: 20211750.STR.7560, Dated April 7, 2021</i>

**Analysis Criteria:**

Codes and Standards:	ANSI/TIA-222-H
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), $V_{ULT}$ : 115 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 0.25 in Risk Category: II Exposure Category: C Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, $K_e$ : 0.822
Seismic Parameters:	$S_s$ : 0.187 g $S_1$ : 0.054 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Live Load, $L_v$ : 250 lbs. Maintenance Live Load, $L_m$ : 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
77.50	80.20	3	Ericsson	AIR 6449	Added
	77.50	6	Commscope	NHHSS-65C-R2B	
		3	Raycap	RRODC-6627-PF-48	
		3	Ericsson	4408 B48	
		3	Ericsson	8843	
		3	Ericsson	4449	
	77.30	3	Antel	CWX063X19X00-T05	Retained
	76.50	3	Ericsson	VZ-SM67015	Added

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 unless replacing an existing OVP.

Model Number	Ports	AKA
RxxDC-3315-PF-48	6	OVP-6
RC3DC-3300-PF-48	6	OVP-6
DB-B1-6C-12AB-0Z	6	OVP-6
RxxDC-6627-PF-48	12	OVP-12
RCMDC-6627-PF-48	12	OVP-12
RVZDC-6627-PF-48	12	OVP-12
RRODC-6627-PF-48	12	OVP-12

**Standard Conditions:**

1. All engineering services are performed on the basis that the information provided to Maser Consulting 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 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 in accordance with the NSTD-446 Standard, 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 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:
  - o Channel, Solid Round, Angle, Plate      ASTM A36 (Gr. 36)
  - o HSS (Rectangular)                              ASTM 500 (Gr. B-46)
  - o Pipe    ASTM A53 (Gr. B-35)
  - o Threaded Rod                                        F1554 (Gr. 36)
  - o Bolts    ASTM A325

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

**Analysis Results:**

Component	Utilization %	Pass/Fail
Connection Angle	23.9 %	Pass
Face Horizontal	69.5 %	Pass
Mount Pipe	23.4 %	Pass
Dual Mount Pipe	17.5 %	Pass
Standoff Plate	59.5 %	Pass
Standoff Horizontal	59.7 %	Pass
Standoff Bracing	11.6 %	Pass
Tieback	4.3 %	Pass
Face Plate	16.2 %	Pass
Mount Connection	12.3 %	Pass

<b>Structure Rating – (Controlling Utilization of all Components)</b>	<b>69.5*</b>
---	--------------

\* Results valid after hardware upgrades noted in the PMI Requirements are installed.

**Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:**

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	13.9	6.9	23.5	16.5
0.5	22.1	11.5	35.5	24.9
1	29.6	15.5	46.9	32.7

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 1 sector(s).
- Ka factors included in (EPA)a calculations

## **Requirements:**

The existing mounts will be **SUFFICIENT** for the final loading configuration shown in attachment 2 **upon the completion of the requirements listed below.**

Contractor shall inspect climbing facilities and safety climb, if present, and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

Contractor shall record all dimensions and member sizes requested in the Mount Geometry Verification Requirements section of the Mount Analysis report. Contact EOR if these documents are not available to the general contractor.

Contractor shall replace existing position 2 mount pipe with new 96" long P2.5 STD pipe in all sectors. Install 48" from position 1 pipe. Top of pipe shall be 31.5" above top face horizontal. Attach using VZWSMART MSK1 crossover plates. Refer to placement diagrams.

Contractor shall install proposed OVP to top right (as seen from behind mount) all sectors standoff 24" distance from tower connection.

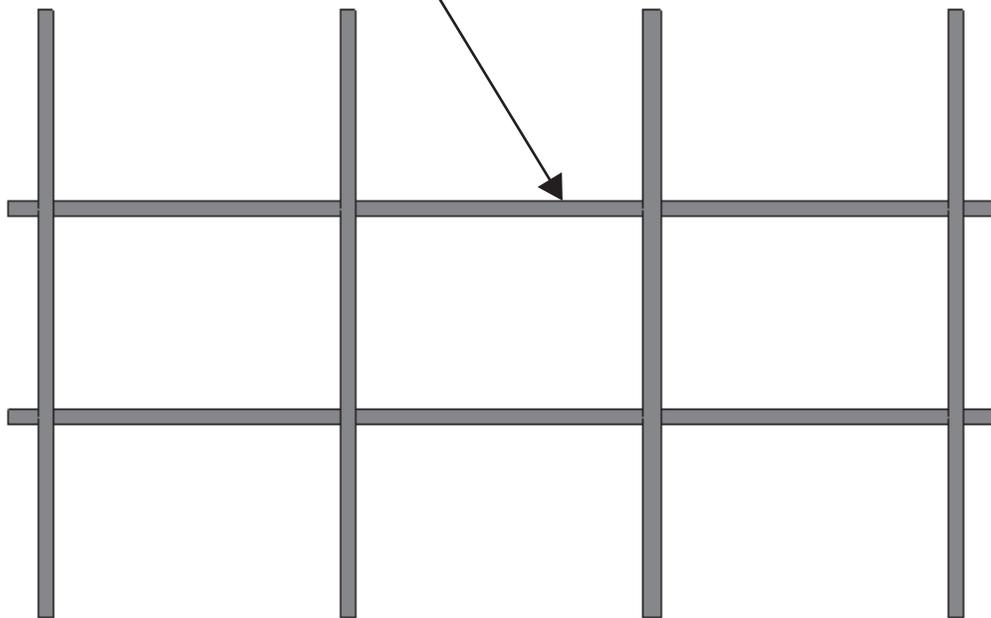
ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

## **Attachments:**

1. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Photos
4. Mount Specifications (for reference only)
5. Analysis Calculations

# MOUNT GEOMETRY VERIFICATION

FACE HORIZONTAL  
SIZE:  
LENGTH: \_\_\_\_\_  
THICKNESS: \_\_\_\_\_



## TOWER GEOMETRY VERIFICATION

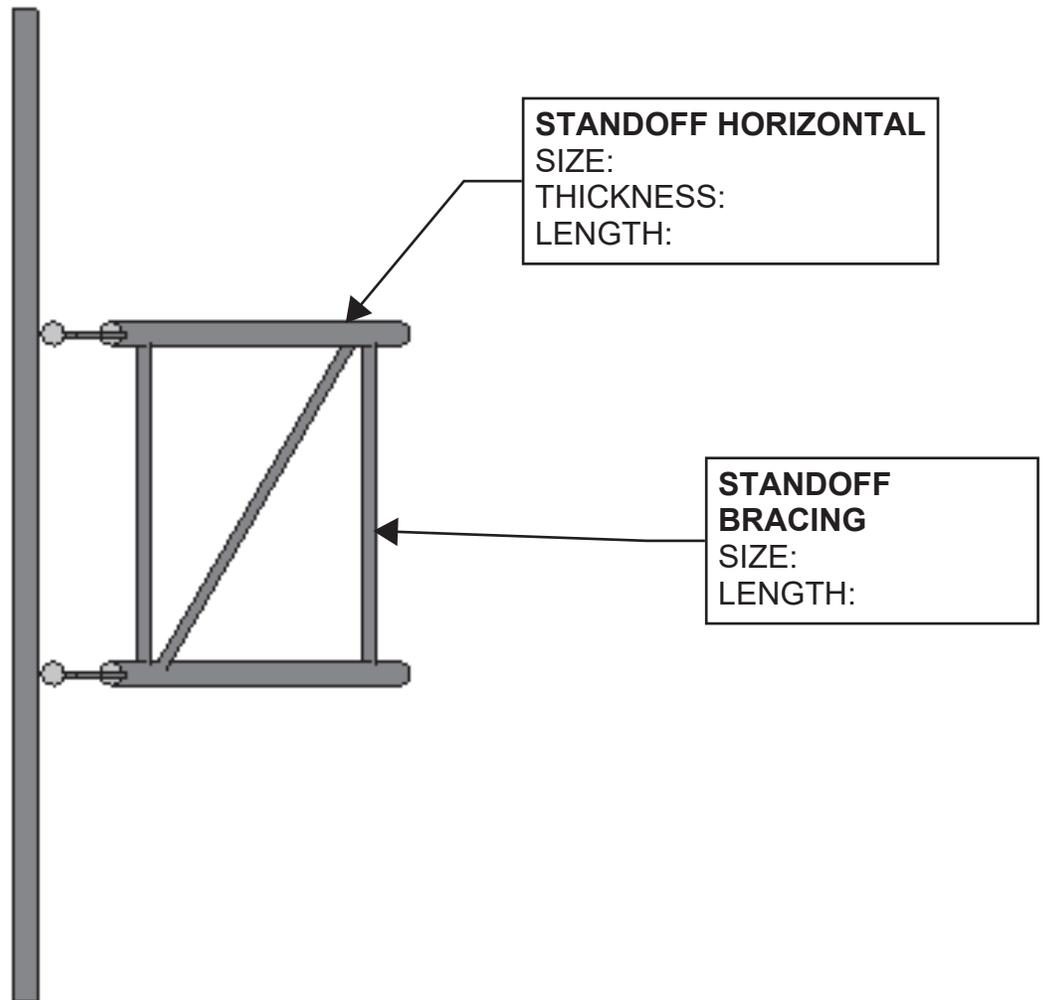
TOWER FACE WIDTH: \_\_\_\_\_"  
TOWER LEG DIAMETER: \_\_\_\_\_"

MOUNT FRONT ELEVATION VIEW (TYP. ALL SECTORS)

*N.T.S.*

**CONTRACTOR SHALL MEASURE ALL DIMENSIONS AND MEMBER SIZES REQUESTED ON THIS SKETCH. RECORD VIA PHOTOS AND MARKUPS ON THIS PAGE. PROVIDE PHOTOS AND MARKED-UP SKETCH TO THE EOR FOR EVALUATION.**

# MOUNT GEOMETRY VERIFICATION



MOUNT SIDE ELEVATION VIEW (TYP. ALL SECTORS)

*N.T.S.*

**CONTRACTOR SHALL MEASURE ALL DIMENSIONS AND MEMBER SIZES REQUESTED ON THIS SKETCH. RECORD VIA PHOTOS AND MARKUPS ON THIS PAGE. PROVIDE PHOTOS AND MARKED-UP SKETCH TO THE EOR FOR EVALUATION.**

## MOUNT GEOMETRY VERIFICATION

STANDARD PIPE DIMENSIONS				
PIPE SIZE	O.D. (IN.)	THICKNESS (IN.)		
		STD	XSTR	XXSTR
P1 1/2	1.900	0.145	0.200	0.400
P2	2.375	0.154	0.218	0.436
P2 1/2	2.875	0.203	0.276	0.552
P3	3.500	0.216	0.300	0.600
P3 1/2	4.000	0.226	0.318	0.636
P4	4.500	0.237	0.337	0.674
P4 1/2	5.000	0.247	0.355	0.710
P5	5.563	0.258	0.375	0.750
P6	6.625	0.280	0.432	0.864

**CONTRACTOR SHALL USE MEMBER SIZES AND DETAILS TO FACILITATE GEOMETRY VERIFICATION. CONTACT EOR FOR ADDITIONAL CLARIFICATION IF NEEDED**

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

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

Passing Mount Analysis requires a PMI due to a modification in loading.

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>.

For additional questions and support, please reach out to [pmisupport@colliersengineering.com](mailto:pmisupport@colliersengineering.com)

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PSLC #: 181602

SMART Project #: 10147479

Fuze Project ID: 16374880

**Purpose** – to provide SMART Tool structural vendor 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:**

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built mount drawings” showing contractor’s name, contact information, preparer’s signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped
- Photos should be high resolution.
- 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. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

### **Photo Requirements:**

- Photos taken at ground level
  - Photo of Gate Signs showing the tower owner, site name, and number.
  - Overall tower structure after installation.
  - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- Photos taken at Mount Elevation
  - Photos showing the safety climb wire rope above and below the mount prior to installation.
  - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation. Each entire sector shall be in one photo to show the interconnection of members.
  - These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.

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

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.
  - The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

- The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

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

**Issue:**

Contractor shall inspect climbing facilities and safety climb, if present, and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

Contractor shall record all dimensions and member sizes requested in the Mount Geometry Verification Requirements section of the Mount Analysis report. Contact EOR if these documents are not available to the general contractor.

Contractor shall replace existing position 2 mount pipe with new 96" long P2.5 STD pipe in all sectors. Install 48" from position 1 pipe. Top of pipe shall be 31.5" above top face horizontal. Attach using VZWSMART MSK1 crossover plates. Refer to placement diagrams.

Contractor shall install proposed OVP to top right (as seen from behind mount) all sectors standoff 24" distance from tower connection.

**Response:**

**Special Instruction Confirmation:**

- The contractor has read and acknowledges the above special instructions.
- All hardware listed in the Special Instructions above (if applicable) has been properly installed, and the existing hardware was inspected.
- The material utilized was as specified in the SMART Tool engineering vendor Special Instructions above (if applicable) and included in the material certification folder is a packing list or invoice for these materials.

OR

- The material utilized was approved by a SMART Tool engineering vendor as an “equivalent” and this approval is included as part of the contractor submission.

**Comments:**

**Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:**

- Yes       No

**Contractor certifies no new damage created during the current installation:**

- Yes       No

**Contractor to certify the condition of the safety climb and verify no damage when leaving the site:**

- Safety Climb in Good Condition       Safety Climb Damaged

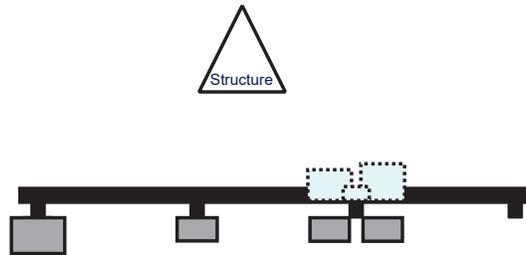
**Certifying Individual:**

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

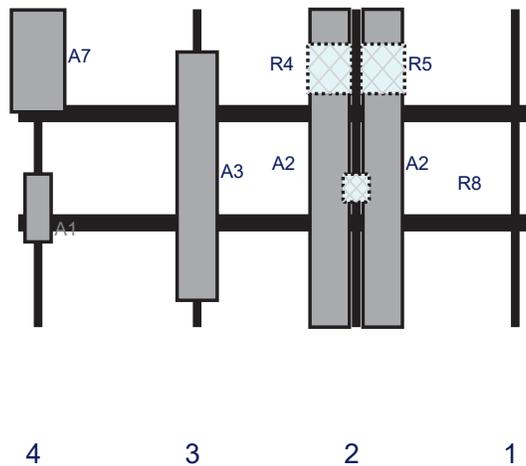




Plan View



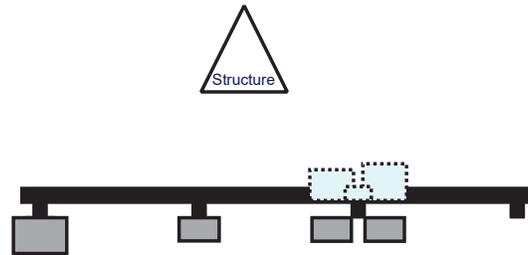
Front View - Looking at Structure



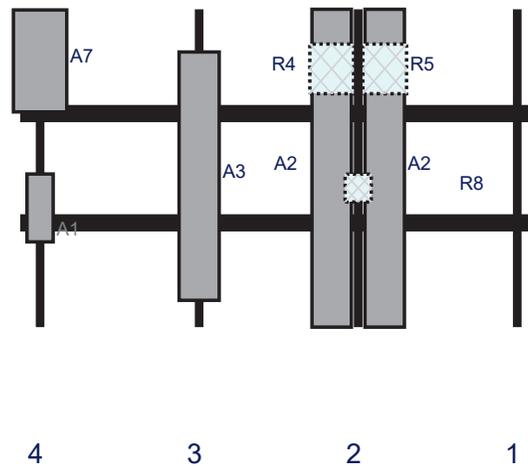
Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	NHHSS-65C-R2B	96	11.9	102	2	a	Front	48	-8	Added	
A2	NHHSS-65C-R2B	96	11.9	102	2	b	Front	48	8	Added	
R4	4449	15	13.2	102	2	a	Behind	18	-8	Retained	
R5	8843	15	13.2	102	2	a	Behind	18	8	Added	
R8	4408 B48	8.4	7.9	102	2	a	Behind	54	0	Added	
A3	CWX063X19X00-T05	75	12.1	54	3	a	Front	50.4	0	Retained	
A1	VZ-SM67015	20.5	7.9	6	4	a	Front	60	0	Added	
A7	AIR 6449	30.8	16.1	6	4	a	Front	15.6	0	Added	
OVP	RRODC-6627-PF-48	29.5	16.5			Member				Added	



Plan View



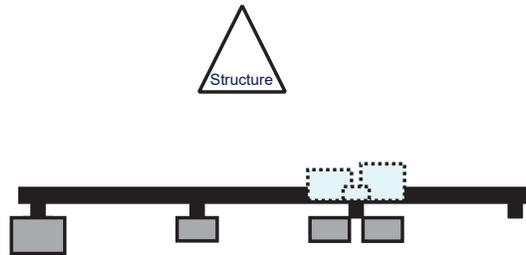
Front View - Looking at Structure



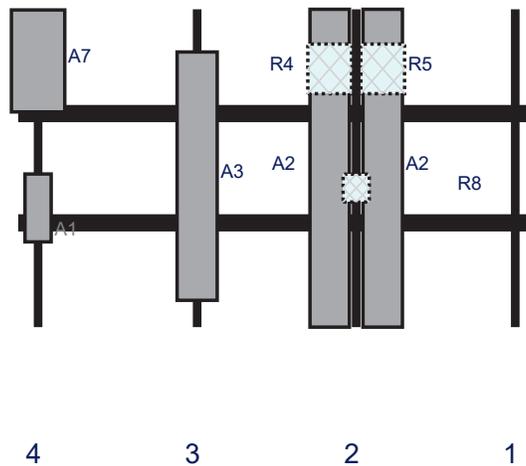
Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	NHHSS-65C-R2B	96	11.9	102	2	a	Front	48	-8	Added	
A2	NHHSS-65C-R2B	96	11.9	102	2	b	Front	48	8	Added	
R4	4449	15	13.2	102	2	a	Behind	18	-8	Retained	
R5	8843	15	13.2	102	2	a	Behind	18	8	Added	
R8	4408 B48	8.4	7.9	102	2	a	Behind	54	0	Added	
A3	CWX063X19X00-T05	75	12.1	54	3	a	Front	50.4	0	Retained	
A1	VZ-SM67015	20.5	7.9	6	4	a	Front	60	0	Added	
A7	AIR 6449	30.8	16.1	6	4	a	Front	15.6	0	Added	



Plan View

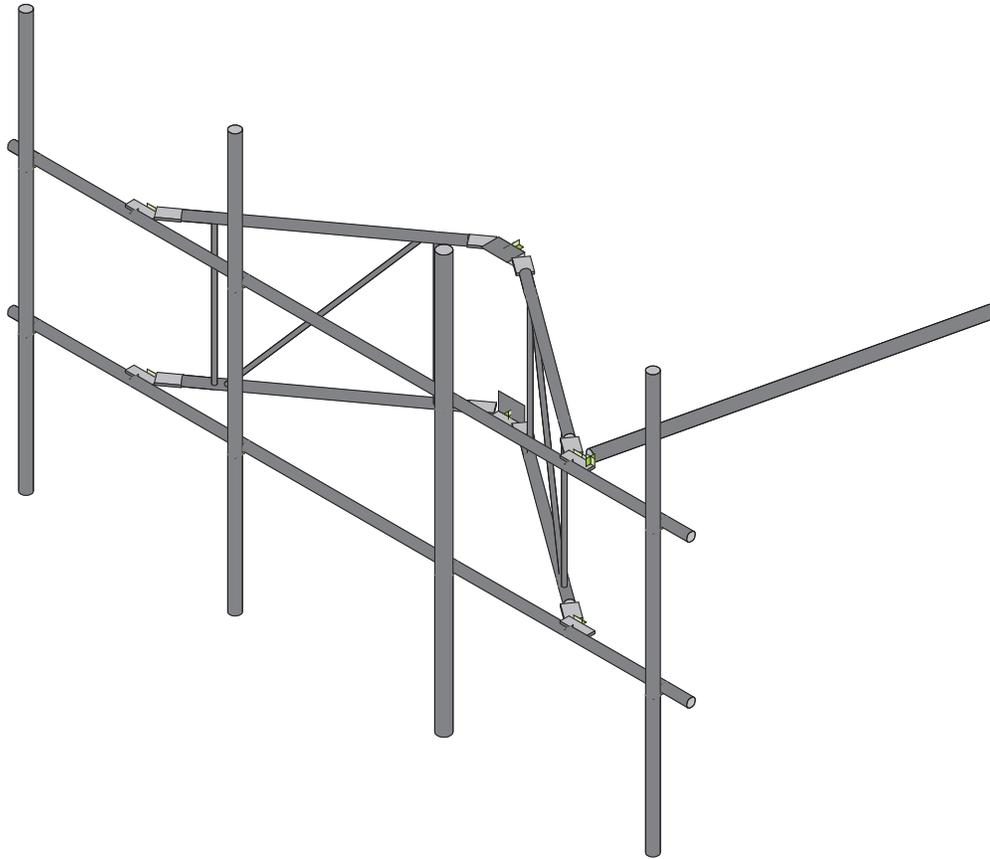
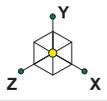


Front View - Looking at Structure



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
A2	NHHSS-65C-R2B	96	11.9	102	2	a	Front	48	-8	Added	
A2	NHHSS-65C-R2B	96	11.9	102	2	b	Front	48	8	Added	
R4	4449	15	13.2	102	2	a	Behind	18	-8	Retained	
R5	8843	15	13.2	102	2	a	Behind	18	8	Added	
R8	4408 B48	8.4	7.9	102	2	a	Behind	54	0	Added	
A3	CWX063X19X00-T05	75	12.1	54	3	a	Front	50.4	0	Retained	
A1	VZ-SM67015	20.5	7.9	6	4	a	Front	60	0	Added	
A7	AIR 6449	30.8	16.1	6	4	a	Front	15.6	0	Added	



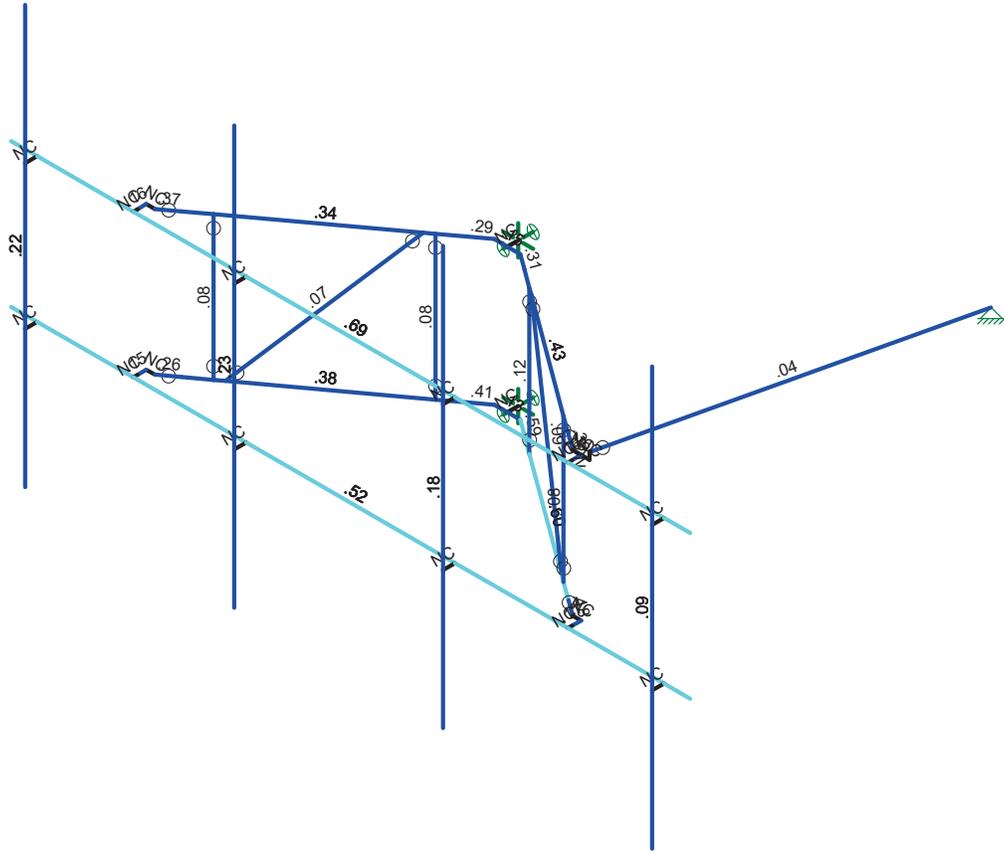
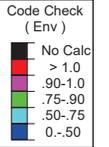
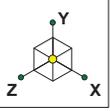


Envelope Only Solution

SK - 1

May 23, 2022 at 4:20 PM

181602-VZW\_MT\_LOT\_A\_H.r3d



Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

		SK - 2
		May 23, 2022 at 4:20 PM
		181602-VZW_MT_LOT_A_H.r3d



**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Antenna D	None					39			
2	Antenna Di	None					39			
3	Antenna Wo (0 Deg)	None					39			
4	Antenna Wo (30 Deg)	None					39			
5	Antenna Wo (60 Deg)	None					39			
6	Antenna Wo (90 Deg)	None					39			
7	Antenna Wo (120 Deg)	None					39			
8	Antenna Wo (150 Deg)	None					39			
9	Antenna Wo (180 Deg)	None					39			
10	Antenna Wo (210 Deg)	None					39			
11	Antenna Wo (240 Deg)	None					39			
12	Antenna Wo (270 Deg)	None					39			
13	Antenna Wo (300 Deg)	None					39			
14	Antenna Wo (330 Deg)	None					39			
15	Antenna Wi (0 Deg)	None					39			
16	Antenna Wi (30 Deg)	None					39			
17	Antenna Wi (60 Deg)	None					39			
18	Antenna Wi (90 Deg)	None					39			
19	Antenna Wi (120 Deg)	None					39			
20	Antenna Wi (150 Deg)	None					39			
21	Antenna Wi (180 Deg)	None					39			
22	Antenna Wi (210 Deg)	None					39			
23	Antenna Wi (240 Deg)	None					39			
24	Antenna Wi (270 Deg)	None					39			
25	Antenna Wi (300 Deg)	None					39			
26	Antenna Wi (330 Deg)	None					39			
27	Antenna Wm (0 Deg)	None					39			
28	Antenna Wm (30 Deg)	None					39			
29	Antenna Wm (60 Deg)	None					39			
30	Antenna Wm (90 Deg)	None					39			
31	Antenna Wm (120 Deg)	None					39			
32	Antenna Wm (150 Deg)	None					39			
33	Antenna Wm (180 Deg)	None					39			
34	Antenna Wm (210 Deg)	None					39			
35	Antenna Wm (240 Deg)	None					39			
36	Antenna Wm (270 Deg)	None					39			
37	Antenna Wm (300 Deg)	None					39			
38	Antenna Wm (330 Deg)	None					39			
39	Structure D	None		-1						
40	Structure Di	None						31		
41	Structure Wo (0 Deg)	None						62		
42	Structure Wo (30 Deg)	None						62		
43	Structure Wo (60 Deg)	None						62		
44	Structure Wo (90 Deg)	None						62		
45	Structure Wo (120 Deg)	None						62		
46	Structure Wo (150 Deg)	None						62		
47	Structure Wo (180 Deg)	None						62		
48	Structure Wo (210 Deg)	None						62		
49	Structure Wo (240 Deg)	None						62		
50	Structure Wo (270 Deg)	None						62		
51	Structure Wo (300 Deg)	None						62		
52	Structure Wo (330 Deg)	None						62		
53	Structure Wi (0 Deg)	None						62		
54	Structure Wi (30 Deg)	None						62		
55	Structure Wi (60 Deg)	None						62		
56	Structure Wi (90 Deg)	None						62		
57	Structure Wi (120 Deg)	None						62		
58	Structure Wi (150 Deg)	None						62		







Company :  
 Designer :  
 Job Number :  
 Model Name :

May 23, 2022  
 4:20 PM  
 Checked By: \_\_\_\_\_

**Joint Coordinates and Temperatures (Continued)**

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
6	N8	9.049392	0	5.102887	0	
7	N9	46.95083	0	32.897275	0	
8	N10	13.283018	0	8.207546	0	
9	N11	14.895828	33	9.390274	0	
10	N12	42.7168	0	29.79232	0	
11	N13	-4.049392	0	5.102887	0	
12	N14	-41.95083	0	32.897275	0	
13	N15	-8.283018	0	8.207546	0	
14	N16	-9.895828	33	9.390274	0	
15	N17	-37.7168	0	29.79232	0	
16	N18	2.5	33	2.5	0	
17	N19	5.5	33	2.5	0	
18	N20	-5	33	2.5	0	
19	N23	50.5	33	35.5	0	
20	N24	-45.5	33	35.5	0	
21	N25	9.049392	33	5.102887	0	
22	N26	46.95083	33	32.897275	0	
23	N27	13.283018	33	8.207546	0	
24	N28	41.10399	0	28.609593	0	
25	N29	42.7168	33	29.79232	0	
26	N30	-4.049392	33	5.102887	0	
27	N31	-41.95083	33	32.897275	0	
28	N32	-8.283018	33	8.207546	0	
29	N33	-36.10399	0	28.609593	0	
30	N34	-37.7168	33	29.79232	0	
31	N35	80.5	0	38.5	0	
32	N36	80.5	33	38.5	0	
33	N37	-75.5	0	38.5	0	
34	N38	-75.5	33	38.5	0	
35	N39	2.5	0	0	0	
36	N40	2.5	33	0	0	
37	N41	74.5	0	38.5	0	
38	N42	74.5	33	38.5	0	
39	N43	74.5	0	41.25	0	
40	N44	74.5	33	41.25	0	
41	N45	74.5	64.5	41.25	0	
42	N46	74.5	-31.5	41.25	0	
43	N50	26.5	0	38.5	0	
44	N51	26.5	33	38.5	0	
45	N52	26.5	0	41.25	0	
46	N53	26.5	33	41.25	0	
47	N54	26.5	64.5	41.25	0	
48	N55	26.5	-31.5	41.25	0	
49	N62	-21.5	0	38.5	0	
50	N63	-21.5	33	38.5	0	
51	N64	-21.5	0	41.25	0	
52	N65	-21.5	33	41.25	0	
53	N66	-21.5	64.5	41.25	0	
54	N67	-21.5	-31.5	41.25	0	
55	N68	-69.5	0	38.5	0	
56	N69	-69.5	33	38.5	0	
57	N70	-69.5	0	41.25	0	
58	N71	-69.5	33	41.25	0	
59	N72	-69.5	64.5	41.25	0	
60	N73	-69.5	-31.5	41.25	0	
61	N74	52.4375	0	35.5	0	
62	N75	52.4375	0	37.55	0	
63	N76	52.4375	33	35.5	0	
64	N77	52.4375	33	37.55	0	

### Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
65	N78	-47.4375	0	35.5	0	
66	N79	-47.4375	0	37.55	0	
67	N80	-47.4375	33	35.5	0	
68	N81	-47.4375	33	37.55	0	
69	N82	54.375	33	35.5	0	
70	N84	71.668395	34.5	-39.456665	0	
71	N85	54.375	34.5	35.5	0	
72	N72A	52.4375	0	38.5	0	
73	N73A	52.4375	33	38.5	0	
74	N74A	-47.4375	0	38.5	0	
75	N75A	-47.4375	33	38.5	0	

### Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horizontal	PIPE_1.5X	Beam	Pipe	A53 Gr.B	Typical	1	.372	.372	.744
2	Standoff Horizontal	PIPE_1.5X	Beam	Pipe	A53 Gr.B	Typical	1	.372	.372	.744
3	Standoff Bracing	SR 0.875	Beam	BAR	A36 Gr.36	Typical	.601	.029	.029	.058
4	Mount Pipe	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Dual Mount Pipe	PIPE 2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
6	Tieback	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Standoff Plate	PL1/2x3	Beam	RECT	A36 Gr.36	Typical	1.5	.031	1.125	.112
8	Connection Angle	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical	2.86	4.32	4.32	.141
9	Face Plate	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237

### Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt	
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

### Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	CL-BOT	N2	N3		270	Connection An...	Beam	Single Angle	A36 Gr.36	Typical
2	CL-TOP	N19	N20		180	Connection An...	Beam	Single Angle	A36 Gr.36	Typical
3	FACE	N37	N35			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
4	FM-TOP	N36	N38			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
5	M52A	N82	N85			RIGID	None	None	RIGID	Typical
6	MP4A	N72	N73			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
7	MP1A	N45	N46			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
8	MP2A	N54	N55			Dual Mount Pi...	Beam	Pipe	A53 Gr.B	Typical
9	MP3A	N66	N67			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
10	PL-5	N2	N8		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
11	PL-6	N9	N6		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
12	PL-7	N3	N13		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
13	PL-8	N14	N7		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
14	PL-9	N19	N25		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
15	PL-10	N26	N23		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
16	PL-11	N20	N30		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
17	PL-12	N31	N24		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
18	RL1	N39	N1			RIGID	None	None	RIGID	Typical

**Member Primary Data (Continued)**

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
19	RL2	N40	N18			RIGID	None	None	RIGID	Typical
20	RL3	N41	N43			RIGID	None	None	RIGID	Typical
21	RL4	N42	N44			RIGID	None	None	RIGID	Typical
22	L2	N50	N52			RIGID	None	None	RIGID	Typical
23	RL6	N51	N53			RIGID	None	None	RIGID	Typical
24	RL9	N24	N80			RIGID	None	None	RIGID	Typical
25	RL10	N63	N65			RIGID	None	None	RIGID	Typical
26	L1	N68	N70			RIGID	None	None	RIGID	Typical
27	RL12	N69	N71			RIGID	None	None	RIGID	Typical
28	RL13	N76	N23			RIGID	None	None	RIGID	Typical
29	RL14	N74	N6			RIGID	None	None	RIGID	Typical
30	RL15	N7	N78			RIGID	None	None	RIGID	Typical
31	RL16	N82	N76			RIGID	None	None	RIGID	Typical
32	RL18	N62	N64			RIGID	None	None	RIGID	Typical
33	SA-BOT-1	N8	N9			Standoff Horiz...	Beam	Pipe	A53 Gr.B	Typical
34	SA-BOT-2	N13	N14			Standoff Horiz...	Beam	Pipe	A53 Gr.B	Typical
35	SA-D-1	N11	N28			Standoff Braci...	Beam	BAR	A36 Gr.36	Typical
36	SA-D-2	N16	N33			Standoff Braci...	Beam	BAR	A36 Gr.36	Typical
37	SA-TOP-1	N25	N26			Standoff Horiz...	Beam	Pipe	A53 Gr.B	Typical
38	OVP	N30	N31			Standoff Horiz...	Beam	Pipe	A53 Gr.B	Typical
39	SA-V-1	N10	N27			Standoff Braci...	Beam	BAR	A36 Gr.36	Typical
40	SA-V-2	N12	N29			Standoff Braci...	Beam	BAR	A36 Gr.36	Typical
41	SA-V-3	N32	N15			Standoff Braci...	Beam	BAR	A36 Gr.36	Typical
42	SA-V-4	N17	N34			Standoff Braci...	Beam	BAR	A36 Gr.36	Typical
43	STAB	N84	N85			Tieback	Beam	Pipe	A53 Gr.B	Typical
44	M51	N80	N81		90	Face Plate	Beam	RECT	A36 Gr.36	Typical
45	M49	N78	N79		90	Face Plate	Beam	RECT	A36 Gr.36	Typical
46	M50	N74	N75		90	Face Plate	Beam	RECT	A36 Gr.36	Typical
47	M51A	N76	N77		90	Face Plate	Beam	RECT	A36 Gr.36	Typical
48	M48	N74A	N79			RIGID	None	None	RIGID	Typical
49	M49A	N75A	N81			RIGID	None	None	RIGID	Typical
50	M50A	N77	N73A			RIGID	None	None	RIGID	Typical
51	M51B	N72A	N75			RIGID	None	None	RIGID	Typical

**Member Point Loads (BLC 1 : Antenna D)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	Y	-29	60
2	MP4A	My	-.015	60
3	MP4A	Mz	0	60
4	MP2A	Y	-42	18
5	MP2A	My	-.021	18
6	MP2A	Mz	-.028	18
7	MP2A	Y	-42	78
8	MP2A	My	-.021	78
9	MP2A	Mz	-.028	78
10	MP2A	Y	-42	18
11	MP2A	My	-.021	18
12	MP2A	Mz	.028	18
13	MP2A	Y	-42	78
14	MP2A	My	-.021	78
15	MP2A	Mz	.028	78
16	MP3A	Y	-16.85	20.4
17	MP3A	My	-.008	20.4
18	MP3A	Mz	0	20.4
19	MP3A	Y	-16.85	80.4
20	MP3A	My	-.008	80.4
21	MP3A	Mz	0	80.4

**Member Point Loads (BLC 1 : Antenna D) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
22	MP2A	Y	-70	18
23	MP2A	My	.035	18
24	MP2A	Mz	-.047	18
25	MP2A	Y	-75	18
26	MP2A	My	.037	18
27	MP2A	Mz	.05	18
28	OVP	Y	-32	24
29	OVP	My	0	24
30	OVP	Mz	0	24
31	MP4A	Y	-44	3.6
32	MP4A	My	-.022	3.6
33	MP4A	Mz	0	3.6
34	MP4A	Y	-44	27.6
35	MP4A	My	-.022	27.6
36	MP4A	Mz	0	27.6
37	MP2A	Y	-10.2	54
38	MP2A	My	.005	54
39	MP2A	Mz	0	54

**Member Point Loads (BLC 2 : Antenna Di)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	Y	-5.572	60
2	MP4A	My	-.003	60
3	MP4A	Mz	0	60
4	MP2A	Y	-17.287	18
5	MP2A	My	-.009	18
6	MP2A	Mz	-.012	18
7	MP2A	Y	-17.287	78
8	MP2A	My	-.009	78
9	MP2A	Mz	-.012	78
10	MP2A	Y	-17.287	18
11	MP2A	My	-.009	18
12	MP2A	Mz	.012	18
13	MP2A	Y	-17.287	78
14	MP2A	My	-.009	78
15	MP2A	Mz	.012	78
16	MP3A	Y	-13.753	20.4
17	MP3A	My	-.007	20.4
18	MP3A	Mz	0	20.4
19	MP3A	Y	-13.753	80.4
20	MP3A	My	-.007	80.4
21	MP3A	Mz	0	80.4
22	MP2A	Y	-8.414	18
23	MP2A	My	.004	18
24	MP2A	Mz	-.006	18
25	MP2A	Y	-9.324	18
26	MP2A	My	.005	18
27	MP2A	Mz	.006	18
28	OVP	Y	-19.277	24
29	OVP	My	0	24
30	OVP	Mz	0	24
31	MP4A	Y	-9.07	3.6
32	MP4A	My	-.005	3.6
33	MP4A	Mz	0	3.6
34	MP4A	Y	-9.07	27.6
35	MP4A	My	-.005	27.6
36	MP4A	Mz	0	27.6
37	MP2A	Y	-2.537	54



**Member Point Loads (BLC 4 : Antenna Wo (30 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
12	MP2A	Mx	-.123	18
13	MP2A	X	74.483	78
14	MP2A	Z	-129.008	78
15	MP2A	Mx	-.123	78
16	MP3A	X	55.999	20.4
17	MP3A	Z	-96.993	20.4
18	MP3A	Mx	-.028	20.4
19	MP3A	X	55.999	80.4
20	MP3A	Z	-96.993	80.4
21	MP3A	Mx	-.028	80.4
22	MP2A	X	22.717	18
23	MP2A	Z	-39.347	18
24	MP2A	Mx	.038	18
25	MP2A	X	22.637	18
26	MP2A	Z	-39.208	18
27	MP2A	Mx	-.015	18
28	OVP	X	42.576	24
29	OVP	Z	-73.745	24
30	OVP	Mx	0	24
31	MP4A	X	26.61	3.6
32	MP4A	Z	-46.09	3.6
33	MP4A	Mx	-.013	3.6
34	MP4A	X	26.61	27.6
35	MP4A	Z	-46.09	27.6
36	MP4A	Mx	-.013	27.6
37	MP2A	X	6.934	54
38	MP2A	Z	-12.011	54
39	MP2A	Mx	.003	54

**Member Point Loads (BLC 5 : Antenna Wo (60 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	24.857	60
2	MP4A	Z	-14.351	60
3	MP4A	Mx	-.012	60
4	MP2A	X	106.152	18
5	MP2A	Z	-61.287	18
6	MP2A	Mx	-.012	18
7	MP2A	X	106.152	78
8	MP2A	Z	-61.287	78
9	MP2A	Mx	-.012	78
10	MP2A	X	106.152	18
11	MP2A	Z	-61.287	18
12	MP2A	Mx	-.094	18
13	MP2A	X	106.152	78
14	MP2A	Z	-61.287	78
15	MP2A	Mx	-.094	78
16	MP3A	X	78.158	20.4
17	MP3A	Z	-45.124	20.4
18	MP3A	Mx	-.039	20.4
19	MP3A	X	78.158	80.4
20	MP3A	Z	-45.124	80.4
21	MP3A	Mx	-.039	80.4
22	MP2A	X	32.913	18
23	MP2A	Z	-19.002	18
24	MP2A	Mx	.029	18
25	MP2A	X	35.96	18
26	MP2A	Z	-20.761	18
27	MP2A	Mx	.004	18

**Member Point Loads (BLC 5 : Antenna Wo (60 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
28	OVP	X	64.341	24
29	OVP	Z	-37.147	24
30	OVP	Mx	0	24
31	MP4A	X	37.8	3.6
32	MP4A	Z	-21.824	3.6
33	MP4A	Mx	-.019	3.6
34	MP4A	X	37.8	27.6
35	MP4A	Z	-21.824	27.6
36	MP4A	Mx	-.019	27.6
37	MP2A	X	8.847	54
38	MP2A	Z	-5.108	54
39	MP2A	Mx	.004	54

**Member Point Loads (BLC 6 : Antenna Wo (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	25.411	60
2	MP4A	Z	0	60
3	MP4A	Mx	-.013	60
4	MP2A	X	109.378	18
5	MP2A	Z	0	18
6	MP2A	Mx	-.055	18
7	MP2A	X	109.378	78
8	MP2A	Z	0	78
9	MP2A	Mx	-.055	78
10	MP2A	X	109.378	18
11	MP2A	Z	0	18
12	MP2A	Mx	-.055	18
13	MP2A	X	109.378	78
14	MP2A	Z	0	78
15	MP2A	Mx	-.055	78
16	MP3A	X	79.374	20.4
17	MP3A	Z	0	20.4
18	MP3A	Mx	-.04	20.4
19	MP3A	X	79.374	80.4
20	MP3A	Z	0	80.4
21	MP3A	Mx	-.04	80.4
22	MP2A	X	34.29	18
23	MP2A	Z	0	18
24	MP2A	Mx	.017	18
25	MP2A	X	39.648	18
26	MP2A	Z	0	18
27	MP2A	Mx	.02	18
28	OVP	X	68.865	24
29	OVP	Z	0	24
30	OVP	Mx	0	24
31	MP4A	X	38.862	3.6
32	MP4A	Z	0	3.6
33	MP4A	Mx	-.019	3.6
34	MP4A	X	38.862	27.6
35	MP4A	Z	0	27.6
36	MP4A	Mx	-.019	27.6
37	MP2A	X	8.39	54
38	MP2A	Z	0	54
39	MP2A	Mx	.004	54

**Member Point Loads (BLC 7 : Antenna Wo (120 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	24.857	60

**Member Point Loads (BLC 7 : Antenna Wo (120 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
2	MP4A	Z	14.351	60
3	MP4A	Mx	-.012	60
4	MP2A	X	106.152	18
5	MP2A	Z	61.287	18
6	MP2A	Mx	-.094	18
7	MP2A	X	106.152	78
8	MP2A	Z	61.287	78
9	MP2A	Mx	-.094	78
10	MP2A	X	106.152	18
11	MP2A	Z	61.287	18
12	MP2A	Mx	-.012	18
13	MP2A	X	106.152	78
14	MP2A	Z	61.287	78
15	MP2A	Mx	-.012	78
16	MP3A	X	78.158	20.4
17	MP3A	Z	45.124	20.4
18	MP3A	Mx	-.039	20.4
19	MP3A	X	78.158	80.4
20	MP3A	Z	45.124	80.4
21	MP3A	Mx	-.039	80.4
22	MP2A	X	32.913	18
23	MP2A	Z	19.002	18
24	MP2A	Mx	.004	18
25	MP2A	X	35.96	18
26	MP2A	Z	20.761	18
27	MP2A	Mx	.032	18
28	OVP	X	64.341	24
29	OVP	Z	37.147	24
30	OVP	Mx	0	24
31	MP4A	X	37.8	3.6
32	MP4A	Z	21.824	3.6
33	MP4A	Mx	-.019	3.6
34	MP4A	X	37.8	27.6
35	MP4A	Z	21.824	27.6
36	MP4A	Mx	-.019	27.6
37	MP2A	X	8.847	54
38	MP2A	Z	5.108	54
39	MP2A	Mx	.004	54

**Member Point Loads (BLC 8 : Antenna Wo (150 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	17.642	60
2	MP4A	Z	30.558	60
3	MP4A	Mx	-.009	60
4	MP2A	X	74.483	18
5	MP2A	Z	129.008	18
6	MP2A	Mx	-.123	18
7	MP2A	X	74.483	78
8	MP2A	Z	129.008	78
9	MP2A	Mx	-.123	78
10	MP2A	X	74.483	18
11	MP2A	Z	129.008	18
12	MP2A	Mx	.049	18
13	MP2A	X	74.483	78
14	MP2A	Z	129.008	78
15	MP2A	Mx	.049	78
16	MP3A	X	55.999	20.4
17	MP3A	Z	96.993	20.4

**Member Point Loads (BLC 8 : Antenna Wo (150 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
18	MP3A	Mx	-.028	20.4
19	MP3A	X	55.999	80.4
20	MP3A	Z	96.993	80.4
21	MP3A	Mx	-.028	80.4
22	MP2A	X	22.717	18
23	MP2A	Z	39.347	18
24	MP2A	Mx	-.015	18
25	MP2A	X	22.637	18
26	MP2A	Z	39.208	18
27	MP2A	Mx	.037	18
28	OVP	X	42.576	24
29	OVP	Z	73.745	24
30	OVP	Mx	0	24
31	MP4A	X	26.61	3.6
32	MP4A	Z	46.09	3.6
33	MP4A	Mx	-.013	3.6
34	MP4A	X	26.61	27.6
35	MP4A	Z	46.09	27.6
36	MP4A	Mx	-.013	27.6
37	MP2A	X	6.934	54
38	MP2A	Z	12.011	54
39	MP2A	Mx	.003	54

**Member Point Loads (BLC 9 : Antenna Wo (180 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	0	60
2	MP4A	Z	38.576	60
3	MP4A	Mx	0	60
4	MP2A	X	0	18
5	MP2A	Z	162.162	18
6	MP2A	Mx	-.108	18
7	MP2A	X	0	78
8	MP2A	Z	162.162	78
9	MP2A	Mx	-.108	78
10	MP2A	X	0	18
11	MP2A	Z	162.162	18
12	MP2A	Mx	.108	18
13	MP2A	X	0	78
14	MP2A	Z	162.162	78
15	MP2A	Mx	.108	78
16	MP3A	X	0	20.4
17	MP3A	Z	122.872	20.4
18	MP3A	Mx	0	20.4
19	MP3A	X	0	80.4
20	MP3A	Z	122.872	80.4
21	MP3A	Mx	0	80.4
22	MP2A	X	0	18
23	MP2A	Z	49.149	18
24	MP2A	Mx	-.033	18
25	MP2A	X	0	18
26	MP2A	Z	47.148	18
27	MP2A	Mx	.031	18
28	OVP	X	0	24
29	OVP	Z	90.582	24
30	OVP	Mx	0	24
31	MP4A	X	0	3.6
32	MP4A	Z	58.007	3.6
33	MP4A	Mx	0	3.6

**Member Point Loads (BLC 9 : Antenna Wo (180 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
34	MP4A	X	0	27.6
35	MP4A	Z	58.007	27.6
36	MP4A	Mx	0	27.6
37	MP2A	X	0	54
38	MP2A	Z	15.695	54
39	MP2A	Mx	0	54

**Member Point Loads (BLC 10 : Antenna Wo (210 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-17.642	60
2	MP4A	Z	30.558	60
3	MP4A	Mx	.009	60
4	MP2A	X	-74.483	18
5	MP2A	Z	129.008	18
6	MP2A	Mx	-.049	18
7	MP2A	X	-74.483	78
8	MP2A	Z	129.008	78
9	MP2A	Mx	-.049	78
10	MP2A	X	-74.483	18
11	MP2A	Z	129.008	18
12	MP2A	Mx	.123	18
13	MP2A	X	-74.483	78
14	MP2A	Z	129.008	78
15	MP2A	Mx	.123	78
16	MP3A	X	-55.999	20.4
17	MP3A	Z	96.993	20.4
18	MP3A	Mx	.028	20.4
19	MP3A	X	-55.999	80.4
20	MP3A	Z	96.993	80.4
21	MP3A	Mx	.028	80.4
22	MP2A	X	-22.717	18
23	MP2A	Z	39.347	18
24	MP2A	Mx	-.038	18
25	MP2A	X	-22.637	18
26	MP2A	Z	39.208	18
27	MP2A	Mx	.015	18
28	OVP	X	-42.576	24
29	OVP	Z	73.745	24
30	OVP	Mx	0	24
31	MP4A	X	-26.61	3.6
32	MP4A	Z	46.09	3.6
33	MP4A	Mx	.013	3.6
34	MP4A	X	-26.61	27.6
35	MP4A	Z	46.09	27.6
36	MP4A	Mx	.013	27.6
37	MP2A	X	-6.934	54
38	MP2A	Z	12.011	54
39	MP2A	Mx	-.003	54

**Member Point Loads (BLC 11 : Antenna Wo (240 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-24.857	60
2	MP4A	Z	14.351	60
3	MP4A	Mx	.012	60
4	MP2A	X	-106.152	18
5	MP2A	Z	61.287	18
6	MP2A	Mx	.012	18
7	MP2A	X	-106.152	78

**Member Point Loads (BLC 11 : Antenna Wo (240 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
8	MP2A	Z	61.287	78
9	MP2A	Mx	.012	78
10	MP2A	X	-106.152	18
11	MP2A	Z	61.287	18
12	MP2A	Mx	.094	18
13	MP2A	X	-106.152	78
14	MP2A	Z	61.287	78
15	MP2A	Mx	.094	78
16	MP3A	X	-78.158	20.4
17	MP3A	Z	45.124	20.4
18	MP3A	Mx	.039	20.4
19	MP3A	X	-78.158	80.4
20	MP3A	Z	45.124	80.4
21	MP3A	Mx	.039	80.4
22	MP2A	X	-32.913	18
23	MP2A	Z	19.002	18
24	MP2A	Mx	-.029	18
25	MP2A	X	-35.96	18
26	MP2A	Z	20.761	18
27	MP2A	Mx	-.004	18
28	OVP	X	-64.341	24
29	OVP	Z	37.147	24
30	OVP	Mx	0	24
31	MP4A	X	-37.8	3.6
32	MP4A	Z	21.824	3.6
33	MP4A	Mx	.019	3.6
34	MP4A	X	-37.8	27.6
35	MP4A	Z	21.824	27.6
36	MP4A	Mx	.019	27.6
37	MP2A	X	-8.847	54
38	MP2A	Z	5.108	54
39	MP2A	Mx	-.004	54

**Member Point Loads (BLC 12 : Antenna Wo (270 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-25.411	60
2	MP4A	Z	0	60
3	MP4A	Mx	.013	60
4	MP2A	X	-109.378	18
5	MP2A	Z	0	18
6	MP2A	Mx	.055	18
7	MP2A	X	-109.378	78
8	MP2A	Z	0	78
9	MP2A	Mx	.055	78
10	MP2A	X	-109.378	18
11	MP2A	Z	0	18
12	MP2A	Mx	.055	18
13	MP2A	X	-109.378	78
14	MP2A	Z	0	78
15	MP2A	Mx	.055	78
16	MP3A	X	-79.374	20.4
17	MP3A	Z	0	20.4
18	MP3A	Mx	.04	20.4
19	MP3A	X	-79.374	80.4
20	MP3A	Z	0	80.4
21	MP3A	Mx	.04	80.4
22	MP2A	X	-34.29	18
23	MP2A	Z	0	18

**Member Point Loads (BLC 12 : Antenna Wo (270 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
24	MP2A	Mx	-.017	18
25	MP2A	X	-39.648	18
26	MP2A	Z	0	18
27	MP2A	Mx	-.02	18
28	OVP	X	-68.865	24
29	OVP	Z	0	24
30	OVP	Mx	0	24
31	MP4A	X	-38.862	3.6
32	MP4A	Z	0	3.6
33	MP4A	Mx	.019	3.6
34	MP4A	X	-38.862	27.6
35	MP4A	Z	0	27.6
36	MP4A	Mx	.019	27.6
37	MP2A	X	-8.39	54
38	MP2A	Z	0	54
39	MP2A	Mx	-.004	54

**Member Point Loads (BLC 13 : Antenna Wo (300 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-24.857	60
2	MP4A	Z	-14.351	60
3	MP4A	Mx	.012	60
4	MP2A	X	-106.152	18
5	MP2A	Z	-61.287	18
6	MP2A	Mx	.094	18
7	MP2A	X	-106.152	78
8	MP2A	Z	-61.287	78
9	MP2A	Mx	.094	78
10	MP2A	X	-106.152	18
11	MP2A	Z	-61.287	18
12	MP2A	Mx	.012	18
13	MP2A	X	-106.152	78
14	MP2A	Z	-61.287	78
15	MP2A	Mx	.012	78
16	MP3A	X	-78.158	20.4
17	MP3A	Z	-45.124	20.4
18	MP3A	Mx	.039	20.4
19	MP3A	X	-78.158	80.4
20	MP3A	Z	-45.124	80.4
21	MP3A	Mx	.039	80.4
22	MP2A	X	-32.913	18
23	MP2A	Z	-19.002	18
24	MP2A	Mx	-.004	18
25	MP2A	X	-35.96	18
26	MP2A	Z	-20.761	18
27	MP2A	Mx	-.032	18
28	OVP	X	-64.341	24
29	OVP	Z	-37.147	24
30	OVP	Mx	0	24
31	MP4A	X	-37.8	3.6
32	MP4A	Z	-21.824	3.6
33	MP4A	Mx	.019	3.6
34	MP4A	X	-37.8	27.6
35	MP4A	Z	-21.824	27.6
36	MP4A	Mx	.019	27.6
37	MP2A	X	-8.847	54
38	MP2A	Z	-5.108	54
39	MP2A	Mx	-.004	54

**Member Point Loads (BLC 14 : Antenna Wo (330 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-17.642	60
2	MP4A	Z	-30.558	60
3	MP4A	Mx	.009	60
4	MP2A	X	-74.483	18
5	MP2A	Z	-129.008	18
6	MP2A	Mx	.123	18
7	MP2A	X	-74.483	78
8	MP2A	Z	-129.008	78
9	MP2A	Mx	.123	78
10	MP2A	X	-74.483	18
11	MP2A	Z	-129.008	18
12	MP2A	Mx	-.049	18
13	MP2A	X	-74.483	78
14	MP2A	Z	-129.008	78
15	MP2A	Mx	-.049	78
16	MP3A	X	-55.999	20.4
17	MP3A	Z	-96.993	20.4
18	MP3A	Mx	.028	20.4
19	MP3A	X	-55.999	80.4
20	MP3A	Z	-96.993	80.4
21	MP3A	Mx	.028	80.4
22	MP2A	X	-22.717	18
23	MP2A	Z	-39.347	18
24	MP2A	Mx	.015	18
25	MP2A	X	-22.637	18
26	MP2A	Z	-39.208	18
27	MP2A	Mx	-.037	18
28	OVP	X	-42.576	24
29	OVP	Z	-73.745	24
30	OVP	Mx	0	24
31	MP4A	X	-26.61	3.6
32	MP4A	Z	-46.09	3.6
33	MP4A	Mx	.013	3.6
34	MP4A	X	-26.61	27.6
35	MP4A	Z	-46.09	27.6
36	MP4A	Mx	.013	27.6
37	MP2A	X	-6.934	54
38	MP2A	Z	-12.011	54
39	MP2A	Mx	-.003	54

**Member Point Loads (BLC 15 : Antenna Wi (0 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	0	60
2	MP4A	Z	-7.704	60
3	MP4A	Mx	0	60
4	MP2A	X	0	18
5	MP2A	Z	-31.444	18
6	MP2A	Mx	.021	18
7	MP2A	X	0	78
8	MP2A	Z	-31.444	78
9	MP2A	Mx	.021	78
10	MP2A	X	0	18
11	MP2A	Z	-31.444	18
12	MP2A	Mx	-.021	18
13	MP2A	X	0	78
14	MP2A	Z	-31.444	78
15	MP2A	Mx	-.021	78
16	MP3A	X	0	20.4

**Member Point Loads (BLC 15 : Antenna Wi (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
17	MP3A	Z	-23.75	20.4
18	MP3A	Mx	0	20.4
19	MP3A	X	0	80.4
20	MP3A	Z	-23.75	80.4
21	MP3A	Mx	0	80.4
22	MP2A	X	0	18
23	MP2A	Z	-9.324	18
24	MP2A	Mx	.006	18
25	MP2A	X	0	18
26	MP2A	Z	-9.324	18
27	MP2A	Mx	-.006	18
28	OVP	X	0	24
29	OVP	Z	-22.576	24
30	OVP	Mx	0	24
31	MP4A	X	0	3.6
32	MP4A	Z	-11.5	3.6
33	MP4A	Mx	0	3.6
34	MP4A	X	0	27.6
35	MP4A	Z	-11.5	27.6
36	MP4A	Mx	0	27.6
37	MP2A	X	0	54
38	MP2A	Z	-3.224	54
39	MP2A	Mx	0	54

**Member Point Loads (BLC 16 : Antenna Wi (30 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
1	MP4A	X	3.531	60
2	MP4A	Z	-6.116	60
3	MP4A	Mx	-.002	60
4	MP2A	X	14.451	18
5	MP2A	Z	-25.03	18
6	MP2A	Mx	.009	18
7	MP2A	X	14.451	78
8	MP2A	Z	-25.03	78
9	MP2A	Mx	.009	78
10	MP2A	X	14.451	18
11	MP2A	Z	-25.03	18
12	MP2A	Mx	-.024	18
13	MP2A	X	14.451	78
14	MP2A	Z	-25.03	78
15	MP2A	Mx	-.024	78
16	MP3A	X	10.844	20.4
17	MP3A	Z	-18.783	20.4
18	MP3A	Mx	-.005	20.4
19	MP3A	X	10.844	80.4
20	MP3A	Z	-18.783	80.4
21	MP3A	Mx	-.005	80.4
22	MP2A	X	4.326	18
23	MP2A	Z	-7.493	18
24	MP2A	Mx	.007	18
25	MP2A	X	4.481	18
26	MP2A	Z	-7.761	18
27	MP2A	Mx	-.003	18
28	OVP	X	10.634	24
29	OVP	Z	-18.418	24
30	OVP	Mx	0	24
31	MP4A	X	5.296	3.6
32	MP4A	Z	-9.172	3.6

**Member Point Loads (BLC 16 : Antenna Wi (30 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
33	MP4A	Mx	-0.003	3.6
34	MP4A	X	5.296	27.6
35	MP4A	Z	-9.172	27.6
36	MP4A	Mx	-0.003	27.6
37	MP2A	X	1.431	54
38	MP2A	Z	-2.478	54
39	MP2A	Mx	.000716	54

**Member Point Loads (BLC 17 : Antenna Wi (60 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	5.005	60
2	MP4A	Z	-2.89	60
3	MP4A	Mx	-0.003	60
4	MP2A	X	20.627	18
5	MP2A	Z	-11.909	18
6	MP2A	Mx	-0.002	18
7	MP2A	X	20.627	78
8	MP2A	Z	-11.909	78
9	MP2A	Mx	-0.002	78
10	MP2A	X	20.627	18
11	MP2A	Z	-11.909	18
12	MP2A	Mx	-0.018	18
13	MP2A	X	20.627	78
14	MP2A	Z	-11.909	78
15	MP2A	Mx	-0.018	78
16	MP3A	X	15.213	20.4
17	MP3A	Z	-8.783	20.4
18	MP3A	Mx	-0.008	20.4
19	MP3A	X	15.213	80.4
20	MP3A	Z	-8.783	80.4
21	MP3A	Mx	-0.008	80.4
22	MP2A	X	6.328	18
23	MP2A	Z	-3.654	18
24	MP2A	Mx	.006	18
25	MP2A	X	7.134	18
26	MP2A	Z	-4.119	18
27	MP2A	Mx	.000821	18
28	OVP	X	16.152	24
29	OVP	Z	-9.325	24
30	OVP	Mx	0	24
31	MP4A	X	7.597	3.6
32	MP4A	Z	-4.386	3.6
33	MP4A	Mx	-0.004	3.6
34	MP4A	X	7.597	27.6
35	MP4A	Z	-4.386	27.6
36	MP4A	Mx	-0.004	27.6
37	MP2A	X	1.85	54
38	MP2A	Z	-1.068	54
39	MP2A	Mx	.000925	54

**Member Point Loads (BLC 18 : Antenna Wi (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	5.138	60
2	MP4A	Z	0	60
3	MP4A	Mx	-0.003	60
4	MP2A	X	21.276	18
5	MP2A	Z	0	18
6	MP2A	Mx	-0.011	18

**Member Point Loads (BLC 18 : Antenna Wi (90 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
7	MP2A	X	21.276	78
8	MP2A	Z	0	78
9	MP2A	Mx	-.011	78
10	MP2A	X	21.276	18
11	MP2A	Z	0	18
12	MP2A	Mx	-.011	18
13	MP2A	X	21.276	78
14	MP2A	Z	0	78
15	MP2A	Mx	-.011	78
16	MP3A	X	15.506	20.4
17	MP3A	Z	0	20.4
18	MP3A	Mx	-.008	20.4
19	MP3A	X	15.506	80.4
20	MP3A	Z	0	80.4
21	MP3A	Mx	-.008	80.4
22	MP2A	X	6.635	18
23	MP2A	Z	0	18
24	MP2A	Mx	.003	18
25	MP2A	X	7.876	18
26	MP2A	Z	0	18
27	MP2A	Mx	.004	18
28	OVP	X	17.342	24
29	OVP	Z	0	24
30	OVP	Mx	0	24
31	MP4A	X	7.864	3.6
32	MP4A	Z	0	3.6
33	MP4A	Mx	-.004	3.6
34	MP4A	X	7.864	27.6
35	MP4A	Z	0	27.6
36	MP4A	Mx	-.004	27.6
37	MP2A	X	1.774	54
38	MP2A	Z	0	54
39	MP2A	Mx	.000887	54

**Member Point Loads (BLC 19 : Antenna Wi (120 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	5.005	60
2	MP4A	Z	2.89	60
3	MP4A	Mx	-.003	60
4	MP2A	X	20.627	18
5	MP2A	Z	11.909	18
6	MP2A	Mx	-.018	18
7	MP2A	X	20.627	78
8	MP2A	Z	11.909	78
9	MP2A	Mx	-.018	78
10	MP2A	X	20.627	18
11	MP2A	Z	11.909	18
12	MP2A	Mx	-.002	18
13	MP2A	X	20.627	78
14	MP2A	Z	11.909	78
15	MP2A	Mx	-.002	78
16	MP3A	X	15.213	20.4
17	MP3A	Z	8.783	20.4
18	MP3A	Mx	-.008	20.4
19	MP3A	X	15.213	80.4
20	MP3A	Z	8.783	80.4
21	MP3A	Mx	-.008	80.4
22	MP2A	X	6.328	18

**Member Point Loads (BLC 19 : Antenna Wi (120 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
23	MP2A	Z	3.654	18
24	MP2A	Mx	.000728	18
25	MP2A	X	7.134	18
26	MP2A	Z	4.119	18
27	MP2A	Mx	.006	18
28	OVP	X	16.152	24
29	OVP	Z	9.325	24
30	OVP	Mx	0	24
31	MP4A	X	7.597	3.6
32	MP4A	Z	4.386	3.6
33	MP4A	Mx	-.004	3.6
34	MP4A	X	7.597	27.6
35	MP4A	Z	4.386	27.6
36	MP4A	Mx	-.004	27.6
37	MP2A	X	1.85	54
38	MP2A	Z	1.068	54
39	MP2A	Mx	.000925	54

**Member Point Loads (BLC 20 : Antenna Wi (150 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	3.531	60
2	MP4A	Z	6.116	60
3	MP4A	Mx	-.002	60
4	MP2A	X	14.451	18
5	MP2A	Z	25.03	18
6	MP2A	Mx	-.024	18
7	MP2A	X	14.451	78
8	MP2A	Z	25.03	78
9	MP2A	Mx	-.024	78
10	MP2A	X	14.451	18
11	MP2A	Z	25.03	18
12	MP2A	Mx	.009	18
13	MP2A	X	14.451	78
14	MP2A	Z	25.03	78
15	MP2A	Mx	.009	78
16	MP3A	X	10.844	20.4
17	MP3A	Z	18.783	20.4
18	MP3A	Mx	-.005	20.4
19	MP3A	X	10.844	80.4
20	MP3A	Z	18.783	80.4
21	MP3A	Mx	-.005	80.4
22	MP2A	X	4.326	18
23	MP2A	Z	7.493	18
24	MP2A	Mx	-.003	18
25	MP2A	X	4.481	18
26	MP2A	Z	7.761	18
27	MP2A	Mx	.007	18
28	OVP	X	10.634	24
29	OVP	Z	18.418	24
30	OVP	Mx	0	24
31	MP4A	X	5.296	3.6
32	MP4A	Z	9.172	3.6
33	MP4A	Mx	-.003	3.6
34	MP4A	X	5.296	27.6
35	MP4A	Z	9.172	27.6
36	MP4A	Mx	-.003	27.6
37	MP2A	X	1.431	54
38	MP2A	Z	2.478	54



Company :  
 Designer :  
 Job Number :  
 Model Name :

May 23, 2022  
 4:20 PM  
 Checked By: \_\_\_\_\_

**Member Point Loads (BLC 20 : Antenna Wi (150 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
39	MP2A	Mx	.000716	54

**Member Point Loads (BLC 21 : Antenna Wi (180 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	0	60
2	MP4A	Z	7.704	60
3	MP4A	Mx	0	60
4	MP2A	X	0	18
5	MP2A	Z	31.444	18
6	MP2A	Mx	-.021	18
7	MP2A	X	0	78
8	MP2A	Z	31.444	78
9	MP2A	Mx	-.021	78
10	MP2A	X	0	18
11	MP2A	Z	31.444	18
12	MP2A	Mx	.021	18
13	MP2A	X	0	78
14	MP2A	Z	31.444	78
15	MP2A	Mx	.021	78
16	MP3A	X	0	20.4
17	MP3A	Z	23.75	20.4
18	MP3A	Mx	0	20.4
19	MP3A	X	0	80.4
20	MP3A	Z	23.75	80.4
21	MP3A	Mx	0	80.4
22	MP2A	X	0	18
23	MP2A	Z	9.324	18
24	MP2A	Mx	-.006	18
25	MP2A	X	0	18
26	MP2A	Z	9.324	18
27	MP2A	Mx	.006	18
28	OVP	X	0	24
29	OVP	Z	22.576	24
30	OVP	Mx	0	24
31	MP4A	X	0	3.6
32	MP4A	Z	11.5	3.6
33	MP4A	Mx	0	3.6
34	MP4A	X	0	27.6
35	MP4A	Z	11.5	27.6
36	MP4A	Mx	0	27.6
37	MP2A	X	0	54
38	MP2A	Z	3.224	54
39	MP2A	Mx	0	54

**Member Point Loads (BLC 22 : Antenna Wi (210 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-3.531	60
2	MP4A	Z	6.116	60
3	MP4A	Mx	.002	60
4	MP2A	X	-14.451	18
5	MP2A	Z	25.03	18
6	MP2A	Mx	-.009	18
7	MP2A	X	-14.451	78
8	MP2A	Z	25.03	78
9	MP2A	Mx	-.009	78
10	MP2A	X	-14.451	18
11	MP2A	Z	25.03	18
12	MP2A	Mx	.024	18

**Member Point Loads (BLC 22 : Antenna Wi (210 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
13	MP2A	X	-14.451	78
14	MP2A	Z	25.03	78
15	MP2A	Mx	.024	78
16	MP3A	X	-10.844	20.4
17	MP3A	Z	18.783	20.4
18	MP3A	Mx	.005	20.4
19	MP3A	X	-10.844	80.4
20	MP3A	Z	18.783	80.4
21	MP3A	Mx	.005	80.4
22	MP2A	X	-4.326	18
23	MP2A	Z	7.493	18
24	MP2A	Mx	-.007	18
25	MP2A	X	-4.481	18
26	MP2A	Z	7.761	18
27	MP2A	Mx	.003	18
28	OVP	X	-10.634	24
29	OVP	Z	18.418	24
30	OVP	Mx	0	24
31	MP4A	X	-5.296	3.6
32	MP4A	Z	9.172	3.6
33	MP4A	Mx	.003	3.6
34	MP4A	X	-5.296	27.6
35	MP4A	Z	9.172	27.6
36	MP4A	Mx	.003	27.6
37	MP2A	X	-1.431	54
38	MP2A	Z	2.478	54
39	MP2A	Mx	-.000716	54

**Member Point Loads (BLC 23 : Antenna Wi (240 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	-5.005	60
2	MP4A	Z	2.89	60
3	MP4A	Mx	.003	60
4	MP2A	X	-20.627	18
5	MP2A	Z	11.909	18
6	MP2A	Mx	.002	18
7	MP2A	X	-20.627	78
8	MP2A	Z	11.909	78
9	MP2A	Mx	.002	78
10	MP2A	X	-20.627	18
11	MP2A	Z	11.909	18
12	MP2A	Mx	.018	18
13	MP2A	X	-20.627	78
14	MP2A	Z	11.909	78
15	MP2A	Mx	.018	78
16	MP3A	X	-15.213	20.4
17	MP3A	Z	8.783	20.4
18	MP3A	Mx	.008	20.4
19	MP3A	X	-15.213	80.4
20	MP3A	Z	8.783	80.4
21	MP3A	Mx	.008	80.4
22	MP2A	X	-6.328	18
23	MP2A	Z	3.654	18
24	MP2A	Mx	-.006	18
25	MP2A	X	-7.134	18
26	MP2A	Z	4.119	18
27	MP2A	Mx	-.000821	18
28	OVP	X	-16.152	24

**Member Point Loads (BLC 23 : Antenna Wi (240 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
29	OVP	Z	9.325	24
30	OVP	Mx	0	24
31	MP4A	X	-7.597	3.6
32	MP4A	Z	4.386	3.6
33	MP4A	Mx	.004	3.6
34	MP4A	X	-7.597	27.6
35	MP4A	Z	4.386	27.6
36	MP4A	Mx	.004	27.6
37	MP2A	X	-1.85	54
38	MP2A	Z	1.068	54
39	MP2A	Mx	-.000925	54

**Member Point Loads (BLC 24 : Antenna Wi (270 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	-5.138	60
2	MP4A	Z	0	60
3	MP4A	Mx	.003	60
4	MP2A	X	-21.276	18
5	MP2A	Z	0	18
6	MP2A	Mx	.011	18
7	MP2A	X	-21.276	78
8	MP2A	Z	0	78
9	MP2A	Mx	.011	78
10	MP2A	X	-21.276	18
11	MP2A	Z	0	18
12	MP2A	Mx	.011	18
13	MP2A	X	-21.276	78
14	MP2A	Z	0	78
15	MP2A	Mx	.011	78
16	MP3A	X	-15.506	20.4
17	MP3A	Z	0	20.4
18	MP3A	Mx	.008	20.4
19	MP3A	X	-15.506	80.4
20	MP3A	Z	0	80.4
21	MP3A	Mx	.008	80.4
22	MP2A	X	-6.635	18
23	MP2A	Z	0	18
24	MP2A	Mx	-.003	18
25	MP2A	X	-7.876	18
26	MP2A	Z	0	18
27	MP2A	Mx	-.004	18
28	OVP	X	-17.342	24
29	OVP	Z	0	24
30	OVP	Mx	0	24
31	MP4A	X	-7.864	3.6
32	MP4A	Z	0	3.6
33	MP4A	Mx	.004	3.6
34	MP4A	X	-7.864	27.6
35	MP4A	Z	0	27.6
36	MP4A	Mx	.004	27.6
37	MP2A	X	-1.774	54
38	MP2A	Z	0	54
39	MP2A	Mx	-.000887	54

**Member Point Loads (BLC 25 : Antenna Wi (300 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	-5.005	60
2	MP4A	Z	-2.89	60

**Member Point Loads (BLC 25 : Antenna Wi (300 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
3	MP4A	Mx	.003	60
4	MP2A	X	-20.627	18
5	MP2A	Z	-11.909	18
6	MP2A	Mx	.018	18
7	MP2A	X	-20.627	78
8	MP2A	Z	-11.909	78
9	MP2A	Mx	.018	78
10	MP2A	X	-20.627	18
11	MP2A	Z	-11.909	18
12	MP2A	Mx	.002	18
13	MP2A	X	-20.627	78
14	MP2A	Z	-11.909	78
15	MP2A	Mx	.002	78
16	MP3A	X	-15.213	20.4
17	MP3A	Z	-8.783	20.4
18	MP3A	Mx	.008	20.4
19	MP3A	X	-15.213	80.4
20	MP3A	Z	-8.783	80.4
21	MP3A	Mx	.008	80.4
22	MP2A	X	-6.328	18
23	MP2A	Z	-3.654	18
24	MP2A	Mx	-.000728	18
25	MP2A	X	-7.134	18
26	MP2A	Z	-4.119	18
27	MP2A	Mx	-.006	18
28	OVP	X	-16.152	24
29	OVP	Z	-9.325	24
30	OVP	Mx	0	24
31	MP4A	X	-7.597	3.6
32	MP4A	Z	-4.386	3.6
33	MP4A	Mx	.004	3.6
34	MP4A	X	-7.597	27.6
35	MP4A	Z	-4.386	27.6
36	MP4A	Mx	.004	27.6
37	MP2A	X	-1.85	54
38	MP2A	Z	-1.068	54
39	MP2A	Mx	-.000925	54

**Member Point Loads (BLC 26 : Antenna Wi (330 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	-3.531	60
2	MP4A	Z	-6.116	60
3	MP4A	Mx	.002	60
4	MP2A	X	-14.451	18
5	MP2A	Z	-25.03	18
6	MP2A	Mx	.024	18
7	MP2A	X	-14.451	78
8	MP2A	Z	-25.03	78
9	MP2A	Mx	.024	78
10	MP2A	X	-14.451	18
11	MP2A	Z	-25.03	18
12	MP2A	Mx	-.009	18
13	MP2A	X	-14.451	78
14	MP2A	Z	-25.03	78
15	MP2A	Mx	-.009	78
16	MP3A	X	-10.844	20.4
17	MP3A	Z	-18.783	20.4
18	MP3A	Mx	.005	20.4

**Member Point Loads (BLC 26 : Antenna Wi (330 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
19	MP3A	X	-10.844	80.4
20	MP3A	Z	-18.783	80.4
21	MP3A	Mx	.005	80.4
22	MP2A	X	-4.326	18
23	MP2A	Z	-7.493	18
24	MP2A	Mx	.003	18
25	MP2A	X	-4.481	18
26	MP2A	Z	-7.761	18
27	MP2A	Mx	-.007	18
28	OVP	X	-10.634	24
29	OVP	Z	-18.418	24
30	OVP	Mx	0	24
31	MP4A	X	-5.296	3.6
32	MP4A	Z	-9.172	3.6
33	MP4A	Mx	.003	3.6
34	MP4A	X	-5.296	27.6
35	MP4A	Z	-9.172	27.6
36	MP4A	Mx	.003	27.6
37	MP2A	X	-1.431	54
38	MP2A	Z	-2.478	54
39	MP2A	Mx	-.000716	54

**Member Point Loads (BLC 27 : Antenna Wm (0 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	0	60
2	MP4A	Z	-2.625	60
3	MP4A	Mx	0	60
4	MP2A	X	0	18
5	MP2A	Z	-11.036	18
6	MP2A	Mx	.007	18
7	MP2A	X	0	78
8	MP2A	Z	-11.036	78
9	MP2A	Mx	.007	78
10	MP2A	X	0	18
11	MP2A	Z	-11.036	18
12	MP2A	Mx	-.007	18
13	MP2A	X	0	78
14	MP2A	Z	-11.036	78
15	MP2A	Mx	-.007	78
16	MP3A	X	0	20.4
17	MP3A	Z	-8.362	20.4
18	MP3A	Mx	0	20.4
19	MP3A	X	0	80.4
20	MP3A	Z	-8.362	80.4
21	MP3A	Mx	0	80.4
22	MP2A	X	0	18
23	MP2A	Z	-3.345	18
24	MP2A	Mx	.002	18
25	MP2A	X	0	18
26	MP2A	Z	-3.209	18
27	MP2A	Mx	-.002	18
28	OVP	X	0	24
29	OVP	Z	-6.164	24
30	OVP	Mx	0	24
31	MP4A	X	0	3.6
32	MP4A	Z	-3.948	3.6
33	MP4A	Mx	0	3.6
34	MP4A	X	0	27.6

**Member Point Loads (BLC 27 : Antenna Wm (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
35	MP4A	Z	-3.948	27.6
36	MP4A	Mx	0	27.6
37	MP2A	X	0	54
38	MP2A	Z	-1.068	54
39	MP2A	Mx	0	54

**Member Point Loads (BLC 28 : Antenna Wm (30 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	1.201	60
2	MP4A	Z	-2.08	60
3	MP4A	Mx	-.0006	60
4	MP2A	X	5.069	18
5	MP2A	Z	-8.779	18
6	MP2A	Mx	.003	18
7	MP2A	X	5.069	78
8	MP2A	Z	-8.779	78
9	MP2A	Mx	.003	78
10	MP2A	X	5.069	18
11	MP2A	Z	-8.779	18
12	MP2A	Mx	-.008	18
13	MP2A	X	5.069	78
14	MP2A	Z	-8.779	78
15	MP2A	Mx	-.008	78
16	MP3A	X	3.811	20.4
17	MP3A	Z	-6.601	20.4
18	MP3A	Mx	-.002	20.4
19	MP3A	X	3.811	80.4
20	MP3A	Z	-6.601	80.4
21	MP3A	Mx	-.002	80.4
22	MP2A	X	1.546	18
23	MP2A	Z	-2.678	18
24	MP2A	Mx	.003	18
25	MP2A	X	1.54	18
26	MP2A	Z	-2.668	18
27	MP2A	Mx	-.001	18
28	OVP	X	2.897	24
29	OVP	Z	-5.019	24
30	OVP	Mx	0	24
31	MP4A	X	1.811	3.6
32	MP4A	Z	-3.137	3.6
33	MP4A	Mx	-.000906	3.6
34	MP4A	X	1.811	27.6
35	MP4A	Z	-3.137	27.6
36	MP4A	Mx	-.000906	27.6
37	MP2A	X	.472	54
38	MP2A	Z	-.817	54
39	MP2A	Mx	.000236	54

**Member Point Loads (BLC 29 : Antenna Wm (60 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	1.692	60
2	MP4A	Z	-.977	60
3	MP4A	Mx	-.000846	60
4	MP2A	X	7.224	18
5	MP2A	Z	-4.171	18
6	MP2A	Mx	-.000831	18
7	MP2A	X	7.224	78
8	MP2A	Z	-4.171	78

**Member Point Loads (BLC 29 : Antenna Wm (60 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
9	MP2A	Mx	-.000831	78
10	MP2A	X	7.224	18
11	MP2A	Z	-4.171	18
12	MP2A	Mx	-.006	18
13	MP2A	X	7.224	78
14	MP2A	Z	-4.171	78
15	MP2A	Mx	-.006	78
16	MP3A	X	5.319	20.4
17	MP3A	Z	-3.071	20.4
18	MP3A	Mx	-.003	20.4
19	MP3A	X	5.319	80.4
20	MP3A	Z	-3.071	80.4
21	MP3A	Mx	-.003	80.4
22	MP2A	X	2.24	18
23	MP2A	Z	-1.293	18
24	MP2A	Mx	.002	18
25	MP2A	X	2.447	18
26	MP2A	Z	-1.413	18
27	MP2A	Mx	.000282	18
28	OVP	X	4.379	24
29	OVP	Z	-2.528	24
30	OVP	Mx	0	24
31	MP4A	X	2.572	3.6
32	MP4A	Z	-1.485	3.6
33	MP4A	Mx	-.001	3.6
34	MP4A	X	2.572	27.6
35	MP4A	Z	-1.485	27.6
36	MP4A	Mx	-.001	27.6
37	MP2A	X	.602	54
38	MP2A	Z	-.348	54
39	MP2A	Mx	.000301	54

**Member Point Loads (BLC 30 : Antenna Wm (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	1.729	60
2	MP4A	Z	0	60
3	MP4A	Mx	-.000864	60
4	MP2A	X	7.443	18
5	MP2A	Z	0	18
6	MP2A	Mx	-.004	18
7	MP2A	X	7.443	78
8	MP2A	Z	0	78
9	MP2A	Mx	-.004	78
10	MP2A	X	7.443	18
11	MP2A	Z	0	18
12	MP2A	Mx	-.004	18
13	MP2A	X	7.443	78
14	MP2A	Z	0	78
15	MP2A	Mx	-.004	78
16	MP3A	X	5.402	20.4
17	MP3A	Z	0	20.4
18	MP3A	Mx	-.003	20.4
19	MP3A	X	5.402	80.4
20	MP3A	Z	0	80.4
21	MP3A	Mx	-.003	80.4
22	MP2A	X	2.334	18
23	MP2A	Z	0	18
24	MP2A	Mx	.001	18

**Member Point Loads (BLC 30 : Antenna Wm (90 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
25	MP2A	X	2.698	18
26	MP2A	Z	0	18
27	MP2A	Mx	.001	18
28	OVP	X	4.686	24
29	OVP	Z	0	24
30	OVP	Mx	0	24
31	MP4A	X	2.645	3.6
32	MP4A	Z	0	3.6
33	MP4A	Mx	-.001	3.6
34	MP4A	X	2.645	27.6
35	MP4A	Z	0	27.6
36	MP4A	Mx	-.001	27.6
37	MP2A	X	.571	54
38	MP2A	Z	0	54
39	MP2A	Mx	.000286	54

**Member Point Loads (BLC 31 : Antenna Wm (120 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	1.692	60
2	MP4A	Z	.977	60
3	MP4A	Mx	-.000846	60
4	MP2A	X	7.224	18
5	MP2A	Z	4.171	18
6	MP2A	Mx	-.006	18
7	MP2A	X	7.224	78
8	MP2A	Z	4.171	78
9	MP2A	Mx	-.006	78
10	MP2A	X	7.224	18
11	MP2A	Z	4.171	18
12	MP2A	Mx	-.000831	18
13	MP2A	X	7.224	78
14	MP2A	Z	4.171	78
15	MP2A	Mx	-.000831	78
16	MP3A	X	5.319	20.4
17	MP3A	Z	3.071	20.4
18	MP3A	Mx	-.003	20.4
19	MP3A	X	5.319	80.4
20	MP3A	Z	3.071	80.4
21	MP3A	Mx	-.003	80.4
22	MP2A	X	2.24	18
23	MP2A	Z	1.293	18
24	MP2A	Mx	.000258	18
25	MP2A	X	2.447	18
26	MP2A	Z	1.413	18
27	MP2A	Mx	.002	18
28	OVP	X	4.379	24
29	OVP	Z	2.528	24
30	OVP	Mx	0	24
31	MP4A	X	2.572	3.6
32	MP4A	Z	1.485	3.6
33	MP4A	Mx	-.001	3.6
34	MP4A	X	2.572	27.6
35	MP4A	Z	1.485	27.6
36	MP4A	Mx	-.001	27.6
37	MP2A	X	.602	54
38	MP2A	Z	.348	54
39	MP2A	Mx	.000301	54

**Member Point Loads (BLC 32 : Antenna Wm (150 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	1.201	60
2	MP4A	Z	2.08	60
3	MP4A	Mx	-.0006	60
4	MP2A	X	5.069	18
5	MP2A	Z	8.779	18
6	MP2A	Mx	-.008	18
7	MP2A	X	5.069	78
8	MP2A	Z	8.779	78
9	MP2A	Mx	-.008	78
10	MP2A	X	5.069	18
11	MP2A	Z	8.779	18
12	MP2A	Mx	.003	18
13	MP2A	X	5.069	78
14	MP2A	Z	8.779	78
15	MP2A	Mx	.003	78
16	MP3A	X	3.811	20.4
17	MP3A	Z	6.601	20.4
18	MP3A	Mx	-.002	20.4
19	MP3A	X	3.811	80.4
20	MP3A	Z	6.601	80.4
21	MP3A	Mx	-.002	80.4
22	MP2A	X	1.546	18
23	MP2A	Z	2.678	18
24	MP2A	Mx	-.001	18
25	MP2A	X	1.54	18
26	MP2A	Z	2.668	18
27	MP2A	Mx	.003	18
28	OVP	X	2.897	24
29	OVP	Z	5.019	24
30	OVP	Mx	0	24
31	MP4A	X	1.811	3.6
32	MP4A	Z	3.137	3.6
33	MP4A	Mx	-.000906	3.6
34	MP4A	X	1.811	27.6
35	MP4A	Z	3.137	27.6
36	MP4A	Mx	-.000906	27.6
37	MP2A	X	.472	54
38	MP2A	Z	.817	54
39	MP2A	Mx	.000236	54

**Member Point Loads (BLC 33 : Antenna Wm (180 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	0	60
2	MP4A	Z	2.625	60
3	MP4A	Mx	0	60
4	MP2A	X	0	18
5	MP2A	Z	11.036	18
6	MP2A	Mx	-.007	18
7	MP2A	X	0	78
8	MP2A	Z	11.036	78
9	MP2A	Mx	-.007	78
10	MP2A	X	0	18
11	MP2A	Z	11.036	18
12	MP2A	Mx	.007	18
13	MP2A	X	0	78
14	MP2A	Z	11.036	78
15	MP2A	Mx	.007	78
16	MP3A	X	0	20.4

**Member Point Loads (BLC 33 : Antenna Wm (180 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
17	MP3A	Z	8.362	20.4
18	MP3A	Mx	0	20.4
19	MP3A	X	0	80.4
20	MP3A	Z	8.362	80.4
21	MP3A	Mx	0	80.4
22	MP2A	X	0	18
23	MP2A	Z	3.345	18
24	MP2A	Mx	-.002	18
25	MP2A	X	0	18
26	MP2A	Z	3.209	18
27	MP2A	Mx	.002	18
28	OVP	X	0	24
29	OVP	Z	6.164	24
30	OVP	Mx	0	24
31	MP4A	X	0	3.6
32	MP4A	Z	3.948	3.6
33	MP4A	Mx	0	3.6
34	MP4A	X	0	27.6
35	MP4A	Z	3.948	27.6
36	MP4A	Mx	0	27.6
37	MP2A	X	0	54
38	MP2A	Z	1.068	54
39	MP2A	Mx	0	54

**Member Point Loads (BLC 34 : Antenna Wm (210 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
1	MP4A	X	-1.201	60
2	MP4A	Z	2.08	60
3	MP4A	Mx	.0006	60
4	MP2A	X	-5.069	18
5	MP2A	Z	8.779	18
6	MP2A	Mx	-.003	18
7	MP2A	X	-5.069	78
8	MP2A	Z	8.779	78
9	MP2A	Mx	-.003	78
10	MP2A	X	-5.069	18
11	MP2A	Z	8.779	18
12	MP2A	Mx	.008	18
13	MP2A	X	-5.069	78
14	MP2A	Z	8.779	78
15	MP2A	Mx	.008	78
16	MP3A	X	-3.811	20.4
17	MP3A	Z	6.601	20.4
18	MP3A	Mx	.002	20.4
19	MP3A	X	-3.811	80.4
20	MP3A	Z	6.601	80.4
21	MP3A	Mx	.002	80.4
22	MP2A	X	-1.546	18
23	MP2A	Z	2.678	18
24	MP2A	Mx	-.003	18
25	MP2A	X	-1.54	18
26	MP2A	Z	2.668	18
27	MP2A	Mx	.001	18
28	OVP	X	-2.897	24
29	OVP	Z	5.019	24
30	OVP	Mx	0	24
31	MP4A	X	-1.811	3.6
32	MP4A	Z	3.137	3.6

**Member Point Loads (BLC 34 : Antenna Wm (210 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
33	MP4A	Mx	.000906	3.6
34	MP4A	X	-1.811	27.6
35	MP4A	Z	3.137	27.6
36	MP4A	Mx	.000906	27.6
37	MP2A	X	-.472	54
38	MP2A	Z	.817	54
39	MP2A	Mx	-.000236	54

**Member Point Loads (BLC 35 : Antenna Wm (240 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-1.692	60
2	MP4A	Z	.977	60
3	MP4A	Mx	.000846	60
4	MP2A	X	-7.224	18
5	MP2A	Z	4.171	18
6	MP2A	Mx	.000831	18
7	MP2A	X	-7.224	78
8	MP2A	Z	4.171	78
9	MP2A	Mx	.000831	78
10	MP2A	X	-7.224	18
11	MP2A	Z	4.171	18
12	MP2A	Mx	.006	18
13	MP2A	X	-7.224	78
14	MP2A	Z	4.171	78
15	MP2A	Mx	.006	78
16	MP3A	X	-5.319	20.4
17	MP3A	Z	3.071	20.4
18	MP3A	Mx	.003	20.4
19	MP3A	X	-5.319	80.4
20	MP3A	Z	3.071	80.4
21	MP3A	Mx	.003	80.4
22	MP2A	X	-2.24	18
23	MP2A	Z	1.293	18
24	MP2A	Mx	-.002	18
25	MP2A	X	-2.447	18
26	MP2A	Z	1.413	18
27	MP2A	Mx	-.000282	18
28	OVP	X	-4.379	24
29	OVP	Z	2.528	24
30	OVP	Mx	0	24
31	MP4A	X	-2.572	3.6
32	MP4A	Z	1.485	3.6
33	MP4A	Mx	.001	3.6
34	MP4A	X	-2.572	27.6
35	MP4A	Z	1.485	27.6
36	MP4A	Mx	.001	27.6
37	MP2A	X	-.602	54
38	MP2A	Z	.348	54
39	MP2A	Mx	-.000301	54

**Member Point Loads (BLC 36 : Antenna Wm (270 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-1.729	60
2	MP4A	Z	0	60
3	MP4A	Mx	.000864	60
4	MP2A	X	-7.443	18
5	MP2A	Z	0	18
6	MP2A	Mx	.004	18

**Member Point Loads (BLC 36 : Antenna Wm (270 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
7	MP2A	X	-7.443	78
8	MP2A	Z	0	78
9	MP2A	Mx	.004	78
10	MP2A	X	-7.443	18
11	MP2A	Z	0	18
12	MP2A	Mx	.004	18
13	MP2A	X	-7.443	78
14	MP2A	Z	0	78
15	MP2A	Mx	.004	78
16	MP3A	X	-5.402	20.4
17	MP3A	Z	0	20.4
18	MP3A	Mx	.003	20.4
19	MP3A	X	-5.402	80.4
20	MP3A	Z	0	80.4
21	MP3A	Mx	.003	80.4
22	MP2A	X	-2.334	18
23	MP2A	Z	0	18
24	MP2A	Mx	-.001	18
25	MP2A	X	-2.698	18
26	MP2A	Z	0	18
27	MP2A	Mx	-.001	18
28	OVP	X	-4.686	24
29	OVP	Z	0	24
30	OVP	Mx	0	24
31	MP4A	X	-2.645	3.6
32	MP4A	Z	0	3.6
33	MP4A	Mx	.001	3.6
34	MP4A	X	-2.645	27.6
35	MP4A	Z	0	27.6
36	MP4A	Mx	.001	27.6
37	MP2A	X	-.571	54
38	MP2A	Z	0	54
39	MP2A	Mx	-.000286	54

**Member Point Loads (BLC 37 : Antenna Wm (300 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	-1.692	60
2	MP4A	Z	-.977	60
3	MP4A	Mx	.000846	60
4	MP2A	X	-7.224	18
5	MP2A	Z	-4.171	18
6	MP2A	Mx	.006	18
7	MP2A	X	-7.224	78
8	MP2A	Z	-4.171	78
9	MP2A	Mx	.006	78
10	MP2A	X	-7.224	18
11	MP2A	Z	-4.171	18
12	MP2A	Mx	.000831	18
13	MP2A	X	-7.224	78
14	MP2A	Z	-4.171	78
15	MP2A	Mx	.000831	78
16	MP3A	X	-5.319	20.4
17	MP3A	Z	-3.071	20.4
18	MP3A	Mx	.003	20.4
19	MP3A	X	-5.319	80.4
20	MP3A	Z	-3.071	80.4
21	MP3A	Mx	.003	80.4
22	MP2A	X	-2.24	18

**Member Point Loads (BLC 37 : Antenna Wm (300 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
23	MP2A	Z	-1.293	18
24	MP2A	Mx	-.000258	18
25	MP2A	X	-2.447	18
26	MP2A	Z	-1.413	18
27	MP2A	Mx	-.002	18
28	OVP	X	-4.379	24
29	OVP	Z	-2.528	24
30	OVP	Mx	0	24
31	MP4A	X	-2.572	3.6
32	MP4A	Z	-1.485	3.6
33	MP4A	Mx	.001	3.6
34	MP4A	X	-2.572	27.6
35	MP4A	Z	-1.485	27.6
36	MP4A	Mx	.001	27.6
37	MP2A	X	-.602	54
38	MP2A	Z	-.348	54
39	MP2A	Mx	-.000301	54

**Member Point Loads (BLC 38 : Antenna Wm (330 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP4A	X	-1.201	60
2	MP4A	Z	-2.08	60
3	MP4A	Mx	.0006	60
4	MP2A	X	-5.069	18
5	MP2A	Z	-8.779	18
6	MP2A	Mx	.008	18
7	MP2A	X	-5.069	78
8	MP2A	Z	-8.779	78
9	MP2A	Mx	.008	78
10	MP2A	X	-5.069	18
11	MP2A	Z	-8.779	18
12	MP2A	Mx	-.003	18
13	MP2A	X	-5.069	78
14	MP2A	Z	-8.779	78
15	MP2A	Mx	-.003	78
16	MP3A	X	-3.811	20.4
17	MP3A	Z	-6.601	20.4
18	MP3A	Mx	.002	20.4
19	MP3A	X	-3.811	80.4
20	MP3A	Z	-6.601	80.4
21	MP3A	Mx	.002	80.4
22	MP2A	X	-1.546	18
23	MP2A	Z	-2.678	18
24	MP2A	Mx	.001	18
25	MP2A	X	-1.54	18
26	MP2A	Z	-2.668	18
27	MP2A	Mx	-.003	18
28	OVP	X	-2.897	24
29	OVP	Z	-5.019	24
30	OVP	Mx	0	24
31	MP4A	X	-1.811	3.6
32	MP4A	Z	-3.137	3.6
33	MP4A	Mx	.000906	3.6
34	MP4A	X	-1.811	27.6
35	MP4A	Z	-3.137	27.6
36	MP4A	Mx	.000906	27.6
37	MP2A	X	-.472	54
38	MP2A	Z	-.817	54



Company :  
 Designer :  
 Job Number :  
 Model Name :

May 23, 2022  
 4:20 PM  
 Checked By: \_\_\_\_\_

**Member Point Loads (BLC 38 : Antenna Wm (330 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
39	MP2A	Mx	-0.00236	54

**Member Point Loads (BLC 77 : Lm1)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
1	SA-BOT-1	Y	-500	0

**Member Point Loads (BLC 78 : Lm2)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
1	RL14	Y	-500	0

**Member Point Loads (BLC 79 : Lv1)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
1	FACE	Y	-250	0

**Member Point Loads (BLC 80 : Lv2)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
1	FACE	Y	-250	%50

**Member Point Loads (BLC 81 : Antenna Ev)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in,%]
1	MP4A	Y	-1.157	60
2	MP4A	My	-0.000578	60
3	MP4A	Mz	0	60
4	MP2A	Y	-1.676	18
5	MP2A	My	-0.000838	18
6	MP2A	Mz	-0.001	18
7	MP2A	Y	-1.676	78
8	MP2A	My	-0.000838	78
9	MP2A	Mz	-0.001	78
10	MP2A	Y	-1.676	18
11	MP2A	My	-0.000838	18
12	MP2A	Mz	.001	18
13	MP2A	Y	-1.676	78
14	MP2A	My	-0.000838	78
15	MP2A	Mz	.001	78
16	MP3A	Y	-0.672	20.4
17	MP3A	My	-0.000336	20.4
18	MP3A	Mz	0	20.4
19	MP3A	Y	-0.672	80.4
20	MP3A	My	-0.000336	80.4
21	MP3A	Mz	0	80.4
22	MP2A	Y	-2.793	18
23	MP2A	My	.001	18
24	MP2A	Mz	-0.002	18
25	MP2A	Y	-2.992	18
26	MP2A	My	.001	18
27	MP2A	Mz	.002	18
28	OVP	Y	-1.277	24
29	OVP	My	0	24
30	OVP	Mz	0	24
31	MP4A	Y	-1.755	3.6
32	MP4A	My	-0.000878	3.6
33	MP4A	Mz	0	3.6
34	MP4A	Y	-1.755	27.6
35	MP4A	My	-0.000878	27.6
36	MP4A	Mz	0	27.6

**Member Point Loads (BLC 81 : Antenna Ev) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
37	MP2A	Y	-407	54
38	MP2A	My	.000203	54
39	MP2A	Mz	0	54

**Member Point Loads (BLC 82 : Antenna Eh (0 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	Z	-2.892	60
2	MP4A	Mx	0	60
3	MP2A	Z	-4.189	18
4	MP2A	Mx	.003	18
5	MP2A	Z	-4.189	78
6	MP2A	Mx	.003	78
7	MP2A	Z	-4.189	18
8	MP2A	Mx	-.003	18
9	MP2A	Z	-4.189	78
10	MP2A	Mx	-.003	78
11	MP3A	Z	-1.681	20.4
12	MP3A	Mx	0	20.4
13	MP3A	Z	-1.681	80.4
14	MP3A	Mx	0	80.4
15	MP2A	Z	-6.981	18
16	MP2A	Mx	.005	18
17	MP2A	Z	-7.48	18
18	MP2A	Mx	-.005	18
19	OVP	Z	-3.191	24
20	OVP	Mx	0	24
21	MP4A	Z	-4.388	3.6
22	MP4A	Mx	0	3.6
23	MP4A	Z	-4.388	27.6
24	MP4A	Mx	0	27.6
25	MP2A	Z	-1.017	54
26	MP2A	Mx	0	54

**Member Point Loads (BLC 83 : Antenna Eh (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in. %]
1	MP4A	X	2.892	60
2	MP4A	Mx	-.001	60
3	MP2A	X	4.189	18
4	MP2A	Mx	-.002	18
5	MP2A	X	4.189	78
6	MP2A	Mx	-.002	78
7	MP2A	X	4.189	18
8	MP2A	Mx	-.002	18
9	MP2A	X	4.189	78
10	MP2A	Mx	-.002	78
11	MP3A	X	1.681	20.4
12	MP3A	Mx	-.00084	20.4
13	MP3A	X	1.681	80.4
14	MP3A	Mx	-.00084	80.4
15	MP2A	X	6.981	18
16	MP2A	Mx	.003	18
17	MP2A	X	7.48	18
18	MP2A	Mx	.004	18
19	OVP	X	3.191	24
20	OVP	Mx	0	24
21	MP4A	X	4.388	3.6
22	MP4A	Mx	-.002	3.6
23	MP4A	X	4.388	27.6

**Member Point Loads (BLC 83 : Antenna Eh (90 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
24	MP4A	Mx	-0.002	27.6
25	MP2A	X	1.017	54
26	MP2A	Mx	.000509	54

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

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft....]	Start Location[in.%]	End Location[in.%]
1	CL-BOT	Y	-1.972	-1.972	0	%100
2	CL-TOP	Y	-1.972	-1.972	0	%100
3	FACE	Y	-.723	-.723	0	%100
4	FM-TOP	Y	-.723	-.723	0	%100
5	MP4A	Y	-.881	-.881	0	%100
6	MP1A	Y	-.881	-.881	0	%100
7	MP2A	Y	-1.047	-1.047	0	%100
8	MP3A	Y	-.881	-.881	0	%100
9	PL-5	Y	-1.102	-1.102	0	%100
10	PL-6	Y	-1.102	-1.102	0	%100
11	PL-7	Y	-1.102	-1.102	0	%100
12	PL-8	Y	-1.102	-1.102	0	%100
13	PL-9	Y	-1.102	-1.102	0	%100
14	PL-10	Y	-1.102	-1.102	0	%100
15	PL-11	Y	-1.102	-1.102	0	%100
16	PL-12	Y	-1.102	-1.102	0	%100
17	SA-BOT-1	Y	-.723	-.723	0	%100
18	SA-BOT-2	Y	-.723	-.723	0	%100
19	SA-D-1	Y	-.382	-.382	0	%100
20	SA-D-2	Y	-.382	-.382	0	%100
21	SA-TOP-1	Y	-.723	-.723	0	%100
22	OVP	Y	-.723	-.723	0	%100
23	SA-V-1	Y	-.382	-.382	0	%100
24	SA-V-2	Y	-.382	-.382	0	%100
25	SA-V-3	Y	-.382	-.382	0	%100
26	SA-V-4	Y	-.382	-.382	0	%100
27	STAB	Y	-.881	-.881	0	%100
28	M51	Y	-2.093	-2.093	0	%100
29	M49	Y	-2.093	-2.093	0	%100
30	M50	Y	-2.093	-2.093	0	%100
31	M51A	Y	-2.093	-2.093	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft....]	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	-11.414	-11.414	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	-11.414	-11.414	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	-5.422	-5.422	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	-5.422	-5.422	0	%100
9	MP4A	X	0	0	0	%100
10	MP4A	Z	-6.777	-6.777	0	%100
11	MP1A	X	0	0	0	%100
12	MP1A	Z	-6.777	-6.777	0	%100
13	MP2A	X	0	0	0	%100
14	MP2A	Z	-8.204	-8.204	0	%100
15	MP3A	X	0	0	0	%100
16	MP3A	Z	-6.777	-6.777	0	%100
17	PL-5	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....	Start Location[in.%]	End Location[in.%]
18	PL-5	Z	- .928	- .928	0	%100
19	PL-6	X	0	0	0	%100
20	PL-6	Z	- .928	- .928	0	%100
21	PL-7	X	0	0	0	%100
22	PL-7	Z	- .928	- .928	0	%100
23	PL-8	X	0	0	0	%100
24	PL-8	Z	- .928	- .928	0	%100
25	PL-9	X	0	0	0	%100
26	PL-9	Z	- .928	- .928	0	%100
27	PL-10	X	0	0	0	%100
28	PL-10	Z	- .928	- .928	0	%100
29	PL-11	X	0	0	0	%100
30	PL-11	Z	- .928	- .928	0	%100
31	PL-12	X	0	0	0	%100
32	PL-12	Z	- .928	- .928	0	%100
33	SA-BOT-1	X	0	0	0	%100
34	SA-BOT-1	Z	-3.509	-3.509	0	%100
35	SA-BOT-2	X	0	0	0	%100
36	SA-BOT-2	Z	-3.509	-3.509	0	%100
37	SA-D-1	X	0	0	0	%100
38	SA-D-1	Z	-2.067	-2.067	0	%100
39	SA-D-2	X	0	0	0	%100
40	SA-D-2	Z	-2.067	-2.067	0	%100
41	SA-TOP-1	X	0	0	0	%100
42	SA-TOP-1	Z	-3.509	-3.509	0	%100
43	OVP	X	0	0	0	%100
44	OVP	Z	-3.509	-3.509	0	%100
45	SA-V-1	X	0	0	0	%100
46	SA-V-1	Z	-2.497	-2.497	0	%100
47	SA-V-2	X	0	0	0	%100
48	SA-V-2	Z	-2.497	-2.497	0	%100
49	SA-V-3	X	0	0	0	%100
50	SA-V-3	Z	-2.497	-2.497	0	%100
51	SA-V-4	X	0	0	0	%100
52	SA-V-4	Z	-2.497	-2.497	0	%100
53	STAB	X	0	0	0	%100
54	STAB	Z	- .343	- .343	0	%100
55	M51	X	0	0	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	0	0	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	0	0	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	4.28	4.28	0	%100
2	CL-BOT	Z	-7.414	-7.414	0	%100
3	CL-TOP	X	4.28	4.28	0	%100
4	CL-TOP	Z	-7.414	-7.414	0	%100
5	FACE	X	2.033	2.033	0	%100
6	FACE	Z	-3.522	-3.522	0	%100
7	FM-TOP	X	2.033	2.033	0	%100
8	FM-TOP	Z	-3.522	-3.522	0	%100
9	MP4A	X	3.389	3.389	0	%100
10	MP4A	Z	-5.869	-5.869	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
11	MP1A	X	3.389	3.389	0	%100
12	MP1A	Z	-5.869	-5.869	0	%100
13	MP2A	X	4.102	4.102	0	%100
14	MP2A	Z	-7.105	-7.105	0	%100
15	MP3A	X	3.389	3.389	0	%100
16	MP3A	Z	-5.869	-5.869	0	%100
17	PL-5	X	.705	.705	0	%100
18	PL-5	Z	-1.221	-1.221	0	%100
19	PL-6	X	.705	.705	0	%100
20	PL-6	Z	-1.221	-1.221	0	%100
21	PL-7	X	.116	.116	0	%100
22	PL-7	Z	-.2	-.2	0	%100
23	PL-8	X	.116	.116	0	%100
24	PL-8	Z	-.2	-.2	0	%100
25	PL-9	X	.705	.705	0	%100
26	PL-9	Z	-1.221	-1.221	0	%100
27	PL-10	X	.705	.705	0	%100
28	PL-10	Z	-1.221	-1.221	0	%100
29	PL-11	X	.116	.116	0	%100
30	PL-11	Z	-.2	-.2	0	%100
31	PL-12	X	.116	.116	0	%100
32	PL-12	Z	-.2	-.2	0	%100
33	SA-BOT-1	X	2.666	2.666	0	%100
34	SA-BOT-1	Z	-4.617	-4.617	0	%100
35	SA-BOT-2	X	.437	.437	0	%100
36	SA-BOT-2	Z	-.758	-.758	0	%100
37	SA-D-1	X	1.241	1.241	0	%100
38	SA-D-1	Z	-2.15	-2.15	0	%100
39	SA-D-2	X	.733	.733	0	%100
40	SA-D-2	Z	-1.27	-1.27	0	%100
41	SA-TOP-1	X	2.666	2.666	0	%100
42	SA-TOP-1	Z	-4.617	-4.617	0	%100
43	OVP	X	.437	.437	0	%100
44	OVP	Z	-.758	-.758	0	%100
45	SA-V-1	X	1.248	1.248	0	%100
46	SA-V-1	Z	-2.162	-2.162	0	%100
47	SA-V-2	X	1.248	1.248	0	%100
48	SA-V-2	Z	-2.162	-2.162	0	%100
49	SA-V-3	X	1.248	1.248	0	%100
50	SA-V-3	Z	-2.162	-2.162	0	%100
51	SA-V-4	X	1.248	1.248	0	%100
52	SA-V-4	Z	-2.162	-2.162	0	%100
53	STAB	X	.29	.29	0	%100
54	STAB	Z	-.502	-.502	0	%100
55	M51	X	.178	.178	0	%100
56	M51	Z	-.309	-.309	0	%100
57	M49	X	.178	.178	0	%100
58	M49	Z	-.309	-.309	0	%100
59	M50	X	.178	.178	0	%100
60	M50	Z	-.309	-.309	0	%100
61	M51A	X	.178	.178	0	%100
62	M51A	Z	-.309	-.309	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	2.471	2.471	0	%100
2	CL-BOT	Z	-1.427	-1.427	0	%100
3	CL-TOP	X	2.471	2.471	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
4	CL-TOP	Z	-1.427	-1.427	0	%100
5	FACE	X	1.174	1.174	0	%100
6	FACE	Z	-.678	-.678	0	%100
7	FM-TOP	X	1.174	1.174	0	%100
8	FM-TOP	Z	-.678	-.678	0	%100
9	MP4A	X	5.869	5.869	0	%100
10	MP4A	Z	-3.389	-3.389	0	%100
11	MP1A	X	5.869	5.869	0	%100
12	MP1A	Z	-3.389	-3.389	0	%100
13	MP2A	X	7.105	7.105	0	%100
14	MP2A	Z	-4.102	-4.102	0	%100
15	MP3A	X	5.869	5.869	0	%100
16	MP3A	Z	-3.389	-3.389	0	%100
17	PL-5	X	1.035	1.035	0	%100
18	PL-5	Z	-.598	-.598	0	%100
19	PL-6	X	1.035	1.035	0	%100
20	PL-6	Z	-.598	-.598	0	%100
21	PL-7	X	.015	.015	0	%100
22	PL-7	Z	-.008	-.008	0	%100
23	PL-8	X	.015	.015	0	%100
24	PL-8	Z	-.008	-.008	0	%100
25	PL-9	X	1.035	1.035	0	%100
26	PL-9	Z	-.598	-.598	0	%100
27	PL-10	X	1.035	1.035	0	%100
28	PL-10	Z	-.598	-.598	0	%100
29	PL-11	X	.015	.015	0	%100
30	PL-11	Z	-.008	-.008	0	%100
31	PL-12	X	.015	.015	0	%100
32	PL-12	Z	-.008	-.008	0	%100
33	SA-BOT-1	X	3.915	3.915	0	%100
34	SA-BOT-1	Z	-2.26	-2.26	0	%100
35	SA-BOT-2	X	.055	.055	0	%100
36	SA-BOT-2	Z	-.032	-.032	0	%100
37	SA-D-1	X	1.99	1.99	0	%100
38	SA-D-1	Z	-1.149	-1.149	0	%100
39	SA-D-2	X	1.11	1.11	0	%100
40	SA-D-2	Z	-.641	-.641	0	%100
41	SA-TOP-1	X	3.915	3.915	0	%100
42	SA-TOP-1	Z	-2.26	-2.26	0	%100
43	OVP	X	.055	.055	0	%100
44	OVP	Z	-.032	-.032	0	%100
45	SA-V-1	X	2.162	2.162	0	%100
46	SA-V-1	Z	-1.248	-1.248	0	%100
47	SA-V-2	X	2.162	2.162	0	%100
48	SA-V-2	Z	-1.248	-1.248	0	%100
49	SA-V-3	X	2.162	2.162	0	%100
50	SA-V-3	Z	-1.248	-1.248	0	%100
51	SA-V-4	X	2.162	2.162	0	%100
52	SA-V-4	Z	-1.248	-1.248	0	%100
53	STAB	X	3.14	3.14	0	%100
54	STAB	Z	-1.813	-1.813	0	%100
55	M51	X	.927	.927	0	%100
56	M51	Z	-.535	-.535	0	%100
57	M49	X	.927	.927	0	%100
58	M49	Z	-.535	-.535	0	%100
59	M50	X	.927	.927	0	%100
60	M50	Z	-.535	-.535	0	%100
61	M51A	X	.927	.927	0	%100
62	M51A	Z	-.535	-.535	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	0	0	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	0	0	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	0	0	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	0	0	0	%100
9	MP4A	X	6.777	6.777	0	%100
10	MP4A	Z	0	0	0	%100
11	MP1A	X	6.777	6.777	0	%100
12	MP1A	Z	0	0	0	%100
13	MP2A	X	8.204	8.204	0	%100
14	MP2A	Z	0	0	0	%100
15	MP3A	X	6.777	6.777	0	%100
16	MP3A	Z	0	0	0	%100
17	PL-5	X	.499	.499	0	%100
18	PL-5	Z	0	0	0	%100
19	PL-6	X	.499	.499	0	%100
20	PL-6	Z	0	0	0	%100
21	PL-7	X	.499	.499	0	%100
22	PL-7	Z	0	0	0	%100
23	PL-8	X	.499	.499	0	%100
24	PL-8	Z	0	0	0	%100
25	PL-9	X	.499	.499	0	%100
26	PL-9	Z	0	0	0	%100
27	PL-10	X	.499	.499	0	%100
28	PL-10	Z	0	0	0	%100
29	PL-11	X	.499	.499	0	%100
30	PL-11	Z	0	0	0	%100
31	PL-12	X	.499	.499	0	%100
32	PL-12	Z	0	0	0	%100
33	SA-BOT-1	X	1.887	1.887	0	%100
34	SA-BOT-1	Z	0	0	0	%100
35	SA-BOT-2	X	1.887	1.887	0	%100
36	SA-BOT-2	Z	0	0	0	%100
37	SA-D-1	X	1.697	1.697	0	%100
38	SA-D-1	Z	0	0	0	%100
39	SA-D-2	X	1.697	1.697	0	%100
40	SA-D-2	Z	0	0	0	%100
41	SA-TOP-1	X	1.887	1.887	0	%100
42	SA-TOP-1	Z	0	0	0	%100
43	OVP	X	1.887	1.887	0	%100
44	OVP	Z	0	0	0	%100
45	SA-V-1	X	2.497	2.497	0	%100
46	SA-V-1	Z	0	0	0	%100
47	SA-V-2	X	2.497	2.497	0	%100
48	SA-V-2	Z	0	0	0	%100
49	SA-V-3	X	2.497	2.497	0	%100
50	SA-V-3	Z	0	0	0	%100
51	SA-V-4	X	2.497	2.497	0	%100
52	SA-V-4	Z	0	0	0	%100
53	STAB	X	6.435	6.435	0	%100
54	STAB	Z	0	0	0	%100
55	M51	X	1.427	1.427	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	1.427	1.427	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	1.427	1.427	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft....]	Start Location[in.%]	End Location[in.%]
60	M50	Z	0	0	0	%100
61	M51A	X	1.427	1.427	0	%100
62	M51A	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....]	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	2.471	2.471	0	%100
2	CL-BOT	Z	1.427	1.427	0	%100
3	CL-TOP	X	2.471	2.471	0	%100
4	CL-TOP	Z	1.427	1.427	0	%100
5	FACE	X	1.174	1.174	0	%100
6	FACE	Z	.678	.678	0	%100
7	FM-TOP	X	1.174	1.174	0	%100
8	FM-TOP	Z	.678	.678	0	%100
9	MP4A	X	5.869	5.869	0	%100
10	MP4A	Z	3.389	3.389	0	%100
11	MP1A	X	5.869	5.869	0	%100
12	MP1A	Z	3.389	3.389	0	%100
13	MP2A	X	7.105	7.105	0	%100
14	MP2A	Z	4.102	4.102	0	%100
15	MP3A	X	5.869	5.869	0	%100
16	MP3A	Z	3.389	3.389	0	%100
17	PL-5	X	.015	.015	0	%100
18	PL-5	Z	.008	.008	0	%100
19	PL-6	X	.015	.015	0	%100
20	PL-6	Z	.008	.008	0	%100
21	PL-7	X	1.035	1.035	0	%100
22	PL-7	Z	.598	.598	0	%100
23	PL-8	X	1.035	1.035	0	%100
24	PL-8	Z	.598	.598	0	%100
25	PL-9	X	.015	.015	0	%100
26	PL-9	Z	.008	.008	0	%100
27	PL-10	X	.015	.015	0	%100
28	PL-10	Z	.008	.008	0	%100
29	PL-11	X	1.035	1.035	0	%100
30	PL-11	Z	.598	.598	0	%100
31	PL-12	X	1.035	1.035	0	%100
32	PL-12	Z	.598	.598	0	%100
33	SA-BOT-1	X	.055	.055	0	%100
34	SA-BOT-1	Z	.032	.032	0	%100
35	SA-BOT-2	X	3.915	3.915	0	%100
36	SA-BOT-2	Z	2.26	2.26	0	%100
37	SA-D-1	X	1.11	1.11	0	%100
38	SA-D-1	Z	.641	.641	0	%100
39	SA-D-2	X	1.99	1.99	0	%100
40	SA-D-2	Z	1.149	1.149	0	%100
41	SA-TOP-1	X	.055	.055	0	%100
42	SA-TOP-1	Z	.032	.032	0	%100
43	OVP	X	3.915	3.915	0	%100
44	OVP	Z	2.26	2.26	0	%100
45	SA-V-1	X	2.162	2.162	0	%100
46	SA-V-1	Z	1.248	1.248	0	%100
47	SA-V-2	X	2.162	2.162	0	%100
48	SA-V-2	Z	1.248	1.248	0	%100
49	SA-V-3	X	2.162	2.162	0	%100
50	SA-V-3	Z	1.248	1.248	0	%100
51	SA-V-4	X	2.162	2.162	0	%100
52	SA-V-4	Z	1.248	1.248	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
53	STAB	X	5.367	5.367	0	%100
54	STAB	Z	3.099	3.099	0	%100
55	M51	X	.927	.927	0	%100
56	M51	Z	.535	.535	0	%100
57	M49	X	.927	.927	0	%100
58	M49	Z	.535	.535	0	%100
59	M50	X	.927	.927	0	%100
60	M50	Z	.535	.535	0	%100
61	M51A	X	.927	.927	0	%100
62	M51A	Z	.535	.535	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	4.28	4.28	0	%100
2	CL-BOT	Z	7.414	7.414	0	%100
3	CL-TOP	X	4.28	4.28	0	%100
4	CL-TOP	Z	7.414	7.414	0	%100
5	FACE	X	2.033	2.033	0	%100
6	FACE	Z	3.522	3.522	0	%100
7	FM-TOP	X	2.033	2.033	0	%100
8	FM-TOP	Z	3.522	3.522	0	%100
9	MP4A	X	3.389	3.389	0	%100
10	MP4A	Z	5.869	5.869	0	%100
11	MP1A	X	3.389	3.389	0	%100
12	MP1A	Z	5.869	5.869	0	%100
13	MP2A	X	4.102	4.102	0	%100
14	MP2A	Z	7.105	7.105	0	%100
15	MP3A	X	3.389	3.389	0	%100
16	MP3A	Z	5.869	5.869	0	%100
17	PL-5	X	.116	.116	0	%100
18	PL-5	Z	.2	.2	0	%100
19	PL-6	X	.116	.116	0	%100
20	PL-6	Z	.2	.2	0	%100
21	PL-7	X	.705	.705	0	%100
22	PL-7	Z	1.221	1.221	0	%100
23	PL-8	X	.705	.705	0	%100
24	PL-8	Z	1.221	1.221	0	%100
25	PL-9	X	.116	.116	0	%100
26	PL-9	Z	.2	.2	0	%100
27	PL-10	X	.116	.116	0	%100
28	PL-10	Z	.2	.2	0	%100
29	PL-11	X	.705	.705	0	%100
30	PL-11	Z	1.221	1.221	0	%100
31	PL-12	X	.705	.705	0	%100
32	PL-12	Z	1.221	1.221	0	%100
33	SA-BOT-1	X	.437	.437	0	%100
34	SA-BOT-1	Z	.758	.758	0	%100
35	SA-BOT-2	X	2.666	2.666	0	%100
36	SA-BOT-2	Z	4.617	4.617	0	%100
37	SA-D-1	X	.733	.733	0	%100
38	SA-D-1	Z	1.27	1.27	0	%100
39	SA-D-2	X	1.241	1.241	0	%100
40	SA-D-2	Z	2.15	2.15	0	%100
41	SA-TOP-1	X	.437	.437	0	%100
42	SA-TOP-1	Z	.758	.758	0	%100
43	OVP	X	2.666	2.666	0	%100
44	OVP	Z	4.617	4.617	0	%100
45	SA-V-1	X	1.248	1.248	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
46	SA-V-1	Z	2.162	2.162	0	%100
47	SA-V-2	X	1.248	1.248	0	%100
48	SA-V-2	Z	2.162	2.162	0	%100
49	SA-V-3	X	1.248	1.248	0	%100
50	SA-V-3	Z	2.162	2.162	0	%100
51	SA-V-4	X	1.248	1.248	0	%100
52	SA-V-4	Z	2.162	2.162	0	%100
53	STAB	X	1.576	1.576	0	%100
54	STAB	Z	2.729	2.729	0	%100
55	M51	X	.178	.178	0	%100
56	M51	Z	.309	.309	0	%100
57	M49	X	.178	.178	0	%100
58	M49	Z	.309	.309	0	%100
59	M50	X	.178	.178	0	%100
60	M50	Z	.309	.309	0	%100
61	M51A	X	.178	.178	0	%100
62	M51A	Z	.309	.309	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	11.414	11.414	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	11.414	11.414	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	5.422	5.422	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	5.422	5.422	0	%100
9	MP4A	X	0	0	0	%100
10	MP4A	Z	6.777	6.777	0	%100
11	MP1A	X	0	0	0	%100
12	MP1A	Z	6.777	6.777	0	%100
13	MP2A	X	0	0	0	%100
14	MP2A	Z	8.204	8.204	0	%100
15	MP3A	X	0	0	0	%100
16	MP3A	Z	6.777	6.777	0	%100
17	PL-5	X	0	0	0	%100
18	PL-5	Z	.928	.928	0	%100
19	PL-6	X	0	0	0	%100
20	PL-6	Z	.928	.928	0	%100
21	PL-7	X	0	0	0	%100
22	PL-7	Z	.928	.928	0	%100
23	PL-8	X	0	0	0	%100
24	PL-8	Z	.928	.928	0	%100
25	PL-9	X	0	0	0	%100
26	PL-9	Z	.928	.928	0	%100
27	PL-10	X	0	0	0	%100
28	PL-10	Z	.928	.928	0	%100
29	PL-11	X	0	0	0	%100
30	PL-11	Z	.928	.928	0	%100
31	PL-12	X	0	0	0	%100
32	PL-12	Z	.928	.928	0	%100
33	SA-BOT-1	X	0	0	0	%100
34	SA-BOT-1	Z	3.509	3.509	0	%100
35	SA-BOT-2	X	0	0	0	%100
36	SA-BOT-2	Z	3.509	3.509	0	%100
37	SA-D-1	X	0	0	0	%100
38	SA-D-1	Z	2.067	2.067	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
39	SA-D-2	X	0	0	0	%100
40	SA-D-2	Z	2.067	2.067	0	%100
41	SA-TOP-1	X	0	0	0	%100
42	SA-TOP-1	Z	3.509	3.509	0	%100
43	OVP	X	0	0	0	%100
44	OVP	Z	3.509	3.509	0	%100
45	SA-V-1	X	0	0	0	%100
46	SA-V-1	Z	2.497	2.497	0	%100
47	SA-V-2	X	0	0	0	%100
48	SA-V-2	Z	2.497	2.497	0	%100
49	SA-V-3	X	0	0	0	%100
50	SA-V-3	Z	2.497	2.497	0	%100
51	SA-V-4	X	0	0	0	%100
52	SA-V-4	Z	2.497	2.497	0	%100
53	STAB	X	0	0	0	%100
54	STAB	Z	.343	.343	0	%100
55	M51	X	0	0	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	0	0	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	0	0	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-4.28	-4.28	0	%100
2	CL-BOT	Z	7.414	7.414	0	%100
3	CL-TOP	X	-4.28	-4.28	0	%100
4	CL-TOP	Z	7.414	7.414	0	%100
5	FACE	X	-2.033	-2.033	0	%100
6	FACE	Z	3.522	3.522	0	%100
7	FM-TOP	X	-2.033	-2.033	0	%100
8	FM-TOP	Z	3.522	3.522	0	%100
9	MP4A	X	-3.389	-3.389	0	%100
10	MP4A	Z	5.869	5.869	0	%100
11	MP1A	X	-3.389	-3.389	0	%100
12	MP1A	Z	5.869	5.869	0	%100
13	MP2A	X	-4.102	-4.102	0	%100
14	MP2A	Z	7.105	7.105	0	%100
15	MP3A	X	-3.389	-3.389	0	%100
16	MP3A	Z	5.869	5.869	0	%100
17	PL-5	X	-.705	-.705	0	%100
18	PL-5	Z	1.221	1.221	0	%100
19	PL-6	X	-.705	-.705	0	%100
20	PL-6	Z	1.221	1.221	0	%100
21	PL-7	X	-.116	-.116	0	%100
22	PL-7	Z	.2	.2	0	%100
23	PL-8	X	-.116	-.116	0	%100
24	PL-8	Z	.2	.2	0	%100
25	PL-9	X	-.705	-.705	0	%100
26	PL-9	Z	1.221	1.221	0	%100
27	PL-10	X	-.705	-.705	0	%100
28	PL-10	Z	1.221	1.221	0	%100
29	PL-11	X	-.116	-.116	0	%100
30	PL-11	Z	.2	.2	0	%100
31	PL-12	X	-.116	-.116	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
32	PL-12	Z	.2	.2	0	%100
33	SA-BOT-1	X	-2.666	-2.666	0	%100
34	SA-BOT-1	Z	4.617	4.617	0	%100
35	SA-BOT-2	X	-.437	-.437	0	%100
36	SA-BOT-2	Z	.758	.758	0	%100
37	SA-D-1	X	-1.241	-1.241	0	%100
38	SA-D-1	Z	2.15	2.15	0	%100
39	SA-D-2	X	-.733	-.733	0	%100
40	SA-D-2	Z	1.27	1.27	0	%100
41	SA-TOP-1	X	-2.666	-2.666	0	%100
42	SA-TOP-1	Z	4.617	4.617	0	%100
43	OVP	X	-.437	-.437	0	%100
44	OVP	Z	.758	.758	0	%100
45	SA-V-1	X	-1.248	-1.248	0	%100
46	SA-V-1	Z	2.162	2.162	0	%100
47	SA-V-2	X	-1.248	-1.248	0	%100
48	SA-V-2	Z	2.162	2.162	0	%100
49	SA-V-3	X	-1.248	-1.248	0	%100
50	SA-V-3	Z	2.162	2.162	0	%100
51	SA-V-4	X	-1.248	-1.248	0	%100
52	SA-V-4	Z	2.162	2.162	0	%100
53	STAB	X	-.29	-.29	0	%100
54	STAB	Z	.502	.502	0	%100
55	M51	X	-.178	-.178	0	%100
56	M51	Z	.309	.309	0	%100
57	M49	X	-.178	-.178	0	%100
58	M49	Z	.309	.309	0	%100
59	M50	X	-.178	-.178	0	%100
60	M50	Z	.309	.309	0	%100
61	M51A	X	-.178	-.178	0	%100
62	M51A	Z	.309	.309	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-2.471	-2.471	0	%100
2	CL-BOT	Z	1.427	1.427	0	%100
3	CL-TOP	X	-2.471	-2.471	0	%100
4	CL-TOP	Z	1.427	1.427	0	%100
5	FACE	X	-1.174	-1.174	0	%100
6	FACE	Z	.678	.678	0	%100
7	FM-TOP	X	-1.174	-1.174	0	%100
8	FM-TOP	Z	.678	.678	0	%100
9	MP4A	X	-5.869	-5.869	0	%100
10	MP4A	Z	3.389	3.389	0	%100
11	MP1A	X	-5.869	-5.869	0	%100
12	MP1A	Z	3.389	3.389	0	%100
13	MP2A	X	-7.105	-7.105	0	%100
14	MP2A	Z	4.102	4.102	0	%100
15	MP3A	X	-5.869	-5.869	0	%100
16	MP3A	Z	3.389	3.389	0	%100
17	PL-5	X	-1.035	-1.035	0	%100
18	PL-5	Z	.598	.598	0	%100
19	PL-6	X	-1.035	-1.035	0	%100
20	PL-6	Z	.598	.598	0	%100
21	PL-7	X	-.015	-.015	0	%100
22	PL-7	Z	.008	.008	0	%100
23	PL-8	X	-.015	-.015	0	%100
24	PL-8	Z	.008	.008	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
25	PL-9	X	-1.035	-1.035	0	%100
26	PL-9	Z	.598	.598	0	%100
27	PL-10	X	-1.035	-1.035	0	%100
28	PL-10	Z	.598	.598	0	%100
29	PL-11	X	-.015	-.015	0	%100
30	PL-11	Z	.008	.008	0	%100
31	PL-12	X	-.015	-.015	0	%100
32	PL-12	Z	.008	.008	0	%100
33	SA-BOT-1	X	-3.915	-3.915	0	%100
34	SA-BOT-1	Z	2.26	2.26	0	%100
35	SA-BOT-2	X	-.055	-.055	0	%100
36	SA-BOT-2	Z	.032	.032	0	%100
37	SA-D-1	X	-1.99	-1.99	0	%100
38	SA-D-1	Z	1.149	1.149	0	%100
39	SA-D-2	X	-1.11	-1.11	0	%100
40	SA-D-2	Z	.641	.641	0	%100
41	SA-TOP-1	X	-3.915	-3.915	0	%100
42	SA-TOP-1	Z	2.26	2.26	0	%100
43	OVP	X	-.055	-.055	0	%100
44	OVP	Z	.032	.032	0	%100
45	SA-V-1	X	-2.162	-2.162	0	%100
46	SA-V-1	Z	1.248	1.248	0	%100
47	SA-V-2	X	-2.162	-2.162	0	%100
48	SA-V-2	Z	1.248	1.248	0	%100
49	SA-V-3	X	-2.162	-2.162	0	%100
50	SA-V-3	Z	1.248	1.248	0	%100
51	SA-V-4	X	-2.162	-2.162	0	%100
52	SA-V-4	Z	1.248	1.248	0	%100
53	STAB	X	-3.14	-3.14	0	%100
54	STAB	Z	1.813	1.813	0	%100
55	M51	X	-.927	-.927	0	%100
56	M51	Z	.535	.535	0	%100
57	M49	X	-.927	-.927	0	%100
58	M49	Z	.535	.535	0	%100
59	M50	X	-.927	-.927	0	%100
60	M50	Z	.535	.535	0	%100
61	M51A	X	-.927	-.927	0	%100
62	M51A	Z	.535	.535	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	0	0	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	0	0	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	0	0	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	0	0	0	%100
9	MP4A	X	-6.777	-6.777	0	%100
10	MP4A	Z	0	0	0	%100
11	MP1A	X	-6.777	-6.777	0	%100
12	MP1A	Z	0	0	0	%100
13	MP2A	X	-8.204	-8.204	0	%100
14	MP2A	Z	0	0	0	%100
15	MP3A	X	-6.777	-6.777	0	%100
16	MP3A	Z	0	0	0	%100
17	PL-5	X	-.499	-.499	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
18	PL-5	Z	0	0	0	%100
19	PL-6	X	-499	-499	0	%100
20	PL-6	Z	0	0	0	%100
21	PL-7	X	-499	-499	0	%100
22	PL-7	Z	0	0	0	%100
23	PL-8	X	-499	-499	0	%100
24	PL-8	Z	0	0	0	%100
25	PL-9	X	-499	-499	0	%100
26	PL-9	Z	0	0	0	%100
27	PL-10	X	-499	-499	0	%100
28	PL-10	Z	0	0	0	%100
29	PL-11	X	-499	-499	0	%100
30	PL-11	Z	0	0	0	%100
31	PL-12	X	-499	-499	0	%100
32	PL-12	Z	0	0	0	%100
33	SA-BOT-1	X	-1.887	-1.887	0	%100
34	SA-BOT-1	Z	0	0	0	%100
35	SA-BOT-2	X	-1.887	-1.887	0	%100
36	SA-BOT-2	Z	0	0	0	%100
37	SA-D-1	X	-1.697	-1.697	0	%100
38	SA-D-1	Z	0	0	0	%100
39	SA-D-2	X	-1.697	-1.697	0	%100
40	SA-D-2	Z	0	0	0	%100
41	SA-TOP-1	X	-1.887	-1.887	0	%100
42	SA-TOP-1	Z	0	0	0	%100
43	OVP	X	-1.887	-1.887	0	%100
44	OVP	Z	0	0	0	%100
45	SA-V-1	X	-2.497	-2.497	0	%100
46	SA-V-1	Z	0	0	0	%100
47	SA-V-2	X	-2.497	-2.497	0	%100
48	SA-V-2	Z	0	0	0	%100
49	SA-V-3	X	-2.497	-2.497	0	%100
50	SA-V-3	Z	0	0	0	%100
51	SA-V-4	X	-2.497	-2.497	0	%100
52	SA-V-4	Z	0	0	0	%100
53	STAB	X	-6.435	-6.435	0	%100
54	STAB	Z	0	0	0	%100
55	M51	X	-1.427	-1.427	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	-1.427	-1.427	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	-1.427	-1.427	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	-1.427	-1.427	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-2.471	-2.471	0	%100
2	CL-BOT	Z	-1.427	-1.427	0	%100
3	CL-TOP	X	-2.471	-2.471	0	%100
4	CL-TOP	Z	-1.427	-1.427	0	%100
5	FACE	X	-1.174	-1.174	0	%100
6	FACE	Z	-.678	-.678	0	%100
7	FM-TOP	X	-1.174	-1.174	0	%100
8	FM-TOP	Z	-.678	-.678	0	%100
9	MP4A	X	-5.869	-5.869	0	%100
10	MP4A	Z	-3.389	-3.389	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
11	MP1A	X	-5.869	-5.869	0	%100
12	MP1A	Z	-3.389	-3.389	0	%100
13	MP2A	X	-7.105	-7.105	0	%100
14	MP2A	Z	-4.102	-4.102	0	%100
15	MP3A	X	-5.869	-5.869	0	%100
16	MP3A	Z	-3.389	-3.389	0	%100
17	PL-5	X	-.015	-.015	0	%100
18	PL-5	Z	-.008	-.008	0	%100
19	PL-6	X	-.015	-.015	0	%100
20	PL-6	Z	-.008	-.008	0	%100
21	PL-7	X	-1.035	-1.035	0	%100
22	PL-7	Z	-.598	-.598	0	%100
23	PL-8	X	-1.035	-1.035	0	%100
24	PL-8	Z	-.598	-.598	0	%100
25	PL-9	X	-.015	-.015	0	%100
26	PL-9	Z	-.008	-.008	0	%100
27	PL-10	X	-.015	-.015	0	%100
28	PL-10	Z	-.008	-.008	0	%100
29	PL-11	X	-1.035	-1.035	0	%100
30	PL-11	Z	-.598	-.598	0	%100
31	PL-12	X	-1.035	-1.035	0	%100
32	PL-12	Z	-.598	-.598	0	%100
33	SA-BOT-1	X	-.055	-.055	0	%100
34	SA-BOT-1	Z	-.032	-.032	0	%100
35	SA-BOT-2	X	-3.915	-3.915	0	%100
36	SA-BOT-2	Z	-2.26	-2.26	0	%100
37	SA-D-1	X	-1.11	-1.11	0	%100
38	SA-D-1	Z	-.641	-.641	0	%100
39	SA-D-2	X	-1.99	-1.99	0	%100
40	SA-D-2	Z	-1.149	-1.149	0	%100
41	SA-TOP-1	X	-.055	-.055	0	%100
42	SA-TOP-1	Z	-.032	-.032	0	%100
43	OVP	X	-3.915	-3.915	0	%100
44	OVP	Z	-2.26	-2.26	0	%100
45	SA-V-1	X	-2.162	-2.162	0	%100
46	SA-V-1	Z	-1.248	-1.248	0	%100
47	SA-V-2	X	-2.162	-2.162	0	%100
48	SA-V-2	Z	-1.248	-1.248	0	%100
49	SA-V-3	X	-2.162	-2.162	0	%100
50	SA-V-3	Z	-1.248	-1.248	0	%100
51	SA-V-4	X	-2.162	-2.162	0	%100
52	SA-V-4	Z	-1.248	-1.248	0	%100
53	STAB	X	-5.367	-5.367	0	%100
54	STAB	Z	-3.099	-3.099	0	%100
55	M51	X	-.927	-.927	0	%100
56	M51	Z	-.535	-.535	0	%100
57	M49	X	-.927	-.927	0	%100
58	M49	Z	-.535	-.535	0	%100
59	M50	X	-.927	-.927	0	%100
60	M50	Z	-.535	-.535	0	%100
61	M51A	X	-.927	-.927	0	%100
62	M51A	Z	-.535	-.535	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	-4.28	-4.28	0	%100
2	CL-BOT	Z	-7.414	-7.414	0	%100
3	CL-TOP	X	-4.28	-4.28	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
4	CL-TOP	Z	-7.414	-7.414	0	%100
5	FACE	X	-2.033	-2.033	0	%100
6	FACE	Z	-3.522	-3.522	0	%100
7	FM-TOP	X	-2.033	-2.033	0	%100
8	FM-TOP	Z	-3.522	-3.522	0	%100
9	MP4A	X	-3.389	-3.389	0	%100
10	MP4A	Z	-5.869	-5.869	0	%100
11	MP1A	X	-3.389	-3.389	0	%100
12	MP1A	Z	-5.869	-5.869	0	%100
13	MP2A	X	-4.102	-4.102	0	%100
14	MP2A	Z	-7.105	-7.105	0	%100
15	MP3A	X	-3.389	-3.389	0	%100
16	MP3A	Z	-5.869	-5.869	0	%100
17	PL-5	X	-.116	-.116	0	%100
18	PL-5	Z	-.2	-.2	0	%100
19	PL-6	X	-.116	-.116	0	%100
20	PL-6	Z	-.2	-.2	0	%100
21	PL-7	X	-.705	-.705	0	%100
22	PL-7	Z	-1.221	-1.221	0	%100
23	PL-8	X	-.705	-.705	0	%100
24	PL-8	Z	-1.221	-1.221	0	%100
25	PL-9	X	-.116	-.116	0	%100
26	PL-9	Z	-.2	-.2	0	%100
27	PL-10	X	-.116	-.116	0	%100
28	PL-10	Z	-.2	-.2	0	%100
29	PL-11	X	-.705	-.705	0	%100
30	PL-11	Z	-1.221	-1.221	0	%100
31	PL-12	X	-.705	-.705	0	%100
32	PL-12	Z	-1.221	-1.221	0	%100
33	SA-BOT-1	X	-.437	-.437	0	%100
34	SA-BOT-1	Z	-.758	-.758	0	%100
35	SA-BOT-2	X	-2.666	-2.666	0	%100
36	SA-BOT-2	Z	-4.617	-4.617	0	%100
37	SA-D-1	X	-.733	-.733	0	%100
38	SA-D-1	Z	-1.27	-1.27	0	%100
39	SA-D-2	X	-1.241	-1.241	0	%100
40	SA-D-2	Z	-2.15	-2.15	0	%100
41	SA-TOP-1	X	-.437	-.437	0	%100
42	SA-TOP-1	Z	-.758	-.758	0	%100
43	OVP	X	-2.666	-2.666	0	%100
44	OVP	Z	-4.617	-4.617	0	%100
45	SA-V-1	X	-1.248	-1.248	0	%100
46	SA-V-1	Z	-2.162	-2.162	0	%100
47	SA-V-2	X	-1.248	-1.248	0	%100
48	SA-V-2	Z	-2.162	-2.162	0	%100
49	SA-V-3	X	-1.248	-1.248	0	%100
50	SA-V-3	Z	-2.162	-2.162	0	%100
51	SA-V-4	X	-1.248	-1.248	0	%100
52	SA-V-4	Z	-2.162	-2.162	0	%100
53	STAB	X	-1.576	-1.576	0	%100
54	STAB	Z	-2.729	-2.729	0	%100
55	M51	X	-.178	-.178	0	%100
56	M51	Z	-.309	-.309	0	%100
57	M49	X	-.178	-.178	0	%100
58	M49	Z	-.309	-.309	0	%100
59	M50	X	-.178	-.178	0	%100
60	M50	Z	-.309	-.309	0	%100
61	M51A	X	-.178	-.178	0	%100
62	M51A	Z	-.309	-.309	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	-2.415	-2.415	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	-2.415	-2.415	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	-1.319	-1.319	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	-1.319	-1.319	0	%100
9	MP4A	X	0	0	0	%100
10	MP4A	Z	-1.575	-1.575	0	%100
11	MP1A	X	0	0	0	%100
12	MP1A	Z	-1.575	-1.575	0	%100
13	MP2A	X	0	0	0	%100
14	MP2A	Z	-1.845	-1.845	0	%100
15	MP3A	X	0	0	0	%100
16	MP3A	Z	-1.575	-1.575	0	%100
17	PL-5	X	0	0	0	%100
18	PL-5	Z	-.307	-.307	0	%100
19	PL-6	X	0	0	0	%100
20	PL-6	Z	-.307	-.307	0	%100
21	PL-7	X	0	0	0	%100
22	PL-7	Z	-.307	-.307	0	%100
23	PL-8	X	0	0	0	%100
24	PL-8	Z	-.307	-.307	0	%100
25	PL-9	X	0	0	0	%100
26	PL-9	Z	-.307	-.307	0	%100
27	PL-10	X	0	0	0	%100
28	PL-10	Z	-.307	-.307	0	%100
29	PL-11	X	0	0	0	%100
30	PL-11	Z	-.307	-.307	0	%100
31	PL-12	X	0	0	0	%100
32	PL-12	Z	-.307	-.307	0	%100
33	SA-BOT-1	X	0	0	0	%100
34	SA-BOT-1	Z	-.854	-.854	0	%100
35	SA-BOT-2	X	0	0	0	%100
36	SA-BOT-2	Z	-.854	-.854	0	%100
37	SA-D-1	X	0	0	0	%100
38	SA-D-1	Z	-.634	-.634	0	%100
39	SA-D-2	X	0	0	0	%100
40	SA-D-2	Z	-.634	-.634	0	%100
41	SA-TOP-1	X	0	0	0	%100
42	SA-TOP-1	Z	-.854	-.854	0	%100
43	OVP	X	0	0	0	%100
44	OVP	Z	-.854	-.854	0	%100
45	SA-V-1	X	0	0	0	%100
46	SA-V-1	Z	-.766	-.766	0	%100
47	SA-V-2	X	0	0	0	%100
48	SA-V-2	Z	-.766	-.766	0	%100
49	SA-V-3	X	0	0	0	%100
50	SA-V-3	Z	-.766	-.766	0	%100
51	SA-V-4	X	0	0	0	%100
52	SA-V-4	Z	-.766	-.766	0	%100
53	STAB	X	0	0	0	%100
54	STAB	Z	-.08	-.08	0	%100
55	M51	X	0	0	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
60	M50	Z	0	0	0	%100
61	M51A	X	0	0	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	.906	.906	0	%100
2	CL-BOT	Z	-1.569	-1.569	0	%100
3	CL-TOP	X	.906	.906	0	%100
4	CL-TOP	Z	-1.569	-1.569	0	%100
5	FACE	X	.495	.495	0	%100
6	FACE	Z	-.857	-.857	0	%100
7	FM-TOP	X	.495	.495	0	%100
8	FM-TOP	Z	-.857	-.857	0	%100
9	MP4A	X	.787	.787	0	%100
10	MP4A	Z	-1.364	-1.364	0	%100
11	MP1A	X	.787	.787	0	%100
12	MP1A	Z	-1.364	-1.364	0	%100
13	MP2A	X	.922	.922	0	%100
14	MP2A	Z	-1.598	-1.598	0	%100
15	MP3A	X	.787	.787	0	%100
16	MP3A	Z	-1.364	-1.364	0	%100
17	PL-5	X	.233	.233	0	%100
18	PL-5	Z	-.403	-.403	0	%100
19	PL-6	X	.233	.233	0	%100
20	PL-6	Z	-.403	-.403	0	%100
21	PL-7	X	.038	.038	0	%100
22	PL-7	Z	-.066	-.066	0	%100
23	PL-8	X	.038	.038	0	%100
24	PL-8	Z	-.066	-.066	0	%100
25	PL-9	X	.233	.233	0	%100
26	PL-9	Z	-.403	-.403	0	%100
27	PL-10	X	.233	.233	0	%100
28	PL-10	Z	-.403	-.403	0	%100
29	PL-11	X	.038	.038	0	%100
30	PL-11	Z	-.066	-.066	0	%100
31	PL-12	X	.038	.038	0	%100
32	PL-12	Z	-.066	-.066	0	%100
33	SA-BOT-1	X	.649	.649	0	%100
34	SA-BOT-1	Z	-1.124	-1.124	0	%100
35	SA-BOT-2	X	.107	.107	0	%100
36	SA-BOT-2	Z	-.184	-.184	0	%100
37	SA-D-1	X	.381	.381	0	%100
38	SA-D-1	Z	-.659	-.659	0	%100
39	SA-D-2	X	.225	.225	0	%100
40	SA-D-2	Z	-.39	-.39	0	%100
41	SA-TOP-1	X	.649	.649	0	%100
42	SA-TOP-1	Z	-1.124	-1.124	0	%100
43	OVP	X	.107	.107	0	%100
44	OVP	Z	-.184	-.184	0	%100
45	SA-V-1	X	.383	.383	0	%100
46	SA-V-1	Z	-.663	-.663	0	%100
47	SA-V-2	X	.383	.383	0	%100
48	SA-V-2	Z	-.663	-.663	0	%100
49	SA-V-3	X	.383	.383	0	%100
50	SA-V-3	Z	-.663	-.663	0	%100
51	SA-V-4	X	.383	.383	0	%100
52	SA-V-4	Z	-.663	-.663	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
53	STAB	X	.067	.067	0	%100
54	STAB	Z	-.117	-.117	0	%100
55	M51	X	.057	.057	0	%100
56	M51	Z	-.099	-.099	0	%100
57	M49	X	.057	.057	0	%100
58	M49	Z	-.099	-.099	0	%100
59	M50	X	.057	.057	0	%100
60	M50	Z	-.099	-.099	0	%100
61	M51A	X	.057	.057	0	%100
62	M51A	Z	-.099	-.099	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	.523	.523	0	%100
2	CL-BOT	Z	-.302	-.302	0	%100
3	CL-TOP	X	.523	.523	0	%100
4	CL-TOP	Z	-.302	-.302	0	%100
5	FACE	X	.286	.286	0	%100
6	FACE	Z	-.165	-.165	0	%100
7	FM-TOP	X	.286	.286	0	%100
8	FM-TOP	Z	-.165	-.165	0	%100
9	MP4A	X	1.364	1.364	0	%100
10	MP4A	Z	-.787	-.787	0	%100
11	MP1A	X	1.364	1.364	0	%100
12	MP1A	Z	-.787	-.787	0	%100
13	MP2A	X	1.598	1.598	0	%100
14	MP2A	Z	-.922	-.922	0	%100
15	MP3A	X	1.364	1.364	0	%100
16	MP3A	Z	-.787	-.787	0	%100
17	PL-5	X	.342	.342	0	%100
18	PL-5	Z	-.197	-.197	0	%100
19	PL-6	X	.342	.342	0	%100
20	PL-6	Z	-.197	-.197	0	%100
21	PL-7	X	.005	.005	0	%100
22	PL-7	Z	-.003	-.003	0	%100
23	PL-8	X	.005	.005	0	%100
24	PL-8	Z	-.003	-.003	0	%100
25	PL-9	X	.342	.342	0	%100
26	PL-9	Z	-.197	-.197	0	%100
27	PL-10	X	.342	.342	0	%100
28	PL-10	Z	-.197	-.197	0	%100
29	PL-11	X	.005	.005	0	%100
30	PL-11	Z	-.003	-.003	0	%100
31	PL-12	X	.005	.005	0	%100
32	PL-12	Z	-.003	-.003	0	%100
33	SA-BOT-1	X	.953	.953	0	%100
34	SA-BOT-1	Z	-.55	-.55	0	%100
35	SA-BOT-2	X	.013	.013	0	%100
36	SA-BOT-2	Z	-.008	-.008	0	%100
37	SA-D-1	X	.61	.61	0	%100
38	SA-D-1	Z	-.352	-.352	0	%100
39	SA-D-2	X	.341	.341	0	%100
40	SA-D-2	Z	-.197	-.197	0	%100
41	SA-TOP-1	X	.953	.953	0	%100
42	SA-TOP-1	Z	-.55	-.55	0	%100
43	OVP	X	.013	.013	0	%100
44	OVP	Z	-.008	-.008	0	%100
45	SA-V-1	X	.663	.663	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
46	SA-V-1	Z	-.383	-.383	0	%100
47	SA-V-2	X	.663	.663	0	%100
48	SA-V-2	Z	-.383	-.383	0	%100
49	SA-V-3	X	.663	.663	0	%100
50	SA-V-3	Z	-.383	-.383	0	%100
51	SA-V-4	X	.663	.663	0	%100
52	SA-V-4	Z	-.383	-.383	0	%100
53	STAB	X	.73	.73	0	%100
54	STAB	Z	-.421	-.421	0	%100
55	M51	X	.297	.297	0	%100
56	M51	Z	-.172	-.172	0	%100
57	M49	X	.297	.297	0	%100
58	M49	Z	-.172	-.172	0	%100
59	M50	X	.297	.297	0	%100
60	M50	Z	-.172	-.172	0	%100
61	M51A	X	.297	.297	0	%100
62	M51A	Z	-.172	-.172	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	0	0	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	0	0	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	0	0	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	0	0	0	%100
9	MP4A	X	1.575	1.575	0	%100
10	MP4A	Z	0	0	0	%100
11	MP1A	X	1.575	1.575	0	%100
12	MP1A	Z	0	0	0	%100
13	MP2A	X	1.845	1.845	0	%100
14	MP2A	Z	0	0	0	%100
15	MP3A	X	1.575	1.575	0	%100
16	MP3A	Z	0	0	0	%100
17	PL-5	X	.165	.165	0	%100
18	PL-5	Z	0	0	0	%100
19	PL-6	X	.165	.165	0	%100
20	PL-6	Z	0	0	0	%100
21	PL-7	X	.165	.165	0	%100
22	PL-7	Z	0	0	0	%100
23	PL-8	X	.165	.165	0	%100
24	PL-8	Z	0	0	0	%100
25	PL-9	X	.165	.165	0	%100
26	PL-9	Z	0	0	0	%100
27	PL-10	X	.165	.165	0	%100
28	PL-10	Z	0	0	0	%100
29	PL-11	X	.165	.165	0	%100
30	PL-11	Z	0	0	0	%100
31	PL-12	X	.165	.165	0	%100
32	PL-12	Z	0	0	0	%100
33	SA-BOT-1	X	.459	.459	0	%100
34	SA-BOT-1	Z	0	0	0	%100
35	SA-BOT-2	X	.459	.459	0	%100
36	SA-BOT-2	Z	0	0	0	%100
37	SA-D-1	X	.521	.521	0	%100
38	SA-D-1	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
39	SA-D-2	X	.521	.521	0	%100
40	SA-D-2	Z	0	0	0	%100
41	SA-TOP-1	X	.459	.459	0	%100
42	SA-TOP-1	Z	0	0	0	%100
43	OVP	X	.459	.459	0	%100
44	OVP	Z	0	0	0	%100
45	SA-V-1	X	.766	.766	0	%100
46	SA-V-1	Z	0	0	0	%100
47	SA-V-2	X	.766	.766	0	%100
48	SA-V-2	Z	0	0	0	%100
49	SA-V-3	X	.766	.766	0	%100
50	SA-V-3	Z	0	0	0	%100
51	SA-V-4	X	.766	.766	0	%100
52	SA-V-4	Z	0	0	0	%100
53	STAB	X	1.495	1.495	0	%100
54	STAB	Z	0	0	0	%100
55	M51	X	.457	.457	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	.457	.457	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	.457	.457	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	.457	.457	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	.523	.523	0	%100
2	CL-BOT	Z	.302	.302	0	%100
3	CL-TOP	X	.523	.523	0	%100
4	CL-TOP	Z	.302	.302	0	%100
5	FACE	X	.286	.286	0	%100
6	FACE	Z	.165	.165	0	%100
7	FM-TOP	X	.286	.286	0	%100
8	FM-TOP	Z	.165	.165	0	%100
9	MP4A	X	1.364	1.364	0	%100
10	MP4A	Z	.787	.787	0	%100
11	MP1A	X	1.364	1.364	0	%100
12	MP1A	Z	.787	.787	0	%100
13	MP2A	X	1.598	1.598	0	%100
14	MP2A	Z	.922	.922	0	%100
15	MP3A	X	1.364	1.364	0	%100
16	MP3A	Z	.787	.787	0	%100
17	PL-5	X	.005	.005	0	%100
18	PL-5	Z	.003	.003	0	%100
19	PL-6	X	.005	.005	0	%100
20	PL-6	Z	.003	.003	0	%100
21	PL-7	X	.342	.342	0	%100
22	PL-7	Z	.197	.197	0	%100
23	PL-8	X	.342	.342	0	%100
24	PL-8	Z	.197	.197	0	%100
25	PL-9	X	.005	.005	0	%100
26	PL-9	Z	.003	.003	0	%100
27	PL-10	X	.005	.005	0	%100
28	PL-10	Z	.003	.003	0	%100
29	PL-11	X	.342	.342	0	%100
30	PL-11	Z	.197	.197	0	%100
31	PL-12	X	.342	.342	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
32	PL-12	Z	.197	.197	0	%100
33	SA-BOT-1	X	.013	.013	0	%100
34	SA-BOT-1	Z	.008	.008	0	%100
35	SA-BOT-2	X	.953	.953	0	%100
36	SA-BOT-2	Z	.55	.55	0	%100
37	SA-D-1	X	.341	.341	0	%100
38	SA-D-1	Z	.197	.197	0	%100
39	SA-D-2	X	.61	.61	0	%100
40	SA-D-2	Z	.352	.352	0	%100
41	SA-TOP-1	X	.013	.013	0	%100
42	SA-TOP-1	Z	.008	.008	0	%100
43	OVP	X	.953	.953	0	%100
44	OVP	Z	.55	.55	0	%100
45	SA-V-1	X	.663	.663	0	%100
46	SA-V-1	Z	.383	.383	0	%100
47	SA-V-2	X	.663	.663	0	%100
48	SA-V-2	Z	.383	.383	0	%100
49	SA-V-3	X	.663	.663	0	%100
50	SA-V-3	Z	.383	.383	0	%100
51	SA-V-4	X	.663	.663	0	%100
52	SA-V-4	Z	.383	.383	0	%100
53	STAB	X	1.247	1.247	0	%100
54	STAB	Z	.72	.72	0	%100
55	M51	X	.297	.297	0	%100
56	M51	Z	.172	.172	0	%100
57	M49	X	.297	.297	0	%100
58	M49	Z	.172	.172	0	%100
59	M50	X	.297	.297	0	%100
60	M50	Z	.172	.172	0	%100
61	M51A	X	.297	.297	0	%100
62	M51A	Z	.172	.172	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	.906	.906	0	%100
2	CL-BOT	Z	1.569	1.569	0	%100
3	CL-TOP	X	.906	.906	0	%100
4	CL-TOP	Z	1.569	1.569	0	%100
5	FACE	X	.495	.495	0	%100
6	FACE	Z	.857	.857	0	%100
7	FM-TOP	X	.495	.495	0	%100
8	FM-TOP	Z	.857	.857	0	%100
9	MP4A	X	.787	.787	0	%100
10	MP4A	Z	1.364	1.364	0	%100
11	MP1A	X	.787	.787	0	%100
12	MP1A	Z	1.364	1.364	0	%100
13	MP2A	X	.922	.922	0	%100
14	MP2A	Z	1.598	1.598	0	%100
15	MP3A	X	.787	.787	0	%100
16	MP3A	Z	1.364	1.364	0	%100
17	PL-5	X	.038	.038	0	%100
18	PL-5	Z	.066	.066	0	%100
19	PL-6	X	.038	.038	0	%100
20	PL-6	Z	.066	.066	0	%100
21	PL-7	X	.233	.233	0	%100
22	PL-7	Z	.403	.403	0	%100
23	PL-8	X	.233	.233	0	%100
24	PL-8	Z	.403	.403	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
25	PL-9	X	.038	.038	0	%100
26	PL-9	Z	.066	.066	0	%100
27	PL-10	X	.038	.038	0	%100
28	PL-10	Z	.066	.066	0	%100
29	PL-11	X	.233	.233	0	%100
30	PL-11	Z	.403	.403	0	%100
31	PL-12	X	.233	.233	0	%100
32	PL-12	Z	.403	.403	0	%100
33	SA-BOT-1	X	.107	.107	0	%100
34	SA-BOT-1	Z	.184	.184	0	%100
35	SA-BOT-2	X	.649	.649	0	%100
36	SA-BOT-2	Z	1.124	1.124	0	%100
37	SA-D-1	X	.225	.225	0	%100
38	SA-D-1	Z	.39	.39	0	%100
39	SA-D-2	X	.381	.381	0	%100
40	SA-D-2	Z	.659	.659	0	%100
41	SA-TOP-1	X	.107	.107	0	%100
42	SA-TOP-1	Z	.184	.184	0	%100
43	OVP	X	.649	.649	0	%100
44	OVP	Z	1.124	1.124	0	%100
45	SA-V-1	X	.383	.383	0	%100
46	SA-V-1	Z	.663	.663	0	%100
47	SA-V-2	X	.383	.383	0	%100
48	SA-V-2	Z	.663	.663	0	%100
49	SA-V-3	X	.383	.383	0	%100
50	SA-V-3	Z	.663	.663	0	%100
51	SA-V-4	X	.383	.383	0	%100
52	SA-V-4	Z	.663	.663	0	%100
53	STAB	X	.366	.366	0	%100
54	STAB	Z	.634	.634	0	%100
55	M51	X	.057	.057	0	%100
56	M51	Z	.099	.099	0	%100
57	M49	X	.057	.057	0	%100
58	M49	Z	.099	.099	0	%100
59	M50	X	.057	.057	0	%100
60	M50	Z	.099	.099	0	%100
61	M51A	X	.057	.057	0	%100
62	M51A	Z	.099	.099	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	2.415	2.415	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	2.415	2.415	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	1.319	1.319	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	1.319	1.319	0	%100
9	MP4A	X	0	0	0	%100
10	MP4A	Z	1.575	1.575	0	%100
11	MP1A	X	0	0	0	%100
12	MP1A	Z	1.575	1.575	0	%100
13	MP2A	X	0	0	0	%100
14	MP2A	Z	1.845	1.845	0	%100
15	MP3A	X	0	0	0	%100
16	MP3A	Z	1.575	1.575	0	%100
17	PL-5	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
18	PL-5	Z	.307	.307	0	%100
19	PL-6	X	0	0	0	%100
20	PL-6	Z	.307	.307	0	%100
21	PL-7	X	0	0	0	%100
22	PL-7	Z	.307	.307	0	%100
23	PL-8	X	0	0	0	%100
24	PL-8	Z	.307	.307	0	%100
25	PL-9	X	0	0	0	%100
26	PL-9	Z	.307	.307	0	%100
27	PL-10	X	0	0	0	%100
28	PL-10	Z	.307	.307	0	%100
29	PL-11	X	0	0	0	%100
30	PL-11	Z	.307	.307	0	%100
31	PL-12	X	0	0	0	%100
32	PL-12	Z	.307	.307	0	%100
33	SA-BOT-1	X	0	0	0	%100
34	SA-BOT-1	Z	.854	.854	0	%100
35	SA-BOT-2	X	0	0	0	%100
36	SA-BOT-2	Z	.854	.854	0	%100
37	SA-D-1	X	0	0	0	%100
38	SA-D-1	Z	.634	.634	0	%100
39	SA-D-2	X	0	0	0	%100
40	SA-D-2	Z	.634	.634	0	%100
41	SA-TOP-1	X	0	0	0	%100
42	SA-TOP-1	Z	.854	.854	0	%100
43	OVP	X	0	0	0	%100
44	OVP	Z	.854	.854	0	%100
45	SA-V-1	X	0	0	0	%100
46	SA-V-1	Z	.766	.766	0	%100
47	SA-V-2	X	0	0	0	%100
48	SA-V-2	Z	.766	.766	0	%100
49	SA-V-3	X	0	0	0	%100
50	SA-V-3	Z	.766	.766	0	%100
51	SA-V-4	X	0	0	0	%100
52	SA-V-4	Z	.766	.766	0	%100
53	STAB	X	0	0	0	%100
54	STAB	Z	.08	.08	0	%100
55	M51	X	0	0	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	0	0	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	0	0	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-.906	-.906	0	%100
2	CL-BOT	Z	1.569	1.569	0	%100
3	CL-TOP	X	-.906	-.906	0	%100
4	CL-TOP	Z	1.569	1.569	0	%100
5	FACE	X	-.495	-.495	0	%100
6	FACE	Z	.857	.857	0	%100
7	FM-TOP	X	-.495	-.495	0	%100
8	FM-TOP	Z	.857	.857	0	%100
9	MP4A	X	-.787	-.787	0	%100
10	MP4A	Z	1.364	1.364	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
11	MP1A	X	- .787	- .787	0	%100
12	MP1A	Z	1.364	1.364	0	%100
13	MP2A	X	- .922	- .922	0	%100
14	MP2A	Z	1.598	1.598	0	%100
15	MP3A	X	- .787	- .787	0	%100
16	MP3A	Z	1.364	1.364	0	%100
17	PL-5	X	- .233	- .233	0	%100
18	PL-5	Z	.403	.403	0	%100
19	PL-6	X	- .233	- .233	0	%100
20	PL-6	Z	.403	.403	0	%100
21	PL-7	X	- .038	- .038	0	%100
22	PL-7	Z	.066	.066	0	%100
23	PL-8	X	- .038	- .038	0	%100
24	PL-8	Z	.066	.066	0	%100
25	PL-9	X	- .233	- .233	0	%100
26	PL-9	Z	.403	.403	0	%100
27	PL-10	X	- .233	- .233	0	%100
28	PL-10	Z	.403	.403	0	%100
29	PL-11	X	- .038	- .038	0	%100
30	PL-11	Z	.066	.066	0	%100
31	PL-12	X	- .038	- .038	0	%100
32	PL-12	Z	.066	.066	0	%100
33	SA-BOT-1	X	- .649	- .649	0	%100
34	SA-BOT-1	Z	1.124	1.124	0	%100
35	SA-BOT-2	X	- .107	- .107	0	%100
36	SA-BOT-2	Z	.184	.184	0	%100
37	SA-D-1	X	- .381	- .381	0	%100
38	SA-D-1	Z	.659	.659	0	%100
39	SA-D-2	X	- .225	- .225	0	%100
40	SA-D-2	Z	.39	.39	0	%100
41	SA-TOP-1	X	- .649	- .649	0	%100
42	SA-TOP-1	Z	1.124	1.124	0	%100
43	OVP	X	- .107	- .107	0	%100
44	OVP	Z	.184	.184	0	%100
45	SA-V-1	X	- .383	- .383	0	%100
46	SA-V-1	Z	.663	.663	0	%100
47	SA-V-2	X	- .383	- .383	0	%100
48	SA-V-2	Z	.663	.663	0	%100
49	SA-V-3	X	- .383	- .383	0	%100
50	SA-V-3	Z	.663	.663	0	%100
51	SA-V-4	X	- .383	- .383	0	%100
52	SA-V-4	Z	.663	.663	0	%100
53	STAB	X	- .067	- .067	0	%100
54	STAB	Z	.117	.117	0	%100
55	M51	X	- .057	- .057	0	%100
56	M51	Z	.099	.099	0	%100
57	M49	X	- .057	- .057	0	%100
58	M49	Z	.099	.099	0	%100
59	M50	X	- .057	- .057	0	%100
60	M50	Z	.099	.099	0	%100
61	M51A	X	- .057	- .057	0	%100
62	M51A	Z	.099	.099	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	- .523	- .523	0	%100
2	CL-BOT	Z	.302	.302	0	%100
3	CL-TOP	X	- .523	- .523	0	%100

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

Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
4	CL-TOP	Z	.302	.302	0 %100
5	FACE	X	-.286	-.286	0 %100
6	FACE	Z	.165	.165	0 %100
7	FM-TOP	X	-.286	-.286	0 %100
8	FM-TOP	Z	.165	.165	0 %100
9	MP4A	X	-1.364	-1.364	0 %100
10	MP4A	Z	.787	.787	0 %100
11	MP1A	X	-1.364	-1.364	0 %100
12	MP1A	Z	.787	.787	0 %100
13	MP2A	X	-1.598	-1.598	0 %100
14	MP2A	Z	.922	.922	0 %100
15	MP3A	X	-1.364	-1.364	0 %100
16	MP3A	Z	.787	.787	0 %100
17	PL-5	X	-.342	-.342	0 %100
18	PL-5	Z	.197	.197	0 %100
19	PL-6	X	-.342	-.342	0 %100
20	PL-6	Z	.197	.197	0 %100
21	PL-7	X	-.005	-.005	0 %100
22	PL-7	Z	.003	.003	0 %100
23	PL-8	X	-.005	-.005	0 %100
24	PL-8	Z	.003	.003	0 %100
25	PL-9	X	-.342	-.342	0 %100
26	PL-9	Z	.197	.197	0 %100
27	PL-10	X	-.342	-.342	0 %100
28	PL-10	Z	.197	.197	0 %100
29	PL-11	X	-.005	-.005	0 %100
30	PL-11	Z	.003	.003	0 %100
31	PL-12	X	-.005	-.005	0 %100
32	PL-12	Z	.003	.003	0 %100
33	SA-BOT-1	X	-.953	-.953	0 %100
34	SA-BOT-1	Z	.55	.55	0 %100
35	SA-BOT-2	X	-.013	-.013	0 %100
36	SA-BOT-2	Z	.008	.008	0 %100
37	SA-D-1	X	-.61	-.61	0 %100
38	SA-D-1	Z	.352	.352	0 %100
39	SA-D-2	X	-.341	-.341	0 %100
40	SA-D-2	Z	.197	.197	0 %100
41	SA-TOP-1	X	-.953	-.953	0 %100
42	SA-TOP-1	Z	.55	.55	0 %100
43	OVP	X	-.013	-.013	0 %100
44	OVP	Z	.008	.008	0 %100
45	SA-V-1	X	-.663	-.663	0 %100
46	SA-V-1	Z	.383	.383	0 %100
47	SA-V-2	X	-.663	-.663	0 %100
48	SA-V-2	Z	.383	.383	0 %100
49	SA-V-3	X	-.663	-.663	0 %100
50	SA-V-3	Z	.383	.383	0 %100
51	SA-V-4	X	-.663	-.663	0 %100
52	SA-V-4	Z	.383	.383	0 %100
53	STAB	X	-.73	-.73	0 %100
54	STAB	Z	.421	.421	0 %100
55	M51	X	-.297	-.297	0 %100
56	M51	Z	.172	.172	0 %100
57	M49	X	-.297	-.297	0 %100
58	M49	Z	.172	.172	0 %100
59	M50	X	-.297	-.297	0 %100
60	M50	Z	.172	.172	0 %100
61	M51A	X	-.297	-.297	0 %100
62	M51A	Z	.172	.172	0 %100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in,%]	End Location[in,%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	0	0	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	0	0	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	0	0	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	0	0	0	%100
9	MP4A	X	-1.575	-1.575	0	%100
10	MP4A	Z	0	0	0	%100
11	MP1A	X	-1.575	-1.575	0	%100
12	MP1A	Z	0	0	0	%100
13	MP2A	X	-1.845	-1.845	0	%100
14	MP2A	Z	0	0	0	%100
15	MP3A	X	-1.575	-1.575	0	%100
16	MP3A	Z	0	0	0	%100
17	PL-5	X	-.165	-.165	0	%100
18	PL-5	Z	0	0	0	%100
19	PL-6	X	-.165	-.165	0	%100
20	PL-6	Z	0	0	0	%100
21	PL-7	X	-.165	-.165	0	%100
22	PL-7	Z	0	0	0	%100
23	PL-8	X	-.165	-.165	0	%100
24	PL-8	Z	0	0	0	%100
25	PL-9	X	-.165	-.165	0	%100
26	PL-9	Z	0	0	0	%100
27	PL-10	X	-.165	-.165	0	%100
28	PL-10	Z	0	0	0	%100
29	PL-11	X	-.165	-.165	0	%100
30	PL-11	Z	0	0	0	%100
31	PL-12	X	-.165	-.165	0	%100
32	PL-12	Z	0	0	0	%100
33	SA-BOT-1	X	-.459	-.459	0	%100
34	SA-BOT-1	Z	0	0	0	%100
35	SA-BOT-2	X	-.459	-.459	0	%100
36	SA-BOT-2	Z	0	0	0	%100
37	SA-D-1	X	-.521	-.521	0	%100
38	SA-D-1	Z	0	0	0	%100
39	SA-D-2	X	-.521	-.521	0	%100
40	SA-D-2	Z	0	0	0	%100
41	SA-TOP-1	X	-.459	-.459	0	%100
42	SA-TOP-1	Z	0	0	0	%100
43	OVP	X	-.459	-.459	0	%100
44	OVP	Z	0	0	0	%100
45	SA-V-1	X	-.766	-.766	0	%100
46	SA-V-1	Z	0	0	0	%100
47	SA-V-2	X	-.766	-.766	0	%100
48	SA-V-2	Z	0	0	0	%100
49	SA-V-3	X	-.766	-.766	0	%100
50	SA-V-3	Z	0	0	0	%100
51	SA-V-4	X	-.766	-.766	0	%100
52	SA-V-4	Z	0	0	0	%100
53	STAB	X	-1.495	-1.495	0	%100
54	STAB	Z	0	0	0	%100
55	M51	X	-.457	-.457	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	-.457	-.457	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	-.457	-.457	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
60	M50	Z	0	0	0	%100
61	M51A	X	-.457	-.457	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-.523	-.523	0	%100
2	CL-BOT	Z	-.302	-.302	0	%100
3	CL-TOP	X	-.523	-.523	0	%100
4	CL-TOP	Z	-.302	-.302	0	%100
5	FACE	X	-.286	-.286	0	%100
6	FACE	Z	-.165	-.165	0	%100
7	FM-TOP	X	-.286	-.286	0	%100
8	FM-TOP	Z	-.165	-.165	0	%100
9	MP4A	X	-1.364	-1.364	0	%100
10	MP4A	Z	-.787	-.787	0	%100
11	MP1A	X	-1.364	-1.364	0	%100
12	MP1A	Z	-.787	-.787	0	%100
13	MP2A	X	-1.598	-1.598	0	%100
14	MP2A	Z	-.922	-.922	0	%100
15	MP3A	X	-1.364	-1.364	0	%100
16	MP3A	Z	-.787	-.787	0	%100
17	PL-5	X	-.005	-.005	0	%100
18	PL-5	Z	-.003	-.003	0	%100
19	PL-6	X	-.005	-.005	0	%100
20	PL-6	Z	-.003	-.003	0	%100
21	PL-7	X	-.342	-.342	0	%100
22	PL-7	Z	-.197	-.197	0	%100
23	PL-8	X	-.342	-.342	0	%100
24	PL-8	Z	-.197	-.197	0	%100
25	PL-9	X	-.005	-.005	0	%100
26	PL-9	Z	-.003	-.003	0	%100
27	PL-10	X	-.005	-.005	0	%100
28	PL-10	Z	-.003	-.003	0	%100
29	PL-11	X	-.342	-.342	0	%100
30	PL-11	Z	-.197	-.197	0	%100
31	PL-12	X	-.342	-.342	0	%100
32	PL-12	Z	-.197	-.197	0	%100
33	SA-BOT-1	X	-.013	-.013	0	%100
34	SA-BOT-1	Z	-.008	-.008	0	%100
35	SA-BOT-2	X	-.953	-.953	0	%100
36	SA-BOT-2	Z	-.55	-.55	0	%100
37	SA-D-1	X	-.341	-.341	0	%100
38	SA-D-1	Z	-.197	-.197	0	%100
39	SA-D-2	X	-.61	-.61	0	%100
40	SA-D-2	Z	-.352	-.352	0	%100
41	SA-TOP-1	X	-.013	-.013	0	%100
42	SA-TOP-1	Z	-.008	-.008	0	%100
43	OVP	X	-.953	-.953	0	%100
44	OVP	Z	-.55	-.55	0	%100
45	SA-V-1	X	-.663	-.663	0	%100
46	SA-V-1	Z	-.383	-.383	0	%100
47	SA-V-2	X	-.663	-.663	0	%100
48	SA-V-2	Z	-.383	-.383	0	%100
49	SA-V-3	X	-.663	-.663	0	%100
50	SA-V-3	Z	-.383	-.383	0	%100
51	SA-V-4	X	-.663	-.663	0	%100
52	SA-V-4	Z	-.383	-.383	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in, %]	End Location[in, %]
53	STAB	X	-1.247	-1.247	0	%100
54	STAB	Z	-.72	-.72	0	%100
55	M51	X	-.297	-.297	0	%100
56	M51	Z	-.172	-.172	0	%100
57	M49	X	-.297	-.297	0	%100
58	M49	Z	-.172	-.172	0	%100
59	M50	X	-.297	-.297	0	%100
60	M50	Z	-.172	-.172	0	%100
61	M51A	X	-.297	-.297	0	%100
62	M51A	Z	-.172	-.172	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	-.906	-.906	0	%100
2	CL-BOT	Z	-1.569	-1.569	0	%100
3	CL-TOP	X	-.906	-.906	0	%100
4	CL-TOP	Z	-1.569	-1.569	0	%100
5	FACE	X	-.495	-.495	0	%100
6	FACE	Z	-.857	-.857	0	%100
7	FM-TOP	X	-.495	-.495	0	%100
8	FM-TOP	Z	-.857	-.857	0	%100
9	MP4A	X	-.787	-.787	0	%100
10	MP4A	Z	-1.364	-1.364	0	%100
11	MP1A	X	-.787	-.787	0	%100
12	MP1A	Z	-1.364	-1.364	0	%100
13	MP2A	X	-.922	-.922	0	%100
14	MP2A	Z	-1.598	-1.598	0	%100
15	MP3A	X	-.787	-.787	0	%100
16	MP3A	Z	-1.364	-1.364	0	%100
17	PL-5	X	-.038	-.038	0	%100
18	PL-5	Z	-.066	-.066	0	%100
19	PL-6	X	-.038	-.038	0	%100
20	PL-6	Z	-.066	-.066	0	%100
21	PL-7	X	-.233	-.233	0	%100
22	PL-7	Z	-.403	-.403	0	%100
23	PL-8	X	-.233	-.233	0	%100
24	PL-8	Z	-.403	-.403	0	%100
25	PL-9	X	-.038	-.038	0	%100
26	PL-9	Z	-.066	-.066	0	%100
27	PL-10	X	-.038	-.038	0	%100
28	PL-10	Z	-.066	-.066	0	%100
29	PL-11	X	-.233	-.233	0	%100
30	PL-11	Z	-.403	-.403	0	%100
31	PL-12	X	-.233	-.233	0	%100
32	PL-12	Z	-.403	-.403	0	%100
33	SA-BOT-1	X	-.107	-.107	0	%100
34	SA-BOT-1	Z	-.184	-.184	0	%100
35	SA-BOT-2	X	-.649	-.649	0	%100
36	SA-BOT-2	Z	-1.124	-1.124	0	%100
37	SA-D-1	X	-.225	-.225	0	%100
38	SA-D-1	Z	-.39	-.39	0	%100
39	SA-D-2	X	-.381	-.381	0	%100
40	SA-D-2	Z	-.659	-.659	0	%100
41	SA-TOP-1	X	-.107	-.107	0	%100
42	SA-TOP-1	Z	-.184	-.184	0	%100
43	OVP	X	-.649	-.649	0	%100
44	OVP	Z	-1.124	-1.124	0	%100
45	SA-V-1	X	-.383	-.383	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
46	SA-V-1	Z	- .663	- .663	0	%100
47	SA-V-2	X	- .383	- .383	0	%100
48	SA-V-2	Z	- .663	- .663	0	%100
49	SA-V-3	X	- .383	- .383	0	%100
50	SA-V-3	Z	- .663	- .663	0	%100
51	SA-V-4	X	- .383	- .383	0	%100
52	SA-V-4	Z	- .663	- .663	0	%100
53	STAB	X	- .366	- .366	0	%100
54	STAB	Z	- .634	- .634	0	%100
55	M51	X	- .057	- .057	0	%100
56	M51	Z	- .099	- .099	0	%100
57	M49	X	- .057	- .057	0	%100
58	M49	Z	- .099	- .099	0	%100
59	M50	X	- .057	- .057	0	%100
60	M50	Z	- .099	- .099	0	%100
61	M51A	X	- .057	- .057	0	%100
62	M51A	Z	- .099	- .099	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	- .777	- .777	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	- .777	- .777	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	- .369	- .369	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	- .369	- .369	0	%100
9	MP4A	X	0	0	0	%100
10	MP4A	Z	- .461	- .461	0	%100
11	MP1A	X	0	0	0	%100
12	MP1A	Z	- .461	- .461	0	%100
13	MP2A	X	0	0	0	%100
14	MP2A	Z	- .558	- .558	0	%100
15	MP3A	X	0	0	0	%100
16	MP3A	Z	- .461	- .461	0	%100
17	PL-5	X	0	0	0	%100
18	PL-5	Z	- .063	- .063	0	%100
19	PL-6	X	0	0	0	%100
20	PL-6	Z	- .063	- .063	0	%100
21	PL-7	X	0	0	0	%100
22	PL-7	Z	- .063	- .063	0	%100
23	PL-8	X	0	0	0	%100
24	PL-8	Z	- .063	- .063	0	%100
25	PL-9	X	0	0	0	%100
26	PL-9	Z	- .063	- .063	0	%100
27	PL-10	X	0	0	0	%100
28	PL-10	Z	- .063	- .063	0	%100
29	PL-11	X	0	0	0	%100
30	PL-11	Z	- .063	- .063	0	%100
31	PL-12	X	0	0	0	%100
32	PL-12	Z	- .063	- .063	0	%100
33	SA-BOT-1	X	0	0	0	%100
34	SA-BOT-1	Z	- .239	- .239	0	%100
35	SA-BOT-2	X	0	0	0	%100
36	SA-BOT-2	Z	- .239	- .239	0	%100
37	SA-D-1	X	0	0	0	%100
38	SA-D-1	Z	- .141	- .141	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
39	SA-D-2	X	0	0	0	%100
40	SA-D-2	Z	-.141	-.141	0	%100
41	SA-TOP-1	X	0	0	0	%100
42	SA-TOP-1	Z	-.239	-.239	0	%100
43	OVP	X	0	0	0	%100
44	OVP	Z	-.239	-.239	0	%100
45	SA-V-1	X	0	0	0	%100
46	SA-V-1	Z	-.17	-.17	0	%100
47	SA-V-2	X	0	0	0	%100
48	SA-V-2	Z	-.17	-.17	0	%100
49	SA-V-3	X	0	0	0	%100
50	SA-V-3	Z	-.17	-.17	0	%100
51	SA-V-4	X	0	0	0	%100
52	SA-V-4	Z	-.17	-.17	0	%100
53	STAB	X	0	0	0	%100
54	STAB	Z	-.023	-.023	0	%100
55	M51	X	0	0	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	0	0	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	0	0	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	.291	.291	0	%100
2	CL-BOT	Z	-.505	-.505	0	%100
3	CL-TOP	X	.291	.291	0	%100
4	CL-TOP	Z	-.505	-.505	0	%100
5	FACE	X	.138	.138	0	%100
6	FACE	Z	-.24	-.24	0	%100
7	FM-TOP	X	.138	.138	0	%100
8	FM-TOP	Z	-.24	-.24	0	%100
9	MP4A	X	.231	.231	0	%100
10	MP4A	Z	-.399	-.399	0	%100
11	MP1A	X	.231	.231	0	%100
12	MP1A	Z	-.399	-.399	0	%100
13	MP2A	X	.279	.279	0	%100
14	MP2A	Z	-.484	-.484	0	%100
15	MP3A	X	.231	.231	0	%100
16	MP3A	Z	-.399	-.399	0	%100
17	PL-5	X	.048	.048	0	%100
18	PL-5	Z	-.083	-.083	0	%100
19	PL-6	X	.048	.048	0	%100
20	PL-6	Z	-.083	-.083	0	%100
21	PL-7	X	.008	.008	0	%100
22	PL-7	Z	-.014	-.014	0	%100
23	PL-8	X	.008	.008	0	%100
24	PL-8	Z	-.014	-.014	0	%100
25	PL-9	X	.048	.048	0	%100
26	PL-9	Z	-.083	-.083	0	%100
27	PL-10	X	.048	.048	0	%100
28	PL-10	Z	-.083	-.083	0	%100
29	PL-11	X	.008	.008	0	%100
30	PL-11	Z	-.014	-.014	0	%100
31	PL-12	X	.008	.008	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
32	PL-12	Z	-.014	-.014	0	%100
33	SA-BOT-1	X	.181	.181	0	%100
34	SA-BOT-1	Z	-.314	-.314	0	%100
35	SA-BOT-2	X	.03	.03	0	%100
36	SA-BOT-2	Z	-.052	-.052	0	%100
37	SA-D-1	X	.084	.084	0	%100
38	SA-D-1	Z	-.146	-.146	0	%100
39	SA-D-2	X	.05	.05	0	%100
40	SA-D-2	Z	-.086	-.086	0	%100
41	SA-TOP-1	X	.181	.181	0	%100
42	SA-TOP-1	Z	-.314	-.314	0	%100
43	OVP	X	.03	.03	0	%100
44	OVP	Z	-.052	-.052	0	%100
45	SA-V-1	X	.085	.085	0	%100
46	SA-V-1	Z	-.147	-.147	0	%100
47	SA-V-2	X	.085	.085	0	%100
48	SA-V-2	Z	-.147	-.147	0	%100
49	SA-V-3	X	.085	.085	0	%100
50	SA-V-3	Z	-.147	-.147	0	%100
51	SA-V-4	X	.085	.085	0	%100
52	SA-V-4	Z	-.147	-.147	0	%100
53	STAB	X	.02	.02	0	%100
54	STAB	Z	-.034	-.034	0	%100
55	M51	X	.012	.012	0	%100
56	M51	Z	-.021	-.021	0	%100
57	M49	X	.012	.012	0	%100
58	M49	Z	-.021	-.021	0	%100
59	M50	X	.012	.012	0	%100
60	M50	Z	-.021	-.021	0	%100
61	M51A	X	.012	.012	0	%100
62	M51A	Z	-.021	-.021	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	.168	.168	0	%100
2	CL-BOT	Z	-.097	-.097	0	%100
3	CL-TOP	X	.168	.168	0	%100
4	CL-TOP	Z	-.097	-.097	0	%100
5	FACE	X	.08	.08	0	%100
6	FACE	Z	-.046	-.046	0	%100
7	FM-TOP	X	.08	.08	0	%100
8	FM-TOP	Z	-.046	-.046	0	%100
9	MP4A	X	.399	.399	0	%100
10	MP4A	Z	-.231	-.231	0	%100
11	MP1A	X	.399	.399	0	%100
12	MP1A	Z	-.231	-.231	0	%100
13	MP2A	X	.484	.484	0	%100
14	MP2A	Z	-.279	-.279	0	%100
15	MP3A	X	.399	.399	0	%100
16	MP3A	Z	-.231	-.231	0	%100
17	PL-5	X	.07	.07	0	%100
18	PL-5	Z	-.041	-.041	0	%100
19	PL-6	X	.07	.07	0	%100
20	PL-6	Z	-.041	-.041	0	%100
21	PL-7	X	.000998	.000998	0	%100
22	PL-7	Z	-.000576	-.000576	0	%100
23	PL-8	X	.000998	.000998	0	%100
24	PL-8	Z	-.000576	-.000576	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
25	PL-9	X	.07	.07	0	%100
26	PL-9	Z	-.041	-.041	0	%100
27	PL-10	X	.07	.07	0	%100
28	PL-10	Z	-.041	-.041	0	%100
29	PL-11	X	.000998	.000998	0	%100
30	PL-11	Z	-.000576	-.000576	0	%100
31	PL-12	X	.000998	.000998	0	%100
32	PL-12	Z	-.000576	-.000576	0	%100
33	SA-BOT-1	X	.266	.266	0	%100
34	SA-BOT-1	Z	-.154	-.154	0	%100
35	SA-BOT-2	X	.004	.004	0	%100
36	SA-BOT-2	Z	-.002	-.002	0	%100
37	SA-D-1	X	.135	.135	0	%100
38	SA-D-1	Z	-.078	-.078	0	%100
39	SA-D-2	X	.076	.076	0	%100
40	SA-D-2	Z	-.044	-.044	0	%100
41	SA-TOP-1	X	.266	.266	0	%100
42	SA-TOP-1	Z	-.154	-.154	0	%100
43	OVP	X	.004	.004	0	%100
44	OVP	Z	-.002	-.002	0	%100
45	SA-V-1	X	.147	.147	0	%100
46	SA-V-1	Z	-.085	-.085	0	%100
47	SA-V-2	X	.147	.147	0	%100
48	SA-V-2	Z	-.085	-.085	0	%100
49	SA-V-3	X	.147	.147	0	%100
50	SA-V-3	Z	-.085	-.085	0	%100
51	SA-V-4	X	.147	.147	0	%100
52	SA-V-4	Z	-.085	-.085	0	%100
53	STAB	X	.214	.214	0	%100
54	STAB	Z	-.123	-.123	0	%100
55	M51	X	.063	.063	0	%100
56	M51	Z	-.036	-.036	0	%100
57	M49	X	.063	.063	0	%100
58	M49	Z	-.036	-.036	0	%100
59	M50	X	.063	.063	0	%100
60	M50	Z	-.036	-.036	0	%100
61	M51A	X	.063	.063	0	%100
62	M51A	Z	-.036	-.036	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	0	0	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	0	0	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	0	0	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	0	0	0	%100
9	MP4A	X	.461	.461	0	%100
10	MP4A	Z	0	0	0	%100
11	MP1A	X	.461	.461	0	%100
12	MP1A	Z	0	0	0	%100
13	MP2A	X	.558	.558	0	%100
14	MP2A	Z	0	0	0	%100
15	MP3A	X	.461	.461	0	%100
16	MP3A	Z	0	0	0	%100
17	PL-5	X	.034	.034	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
18	PL-5	Z	0	0	0	%100
19	PL-6	X	.034	.034	0	%100
20	PL-6	Z	0	0	0	%100
21	PL-7	X	.034	.034	0	%100
22	PL-7	Z	0	0	0	%100
23	PL-8	X	.034	.034	0	%100
24	PL-8	Z	0	0	0	%100
25	PL-9	X	.034	.034	0	%100
26	PL-9	Z	0	0	0	%100
27	PL-10	X	.034	.034	0	%100
28	PL-10	Z	0	0	0	%100
29	PL-11	X	.034	.034	0	%100
30	PL-11	Z	0	0	0	%100
31	PL-12	X	.034	.034	0	%100
32	PL-12	Z	0	0	0	%100
33	SA-BOT-1	X	.128	.128	0	%100
34	SA-BOT-1	Z	0	0	0	%100
35	SA-BOT-2	X	.128	.128	0	%100
36	SA-BOT-2	Z	0	0	0	%100
37	SA-D-1	X	.116	.116	0	%100
38	SA-D-1	Z	0	0	0	%100
39	SA-D-2	X	.116	.116	0	%100
40	SA-D-2	Z	0	0	0	%100
41	SA-TOP-1	X	.128	.128	0	%100
42	SA-TOP-1	Z	0	0	0	%100
43	OVP	X	.128	.128	0	%100
44	OVP	Z	0	0	0	%100
45	SA-V-1	X	.17	.17	0	%100
46	SA-V-1	Z	0	0	0	%100
47	SA-V-2	X	.17	.17	0	%100
48	SA-V-2	Z	0	0	0	%100
49	SA-V-3	X	.17	.17	0	%100
50	SA-V-3	Z	0	0	0	%100
51	SA-V-4	X	.17	.17	0	%100
52	SA-V-4	Z	0	0	0	%100
53	STAB	X	.438	.438	0	%100
54	STAB	Z	0	0	0	%100
55	M51	X	.097	.097	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	.097	.097	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	.097	.097	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	.097	.097	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	.168	.168	0	%100
2	CL-BOT	Z	.097	.097	0	%100
3	CL-TOP	X	.168	.168	0	%100
4	CL-TOP	Z	.097	.097	0	%100
5	FACE	X	.08	.08	0	%100
6	FACE	Z	.046	.046	0	%100
7	FM-TOP	X	.08	.08	0	%100
8	FM-TOP	Z	.046	.046	0	%100
9	MP4A	X	.399	.399	0	%100
10	MP4A	Z	.231	.231	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
11	MP1A	X	.399	.399	0	%100
12	MP1A	Z	.231	.231	0	%100
13	MP2A	X	.484	.484	0	%100
14	MP2A	Z	.279	.279	0	%100
15	MP3A	X	.399	.399	0	%100
16	MP3A	Z	.231	.231	0	%100
17	PL-5	X	.000998	.000998	0	%100
18	PL-5	Z	.000576	.000576	0	%100
19	PL-6	X	.000998	.000998	0	%100
20	PL-6	Z	.000576	.000576	0	%100
21	PL-7	X	.07	.07	0	%100
22	PL-7	Z	.041	.041	0	%100
23	PL-8	X	.07	.07	0	%100
24	PL-8	Z	.041	.041	0	%100
25	PL-9	X	.000998	.000998	0	%100
26	PL-9	Z	.000576	.000576	0	%100
27	PL-10	X	.000998	.000998	0	%100
28	PL-10	Z	.000576	.000576	0	%100
29	PL-11	X	.07	.07	0	%100
30	PL-11	Z	.041	.041	0	%100
31	PL-12	X	.07	.07	0	%100
32	PL-12	Z	.041	.041	0	%100
33	SA-BOT-1	X	.004	.004	0	%100
34	SA-BOT-1	Z	.002	.002	0	%100
35	SA-BOT-2	X	.266	.266	0	%100
36	SA-BOT-2	Z	.154	.154	0	%100
37	SA-D-1	X	.076	.076	0	%100
38	SA-D-1	Z	.044	.044	0	%100
39	SA-D-2	X	.135	.135	0	%100
40	SA-D-2	Z	.078	.078	0	%100
41	SA-TOP-1	X	.004	.004	0	%100
42	SA-TOP-1	Z	.002	.002	0	%100
43	OVP	X	.266	.266	0	%100
44	OVP	Z	.154	.154	0	%100
45	SA-V-1	X	.147	.147	0	%100
46	SA-V-1	Z	.085	.085	0	%100
47	SA-V-2	X	.147	.147	0	%100
48	SA-V-2	Z	.085	.085	0	%100
49	SA-V-3	X	.147	.147	0	%100
50	SA-V-3	Z	.085	.085	0	%100
51	SA-V-4	X	.147	.147	0	%100
52	SA-V-4	Z	.085	.085	0	%100
53	STAB	X	.365	.365	0	%100
54	STAB	Z	.211	.211	0	%100
55	M51	X	.063	.063	0	%100
56	M51	Z	.036	.036	0	%100
57	M49	X	.063	.063	0	%100
58	M49	Z	.036	.036	0	%100
59	M50	X	.063	.063	0	%100
60	M50	Z	.036	.036	0	%100
61	M51A	X	.063	.063	0	%100
62	M51A	Z	.036	.036	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	.291	.291	0	%100
2	CL-BOT	Z	.505	.505	0	%100
3	CL-TOP	X	.291	.291	0	%100



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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	.777	.777	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	.777	.777	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	.369	.369	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	.369	.369	0	%100
9	MP4A	X	0	0	0	%100
10	MP4A	Z	.461	.461	0	%100
11	MP1A	X	0	0	0	%100
12	MP1A	Z	.461	.461	0	%100
13	MP2A	X	0	0	0	%100
14	MP2A	Z	.558	.558	0	%100
15	MP3A	X	0	0	0	%100
16	MP3A	Z	.461	.461	0	%100
17	PL-5	X	0	0	0	%100
18	PL-5	Z	.063	.063	0	%100
19	PL-6	X	0	0	0	%100
20	PL-6	Z	.063	.063	0	%100
21	PL-7	X	0	0	0	%100
22	PL-7	Z	.063	.063	0	%100
23	PL-8	X	0	0	0	%100
24	PL-8	Z	.063	.063	0	%100
25	PL-9	X	0	0	0	%100
26	PL-9	Z	.063	.063	0	%100
27	PL-10	X	0	0	0	%100
28	PL-10	Z	.063	.063	0	%100
29	PL-11	X	0	0	0	%100
30	PL-11	Z	.063	.063	0	%100
31	PL-12	X	0	0	0	%100
32	PL-12	Z	.063	.063	0	%100
33	SA-BOT-1	X	0	0	0	%100
34	SA-BOT-1	Z	.239	.239	0	%100
35	SA-BOT-2	X	0	0	0	%100
36	SA-BOT-2	Z	.239	.239	0	%100
37	SA-D-1	X	0	0	0	%100
38	SA-D-1	Z	.141	.141	0	%100
39	SA-D-2	X	0	0	0	%100
40	SA-D-2	Z	.141	.141	0	%100
41	SA-TOP-1	X	0	0	0	%100
42	SA-TOP-1	Z	.239	.239	0	%100
43	OVP	X	0	0	0	%100
44	OVP	Z	.239	.239	0	%100
45	SA-V-1	X	0	0	0	%100
46	SA-V-1	Z	.17	.17	0	%100
47	SA-V-2	X	0	0	0	%100
48	SA-V-2	Z	.17	.17	0	%100
49	SA-V-3	X	0	0	0	%100
50	SA-V-3	Z	.17	.17	0	%100
51	SA-V-4	X	0	0	0	%100
52	SA-V-4	Z	.17	.17	0	%100
53	STAB	X	0	0	0	%100
54	STAB	Z	.023	.023	0	%100
55	M51	X	0	0	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
60	M50	Z	0	0	0	%100
61	M51A	X	0	0	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-.291	-.291	0	%100
2	CL-BOT	Z	.505	.505	0	%100
3	CL-TOP	X	-.291	-.291	0	%100
4	CL-TOP	Z	.505	.505	0	%100
5	FACE	X	-.138	-.138	0	%100
6	FACE	Z	.24	.24	0	%100
7	FM-TOP	X	-.138	-.138	0	%100
8	FM-TOP	Z	.24	.24	0	%100
9	MP4A	X	-.231	-.231	0	%100
10	MP4A	Z	.399	.399	0	%100
11	MP1A	X	-.231	-.231	0	%100
12	MP1A	Z	.399	.399	0	%100
13	MP2A	X	-.279	-.279	0	%100
14	MP2A	Z	.484	.484	0	%100
15	MP3A	X	-.231	-.231	0	%100
16	MP3A	Z	.399	.399	0	%100
17	PL-5	X	-.048	-.048	0	%100
18	PL-5	Z	.083	.083	0	%100
19	PL-6	X	-.048	-.048	0	%100
20	PL-6	Z	.083	.083	0	%100
21	PL-7	X	-.008	-.008	0	%100
22	PL-7	Z	.014	.014	0	%100
23	PL-8	X	-.008	-.008	0	%100
24	PL-8	Z	.014	.014	0	%100
25	PL-9	X	-.048	-.048	0	%100
26	PL-9	Z	.083	.083	0	%100
27	PL-10	X	-.048	-.048	0	%100
28	PL-10	Z	.083	.083	0	%100
29	PL-11	X	-.008	-.008	0	%100
30	PL-11	Z	.014	.014	0	%100
31	PL-12	X	-.008	-.008	0	%100
32	PL-12	Z	.014	.014	0	%100
33	SA-BOT-1	X	-.181	-.181	0	%100
34	SA-BOT-1	Z	.314	.314	0	%100
35	SA-BOT-2	X	-.03	-.03	0	%100
36	SA-BOT-2	Z	.052	.052	0	%100
37	SA-D-1	X	-.084	-.084	0	%100
38	SA-D-1	Z	.146	.146	0	%100
39	SA-D-2	X	-.05	-.05	0	%100
40	SA-D-2	Z	.086	.086	0	%100
41	SA-TOP-1	X	-.181	-.181	0	%100
42	SA-TOP-1	Z	.314	.314	0	%100
43	OVP	X	-.03	-.03	0	%100
44	OVP	Z	.052	.052	0	%100
45	SA-V-1	X	-.085	-.085	0	%100
46	SA-V-1	Z	.147	.147	0	%100
47	SA-V-2	X	-.085	-.085	0	%100
48	SA-V-2	Z	.147	.147	0	%100
49	SA-V-3	X	-.085	-.085	0	%100
50	SA-V-3	Z	.147	.147	0	%100
51	SA-V-4	X	-.085	-.085	0	%100
52	SA-V-4	Z	.147	.147	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
53	STAB	X	-.02	-.02	0	%100
54	STAB	Z	.034	.034	0	%100
55	M51	X	-.012	-.012	0	%100
56	M51	Z	.021	.021	0	%100
57	M49	X	-.012	-.012	0	%100
58	M49	Z	.021	.021	0	%100
59	M50	X	-.012	-.012	0	%100
60	M50	Z	.021	.021	0	%100
61	M51A	X	-.012	-.012	0	%100
62	M51A	Z	.021	.021	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in, %]	End Location[in, %]
1	CL-BOT	X	-.168	-.168	0	%100
2	CL-BOT	Z	.097	.097	0	%100
3	CL-TOP	X	-.168	-.168	0	%100
4	CL-TOP	Z	.097	.097	0	%100
5	FACE	X	-.08	-.08	0	%100
6	FACE	Z	.046	.046	0	%100
7	FM-TOP	X	-.08	-.08	0	%100
8	FM-TOP	Z	.046	.046	0	%100
9	MP4A	X	-.399	-.399	0	%100
10	MP4A	Z	.231	.231	0	%100
11	MP1A	X	-.399	-.399	0	%100
12	MP1A	Z	.231	.231	0	%100
13	MP2A	X	-.484	-.484	0	%100
14	MP2A	Z	.279	.279	0	%100
15	MP3A	X	-.399	-.399	0	%100
16	MP3A	Z	.231	.231	0	%100
17	PL-5	X	-.07	-.07	0	%100
18	PL-5	Z	.041	.041	0	%100
19	PL-6	X	-.07	-.07	0	%100
20	PL-6	Z	.041	.041	0	%100
21	PL-7	X	-.000998	-.000998	0	%100
22	PL-7	Z	.000576	.000576	0	%100
23	PL-8	X	-.000998	-.000998	0	%100
24	PL-8	Z	.000576	.000576	0	%100
25	PL-9	X	-.07	-.07	0	%100
26	PL-9	Z	.041	.041	0	%100
27	PL-10	X	-.07	-.07	0	%100
28	PL-10	Z	.041	.041	0	%100
29	PL-11	X	-.000998	-.000998	0	%100
30	PL-11	Z	.000576	.000576	0	%100
31	PL-12	X	-.000998	-.000998	0	%100
32	PL-12	Z	.000576	.000576	0	%100
33	SA-BOT-1	X	-.266	-.266	0	%100
34	SA-BOT-1	Z	.154	.154	0	%100
35	SA-BOT-2	X	-.004	-.004	0	%100
36	SA-BOT-2	Z	.002	.002	0	%100
37	SA-D-1	X	-.135	-.135	0	%100
38	SA-D-1	Z	.078	.078	0	%100
39	SA-D-2	X	-.076	-.076	0	%100
40	SA-D-2	Z	.044	.044	0	%100
41	SA-TOP-1	X	-.266	-.266	0	%100
42	SA-TOP-1	Z	.154	.154	0	%100
43	OVP	X	-.004	-.004	0	%100
44	OVP	Z	.002	.002	0	%100
45	SA-V-1	X	-.147	-.147	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
46	SA-V-1	Z	.085	.085	0	%100
47	SA-V-2	X	-.147	-.147	0	%100
48	SA-V-2	Z	.085	.085	0	%100
49	SA-V-3	X	-.147	-.147	0	%100
50	SA-V-3	Z	.085	.085	0	%100
51	SA-V-4	X	-.147	-.147	0	%100
52	SA-V-4	Z	.085	.085	0	%100
53	STAB	X	-.214	-.214	0	%100
54	STAB	Z	.123	.123	0	%100
55	M51	X	-.063	-.063	0	%100
56	M51	Z	.036	.036	0	%100
57	M49	X	-.063	-.063	0	%100
58	M49	Z	.036	.036	0	%100
59	M50	X	-.063	-.063	0	%100
60	M50	Z	.036	.036	0	%100
61	M51A	X	-.063	-.063	0	%100
62	M51A	Z	.036	.036	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	0	0	0	%100
2	CL-BOT	Z	0	0	0	%100
3	CL-TOP	X	0	0	0	%100
4	CL-TOP	Z	0	0	0	%100
5	FACE	X	0	0	0	%100
6	FACE	Z	0	0	0	%100
7	FM-TOP	X	0	0	0	%100
8	FM-TOP	Z	0	0	0	%100
9	MP4A	X	-.461	-.461	0	%100
10	MP4A	Z	0	0	0	%100
11	MP1A	X	-.461	-.461	0	%100
12	MP1A	Z	0	0	0	%100
13	MP2A	X	-.558	-.558	0	%100
14	MP2A	Z	0	0	0	%100
15	MP3A	X	-.461	-.461	0	%100
16	MP3A	Z	0	0	0	%100
17	PL-5	X	-.034	-.034	0	%100
18	PL-5	Z	0	0	0	%100
19	PL-6	X	-.034	-.034	0	%100
20	PL-6	Z	0	0	0	%100
21	PL-7	X	-.034	-.034	0	%100
22	PL-7	Z	0	0	0	%100
23	PL-8	X	-.034	-.034	0	%100
24	PL-8	Z	0	0	0	%100
25	PL-9	X	-.034	-.034	0	%100
26	PL-9	Z	0	0	0	%100
27	PL-10	X	-.034	-.034	0	%100
28	PL-10	Z	0	0	0	%100
29	PL-11	X	-.034	-.034	0	%100
30	PL-11	Z	0	0	0	%100
31	PL-12	X	-.034	-.034	0	%100
32	PL-12	Z	0	0	0	%100
33	SA-BOT-1	X	-.128	-.128	0	%100
34	SA-BOT-1	Z	0	0	0	%100
35	SA-BOT-2	X	-.128	-.128	0	%100
36	SA-BOT-2	Z	0	0	0	%100
37	SA-D-1	X	-.116	-.116	0	%100
38	SA-D-1	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
39	SA-D-2	X	-.116	-.116	0	%100
40	SA-D-2	Z	0	0	0	%100
41	SA-TOP-1	X	-.128	-.128	0	%100
42	SA-TOP-1	Z	0	0	0	%100
43	OVP	X	-.128	-.128	0	%100
44	OVP	Z	0	0	0	%100
45	SA-V-1	X	-.17	-.17	0	%100
46	SA-V-1	Z	0	0	0	%100
47	SA-V-2	X	-.17	-.17	0	%100
48	SA-V-2	Z	0	0	0	%100
49	SA-V-3	X	-.17	-.17	0	%100
50	SA-V-3	Z	0	0	0	%100
51	SA-V-4	X	-.17	-.17	0	%100
52	SA-V-4	Z	0	0	0	%100
53	STAB	X	-.438	-.438	0	%100
54	STAB	Z	0	0	0	%100
55	M51	X	-.097	-.097	0	%100
56	M51	Z	0	0	0	%100
57	M49	X	-.097	-.097	0	%100
58	M49	Z	0	0	0	%100
59	M50	X	-.097	-.097	0	%100
60	M50	Z	0	0	0	%100
61	M51A	X	-.097	-.097	0	%100
62	M51A	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....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-.168	-.168	0	%100
2	CL-BOT	Z	-.097	-.097	0	%100
3	CL-TOP	X	-.168	-.168	0	%100
4	CL-TOP	Z	-.097	-.097	0	%100
5	FACE	X	-.08	-.08	0	%100
6	FACE	Z	-.046	-.046	0	%100
7	FM-TOP	X	-.08	-.08	0	%100
8	FM-TOP	Z	-.046	-.046	0	%100
9	MP4A	X	-.399	-.399	0	%100
10	MP4A	Z	-.231	-.231	0	%100
11	MP1A	X	-.399	-.399	0	%100
12	MP1A	Z	-.231	-.231	0	%100
13	MP2A	X	-.484	-.484	0	%100
14	MP2A	Z	-.279	-.279	0	%100
15	MP3A	X	-.399	-.399	0	%100
16	MP3A	Z	-.231	-.231	0	%100
17	PL-5	X	-.000998	-.000998	0	%100
18	PL-5	Z	-.000576	-.000576	0	%100
19	PL-6	X	-.000998	-.000998	0	%100
20	PL-6	Z	-.000576	-.000576	0	%100
21	PL-7	X	-.07	-.07	0	%100
22	PL-7	Z	-.041	-.041	0	%100
23	PL-8	X	-.07	-.07	0	%100
24	PL-8	Z	-.041	-.041	0	%100
25	PL-9	X	-.000998	-.000998	0	%100
26	PL-9	Z	-.000576	-.000576	0	%100
27	PL-10	X	-.000998	-.000998	0	%100
28	PL-10	Z	-.000576	-.000576	0	%100
29	PL-11	X	-.07	-.07	0	%100
30	PL-11	Z	-.041	-.041	0	%100
31	PL-12	X	-.07	-.07	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
32	PL-12	Z	-041	-041	0	%100
33	SA-BOT-1	X	-004	-004	0	%100
34	SA-BOT-1	Z	-002	-002	0	%100
35	SA-BOT-2	X	-266	-266	0	%100
36	SA-BOT-2	Z	-154	-154	0	%100
37	SA-D-1	X	-076	-076	0	%100
38	SA-D-1	Z	-044	-044	0	%100
39	SA-D-2	X	-135	-135	0	%100
40	SA-D-2	Z	-078	-078	0	%100
41	SA-TOP-1	X	-004	-004	0	%100
42	SA-TOP-1	Z	-002	-002	0	%100
43	OVP	X	-266	-266	0	%100
44	OVP	Z	-154	-154	0	%100
45	SA-V-1	X	-147	-147	0	%100
46	SA-V-1	Z	-085	-085	0	%100
47	SA-V-2	X	-147	-147	0	%100
48	SA-V-2	Z	-085	-085	0	%100
49	SA-V-3	X	-147	-147	0	%100
50	SA-V-3	Z	-085	-085	0	%100
51	SA-V-4	X	-147	-147	0	%100
52	SA-V-4	Z	-085	-085	0	%100
53	STAB	X	-365	-365	0	%100
54	STAB	Z	-211	-211	0	%100
55	M51	X	-063	-063	0	%100
56	M51	Z	-036	-036	0	%100
57	M49	X	-063	-063	0	%100
58	M49	Z	-036	-036	0	%100
59	M50	X	-063	-063	0	%100
60	M50	Z	-036	-036	0	%100
61	M51A	X	-063	-063	0	%100
62	M51A	Z	-036	-036	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
1	CL-BOT	X	-291	-291	0	%100
2	CL-BOT	Z	-505	-505	0	%100
3	CL-TOP	X	-291	-291	0	%100
4	CL-TOP	Z	-505	-505	0	%100
5	FACE	X	-138	-138	0	%100
6	FACE	Z	-24	-24	0	%100
7	FM-TOP	X	-138	-138	0	%100
8	FM-TOP	Z	-24	-24	0	%100
9	MP4A	X	-231	-231	0	%100
10	MP4A	Z	-399	-399	0	%100
11	MP1A	X	-231	-231	0	%100
12	MP1A	Z	-399	-399	0	%100
13	MP2A	X	-279	-279	0	%100
14	MP2A	Z	-484	-484	0	%100
15	MP3A	X	-231	-231	0	%100
16	MP3A	Z	-399	-399	0	%100
17	PL-5	X	-008	-008	0	%100
18	PL-5	Z	-014	-014	0	%100
19	PL-6	X	-008	-008	0	%100
20	PL-6	Z	-014	-014	0	%100
21	PL-7	X	-048	-048	0	%100
22	PL-7	Z	-083	-083	0	%100
23	PL-8	X	-048	-048	0	%100
24	PL-8	Z	-083	-083	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft....	Start Location[in.%]	End Location[in.%]
25	PL-9	X	-008	-008	0	%100
26	PL-9	Z	-014	-014	0	%100
27	PL-10	X	-008	-008	0	%100
28	PL-10	Z	-014	-014	0	%100
29	PL-11	X	-048	-048	0	%100
30	PL-11	Z	-083	-083	0	%100
31	PL-12	X	-048	-048	0	%100
32	PL-12	Z	-083	-083	0	%100
33	SA-BOT-1	X	-03	-03	0	%100
34	SA-BOT-1	Z	-052	-052	0	%100
35	SA-BOT-2	X	-181	-181	0	%100
36	SA-BOT-2	Z	-314	-314	0	%100
37	SA-D-1	X	-05	-05	0	%100
38	SA-D-1	Z	-086	-086	0	%100
39	SA-D-2	X	-084	-084	0	%100
40	SA-D-2	Z	-146	-146	0	%100
41	SA-TOP-1	X	-03	-03	0	%100
42	SA-TOP-1	Z	-052	-052	0	%100
43	OVP	X	-181	-181	0	%100
44	OVP	Z	-314	-314	0	%100
45	SA-V-1	X	-085	-085	0	%100
46	SA-V-1	Z	-147	-147	0	%100
47	SA-V-2	X	-085	-085	0	%100
48	SA-V-2	Z	-147	-147	0	%100
49	SA-V-3	X	-085	-085	0	%100
50	SA-V-3	Z	-147	-147	0	%100
51	SA-V-4	X	-085	-085	0	%100
52	SA-V-4	Z	-147	-147	0	%100
53	STAB	X	-107	-107	0	%100
54	STAB	Z	-186	-186	0	%100
55	M51	X	-012	-012	0	%100
56	M51	Z	-021	-021	0	%100
57	M49	X	-012	-012	0	%100
58	M49	Z	-021	-021	0	%100
59	M50	X	-012	-012	0	%100
60	M50	Z	-021	-021	0	%100
61	M51A	X	-012	-012	0	%100
62	M51A	Z	-021	-021	0	%100

**Member Area Loads**

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

**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	N39	max	983.32	46	1034.384	31	2033.846	37	0	75	0	75	.254	45
2		min	-825.116	49	414.459	75	524.719	7	0	1	0	1	-.184	49
3	N40	max	825.199	49	758.075	37	274.507	12	0	75	0	75	.112	45
4		min	-999.794	40	319.43	69	-2647.162	6	0	1	0	1	-.112	49
5	N84	max	208.124	10	16.571	22	813.706	4	0	75	0	75	0	75
6		min	-208.349	4	9.497	67	-812.537	10	0	1	0	1	0	1
7	Totals:	max	1192.699	10	1790.338	26	1735.5	1						
8		min	-1192.697	4	745.689	68	-1735.485	7						





EXHIBIT B – INTERFERENCE STUDY and LICENSED  
FREQUENCIES



Radio Frequency Exposure
FCC Compliance Assessment
Pre

Table with 4 columns: Site Name, Street Address, City, State, Zip, Verizon's Max % MPE (Measured - Occupational), Structure Type, Broadcast (AM/FM/TV) Co-Locators, Total Access Points, Original Report Date, Multi-Licensee Facility, Is Verizon a Significant Contributor To Co-Locator Areas Requiring Mitigation?, Verizon's Max % MPE (Predictive - Occupational), Assessment Date, Assessment Purpose, Total Report Revisions, Report Revision Date, Compliance Status.

Table with 2 columns: Compliance Status options (BELOW the General Population MPE limit, ABOVE the General Population MPE limit and BELOW the Occupational MPE limit, ABOVE the Occupational MPE limit and BELOW 10x the Occupational MPE limit, ABOVE 10x the Occupational MPE limit).

Table with 7 columns: Final Compliant Configuration, GUIDELINES, NOTICE, CAUTION, WARNING, NOC INFO, BARRIER/MARKER. Rows include Access Point(s), Alpha, Beta, Gamma.

NOTE: The table above represents EVERY compliance item that MUST be implemented at this location; also in Sec. 4 (B)

Table with 2 columns: Additional Compliance Requirements(s), Consultant Legal Name, Phone/Fax, Address.



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## 1. Introduction

Verizon Wireless has contracted with Waterford Consultants, LLC, an independent Radio Frequency consulting firm, to conduct a **Radio Frequency Exposure (RFE) FCC Compliance Assessment** of the **Gibraltar** cell site. The following report contains a detailed summary of the Radio Frequency environment as it relates to Federal Communications Commission (FCC) and Occupational Safety & Health Administration (OSHA) Rules and Regulations for all individuals.

The **Verizon Wireless antenna data** was provided by:

<b>Name</b>	Dang Le
<b>Date</b>	July 12, 2022
<b>Sub-Market</b>	MTN

This compliance assessment and report has been **prepared and reviewed** by:

	<b>Preparer</b>	<b>Reviewer</b>
<b>Name</b>	Kevin Nardi	David C. Cotton, Jr.
<b>Title</b>	RF Technical Analyst	RF Engineer
<b>Date</b>	July 25, 2022	July 28, 2022

This report utilizes the following for predictive modeling of the ambient RF environment:

**MPE Modeling Program:** RoofMaster™ (See Section 7)

**Required Modeling Assumptions:** 100% Duty Cycle and Maximum Total Power Output.

### **Additional Modeling Assumptions:**

Antenna radiation pattern files that characterize directivity and energy suppression values have been utilized to model each RF emitter at this location. If a manufacturer’s antenna pattern is not available or the actual antenna model is unknown, Waterford Consultants, LLC has utilized a generic antenna pattern from a library of panel, omnidirectional, microwave and broadcast patterns that are representative of the actual antenna. Similarly, the effective radiated power values for each antenna, if not provided, has been assumed based on antenna type, carrier, and region. Refer to the antenna inventory table for a listing of the emitter properties utilized in this report.

### **Documents utilized in this analysis:**

*RFDSGIBRALTER32088691652022125617.pdf*

*DENGibraltarCDRevC042822.pdf*

*vzatoll\_rfe\_denver\_20220705\_1541.pdf*



**2. Existing Site Characteristics**

**a. Structure**

<b>Physical Description</b>	Antennas are mounted on a 120' self-support tower.
<b>Single-Family Home</b>	No
<b>Latitude (NAD 83)</b>	39.783083
<b>Longitude (NAD 83)</b>	-104.754553
<b>Total Analyzed Elevations (All Levels)</b>	3

**b. Existing Verizon Observations**

<b>Existing Observations</b>							
	<b>GUIDELINES</b>	<b>NOTICE</b>	<b>CAUTION</b>	<b>WARNING</b>	<b>NOC INFO</b>		<b>BARRIER/MARKER</b>
<b>Access Point(s)</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	N/A
<b>Alpha</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	N/A
<b>Beta</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	N/A
<b>Gamma</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	N/A

**NOTE: The table above represents EXISTING compliance items implemented at this location.**

Are Verizon signs posted on the front, back and sides of antenna arrays where possible?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A
Are Verizon signs visible from all areas of approach?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A
Are there any broken, damaged or illegible Verizon signs?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A
Are there any broken or damaged Verizon physical barriers?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A
Are there any Verizon indicative markers in need of repair or replacement?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A

**c. Antenna Inventory**

Z-height represents the distance from the nearest walking surface to the _____ of the antenna.	<input type="checkbox"/> Bottom <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Top
NON-Verizon Co-locator Data	<input checked="" type="checkbox"/> Estimates <input type="checkbox"/> Actual Data <input type="checkbox"/> N/A



### Existing Installation Visual Inspection Results

The area surrounding the proposed site was inspected using satellite and aerial imagery available at Eagleview.com. No fixed wireless installations are observed in this data.

No other wireless operations were identified within 500 feet of this location.

#### d. Area of Study



#### 500-foot Inspection Radius

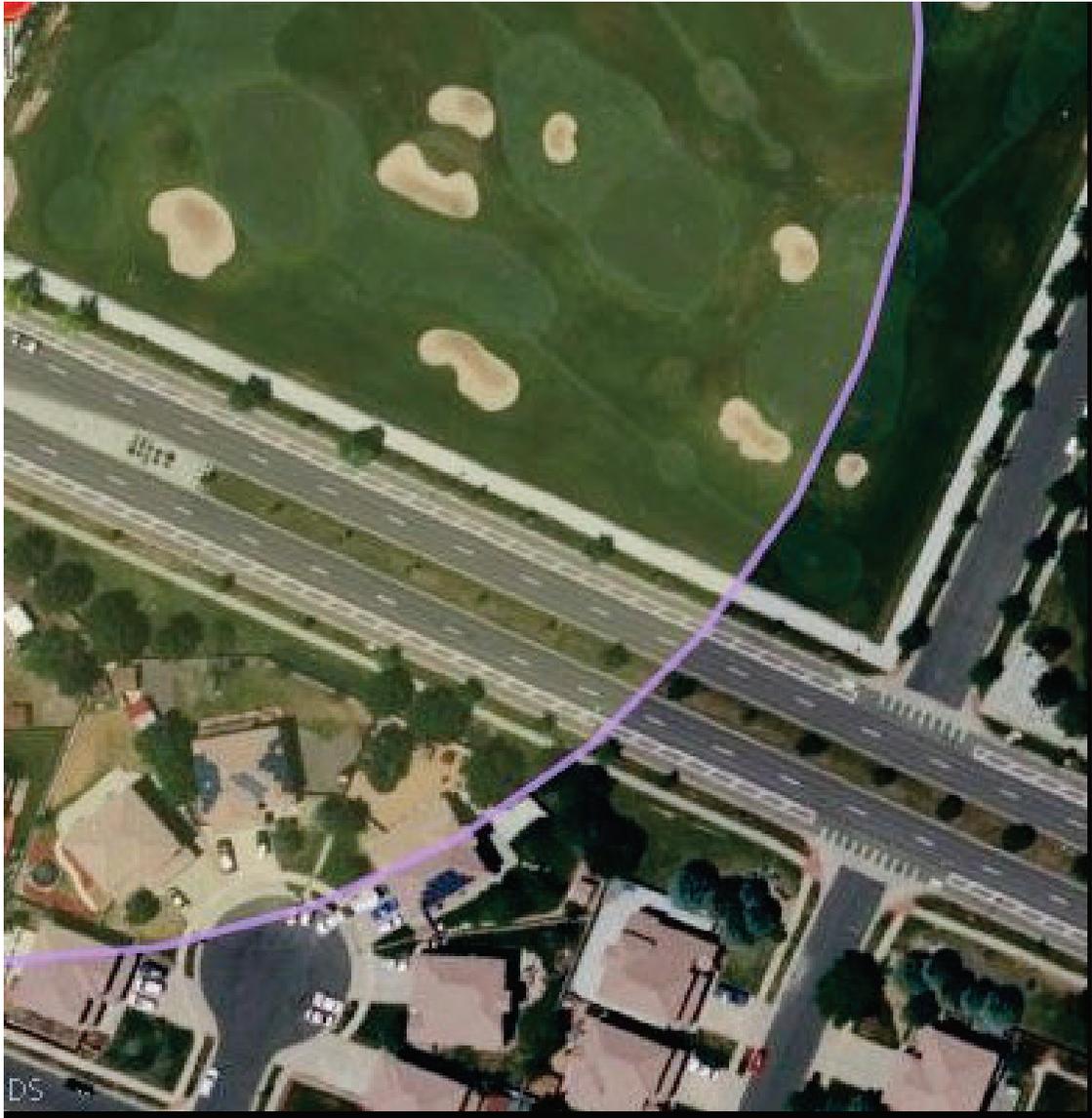
Description of Data: Eagleview (2021)



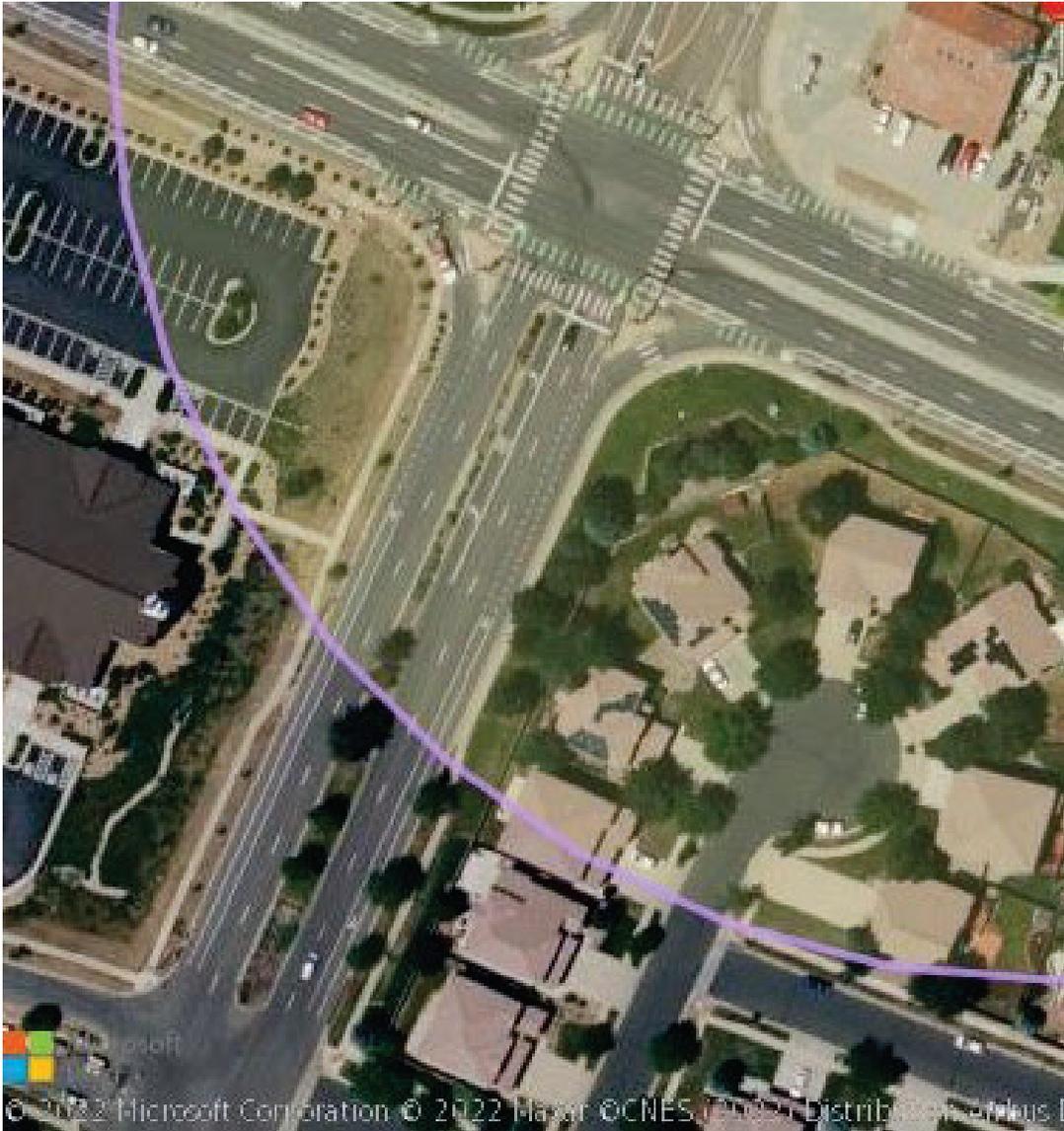
**Area Detail – Section A**



Area Detail – Section B



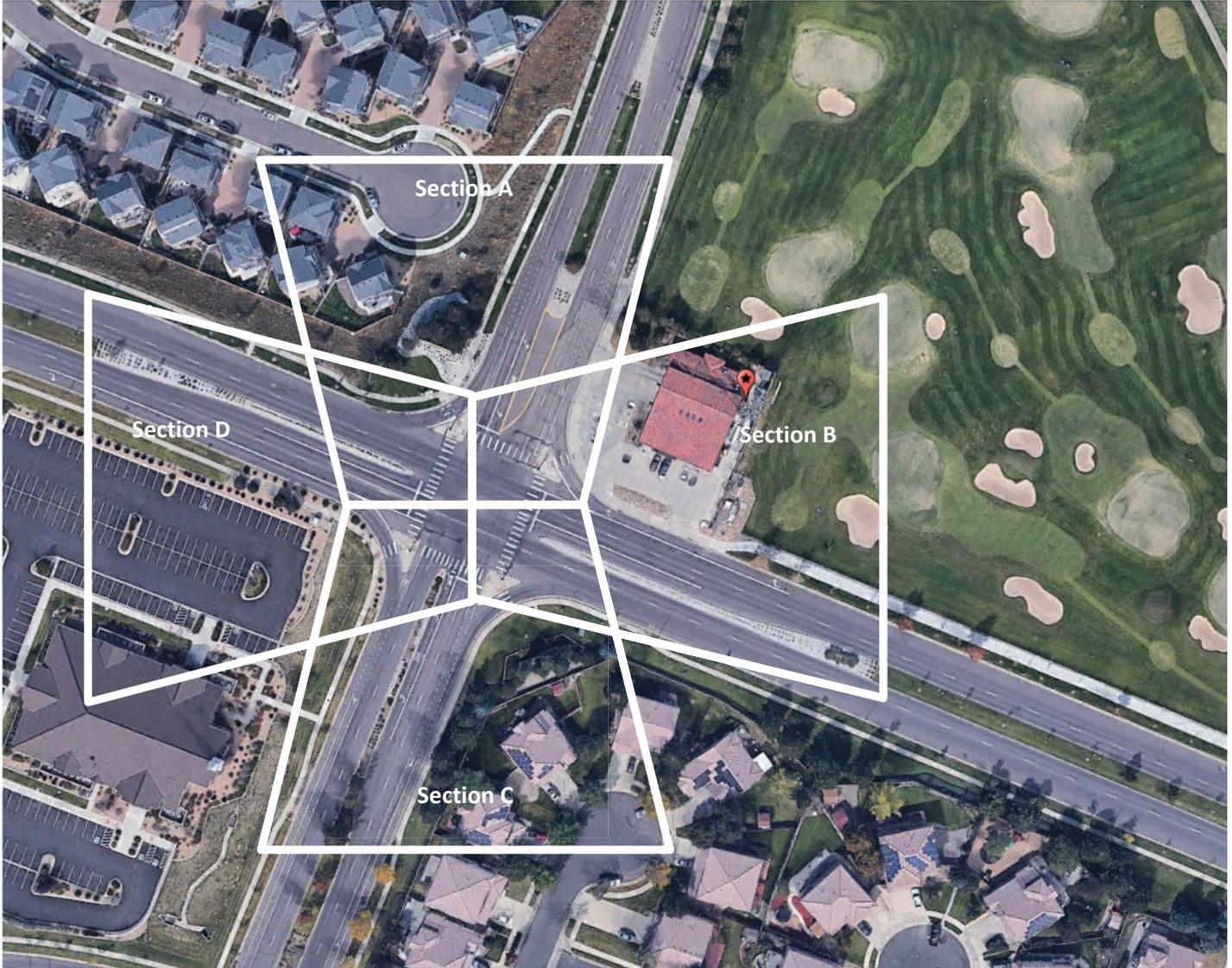
**Area Detail – Section C**



**Area Detail – Section D**



**e. Street View Analysis**



**Area of Study**



**Section A**



**No Wireless Operations Found**

**Section B**



**No Wireless Operations Found**



**Section C**



**No Wireless Operations Found**

**Section D**



**No Wireless Operations Found**



WATERFORD

Roof Master™ Antenna Inventory

Ant #	Operator	Antenna Make	Antenna Model	Type	Frequency (MHz)	Az (Deg)	Downtilt (Deg)	Horizontal Beam Width (Deg)	Ant (ft)	TPO (W)	# of Ch	Loss (dB)	Ant Gain (dBd)	Total ERP (W)	Total ERP (W)	Antenna Centerline Ground Level (0 ft)
1	Verizon	ERICSSON	SON_AIR6449 NR_TB 03.24.21 3700 VZW	Panel	3700	0	0	11	2.8	320	1	0	23.55	72469	118891	80.2
2	Verizon	AMPHENOL	CWX063X19x00 T05	Panel	850	0	0	65	6.3	20	2	0	13.1	817	1340	77.3
3	Verizon	ERICSSON	SON_SM6701 28GHz VZW half array	Panel	28000	0	0	4	0.4	0.3	2	0	26.65	242	397	76.5
4	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	700	0	0	65	8	40	2	0	13.6	1833	3007	77.5
4	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	850	0	0	61	8	40	2	0	13.71	1880	3084	77.5
4	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	1900	0	0	57	8	20	4	0	15.57	2885	4732	77.5
5	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	700	0	0	65	8	40	2	0	13.6	1833	3007	77.5
5	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	850	0	0	61	8	40	2	0	13.71	1880	3084	77.5
5	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	2100	0	0	55	8	40	4	0	15.91	6239	10236	77.5
5	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	2100	0	0	55	8	20	4	0	15.91	3120	5118	77.5
5	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	3100	0	0	43	8	40	2	0	13.6	1833	3007	77.5
5	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	1900	0	0	57	8	20	4	0	15.57	2885	4732	77.5
10	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	700	120	0	65	8	40	2	0	13.6	1833	3007	77.5
10	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	850	120	0	61	8	40	2	0	13.71	1880	3084	77.5
10	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	2100	120	0	55	8	40	4	0	15.91	6239	10236	77.5
10	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	2100	120	0	55	8	20	4	0	15.91	3120	5118	77.5
10	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	3100	120	0	43	8	5	4	0	14.06	509	836	77.5
11	Verizon	ERICSSON	SON_AIR6449 NR_TB 03.24.21 3700 VZW	Panel	3700	240	0	11	2.8	320	1	0	23.55	72469	118891	80.2
12	Verizon	AMPHENOL	CWX063X19x00 T05	Panel	850	240	0	65	6.3	20	2	0	13.1	817	1340	77.3
13	Verizon	ERICSSON	SON_SM6701 28GHz VZW half array	Panel	28000	240	0	4	0.4	0.3	2	0	26.65	242	397	76.5
14	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	700	240	0	65	8	40	2	0	13.6	1833	3007	77.5
14	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	850	240	0	61	8	40	2	0	13.71	1880	3084	77.5
14	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	1900	240	0	57	8	20	4	0	15.57	2885	4732	77.5
15	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	700	240	0	65	8	40	2	0	13.6	1833	3007	77.5
15	Verizon	COMMSCOPE	NHHSS-65C-R2B 08DT	Panel	850	240	0	61	8	40	2	0	13.71	1880	3084	77.5
15	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	2100	240	0	55	8	40	4	0	15.91	6239	10236	77.5
15	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	2100	240	0	55	8	20	4	0	15.91	3120	5118	77.5
15	Verizon	COMMSCOPE	NHHSS-65C-R2B 04DT	Panel	3100	240	0	43	8	5	4	0	14.06	509	836	77.5
16	Unknown	RFS	APXV9ERR18-C-02DT	Panel	850	0	0	80	6	25	4	0	11.9	1531	2512	90
16	Unknown	RFS	APXV9ERR18-C-00DT	Panel	1900	0	0	80	6	45	4	0	14.6	5132	8419	90
17	Unknown	RFS	APXVTM14 ALU-120-00DT	Panel	2500	0	0	65	4.7	20	8	0	15.9	6153	10095	90
18	Unknown	RFS	APXV9ERR18-C-02DT	Panel	850	120	0	80	6	25	4	0	11.9	1531	2512	90
18	Unknown	RFS	APXV9ERR18-C-00DT	Panel	1900	120	0	80	6	45	4	0	14.6	5132	8419	90
19	Unknown	RFS	APXVTM14 ALU-120-00DT	Panel	2500	120	0	65	4.7	20	8	0	15.9	6153	10095	90
20	Unknown	RFS	APXV9ERR18-C-02DT	Panel	850	240	0	80	6	25	4	0	11.9	1531	2512	90
20	Unknown	RFS	APXV9ERR18-C-00DT	Panel	1900	240	0	80	6	45	4	0	14.6	5132	8419	90
21	Unknown	RFS	APXVTM14 ALU-120-00DT	Panel	2500	240	0	65	4.7	20	8	0	15.9	6153	10095	90
22	Unknown	RFS	APXV9ERR18-C-00DT	Panel	1900	0	0	80	6	45	4	0	14.6	5132	8419	65



Ant #	Operator	Antenna Make	Antenna Model	Type	Frequency (MHz)	Az (Deg)	Downtilt (Deg)	Horizontal Beam Width (Deg)	Ant (ft)	TPO (W)	# of Ch	Loss (dB)	Ant Gain (dBd)	Total ERP (W)	Total EIRP (W)	Antenna Centerline Ground Level (0 ft)
23	Unknown	RFS	APXV9ERR18-C-00DT	Panel	1900	120	0	80	6	45	4	0	14.6	5132	8419	65
24	Unknown	RFS	APXV9ERR18-C-00DT	Panel	1900	240	0	80	6	45	4	0	14.6	5132	8419	65
25	Unknown	GENERIC	MICROWAVE 6FT	Microwave	6000	0	0	1.5	6	0.2	1	0	38.7	1462	2399	119
26	Unknown	ANDREW	VHLP4-11	Microwave	11000	180	0	1.5	4	0.2	1	0	38.7	1462	2399	110
27	Unknown	ANDREW	VHLP2-18	Microwave	18000	0	0	2.1	2	0.2	1	0	37	989	1622	55

*Note 1: Operating parameters depicted in above table have been provided by client.*

*Note 2: Some antennas identified by the SON designation may employ beamsteering technology where RF energy allocated to each customer device is dynamically directed toward their location. In the analysis presented herein, predicted exposure levels are based on all beams at full utilization (i.e. full power) simultaneously focused in any direction. As this condition is unlikely to occur, the actual power density levels at ground and at adjacent structures will be less than the levels reported below.*

*Note 3: No other transmitting antennas are known to be operating in the vicinity of this site.*



**3. Analysis**

Could field measurements be taken in areas with Verizon antennas?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A
Describe why measurements could not be taken - if applicable.	N/A
Adjacent Structure(s)	<input type="checkbox"/> Touching <input type="checkbox"/> Potential Concern <input checked="" type="checkbox"/> No Concern
If the structure is a Single-Family Residential Home, were measurements taken inside the residence?	<input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> N/A
Field Measurement Equipment	<input type="checkbox"/> Broadband <input type="checkbox"/> Narrowband <input checked="" type="checkbox"/> N/A
Field Measurement Start Time	N/A
Field Measurement End Time	N/A
Location Broadband Equipment Zeroed	N/A

**Surrounding Environment**



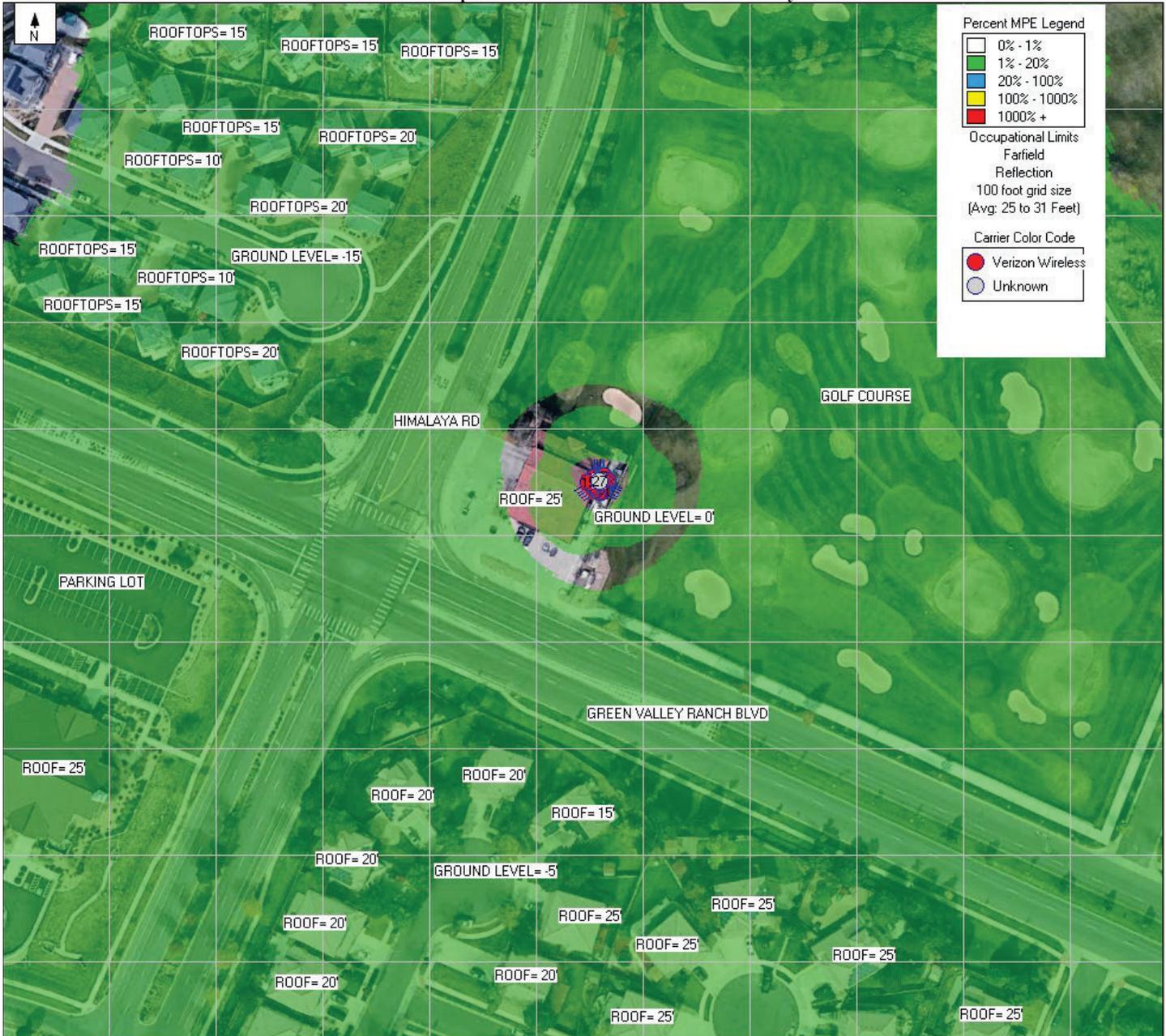


a. Predictive Model: All Transmitters

Is the area being modeled completely INACCESSIBLE to members of the general population (including untrained maintenance workers)?

YES  NO

Reference Plane: 25 ft (Adjacent Building Level)  
Plot Description: All carriers in Antenna Inventory

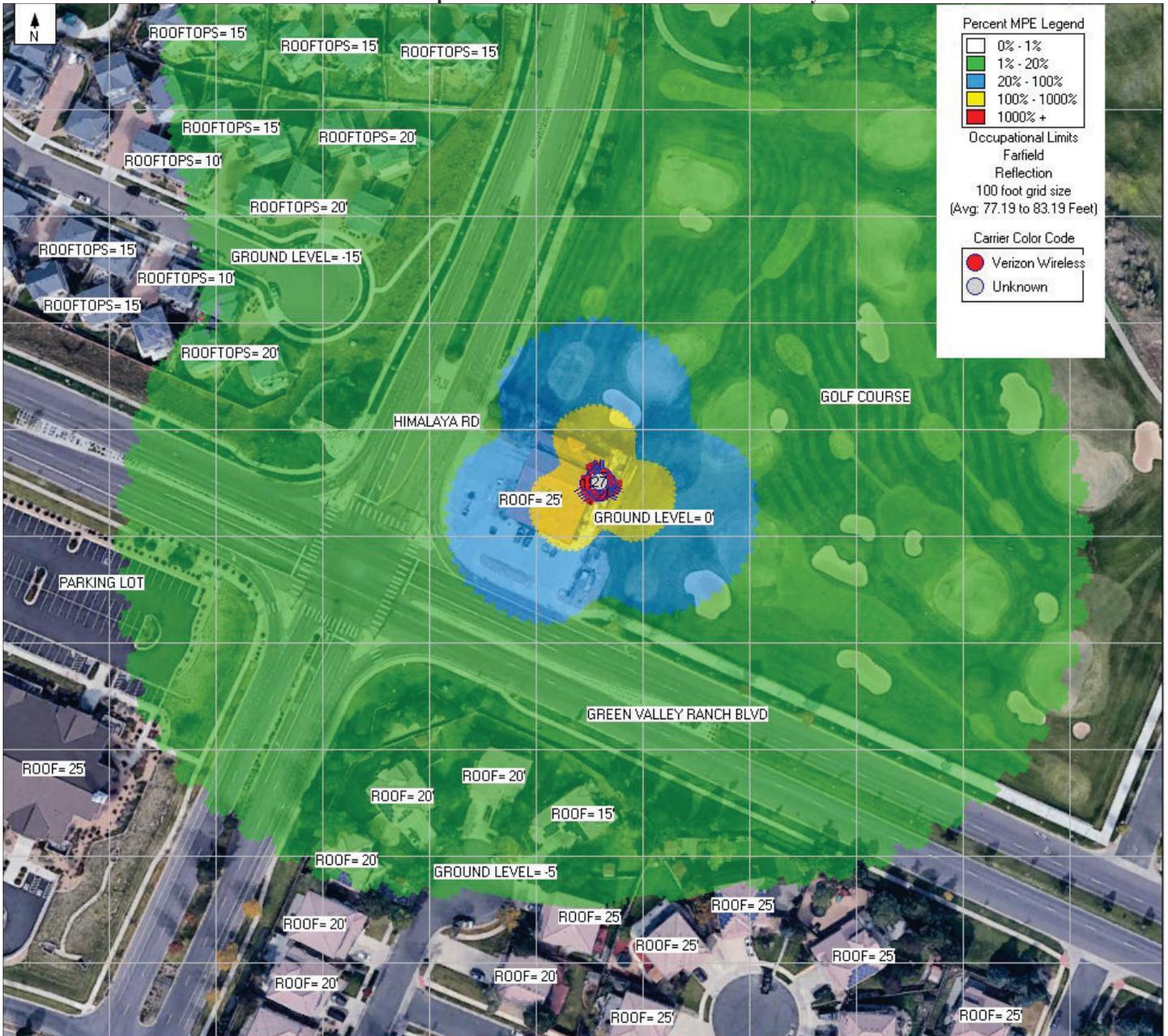






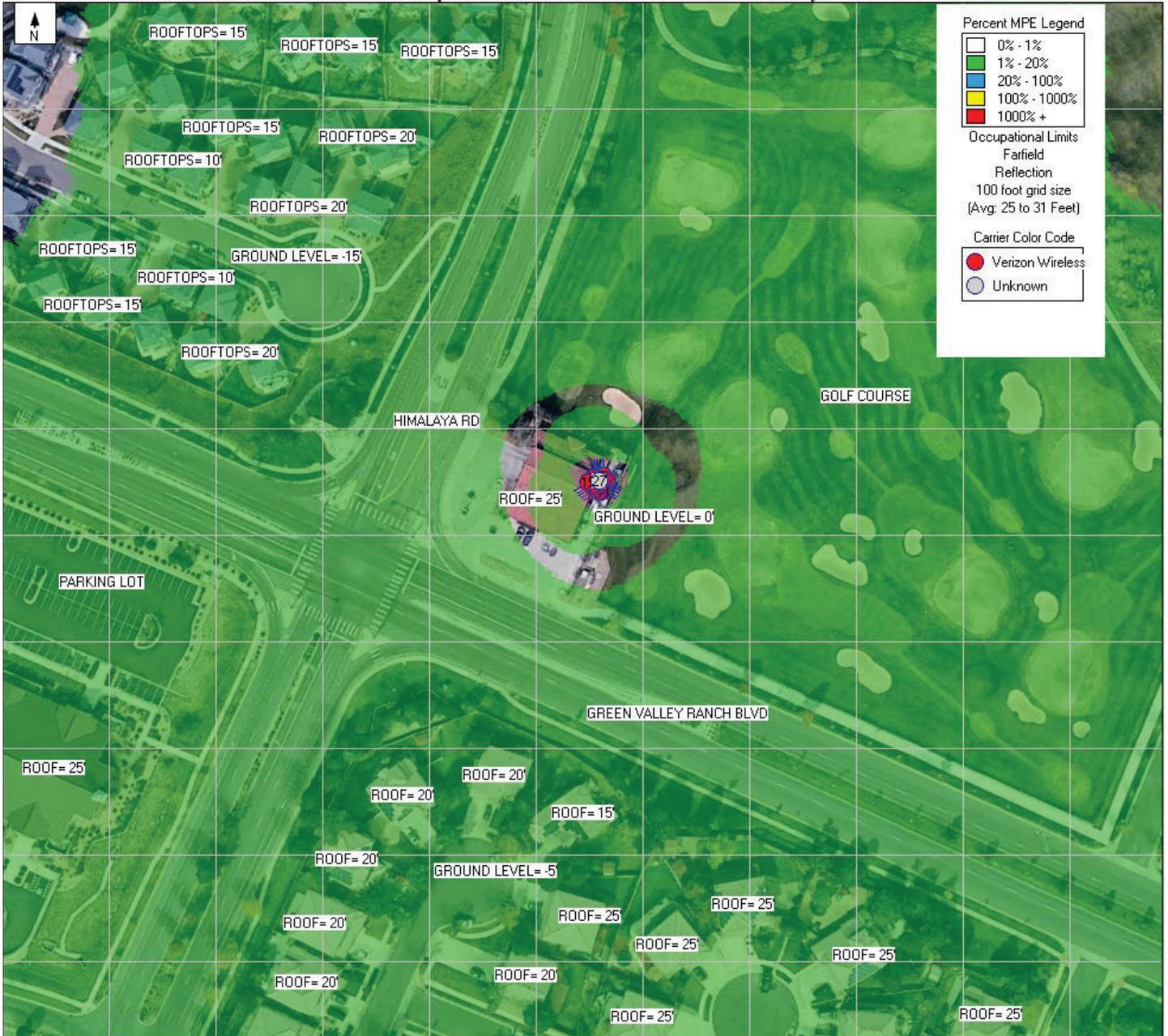
b. Predictive Model: Verizon Transmitters

Reference Plane: 77.2 ft (Antenna Level)  
Plot Description: Verizon Wireless in Antenna Inventory





Reference Plane: 25 ft (Adjacent Building Level)  
Plot Description: Verizon Wireless in Antenna Inventory





Reference Plane: 0 ft (Ground Level)  
Plot Description: Verizon Wireless in Antenna Inventory





**4. Conclusion**

**a. Conclusion Narrative**

**Description of MPE-Limit Exceeding Areas:**

**Adjacent Building (25 ft) Assessment**

- Antenna Inventory Configuration: Below General Population limits

**Ground Level (0 ft) Assessment**

- Antenna Inventory Configuration: Below General Population limits

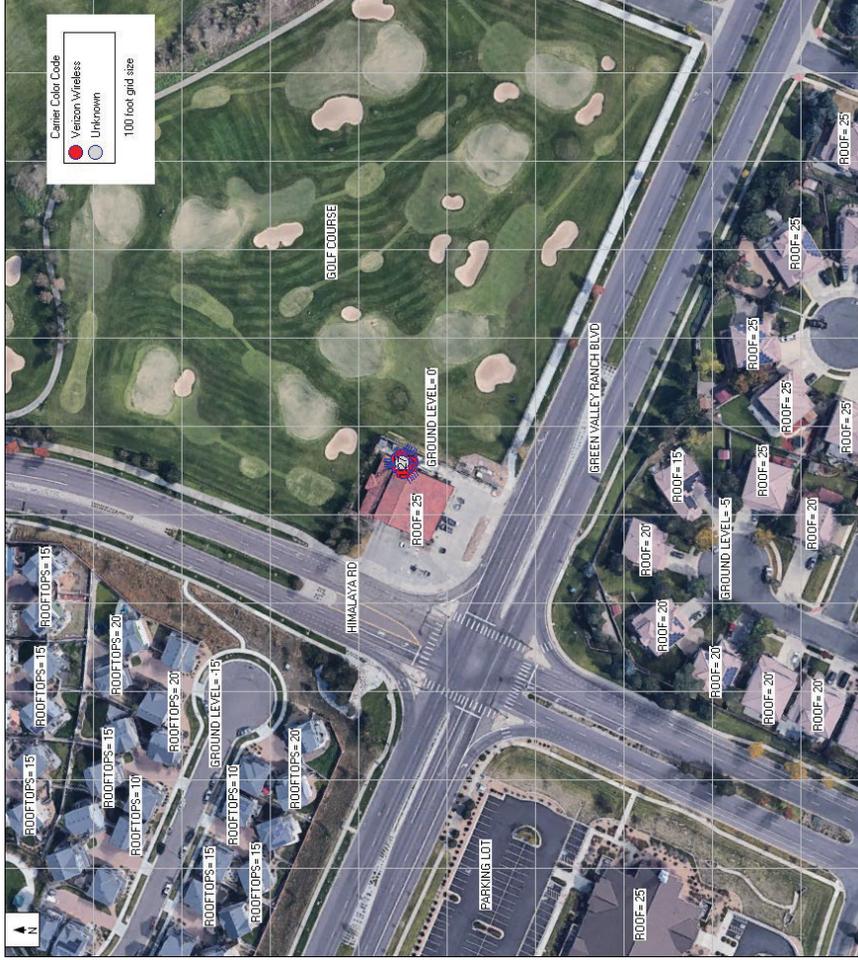
**Potentially Non-Compliant Co-Locator Areas: Verizon Responsibility**

*The following table represents potentially non-compliant co-locators for which Verizon is a 5% General Population MPE (1% Occupational MPE) contributor.*

AT&T	T-Mobile	Sprint	US Cellular	Unknown	Other
<input type="checkbox"/>	Insert Co-Locator				
					Insert Co-Locator
					Insert Co-Locator
					Insert Co-Locator



b. Signage/Barrier Diagram



Final Compliant Configuration	GUIDELINES	NOTICE	CAUTION	WARNING	INFORMATION	BARRIER/MARKER
Access Point(s)	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#]	☐ [#] N/A

NOTE: The table above represents EVERY compliance item that MUST be implemented at this location.



**c. Signage/Barrier Installation Detail**

Mitigation Actions Required/Taken												
	GUIDELINES	NOTICE	NOTICE	NOTICE	CAUTION	CAUTION	WARNING	WARNING	NO INFO	NO INFO	BARRIER/MARKER	
Access Point(s)	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> N/A
Alpha	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> N/A
Beta	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> N/A
Gamma	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> N/A
	ADD	REM	ADD	REM	ADD	REM	ADD	REM	ADD	REM	ADD ONLY	

**NOTE:** The table represents either the signage/barriers installed / removed OR items required by the market (if mitigation is not installed by consultant/vendor).

SPECIAL MITIGATION INSTRUCTIONS	
Items to be Installed	Access: No action required Alpha: No action required Beta: No action required Gamma: No action required
Items to be Removed	N/A
Items to be Repaired/Replaced	N/A



**5. Appendix C: RF Consultant Certifications**

**a. Preparer Certification**

I, Kevin Nardi, the preparer of this report, am fully aware of and familiar with the rules and regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also fully aware of and familiar with the Verizon Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

*Kevin Nardi*

**b. Reviewer Certification**

I, David C. Cotton, Jr., am the reviewer and approver of this report, am fully aware of and familiar with the rules and regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I am also fully aware of and familiar with the Verizon Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.



## 6. Appendix D: Reference Information

### a. FCC Rules & Regulations

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards “incorporate prudent margins of safety.” The following represents explanations of the most applicable information:

#### Two Classifications for Exposure Limits

<p><b>Occupational</b> – Applies to situations in which persons are “exposed as a consequence of their <i>employment</i>” and are “<i>fully aware</i> of the potential for exposure and can <i>exercise control</i> over their exposure”.</p>	<p><b>General Population</b> – Applies to situations in which persons are “exposed as a consequence of their employment <i>may not be made fully aware</i> of the potential for exposure or <i>cannot exercise control</i> over their exposure”. Generally speaking, those without significant and documented RF Safety &amp; Awareness training would be in the General Population classification.</p>
---	---

#### Environment Classification

<p><b>Controlled</b> – Applies to environments that are restricted or “controlled” in order to prevent access from members of the General Population classification.</p>	<p><b>Uncontrolled</b> – Applies to environments that are unrestricted or “uncontrolled” that allow access from members of the General Population classification.</p>
--	---

<i>Limits for Occupational/Controlled Exposure</i>		
Frequency Range (MHz)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time (minutes) ( E  <sup>2</sup> ,  H  <sup>2</sup> , or S)
300-1500	f/300	6
1500-100,000	5	6
<i>Limits for General Population/Uncontrolled Exposure</i>		
Frequency Range (MHz)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time (minutes) ( E  <sup>2</sup> ,  H  <sup>2</sup> , or S)
300-1500	f/1500	30
1500-100,000	1	30
<i>f = frequency in MHz</i>		

#### Significant Contribution to the RF Environment

<p>Any carrier contributing an aggregate MPE percentage of 5 or more (to the applicable RF Environment Classification) is defined as a significant contributor. This means that if any area is determined to be out of compliance with FCC rules, all significant contributors are jointly responsible for correcting any deficiencies.</p>
---

### b. Occupational Safety and Health Administration (OSHA) Requirements

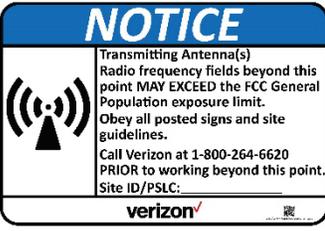
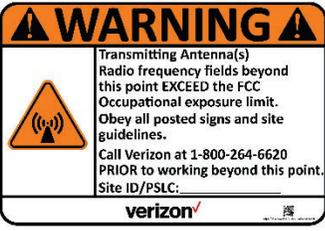
A formal adopter of FCC Standards, OSHA stipulates that those in the Occupational classification must complete training in the following: RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
<ul style="list-style-type: none"> <li>• Utilization of good equipment</li> <li>• Enact control of hazard areas</li> <li>• Limit exposures</li> <li>• Employ medical surveillance and accident response</li> </ul>	<ul style="list-style-type: none"> <li>• Employ Lockout/Tag out</li> <li>• Utilize personal alarms &amp; protective clothing</li> <li>• Prevent access to hazardous locations</li> <li>• Develop or operate an administrative control program</li> </ul>



**c. RF Signage**

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines. These areas must be demarcated by conspicuously posted signage that identifies the potential exposure. Signage **MUST** be viewable regardless of the viewer's position.

GUIDELINES	NOTICE	CAUTION	WARNING
<p>This sign will inform anyone of the basic precautions to follow when entering an area with transmitting radiofrequency equipment.</p>	<p>This sign indicates that RF emissions may exceed the FCC General Population MPE limit.</p>	<p>This sign indicates that RF emissions may exceed the FCC Occupational MPE limit.</p>	<p>This sign indicates that RF emissions may exceed at least 10x the FCC Occupational MPE limit.</p>
			

NOC INFORMATION	
<p>Information signs are used as a means to provide contact information for any questions or concerns. They will include specific cell site identification information and the Verizon Wireless Network Operations Center phone number.</p>	

**d. Physical Barriers**

Physical barriers are control measures that require awareness and participation of personnel. Physical barriers are employed as an additional administration control to complement RF signage and physically demarcate an area in which RF exposure levels may exceed the FCC General Population limit. **Example:** chain-connected stanchions

**e. Indicative Markers**

Indicative markers are visible control measures that require awareness and participation of personnel, as they cannot physically prevent someone from entering an area of potential concern. Indicative markers are employed as an additional administration control to complement RF signage and visually demarcate an area in which RF exposure levels may exceed the FCC General Population limit. **Example:** paint stripes.



## 7. Appendix E: Roofmaster™

RoofMaster™ is the software package that Waterford Consultants created to model RF environments associated with multiple emitters where the potential exists for human exposure. Based on the computational guidelines set forth in OET Bulletin 65 from the Federal Communications Commission (FCC), RoofMaster™ considers the operating parameters of specified RF sources to predict the overall Maximum Permissible Exposure possible at a given location. These theoretical results represent worst-case predictions as emitters are assumed to be operating at 100% duty cycle.

From the FCC document:

*“The revised OET Bulletin 65 has been prepared to provide assistance in determining whether proposed or existing transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) fields adopted by the Federal Communications Commission (FCC). The bulletin offers guidelines and suggestions for evaluating compliance.”*

[http://transition.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins/oet65/oet65.pdf](http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)



## **8. Appendix F: Qualifications of Waterford Consultants, LLC**

Waterford Consultants, LLC [Waterford] provides technical consulting services to clients in the radio communications and antenna locating industry. Waterford retains professional engineers who are placed in responsible charge of the processes for analysis.

Waterford is familiar with 47 C.F.R. § § 1.1307 and 1.1310 along with the general rules, regulations, and policies of the FCC. Waterford work processes incorporate all specifications of FCC Office of Engineering and Technology, Bulletin 65 (“OET65”), from the website: [www.fcc.gov/oet/rfsafety](http://www.fcc.gov/oet/rfsafety) and follow criteria detailed in 47 CFR § 1.1310 “Radiofrequency radiation exposure Limits”.

Within the technical and regulatory framework detailed above, Waterford developed tools according to recognized and generally accepted good engineering practices. Permissible exposure limits are band specific, and the Waterford computerized modeling tools correctly calculate permissible exposure based on the band(s) specified in the input data. Only clients and client representatives are authorized to provide input data through the Waterford web portal. In securing that authorization, clients and client representatives attest to the accuracy of all input data.

Waterford Consultants, LLC attests to the accuracy of the engineering calculations computed by those modeling tools. Furthermore, Waterford attests that the results of those engineering calculations are correctly summarized in this report



## 9. Appendix G: Statement of Limiting Conditions

Due to the complexity of some wireless sites, Waterford Consultants has created this report utilizing best industry practices and due diligence. Waterford Consultants cannot be held accountable or responsible for anomalies or discrepancies due to actual site conditions (i.e., mislabeling of antennas or equipment, inaccessible cable runs, inaccessible antennas or equipment, etc.) or information or data supplied by Wireless Carrier, the site manager, or their affiliates, subcontractors or assigns.

Waterford Consultants has provided the results of a computer-generated model in this MPE Site Compliance Report to show approximate dimensions of the site, and the model results is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Waterford Consultants' recommendations.

Waterford Consultants will not be responsible for any existing conditions or for any engineering or testing that might be required to discover whether adverse safety conditions exist. Because Waterford Consultants is not an expert in the field of mechanical engineering or building maintenance, this MPE Site Compliance Report must not be considered a structural or physical engineering report.

Waterford Consultants obtained information used in this MPE Site Compliance Report from sources that Waterford Consultants considers reliable and believes them to be true and correct. Waterford Consultants does not assume any responsibility for the accuracy of such items that were furnished by other parties.

## Exhibit C — City's Minimum Technical Standards

Note: Some standards may not apply to your facility due to frequency of operation or type of service.

### 1.0 General

1.1 Posting of Information. The following information shall be posted on or near your cabinet:

Copy of FCC license (if applicable)

Equipment Identification Card with the following information:

Transmit and receive frequencies (or frequency bands in case of wireless operators)

Type of service

Authorized output power & ERP

Antenna model number

Transmission line model number and type

Name of licensee

Contact information for responsible person (name, phone, email)

Unidentified equipment shall be considered unauthorized and may be red tagged and removed after 30 days.

1.2 Installations at City Fire Stations. The City may require that the Tenant (Licensee) upgrade City radio equipment to ensure interference-free coexistence. Specifically, there is a problem with installing an isolator on the existing 900 MHz Alligator Model 1888 MAS transceiver used at most City fire stations. The isolator must be installed only on the transmit line, but the transceiver uses a duplexed (switched) output whereby both the transmitter and the receiver share the same antenna line. Similarly, separate cavity filters are required for the receiver and transmitter, but it is not possible to install both on a single duplexed line. For this reason, the City usually directs that the Alligator Model 1888 be replaced with a Model 1800 Master unit with separate transmit and receive antenna ports. A duplexer cavity filter should be used to combine transmit and receive into the existing antenna. Contact the City's Technical Representative for recommended vendors for these components.

1.3 Changes. Notify the City's Technical Representative immediately of any changes to frequencies, antennas or other equipment configuration. Obtain City's approval prior to making those changes as required by the Lease (License). Approved changes shall be shown on an updated Equipment ID Card.

### 2.0 Mobile Wireless Services

2.1 Land Mobile Radio Filter and Isolator Requirements. For land mobile radio (LMR), as a minimum, each transmitter shall employ a dual stage isolator followed by a single cavity

bandpass filter. All transmitters shall have built-in or external harmonic (low pass) filters. The low pass filter must be a true low pass filter, not a notch filter tuned to just one or two harmonic frequencies. Harmonic rejection shall be at least 60 dB at the second harmonic and at least 50 dB at the third harmonic. The following minimum isolator and bandpass cavity filter specifications apply:

30-50 MHz

Isolators - None required.

TX cavity - minimum of 20 dB rejection at + 0.5 MHz

72-76 MHz

Isolators - Minimum of 25 dB

TX cavity - minimum of 20 dB rejection at + 0.5 MHz

138-174, 216-222 MHz

Dual Stage Isolators - minimum of 60 dB

TX cavity - minimum of 20 dB rejection at + 1.5 MHz

406-512 MHz

Dual Stage Isolators - minimum of 60 dB

TX cavity - minimum of 20 dB rejection at + 3.5 MHz

698-941 MHz (excluding airphone)

Dual Stage Isolators - minimum of 60 dB

Tx cavity - minimum of 20 dB rejection at + 6 MHz

Explanation. The bandpass filter and lowpass filter must follow the isolator because ferrite isolators are nonlinear and can create harmonics. Please note that most bandpass cavity filters will pass odd harmonics of the tuned frequency, so an external lowpass filter following the isolator is also required. Transmitter combiners will be considered on a case-by-case basis. Please provide all combiner technical information to the City's Technical Representative.

2.2 Airphone (849-851 MHz transmit, 894-896 MHz receive)

Transmitter out-of-band emissions shall not cause harmful interference to cellular base station receivers (824-849 MHz). Tenant (Licensee) shall submit plans, including bandpass filter response curves, to the City's Technical Representative for approval prior to installation. Tenant (Licensee) shall install adequate receiver bandpass filtering to preclude receiver desensitization or receiver intermodulation caused indirectly by cellular base stations on the site.

2.3 LMR Duplexers. Notch duplexers are not adequate. The duplexer must also have a bandpass characteristic to ensure other transmit signals do not enter the transmitter or over drive the receiver. This is especially important for VHF repeaters which are vulnerable to FM broadcast signals and other closely-spaced VHF transmitters.

2.4 Personal Wireless Services. These services include, but are not limited to the 698-806, 806-

869, 1710-1755, 1850-2000, 2110-2155, 2500-2600 MHz bands (excluding 700 and 800 MHz public safety bands). Because the wireless provider is assumed to have exclusive use of a band of frequencies, out-of-band emissions are expected to be attenuated significantly by the manufacturer's standard combiners, duplexers and cross-band couplers. Ferrite isolators may not be required. Submit your plans to the City's Technical Representative for approval.

2.5 Unlicensed Band (License-Free) Radios. Unlicensed band radios and shared-band services, including, but not limited to those operating in the 902-928 MHz, 2.4-2.4835 GHz, 3.5 GHz, 4.9 GHz (public safety only) and 5 GHz bands are not allowed unless specifically authorized in the Tenant's (Licensee's) Lease (License). When authorized, Tenant (Licensee) shall not change operating frequencies without first getting approval from City. License-free radios are notorious for their poor quality in a harsh RF environment and specific make, model and technical specifications must be provided to the City's Technical Representative for approval. Additional protective devices, shielded CAT 6 cable and shielded NEMA cases may be required before such devices can be installed on the tower.

2.6 Receivers. The site may have relatively high radio frequency (RF) levels in all mobile radio bands. Your receiver amplifier must be robust to work in this environment. Ensure the receiver has good intermodulation (IM) rejection and high 1 dB compression point. If interference is encountered and we find the receiver is not performing up to the standards exhibited by state-of-the-art equipment, the City may require receiver improvements or upgrades before requiring changes to other tenant (licensee) equipment or configurations. This requirement applies to both new and existing tenants (licensees).

Filters are required for mobile radio receivers. Single receivers must employ a minimum of a single 7" diameter (or equivalent) cavity bandpass filter with a rejection curve corresponding to 1 dB insertion loss or better. Additional filter isolation may be required in special cases. Receiver multicouplers must use a bandpass filter (preselector) prior to the multicoupler amplifier.

2.7 Antennas. Select antennas designed to minimize passive intermodulation generation. Note that antennas that pass intermodulation tests at the factory may not provide good intermodulation rejection after years of exposure to heat, cold, vibration from wind, and humidity. Only new antennas are allowed for new installations. Select antennas specifically designed to reject intermodulation over the life of the antenna. Unless the antenna is a duplex configuration, transmit and receive antennas should be separated vertically on the tower. If the tower is owned by the City, the City will designate antenna locations. Antennas must be DC grounded to the tower for lightning protection.

2.8 Transmission Lines. Coaxial cable should be grounded at the top and the bottom of the run with an Andrew ground kit or equivalent. Ensure that ground conductors run straight down with no sharp bends because bends will increase the impedance of the grounding conductor. We also require that the line be marked so we can identify it later. We suggest bands of colored electrical tape at the bottom, middle and top of the run (similar to a resistor color code). Install a Huber-Suhner (or equivalent) coaxial surge arrestor at the bulkhead. All exterior transmission lines must be solid outer conductors. If possible, receive and transmit lines should be separated by at

least one foot from cabinet to antenna.

2.9 Connectors. Connectors are often sources of RF leakage and passive intermodulation. UHF connectors (PL259) are not allowed on connections external to the radio cabinet. Type “N” connectors are allowed below 512 MHz. 7/16 DIN connectors should be used at 698 MHz and above and are required above 1.7 GHz. Connectors using dissimilar metal contacts or ferrous materials (e.g., nickel plating) are not allowed. The preferred connector uses a silver plated body with gold plated inner conductor. Brass bodies and silver or brass inner conductors are also allowed.

2.10 Additional Protective Devices May Be Required. The specifications above are minimum requirements. Additional protective devices may be required based upon evaluation of the following information:

- Theoretical TX mixes, particularly second and third order
- Antenna location and type
- Combiner/multicoupler configurations
- Transmitter specifications
- Receiver specifications
- Historical problems
- Transmitter to transmitter isolation
- Transmitter to antenna isolation
- Transmitter to receiver isolation
- Calculated and measured level of IM products
- Transmitter output power
- Transmitter ERP
- Spectrum analyzer measurements
- VSWR measurements
- Existing cavity selectivity
- Antenna to antenna proximity

### **3.0 FM & IBOC Broadcast (Part 73, ERP > 1 kW)**

3.1 FM Broadcast Transmitters. FM and IBOC Broadcast transmitters will be either combined with other stations into a common antenna or stand-alone. If combined, the combiner design shall be approved by the City's Technical Representative. If stand-alone, the transmitter shall employ a bandpass cavity filter with the following minimum performance specifications:

3.1.1. Rejection. The bandpass filter shall provide the following minimum rejection for Class C, C0 and C1 stations:

From Center +/-	Minimum Rejection
800 kHz	22 dB
1 MHz	28 dB
1.2 MHz	32 dB

- 1.4 MHz 38 dB
- 1.6 MHz 43 dB

Note that four cavities are required to meet this specification. Class C2 and C3 stations may use three-cavity filters. These filter requirements also apply to stations with FM & IBOC combined outputs. A stand alone IBOC transmitter and antenna shall comply with the following requirements: IBOC ERP greater than 5,000 Watts: 4 cavity filter (see rejection above), IBOC ERP less than or equal to 5,000 Watts: 3 cavity filter.

3.1.2 Gain Flatness. +/-0.5 dB from +/-200 kHz from center frequency.

3.1.3. Group Delay Flatness. No greater than +/- 150 nanoseconds (symmetrical) in +/- 200 kHz (I.e., minimum to maximum delay difference shall be no greater than 300 nanoseconds in the band  $f_c - 200$  kHz to  $f_c + 200$  kHz).

3.1.4. VSWR. No greater than 1.1:1 in +/- 200 kHz (assuming filter is terminated in perfect 50 ohm load).

3.1.5. Insertion Loss. No greater than 0.3 dB in +/- 200 kHz.

The transmitter should comply with current FCC rules regarding out-of-band emissions at transmitter output (before the bandpass cavity filter). The external filter is required to provide further rejection of out-of-band emissions to ensure electromagnetic compatibility with other users on the site.

3.2 FM Broadcast Antennas. FM Broadcast antennas mounted below 250' AGL (center of radiation) shall employ short element spacing to reduce downward radiation and ensure compliance with CFR 47, Parts 1.1307-1.1310. This requirement does not apply to stations that employ a single element antenna. Examples of short element spacing are a 6 bay antenna with half-wavelength spacing or an 8 bay antenna with 3/4 wavelength spacing. Submit a plot of predicted power density versus distance at ground level for City's Technical Representative approval.

#### **4.0 Full-Power Television**

4.1 Full-power television transmitters shall include band pass and low pass filters.

4.2 For television transmitters, measured out-of-band emissions (including harmonics) greater than 3 MHz from the respective channel edge shall be more than 80 dB below the measured power over the entire channel. Both measurements shall use a 6 MHz measurement bandwidth.

#### **5.0 Low Power Television (analog and digital)**

5.1 Low Power Television (LPTV) transmitters and television translators must have low pass filters that attenuate all harmonics and spurious products at least 80 dB below the power

measured at the carrier frequency. To facilitate measurements of spurious products, each LPTV and translator transmitter shall have installed a line section and appropriate directional coupler element. For routine use, the line section may employ a standard DC element and be connected to a wattmeter capable of measuring forward and reflected power. In addition, the Tenant (Licensee) shall own or have access to an RF load capable of dissipating the full power of the transmitter for troubleshooting purposes.

## **6.0 Grounding, Bonding and Shielding**

6.1 Shielding. RF interference can get directly into the electronics of a receiver or transmitter. Cabinet shielding must be in place and maintained to the manufacturer's specifications. Do not leave cabinet doors open because open cabinet doors defeat the shielding.

6.2 Grounding. Equipment grounding and bonding should be accomplished in accordance with Mil Std 188-124, Military Handbook 419 and Motorola R56. Contact the City's Technical Representative for guidance on grounding and bonding at your particular facility.

## **7.0 Site Work**

7.1 Tower Work Insurance and Experience Requirements. All tower riggers or installers of antennas, transmission lines, cabinets, wiring or similar hardware or apparatus must meet the minimum basic requirements of the City. These will include, but not be limited to, the following:

- The rigging company must have a current Certificate of Insurance on file with the City. The certificate will include, but not be limited to the following:

1. General Comprehensive & Liability: \$5,000,000
2. Vehicle Liability: \$1,000,000
3. Workman's Compensation Insurance (By Statute)

- Demonstrated experience on similar tower types and similar work activity on similar towers within the past two years with a list of at least two recent clients or professional references with actual knowledge of experience and necessary qualifications, or in lieu thereof; previous working relationship with the City and known by the City's personnel.

City reserves the right, at its sole discretion, to reject the use of any person or tower rigging company on City-owned towers or properties.

7.2 Work Standards. The installation of any and all materials on the tower and in the accompanying shelter must be pre-authorized and approved by the City's Technical Representative. The following guidelines will be strictly enforced:

7.2.1 Equipment or cabinets mounted on platforms will be constructed of galvanized or stainless steel and will be securely attached to the tower members or platforms with J-bolts, U-

bolts or similar clamping devices which do not penetrate tower members or any part of the galvanized coating. All mounting hardware must be hot-dipped galvanized or stainless steel (NOT PLATED). All mounting nuts, bolts, washers or similar must be Grade 5 or better.

7.2.2 Antennas and the mounting thereof must be approved in advance of installation. Data in reference to antenna type, weight, wind loading, gain, bandwidth and mounting details must be provided to the City's Technical Representative and may not be modified or replaced without expressed written permission of City. Installation of antennas on City-owned towers may require a new structural study at the Tenant (Licensee)'s expense.

7.2.3 Transmission lines and hardware must be approved in advance of installation by the City's Technical Representative and must be specified as to manufacturer, size and type and shown on the City's New Tenant Questionnaire. All the mounting hardware must be of appropriate type and design to support the transmission lines with strain-reliefs installed at the manufacturer's recommended intervals. Under no circumstances will stainless steel automotive-type hose clamps be used to secure transmission lines or cables to tower members. Where not previously designated, all lines will be positioned on the tower to minimize wind loading and provide a minimum of obstruction to climbing or removal/replacement of other lines. Each line will be mounted independently of other lines on the tower. Cable trays, waveguide entrances, tower ladders, elevator rails and other similar members are to be kept clear of all cables on the tower. Stainless steel lashing ties are acceptable for use on the tower but are not to be used as strain reliefs.

7.2.4 Antenna jumper cables or cables to/from crossband couplers or similar devices on the tower will be kept to minimum required lengths and will be made of solid shield outer conductor cables with outer jackets capable of withstanding severe weather and ultraviolet rays. All such cable types must be pre-approved by the City.

7.2.5 UNDER NO CIRCUMSTANCES –

- will welding or drilling of tower members be allowed;
- will modifications to the tower, bridge, building entrance fittings or similar be permitted;
- will transmission line splices (a pair of connectors at other than the top or bottom of the run on the tower) be permitted except by prior approval or necessitated by damage only repairable by splicing;
- will any tampering, retuning, rerouting or other modifications be permitted to equipment owned by City or other tenants.

7.2.6 All installations will be performed in accordance with good engineering practice and within the guidelines of this document. Any deviation from these minimum requirements and technical standards must be approved in writing prior to installation or modification.

7.3 Removal of Unused Antennas and Lines. Tenant (Licensee) shall remove all unused antennas, transmission lines and associated mounting hardware from City's tower within 90 days of the date an antenna is no longer in service.

7.4 NO PRESENT INSTALLATION WILL BE "GRANDFATHERED" and must conform to these work standards within a reasonable time period to be determined by the City's Technical Representative. Periodic inspections may be performed to ensure that all installations meet technical standards.

## **8.0 Shelters**

8.1 Cable Dressing Inside Building or Shelter. All wiring and cables within a given rack will be properly dressed and/or bundled with cable ties with excess cut close to the barbs. Twisted wire, tape, rope, twine, phone wire and similar bits of debris usually available on site ARE NOT ACCEPTABLE substitutes for proper securing hardware. All inter-rack cables and wiring must be properly routed and utilize the cable trays provided even if between adjacent racks. Overhead cables and RF lines must be easily removed or reworked within the cable trays. Proper care must be taken to ensure that new cables added to the trays are not stressed or intertwined with existing cables. OVERHEAD CABLES MAY NOT CROSS PERPENDICULARS OR BE SUSPENDED IN MID AIR WITHOUT SUPPORTS. NO SUPPORTS MAY BE INSTALLED WITHOUT PRIOR APPROVAL. All long cable runs must be properly identified at each end indicating the opposite cable end address. All cabling within the building must be cut to proper length except phasing harnesses, where required.

## **9.0 Towers**

9.1 Tenant (Licensee) may not erect new towers without the City's prior written consent, which may be granted or denied in City's sole discretion, and towers that are approved may only be constructed after plans for the tower have been approved by the City and by the zoning authority.

9.2 New towers shall comply with TIA-222-G or the most recent edition adopted by the local zoning authority. Changes to an existing tower, including addition or replacement of antennas requires that TIA-222-G or the most recent edition be used. Tenant (Licensee)-owned towers that present an immediate safety hazard shall be corrected by Tenant (Licensee) regardless of the status of the current lease or the particular edition of TIA-222 in use at the time of tower construction. Installation of antennas on City-owned towers may require a new structural study at the Tenant (Licensee)'s expense.

## **10.0 Permits**

10.1 Tenant (Licensee) shall comply with all local and Federal regulations. Tenant (Licensee) is responsible for acquiring all applicable permits, including, but not limited to FCC construction permits and building permits. Tenant (Licensee) is also responsible for performing any required studies, including RF exposure and RF interference studies required by the FCC, local government, and City. Tenant (Licensee) shall furnish all applicable permits, studies, and

approvals to the City for approval before starting any construction, including antenna installation.

## **11.0 Radio Frequency Safety**

11.1 The engineering, design, configuration, installation, and maintenance of high power (> 1 kW ERP) radio facilities on the site shall be accomplished in a manner that minimizes downward radiation. Changes to proposed systems may be directed by City to comply with this objective.

11.2 Everyone on the site shall follow these guidelines:

- All personnel entering the site must be authorized
- Obey all posted signs
- Assume all antennas are active unless proven otherwise
- Before working on an antenna, notify the owner and disable the transmitter
- Use a radio frequency (RF) personal monitor when working near antennas
- Never operate transmitters without shields

11.3 Power densities on towers can be much higher than at ground level. For this reason, tower climbers should request power reductions from high-power tenants and carry RF personal monitors when climbing towers. The City's Technical Representative can tell you which transmitters should be turned down before climbing the tower.

11.4 Federal Government guidelines regarding human exposure to radio frequency energy are found in the Code of Federal Regulations (CFR) Title 47, Parts 1.1307-1.1310.



Figure 1 - Warning Sign to be Posted at Base of Tower  
(Available from Tessco, Holaday, Narda and other Sources)

EXHIBIT D



CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
06/29/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Aon Risk Services Northeast, Inc. New York NY Office One Liberty Plaza 165 Broadway, Suite 3201 New York NY 10006 USA	CONTACT NAME:		
	PHONE (A/C. No. Ext): (866) 283-7122	FAX (A/C. No.): (800) 363-0105	
E-MAIL ADDRESS:			
INSURER(S) AFFORDING COVERAGE		NAIC #	
INSURED Verizon Wireless, LLC 1095 Avenue of the Americas New York NY 10036 USA	INSURER A: Liberty Mutual Fire Ins Co		23035
	INSURER B: LM Insurance Corporation		33600
	INSURER C: Liberty Insurance Corporation		42404
	INSURER D:		
	INSURER E:		
	INSURER F:		

Holder Identifier :

COVERAGES CERTIFICATE NUMBER: 570094184968 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> XCU Coverage is Included GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			TB2691550588142	06/30/2022	06/30/2023	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$2,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY			AS2-691-550588-122 AOS AS2-691-550588-132 NH - Primary TL2-691-550588-182 NH - Excess	06/30/2022	06/30/2023	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION						EACH OCCURRENCE AGGREGATE
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			WA569D550588092 AOS WC5691550588082 WI, MN	06/30/2022	06/30/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE-EA EMPLOYEE \$1,000,000 E.L. DISEASE-POLICY LIMIT \$1,000,000

Certificate No : 570094184968

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Site Location: 1580 E. Virginia Ave., Denver, City Reference: DFD 21, VZW Site Name: DEN North Wash Park, Location Code: 185057. The City and County of Denver, its elected and appointed officials, employees and volunteers are included as Additional Insured with respect to the General Liability policy. where permitted by law, the Named Insured parties listed herein waive all rights against The City and County of Denver, its elected and appointed officials, employees and volunteers listed herein for recovery of damages to the extent these damages are covered by the above-referenced General Liability, Automobile Liability and Workers' Compensation policies and, as further limited by written contract between the parties.

CERTIFICATE HOLDER

CANCELLATION

City and County of Denver Attn: Real Estate 201 W. Colfax Ave., Dept. 1010 Denver CO 80202 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE  
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# EXHIBIT E

**From:** [Edrich, Matthias M.](#)  
**To:** [Spritzer, Kathryn - DOF Administrator II](#); [Heydman, Laurie J. - CAO Asst City Attorney - Sr](#)  
**Cc:** [Varty, Johna - CAO CL0357 Assistant City Attorney Senior](#)  
**Subject:** RE: [EXTERNAL] Re: Review for bond compliance-DFD Station 29  
**Date:** Friday, January 13, 2023 9:37:47 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)

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Thank you for your emails, Laurie and Kathryn,

The proposed license agreement with Cellco Partnership with respect to the antenna at Fire Station 29 will not result in private business use of the Elevate Denver bonds.

By the way, I had trouble finding the fire station in Google Maps using the address in the draft agreement (4800 N. Himalaya Rd, Denver, CO 80249). That address leads to a spot farther north. Without the "North" reference, Google Maps lead me to the actual location. Perhaps that is a Google glitch, but I wanted to let you know.

Sincerely,

Matthias

**Matthias M. Edrich**

Tax Partner

**Kutak Rock LLP**

1801 California Street, Suite 3000, Denver, CO 80202

[matthias.edrich@kutakrock.com](mailto:matthias.edrich@kutakrock.com)

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