File No. 221120 **Committee Item No.** 1
Board Item No. 13

COMMITTEE/BOARD OF SUPERVISORS

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Committee: Budget and Finance Committee **Date** November 30, 2022
Board of Supervisors Meeting **Date** December 6, 2022

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OTHER **(Use back side if additional space is needed)**

☒	☒	PUC Resolution No. 22-0187 10/24/2022
☒	☒	PUC Resolution No. 17-0195 9/12/2017
☒	☒	Board Resolution No. 405-17 11/9/2017
☒	☒	PLN CEQA Determination 9/26/2022
☐	☒	PUC Presentation 11/30/2022
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Completed by: Brent Jalipa **Date** November 22, 2022
Completed by: Brent Jalipa **Date** December 1, 2022

[Site Use Agreement - VB Nimbus, LLC - Radio Equipment - 32322 S Corral Hollow Road, Tracy - Initial Annual Rent of $30,000]

Resolution authorizing the General Manager of the San Francisco Public Utilities Commission (SFPUC) to enter into a Site Use Agreement with VB Nimbus, LLC, a Delaware limited liability company, for the installation, operation, maintenance, repair, and replacement of radio equipment at 32322 S Corral Hollow Road in Tracy, at an initial annual use fee of $30,000 with annual increases of three percent for an initial five-year term, commencing January 1, 2023, through December 21, 2028, with four five-year extension options for the SFPUC Water Enterprise Radio Replacement Project (Project), pursuant to Charter, Section 9.118; affirming the Planning Department's determination that the project is categorically exempt from environmental review under the California Environmental Quality Act; and to authorize the General Manager of the SFPUC to enter into amendments or modifications to the Agreement that do not materially increase the obligations or liabilities to the City and are necessary to effectuate the purposes of the Agreement or this Resolution.

WHEREAS, The San Francisco Public Utilities Commission (SFPUC) Water Enterprise currently operates a low-band voice radio system for communications across its seven-county, 2,400-mile coverage area; and

WHEREAS, On November 9, 2017, by Resolution No. 405-17, the Board of Supervisors approved the Water Enterprise Radio Replacement Project (Project); and

WHEREAS, The SFPUC seeks to replace three outdated SFPUC radio systems with one unified radio system that will provide radio coverage for SFPUC employees working on SFPUC infrastructure from the Hetch Hetchy Reservoir to San Francisco and enhance business and disaster communications; and

WHEREAS, The SFPUC seeks certain radio site locations to construct, install, use, operate, maintain, enhance, repair, and replace radio communications equipment to provide sufficient communications coverage throughout the Water Enterprise operating area; and

WHEREAS, The SFPUC selected the Corral Hollow radio communications site because a radio communications system on the premises will provide key radio coverage for the Water Enterprise's maintenance and service crews for Tuolumne, San Joaquin, and Alameda Counties, more specifically, from Sonora to Tracy, and specific coverage for the City's power line infrastructure in remote San Joaquin and Alameda Counties; and

WHEREAS, The City and County of San Francisco (City), through the SFPUC, as licensee, desires to enter into a five-year Site Use Agreement (Agreement), with four, five-year extension options with VB Nimbus, LLC, a Delaware limited liability company, as landlord (Owner), to use approximately 345 square feet of ground space and certain tower space on the Owner's existing tower located at 32322 S Corral Hollow Road in Tracy, California (Premises) for the construction, installation, operation, maintenance, repair and replacement of SFPUC radio equipment at a rental rate of $30,000 per year, with annual increases of 3%; and

WHEREAS, The Planning Department, by letter dated September 26, 2022, which is on file with the Clerk of the Board of Supervisors in File No. 221120 and which is incorporated herein by this reference, determined the Project to be categorically exempt from environmental review under California Environmental Quality Act (CEQA) Guidelines, Section 15301, Class 1 (Existing Facilities) and CEQA Guidelines, Section 15302, Class 2 (Replacement and Construction) under Case No. 2022-008210ENV; and

WHEREAS, The Project will be funded by the Fiscal Year 2022-23 Water Enterprise Operating Budget; and

WHEREAS, A delay in approving this Agreement will deny the SFPUC the opportunity

to lease space at a critical location for its radio replacement project; and

WHEREAS, On October 24, 2022, by Resolution No. 22-0187, a copy of which is on file with the Clerk of the Board of Supervisors in File No. 221120, the SFPUC Commission approved the terms and conditions of the Agreement and authorized the General Manager of the SFPUC to execute the Agreement, subject to Board of Supervisors' approval under Charter, Section 9.118; and

WHEREAS, Charter, Section 9.118(c) requires the Board of Supervisors approval of leases having a term of ten or more years; now, therefore, be it

RESOLVED, That the Board of Supervisors hereby approves and authorizes the General Manager of the SFPUC to execute the Agreement, in substantially the form on file with the Clerk of the Board of Supervisors in File No. 221120, which is hereby declared to be a part of this Resolution as if set forth here in fully; and, be it

FURTHER RESOLVED, That the Board of Supervisors adopts the San Francisco Planning Department's determination that the Project is categorically exempt from environmental review under CEQA; and, be it

FURTHER RESOLVED, That the Board authorizes the General Manager of the SFPUC to enter into any amendments or modifications to the Agreement, including, without limitation, the modification, addition, or deletion of exhibits, and to enter into any related documents, instruments, memoranda, or other agreements reasonably necessary to consummate the transaction contemplated in the Agreement that the General Manager determines, in consultation with the City Attorney, are in the best interests of the City, do not materially increase the liabilities or obligations of the City or materially diminish the benefits to the City, and to comply with all applicable laws, including the City Charter; and, be it

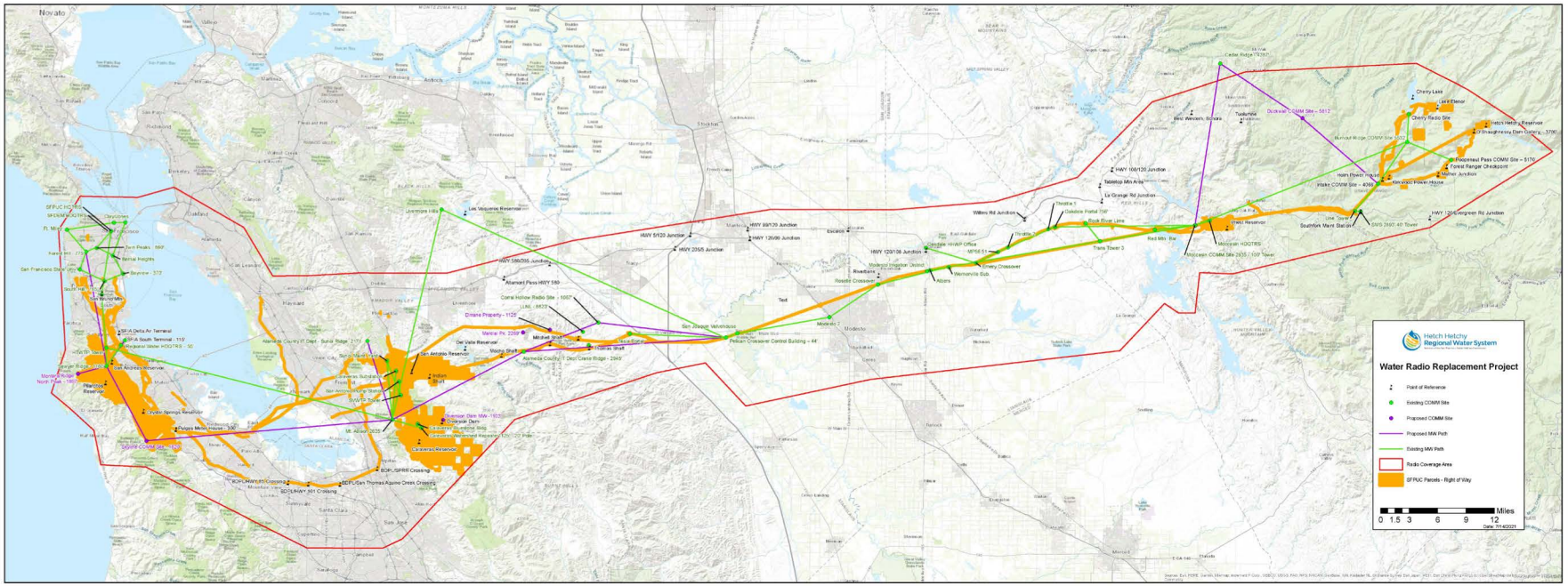
FURTHER RESOLVED, That within thirty (30) days of the execution of the Agreement the General Manager of the San Francisco Public Utilities Commission shall provide the signed contract to the Clerk of the Board for inclusion in the official file.

File No. 221120
Site Use Agreement - VB Nimbus, LLC - Radio Equipment – 32322 S Corral Hollow Road, Tracy - Initial Annual Rent of $30,000

Budget and Finance Committee
11/30/2022

Jeremy Spitz
Local Policy and Government Affairs Manager

System Coverage Map

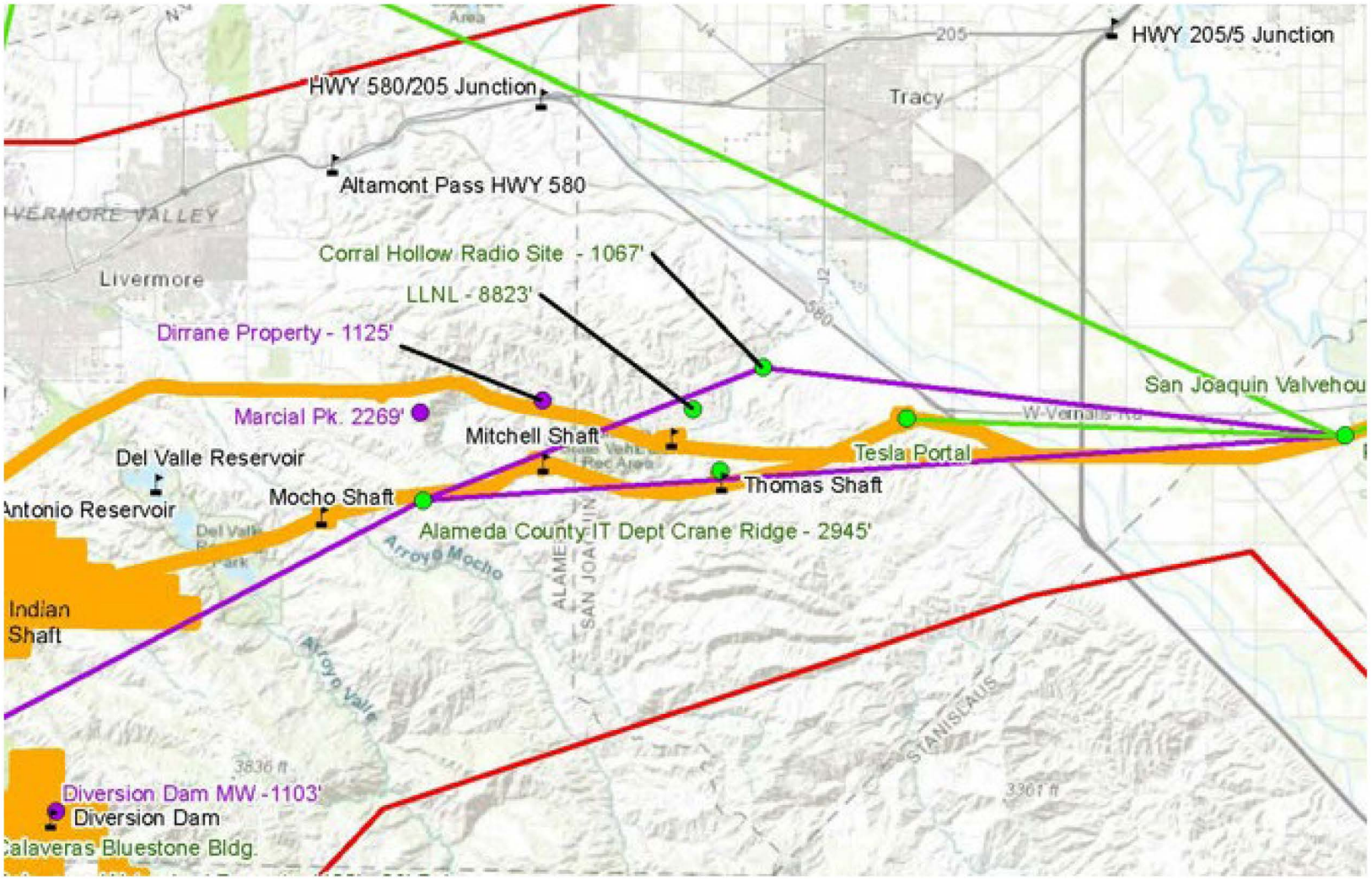


Project/System Highlights

The Water Radio Replacement Project replaces SFPUC's outdated voice radio systems with a modern, unified radio system that enhances coverage and safety for regular and emergency communications from the Sierras to San Francisco.

- Provides voice radio communications coverage for all SFPUC Enterprises across its seven county, 2,400 square mile area of operations.
- Interoperable with CCSF's and mutual aid partners' standard radio systems.
- Integration with City's Department of Emergency Management Motorola 800 MHz, P25 standard, public safety radio system.
- Installation in 29 radio transceivers and dispatch sites.
- Project started January 2018 and is scheduled to be completed in December 2023.
- Project budget is $15 million (includes 8 years of vendor-provided maintenance).

Site Location



Site Use Agreement

- The Agreement includes a five-year term with four, five-year extension options.
- The rental rate is $30,000 per year, with annual increases of 3%.
- The Planning Department has determined the Project at this site to be Categorically Exempt from environmental review under CEQA.

SITE USE AGREEMENT

THIS SITE USE AGREEMENT ("Agreement") is entered into this _____ day of _____, 2022 ("Effective Date"), by and between VB NIMBUS, LLC, a Delaware limited liability company ("Owner"), and CITY AND COUNTY OF SAN FRANCISCO, a California municipal corporation, by and through its Public Utilities Commission, ("User"). Owner and User may each be referred to as a "Party" or collectively as the "Parties".

WHEREAS, Owner owns the communications structure or tower (the "Tower") located on a portion of the real property owned by Owner in San Joaquin County, California, designated as Assessor's Parcel No. 251-120-080-000 and described on Exhibit A attached hereto and incorporated herein (the "Property", and collectively with the Tower, the "Site"). The Tower is located in San Joaquin County, California and has a latitude and longitude of 37.65252222, -121.47806667

WHEREAS, User desires to lease from Owner, and Owner desires to lease to User certain space on the Tower and/or certain ground space on the Property pursuant to the terms and conditions of this Agreement.

NOW, THEREFORE, for good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows.

1. Premises and Use.

Subject to the terms and conditions of this Agreement and the Prime Agreement, if applicable, Owner hereby leases to User, and User leases from Owner (i) certain space on the Tower at the heights set forth on Exhibit B-1 (Colocation Application) (the "Tower Space"), (ii) certain space on the Property measuring approximately 345 square feet (the "Ground Space"), and (iii) certain non-exclusive space running between the Tower Space, Ground Space and certain electrical, fiber, accessory and telephone utility sources located on or about Property for the installation, operation and maintenance of wires, fiber, cables, conduits and pipes (the "Cable Space", and collectively with the Ground Space and Tower Space, the "Premises"). The Tower Space and Ground Space shall be used for the following (together, the "Permitted Use"): the installation, operation and maintenance of the communications equipment, antennas, technology, wires, coaxial cables, and accessory equipment described on Exhibit B-1 (Colocation Application) attached hereto and incorporated herein (collectively, the "Facilities") and for the transmission and reception of communication signals pursuant to and in compliance with all applicable laws, ordinances, rules, and regulations of any governmental entity or agency (federal, state or local) having jurisdiction over the Site and User's operations, including without limitation, the Federal Communications Commission (the "FCC"). In the event User providers Owner installation plans for User's Facilities, such installations plans shall be attached hereto as Exhibit B-2 (Installation Plans).

2. Intentionally Deleted.

3. Inspections.

Subject to the terms and conditions of this Agreement, following the Effective Date, User, its agents, employees, contractors and subcontractors shall have the right to enter upon the Site to inspect and examine the Premises, to perform engineering and environmental tests and studies with respect to the Premises (provided that in no event shall User be permitted to perform any invasive, Phase II or similar environmental testing), to survey the

Premises, and to perform such other studies and tests reasonably necessary to determine the feasibility of the Site for User's Permitted Use (collectively, "Inspections"). Immediately following such entry, User shall restore the Site to its condition existing prior to User, its agents, employees, contractors or subcontractors' entry thereon and remove any equipment, gear or materials brought onto the Site. If such entry or Inspections result in any damage to the Site or exacerbate any previously existing condition, User shall, at User's sole cost and expense, promptly repair and remediate such damage or exacerbation.

4. Term.

The term of this Agreement shall be five (5) years, commencing on the Commencement Date (as hereafter defined) ("Term"). The Term shall commence on the earlier of: (A) the first day of the month in which User commences installation of its equipment on the Premises if such installation commences on or before the 15th day of the month, or the first day of the month after User commences installation of its equipment on the Premises if such installation commences after the 15th day of the month; or (B) November 1, 2022 (such earlier date the "Commencement Date"). User shall have the right to renew this Agreement for four (4) successive five (5) year periods (each, a "Renewal Term") on the same terms and conditions as set forth herein. This Agreement shall be renewed for such successive Renewal Terms, provided User notifies Owner of its intention to renew this Agreement at least one hundred eighty (180) days prior to the commencement of the succeeding Renewal Term. For the purposes of this Agreement, "Term" shall mean the Initial Term and any applicable Renewal Term(s).

5. Initial Installation of Facilities.

(a) Prior to the installation of the Facilities on the Premises:

(i) User shall submit to Owner for Owner's review and approval, which approval shall not be unreasonably withheld, conditioned or delayed: (i) User's final set of installation plans and/or construction and engineering drawings for the Facilities (which approved final set of installation plans and/or construction and engineering drawings and (ii) User's final installation schedule for the installation of the Facilities (collectively, the "Installation Plans"). If Owner rejects all or a portion of the Installation Plans, then the Parties shall cooperate in good faith to amend the applicable item(s) to the extent necessary to cause the Parties to mutually agree on the substance of the Installation Plans. Owner's approval of the Installation Plans shall be in the form of a Notice to Proceed to User (the "Initial Installation NTP"). Owner's approval of the Installation Plans is not a representation that User's Facilities or operations are in compliance with any laws, ordinances, rules or regulations or that User's Facilities or operations will not cause interference with other communications operations on the Site, if any;

(ii) Owner shall perform, at User's sole cost and expense at Owner's then current rate, a structural analysis of the Tower on the basis of applicable ANSI/TIA standards. As of the date of this Agreement Owner's current rate is $(3,500.00). If such structural analysis determines that the Tower requires structural modifications for the Tower to accommodate the weight and/or wind load of the Facilities, then User shall have the right to: (A) to terminate this Agreement upon written notice to Owner, or (B) request that Owner perform, at User's sole cost and expense, the necessary structural modifications to the Tower for the Tower to accommodate the Facilities. If Owner agrees to perform such Tower modifications, then User shall submit a purchase order to Owner for the Tower

modifications and Owner shall thereafter promptly commence performing the structural modifications to the Tower. If Owner does not agree to perform such Tower modifications, then the Parties shall agree to terminate this Agreement in writing; and

(iii) Owner shall perform, at User's sole cost and expense at Owner's then current rate, a structural analysis of the mount User intends to install on the on the basis of applicable ANSI/TIA standards. As of the date of this Agreement Owner's current rate is $(3,500.00). If User has already performed or intends to cause a licensed, professional third-party engineering company to perform such mount analysis, then Owner shall forego performing a mount analysis of User's mount, provided that User shall submit User's mount analysis to Owner for review. Owner shall review, at User's sole cost and expense at Owner's then current rate, User's mount analysis on the basis of applicable ANSI/TIA. If Owner's mount analysis or Owner's review of User's mount analysis determines that the mount User intends to install on the Tower is not structurally capable of supporting the Facilities, then User shall replace such mount with a mount that is structurally capable of supporting the Facilities (as demonstrated by a new mount analysis in accordance with the terms hereof). If Owner is to perform a mount analysis and User does not provide Owner complete and accurate design drawings of User's mount, the Owner shall map User's mount at User's sole cost and expense at Owner's then current rate.

(b) User shall not commence the installation of the Facilities unless the conditions in Section 5(a) are completed and Owner issues User an Initial Installation NTP. User shall notify Owner at least five (5) business days prior to User, its agents, employees, contractors and/or subcontractors commence the installation of the Facilities on the Premises. User shall install the Facilities in accordance with the Installation Plans and in compliance with the standards of good engineering practice and the applicable requirements of the FCC and all other government bodies or agencies with jurisdiction over User, the Facilities and User's operations. If the Tower is painted to be in compliance with certain codes or regulations, then User shall paint its Facilities to match as nearly as possible the color of the Tower. During the installation of the Facilities, User, its agents, employees, contractors and/or subcontractors shall not interfere with Owner's operations at the Site and the operations of their respective lessees, sublessees, and licensees. Upon completing the installation of the Facilities, User shall clear the Site of all debris, machinery, and materials brought to the Site by User its agents, employees, contractors and subcontractors and not intended to remain on the Premises for the operation of User's Facilities.

6. Use Fee.

User shall pay Owner monthly rent in the amount of Two Thousand Five Hundred and No/100 Dollars ($2,500.00) per month (the "Use Fee"), payable on the first day of the month, in advance, beginning on the Commencement Date. The Use Fee for any partial month during the Term shall be pro-rated based on the number of days in such month. On each annual anniversary of the Commencement Date, the Use Fee shall increase by three percent (3%) percent of the Use Fee for the immediately preceding twelve (12) month period. For illustration purposes a Use Fee schedule for the Initial Term is attached hereto as Exhibit B-4 (Use Fee Schedule). The Use Fee shall be sent via ACH or wire transfer to Owner's bank account, which Owner shall notify User of in advance.

If the Use Fee is not paid in accordance with the terms hereof, User will pay interest on the past due amounts at the legal rate permitted by applicable law.

7. Access.

User, its agents, employees, contractors and subcontractors shall have the non-exclusive right to access the Premises using common or designated access routes to the extent reasonably necessary to enable User to install, operate, and maintain the Facilities and to otherwise undertake User's obligations set forth in this Agreement. Notwithstanding the foregoing, User shall have the right to access its ground-based Facilities twenty-four (24) hours a day, seven (7) days a week. User acknowledges that Owner's control of access to the Tower is essential to the safe operations of all parties utilizing the Tower; accordingly, if User wishes to access User's Facilities located on the Tower, User shall provide reasonable advance notice to Owner of User's need to do so and Owner and User shall coordinate a mutually agreeable time for User to access User's Facilities located on the Tower. In the event of an emergency threatening life or property damage, User shall have the right to access its ground-based and tower-based Facilities upon telephonic notice to Owner's NOC at 877-589-6411.

8. Utilities.

(a) User shall at its sole cost and expense initiate, contract for, obtain and pay for any electrical, telephone, or other utility services used by User at the Premises. User agrees to cooperate with Owner's reasonable requests regarding the manner and timing of the installation of User's utilities. A meter shall be installed and maintained by User at User's sole cost and expense which shall separately record the amount of the electrical power used by User. User shall timely pay all charges for electrical power and all other services used by User in connection with the operation of User's Facilities. No additional utilities (water, sewer or gas) will be available at the Premises during the Term. In no event shall Owner be liable for the quality, quantity, failure or interruption of electrical service to the Premises or damages resulting directly or indirectly therefrom by reason of or resulting from any accident, or the need or priority of repairs or improvements to the electrical transmission system to the Site, or by reason of orders of any military, any act or omission of any civil or governmental authority, or any strike, riot, insurrection or invasion, any fire or casualty or any unusually severe weather conditions or any reason beyond the control of Owner.

(b) User shall have the right, at its sole cost and expense, to install a temporary emergency generator on the Property at a location designated and approved by Owner, provided sufficient space is available. The generator must be removed within five (5) days following the emergency need unless otherwise agreed to by Owner. User agrees that any such installation and use of a generator shall be in compliance with all applicable federal, state, and local environmental, health, fire, safety laws and other applicable laws or regulations, now or hereafter enacted or promulgated by any governmental authority having jurisdiction over the Site, including, without limitation, any applicable guidelines promulgated by the United States Environmental Protection Agency (EPA), and the California EPA, whichever is more stringent.

9. Maintenance and Repairs.

(a) Owner shall maintain the portions of the Site it has a legal interest in and the Premises (but not User's Facilities), including all required Tower marking and lighting, in reasonable condition and in compliance with all Federal Aviation Administration and FCC rules and regulations, and shall promptly repair any material damage to the Premises; and perform all necessary maintenance and repairs; provided, however, that when such maintenance and repair is made necessary by or because of the fault of User (reasonable wear and tear and damage by casualty excepted),

User shall reimburse Owner for the reasonable cost thereof. In the performance of its obligation to maintain and repair the Tower, and to allow other lessees to install, remove, relocate, maintain and repair their equipment, it may be necessary from time to time for Owner to require User to temporarily cease transmission activities for a reasonable period under the circumstances but for no longer than twenty-four (24) hours during any event of repair, to turn off electrical power, and/or to make other adjustments to its Facilities or operations. Owner shall use commercially reasonable efforts to schedule such work so as to cause minimum disruption to User's operations and shall provide User with no fewer than forty-eight (48) hours' notice of Owner's need for User to cease transmission activities. User agrees to cooperate with Owner and to comply with and honor Owner's requests for temporary cessation of transmission activities, to turn off electrical power for no longer than twenty-four (24) hours during any event of repair, and/or to make reasonable adjustments to its Facilities or operation, as necessary, to allow orderly performance and carrying out of such work.

(b) User, at its sole cost and expense, shall carry out maintenance of the Facilities, including, but not limited to, the electrical and mechanical maintenance of the Facilities. Maintenance shall be conducted by User in accordance with standards of good engineering practice to assure that at all times the Facilities conform to the applicable requirements of the FCC and all other government bodies or agencies with jurisdiction over User, the Facilities and User's operations.

10. Modifications.

(a) Should User desire to make any installations, modifications, additions, changes, alterations or upgrades to its Facilities or Premises (a "Modification"), User shall complete and submit to Owner for Owner's review and approval, which shall not be unreasonably withheld, conditioned or delayed, a Colocation Application (using Owner's then current form of Colocation Application) detailing User's desired Modification. User shall not be permitted to perform a Modification without Owner's prior written approval, which approval, if granted, shall be in the form of a Notice to Proceed. If the Modification will result in an enlargement of the Premises (whether Ground Space or Tower Space) or increase the weight or wind loading on the Tower beyond the amount originally approved under this Agreement or the amount then existing on the Tower, then Owner shall have the right to condition its approval of a Modification upon (i) an increase to User's then current Use Fee; (ii) Owner performing, at User's sole cost and expense at Owner's then current rate, a structural analysis of the Tower on the basis of applicable ANSI/TIA standards, (iii) Owner performing, at User's sole cost and expense at Owner's then current rate of which Owner has provided User with written notice, a mount analysis of User's mount on the basis of applicable ANSI/TIA standards and (iv) amending this Agreement to memorialize User's Modification. Any approved Modification shall further be subject to User obtaining all applicable governmental licenses, permits and approvals necessary for User to perform the Modification. Owner's approval of a Modification is not a representation that the Modification is in compliance with applicable laws, ordinances, rules or regulations or that the Modification will not cause interference with other communications operations at the Site.

(b) Notwithstanding the foregoing, if the structural analysis performed by Owner in connection with a proposed Modification determines that the Tower requires structural modifications for the Tower to accommodate the weight and/or wind load of User's proposed Modification, then User shall either (i) elect to forego performing the Modification or (ii) request that Owner perform, at User's sole cost and expense, the necessary structural modifications to the Tower for the Tower to accommodate the Modification. If Owner agrees to perform such structural modifications to the Tower, then User shall submit a purchase order to Owner for the Tower modifications and Owner shall thereafter

promptly commence performing the structural modifications to the Tower. If Owner does not agree to perform such structural modifications to the Tower, then User shall forego performing the Modification or the portion thereof adding weight and/or wind load to the Tower.

(c) In the event User performs a Modification without the prior written approval of Owner, such Modification shall be subject to an additional monthly fee in the amount of one hundred fifty percent (150%) of the fair market rental value of the Modification at the time of discovery of such unapproved Modification (the "Additional Use Fee"). The Additional Use Fee shall accrue (i.e., shall be back-billed) from the date the installation of such unapproved Modification commenced.

11. Non-Interference.

(a) If the Facilities or portion thereof (the "Interfering Equipment") cause interference with any equipment placed on the Site prior to the installation of the Interfering Equipment, then User shall take all reasonable steps necessary to correct and eliminate the interference. If such interference cannot be eliminated within forty-eight (48) hours after receipt by User from Owner of written notice of the existence of interference, User shall cease operating and power-down the interfering Equipment (except for intermittent testing for the purpose of correcting such interference) until the interference is corrected. If the interference is not rectified to the reasonable satisfaction of Owner, within thirty (30) business days after receipt by User of such written notice from Owner, User shall remove the Interfering Equipment from the Site. User agrees that it shall not alter the operations of the Facilities or replace, upgrade or otherwise Modify the Facilities in a manner which will cause interference with the operations of any other equipment which is then operating on the Site.

(b) If the communications equipment belonging to another tenant of Owner's on the Site causes interference with the Facilities or portion thereof, as applicable, and the interfering equipment was installed on the Site after the Facilities being interfered with, then Owner will require such tenant to take all steps necessary to correct and eliminate the interference. If such interference cannot be eliminated within forty-eight (48) hours after receipt by Owner of notice from User of the existence of interference, Owner shall take such actions as are permitted by law and can be conducted without breach of the peace such as causing the tenant to cease operating and power-down its interfering equipment (except for intermittent testing for the purpose of correcting such interference) until such interference is corrected. If the interference is not rectified to the reasonable satisfaction of User within thirty (30) days after receipt by Owner of such notice from User, Owner shall exercise the remedies available to it under the tenant's written agreement granting the tenant an interest in the Site to cause such tenant to cease the interfering activity. User agrees to exercise commercially reasonable and good faith efforts to cooperate with Owner and the tenant causing interference to try to resolve any interference issues on the Site.

(c) If antenna power output ("RF Emissions") becomes subject to any restrictions imposed by the FCC or any other government agency for RF Emissions standards on Maximum Permissible Exposure ("MPE") limits, or if the Site otherwise becomes subject to federal, state or local rules, regulations, restrictions or ordinances, User shall comply with Owner's reasonable requests for modifications to the Facilities which are reasonably necessary for Owner to comply with such limits, rules, regulations, restrictions or ordinances. Owner also shall request any other user(s) of the Tower to modify its equipment or otherwise assist in any actions which are reasonably necessary to comply with such limits, rules, regulations, restrictions or ordinances. The RF Emissions requirements of User shall be subordinate to any prior users of the Site. Similarly, the RF Emissions of users subsequent to User shall become subordinate to

any requirements of User. If Owner or User require an engineering evaluation or other power density study be performed to evaluate RF Emissions compliance with MPE limits, then all reasonable costs of such evaluation or study shall be shared equally between Owner, User, and any other users of the Site. If said study indicates that RF Emissions at the Site do not comply with MPE limits, then Owner, User, and any subsequent tenants shall immediately take any steps necessary to ensure that they are individually, and collectively, in compliance with such limits or shall at the demand of Owner cease operations until a maintenance program or other mitigating measures can be implemented to comply with MPE limits. User shall have the right to terminate this Agreement in the event that such mitigation measures cannot be implemented without materially and adversely affecting the operation of the Facilities.

12. Taxes.

Owner shall be responsible for timely payment to the appropriate taxing or governmental authority of the full amount of all taxes and assessments levied upon the Property. Owner shall be responsible for timely payment to the appropriate taxing or governmental authority for the taxes and assessments. Owner shall be responsible for timely payment to the appropriate taxing or governmental authority of the full amount of all taxes and assessments levied upon the Tower and improvements or equipment located on the Property to which Owner holds title. Notwithstanding the foregoing, User shall be responsible for reimbursing Owner for any taxes and assessments reasonably attributable to User's Facilities and operations on the Premises, including without limitation, any sales tax. In the event Owner receives a notice of assessment with respect to which any portion is attributable to User's Facilities or operations on the Premises, Owner shall promptly provide User with copies of each such notice.

13. Default.

(a) In the event User shall (i) default in the payment of the Use Fee or any other sum payable by User under this Agreement, and such default shall continue for a period of thirty (30) days after receipt of written notice by Owner, (ii) default in the performance of any other covenants or agreements of this Agreement and such default shall continue for thirty (30) days after User's receipt of written notice thereof or after the applicable cure period elsewhere set forth in this Agreement; provided, however, that if the default is of the type that cannot be cured within thirty (30) days of User's receipt of written notice, User shall have such reasonable time as may be necessary to cure such default so long as User has commenced such cure within the first 10 days of the initial 30-day period and is continuing in good faith to effectuate the cure to completion, (ii) become bankrupt or insolvent or should any debtor proceeding by initiated by or against User, which have not been dismissed within sixty (60) days, then Owner may pursue the following rights and remedies:

(A) Cure the default and invoice User for the reasonable costs and expenses of same, which invoice shall be payable within ten (30) business days of its receipt by User;

(B) Retake possession of the Premises in accordance to Section 15 of this agreement (Removal of Equipment); and;

(C) Terminate this Agreement; and/or

(D) Exercise any other remedy available at law or in equity.

(b) If User remains in default beyond any applicable cure period, whether or not Owner shall have terminated this Agreement, the following shall be immediately due and payable by User, (i) all Use Fees and other charges, payments, costs and expenses of which Owner has provided written notice of the charges, payments, costs and expenses due from User to Owner and in arrears at the time of the default plus (ii) the Use Fee owed for the balance of the then current Term (not including, for the avoidance of doubt, any remaining Renewal Terms), plus (iii) all other charges, payments, costs and expenses herein agreed to be paid by User up to the end of such Term. User further agrees to pay the reasonable attorney's fees and costs of Owner, including court costs, if User engages an attorney to collect the Use Fee or otherwise enforce the terms and provisions of this Agreement.

(c) If User remains in default beyond any applicable cure period, whether or not Owner shall have terminated this Agreement, Owner may demand immediate removal by User of the Facilities from the Property, and if User fails to do so within thirty (30) days of receipt of Owner's demand, Owner may remove the Facilities at User's sole cost and expense. In such event, Owner shall not be liable to User for damage to the Facilities in the course of such removal, and User shall reimburse Owner for any damages to the Property caused by such removal.

(d) In the event Owner shall default in the performance of its covenants or agreements under this Agreement and such default shall continue for thirty (30) days after Owner's receipt of written notice thereof or after the applicable cure period elsewhere set forth in this Agreement, then User shall have the immediate right to terminate/ this Agreement upon written notice to Owner.

14. Termination.

Following the Commencement Date and provided that no default exists at the time of issuance of User's written notice, User may terminate this Agreement upon thirty (30) days' prior written notice to Owner in the event that User, through no fault of its own, is unable to obtain or maintain, any governmental licenses, permits and approvals required of User for its use of the Premises.

15. Removal of Equipment.

Upon the expiration or termination of this Agreement, this Agreement and the Term shall terminate and all rights of User hereunder shall expire and terminate (but not any obligations that expressly survive termination of this Agreement) and User shall surrender the Premises to Owner and, within ninety (90) days after the expiration or termination of this Agreement, remove the Facilities and restore the Premises to substantially the same condition existing prior to User commencing the installation of the Facilities on the Premises, except for ordinary wear and tear, casualty, or acts of God. In the event the Facilities remain on the Premises for more than ninety (90) days following the expiration or termination of this Agreement (even if it has been disconnected) or if User does not completely surrender or restore the Premises in accordance with this Section 15 , User shall pay Owner holdover fees equal to one hundred fifty percent (150%) of the Use Fee in effect immediately prior to the expiration or termination of this Agreement, which holdover fees shall accrue from the date of expiration or termination to the date User completes its obligations under this Section 15. If User fails to complete its obligations under this Section 15 within one hundred twenty (120) days following the expiration or termination of this Agreement, Owner shall have the right to perform User's obligations hereunder. If Owner performs User's obligations under this Section 15, Owner shall not be liable to User for damage to the Facilities in the course of such removal, and User shall reimburse Owner for any restoration

costs or any damages to the Property caused by such removal. This Section 15 shall survive the expiration or termination of this Agreement.

16. Tower Damage.

In the event that the Tower is fully or more than twenty-five (25) percent (25%) destroyed or damaged by fire, lightning, windstorm, explosion, collapse, vandalism, civil disturbance, aircraft or other vehicle damage or other casualty so as to be unfit for User's occupancy and Permitted Use and Owner determines, in Owner's sole discretion, that the Tower cannot be restored or rebuilt by Owner within 180 days or if Owner determines, in Owner's sole discretion, that it shall not undertake restoring or rebuilding the Tower, then either Owner or User may elect to terminate this Agreement by thirty (30) days' written notice to the other Party. User shall be entitled to a pro rata refund of its prepaid Use Fee for such time as it is unable to conduct its normal operations as a result of such total or partial destruction or damage or need of repair. Under no circumstances shall Owner be liable for any financial loss due to business interruption caused by the aforementioned circumstances.

17. Eminent Domain.

If the portion of the Property upon which the Tower, foundation, guy wire anchors or associated improvements is located or the Premises are acquired or condemned under the power of eminent domain whether by public authority, public utility, or otherwise, then this Agreement shall terminate as of the date title shall have vested in public authority. Owner shall be entitled to the entire amount of any condemnation award, except that User shall be entitled to make claim for and retain a condemnation award based on and attributed to the expense of removing its Facilities.

18. Insurance.

(a) User, at its own cost and expense, shall carry the following insurance during the Term of this Agreement: (i) "All Risk" property insurance which insures User's Facilities for its full replacement cost; (ii) commercial general liability insurance with a minimum limit of liability of $1,000,000 per occurrence and $2,000,000 general aggregate covering all operations by or on behalf of User for personal injury and damage to property; (iii) commercial automobile liability insurance, including coverage for all owned, non-owned and hired automobiles, with a coverage amount not less than $1,000,000 combined single limit for each accident and for bodily injury and property damage, (iv) workers' compensation insurance as mandated by state law where the Property is located for all of User's employees and employer's liability insurance in amount not less than $1,000,000, (v) an umbrella insurance policy providing coverage in excess of User's primary commercial general liability, automobile liability and employer's liability policies in an amount not less than $5,000,000; and (v) Workers' Compensation at statutory limits and Employers Liability and/or Stop Gap insurance with minimum limits of $1,000,000 per accident or disease per employee. Vertical Bridge REIT, LLC, its parents, affiliates, subsidiaries, successors and/or assigns, shall be named as additional insureds under User's commercial general liability insurance, commercial auto liability insurance, and umbrella insurance policy.

(b) User shall cause each contractor or subcontractor hired to perform work on the Property to maintain insurance coverages and limits of liability of the same type and the same amount as required of User under this Section 18, adjusted to the nature of the contractor's or subcontractor's operations.

(c) Certificates of insurance, as evidence of the insurance required by this Agreement, shall be furnished by User to Owner before any access to the Property or construction is commenced by User, its employees, agents, contractors or subcontractors. The certificates of insurance shall provide that the broker will endeavor to give written notice of cancellation of the above-required insurance policies or reduction in the limits required above to the certificate holder thirty (30) days prior to cancellation. Notwithstanding the foregoing or any contrary provision contained herein, Owner acknowledges and agrees that User may elect to self-insure to meet the insurance requirements contained herein.

19. Indemnification.

(a) User agrees to indemnify, defend and hold Owner, their affiliates, and their respective officers, directors, employees, managers, equity holders, agents, and lenders (collectively, the "Owner Indemnified Parties") harmless from and against injury, loss, damage or liability (or any claims in respect of the foregoing), costs or expenses (including reasonable attorneys' fees and court costs) which may be imposed upon or incurred by or asserted against the Owner Indemnified Parties to the extent arising from (i) any negligent act or omission of User or any of its employees, agents, contractors, or subcontractors in, on or around the Property (together, "Agents") or (ii) User's breach of this Agreement, except to the extent caused by the negligence or willful misconduct of Owner.

(b) Owner agrees to indemnify, defend and hold User, its affiliates, and their respective supervisors, commissioners, officers, directors, employees, managers, equity holders, agents, and lenders (the "User Indemnified Parties") harmless from and against any and all injury, loss, damage or liability (or any claims in respect of the foregoing), costs or expenses (including reasonable attorneys' fees and court costs) which may be imposed upon or incurred by or asserted against the User Indemnified Parties and which arise from any act of negligence or omission of Owner or its employees, agents contractors or subcontractors in, on or around the Property, except to the extent caused by the gross negligence or willful misconduct of User or its Agents.

(c) Notwithstanding anything in this Agreement to the contrary, User and Owner hereby waive any claim that they may have against the other Party with respect to any consequential, punitive, or special damages.

(d) This Section 19 shall survive the expiration or termination of this Agreement.

20. Assignment.

User shall not assign, mortgage or encumber this Agreement without the express written consent of Owner. User acknowledges and agrees that it shall not have any rights to sublet or permit the Premises or any part thereof to be used by others. Notwithstanding the foregoing, User may freely, without Owner's consent, assign its interest hereunder to any entity which directly controls, is controlled by, or is under common control of User or an entity that obtains control of User during the term of this Agreement. For the purposes of this Section 20, the term "control" means the ownership, direct or indirect, of sufficient voting shares of an entity, or otherwise the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of an entity, or the power to veto major policy decisions of any such entity, whether through the ownership of voting securities, by contract or otherwise. No such assignment or transfer shall release User or its assignee or transferee from any of the obligations arising under this Agreement. A sale or other transfer of the direct or indirect ownership interests in User shall be deemed an assignment hereunder.

21. Waiver of Lien.

User hereby waives any and all lien rights User may have, in its proprietary capacity, statutory or otherwise, in and to the Site or any portion thereof, regardless of whether or not same is deemed real or personal property under applicable laws.

22. Warranty of Title and Quiet Enjoyment.

Owner warrants that upon User paying the Use Fee and observing and performing all of the terms, covenants and conditions on User's part to be observed and performed under this Agreement, User may peacefully and quietly enjoy the Premises.

23. Non-Recourse.

In no event will any member, manager, officer, agent or employee of Owner have any personal liability to User. User agrees that this provision will apply to any and all liabilities, claims, and causes of action whatsoever, including those based on any provision of this Agreement, any implied covenant, or any statute or common law principle.

24. Estoppel Certificate.

User agrees that it will from time to time, within thirty (30) days after receipt of written request by Owner, execute and deliver to such persons as Owner shall request, a statement, in recordable form, certifying that the Agreement is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as so modified), stating the dates to which fees and other charges payable under the Agreement have been paid, stating that to User's actual knowledge (without independent investigation) that Owner is not in material default under the Agreement (or if User alleges a default, stating the nature of such alleged default), and further stating such other matters as Owner may reasonably request regarding the status of this Agreement.

25. Subordination.

This Agreement is and shall be subordinate to all mortgages, deeds of trust and similar security documents which may now or hereafter be secured upon the Property by Owner, and to all renewals, modifications, consolidations and extensions thereof. This clause shall be self-operative and no further instrument of subordination shall be required by any lessor, mortgagee or applicable security interest holder. Upon User's request, Owner agrees to exercise commercially reasonably efforts to obtain from Owner's mortgagee who may now or hereafter have an interest in the Site a Subordination, Non-Disturbance and Attornment Agreement (an "SNDA") in a form acceptable to User and such mortgagee. In the event Owner's mortgagee declines to enter into an SNDA, Owner shall be deemed to have satisfied its obligations hereunder.

26. Mechanics Liens.

Owner and User expressly acknowledge and agree that neither User nor any one claiming by, through or under User, including without limitation contractors, sub-contractors, materialmen, mechanics and laborers, shall have any right to file or place any mechanics' or materialmen's liens of any kind whatsoever upon the Site nor upon any building or improvement thereon. All parties with whom User may deal are hereby put on notice that User has no power to subject Owner's interest in the Site to any claim or lien of any kind or character and any persons dealing with User must look solely to the credit of User for payment and not to Owner's interest in the Site or otherwise. Owner shall have the right to post notices of non-responsibility on the Premises. User agrees to allow such notices to remain posted on the Premises throughout the construction period and to notify Owner if such notices are damaged or removed. However, if by reason of any alteration, repair, labor performed or materials furnished to the Site for or on behalf of User any mechanic's or materialmen's lien shall be filed, claimed, perfected or otherwise established or as provided by law against the Site, User shall discharge or remove the lien by bonding or otherwise, within thirty (30) days after User receives notice from Owner of the filing of same.

27. Hazardous Substances.

(a) User covenants that (a) User shall at its own cost comply with all Environmental Laws with respect to its operations on the Property; (b) User shall not Manage any Hazardous Materials on the Premises, nor conduct nor authorize the same, including installation of any underground storage tanks, without prior written disclosure to and approval of Owner, in Owner's sole discretion; (c) User shall not take any action that would subject the Property to permit requirements under Environmental Law for storage, treatment or disposal of Hazardous Materials; (d) User shall not dispose of Hazardous Materials on the Premises; (e) User shall not discharge Hazardous Materials into drains or sewers in violation of environmental laws; (f) User shall not suffer, cause or allow the Release of any Hazardous Materials on, to or from the Premises in violation of environmental law or in quantities requiring a permit; and (g) User shall at its own cost arrange for the lawful transportation and off-site disposal of all Hazardous Materials that it generates.

(b) "Environmental Law" shall mean and include all applicable federal, state and local statutes, ordinances, regulations and rules relating to environmental quality, health, safety, contamination and clean-up. "Hazardous Material" shall mean petroleum or any petroleum product, asbestos, any substance known by the state in which the Site is located to cause cancer and/or reproductive toxicity, and/or any substance, chemical or waste that is identified as hazardous, toxic or dangerous under Environmental Law, but excluding the use of solvents and commercial cleaners used in compliance with Environmental Law. "Manage" means to generate, manufacture, process, treat, store, use, re-use, refine, recycle, reclaim, blend or burn for energy recovery, incinerate, accumulate speculatively, transport, transfer, dispose of or abandon Hazardous Materials. "Release" shall mean any actual or threatened spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, presence, dumping, migration from adjacent property or disposing of Hazardous Materials into the environment, as "environment" is defined under Environmental Law.

28. Labeling.

User shall identify its equipment and equipment cabinets (unless such cabinet is located in a building owned by User) with labels permanently affixed thereto, indicating User's name, contact phone number, and installation date.

User's coaxial cables shall be labeled at both the top and bottom of the Tower. Owner shall provide written notice to the User of the failure to identify its equipment and equipment cabinets, and within thirty (30) days after receipt of such written request by Owner, User shall adequately label its equipment and equipment cabinets. If User fails to so identify its equipment, Owner may label User's equipment and assess against User a fee of $2,000.00 (or Owner's then current fee for same), which shall be promptly due and payable by User upon receipt of invoice from Owner.

29. Notices.

Except as otherwise expressly provided herein, all notices, requests, claims, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given when received if delivered by certified mail, postage prepaid, return receipt requested, or sent by receipted overnight delivery service to the following addresses:

As to Owner:
VB NIMBUS, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, Florida 33487
Attention: Lease Administration
Ref: US-CA-5177

With a mandatory copy to:
VB NIMBUS, LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, Florida 33487
Attention: General Counsel
Ref: US-CA-5177

As to User:
San Francisco Public Utilities Commission
Information Technology Services Division
525 Golden Gate Avenue, 5th Floor
San Francisco, CA 94102
Attention: Radio Communications Manager
Re: VB Nimbus, LLC, San Joaquin County, Site Use Agreement:
US-CA-5177 Corral Hollow

With a copy to:
San Francisco Public Utilities Commission
Real Estate Services Division
525 Golden Gate Avenue., 10th Floor
San Francisco, CA 94102
Attention: Real Estate Director
Re: VB Nimbus, LLC, San Joaquin County, Site Use Agreement:
US-CA-5177 Corral Hollow

With a copy to:
Office of the City Attorney
City and County of San Francisco
Room 234, City Hall
1 Dr. Carlton B. Goodlett Place

San Francisco, CA 94102-4682
Attn: Real Estate/Finance Team

30. Miscellaneous.

(a) Entire Agreement; Amendments. This Agreement and any other documents or exhibit referred to herein or delivered pursuant hereto, which form a part hereof, contains the entire understanding of the Parties with respect to its subject matter. There are no restrictions, agreements, promises, warranties, covenants or undertaking other than expressly set forth herein. This Agreement supersedes all prior agreements and understandings between the Parties. No modification of this Agreement shall be effective unless contained in writing signed by the authorized representative of both Parties.

(b) Severability. It is the intention of the Parties that if any provision of this Agreement is capable of two constructions, one of which would render the provision valid, then the provision shall have the meaning which renders it valid. If any term or provision, or any portion thereof, of this Agreement, or the application thereof to any person or circumstances shall, to any extent, held to be invalid or unenforceable by a court of competent jurisdiction, the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each other term and provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law.

(c) Successor and Assigns. This Agreement shall inure to the benefit of and be binding upon Owner, its successors and assigns, and shall be binding upon User, its permitted successors and assigns, and shall inure to the benefit of User and only such assigns of User as are permitted herein. Except as expressly provided otherwise, nothing contained in this Agreement shall be construed so as to confer upon any person's rights of a third-party beneficiary.

(d) Remedies Cumulative. The remedies provided herein shall be cumulative and shall not preclude the assertion by any Party of any other rights or the seeking of and other remedies against the other Party.

(e) No Waiver. Should Owner permit a continuing default of User in User's performance of the terms of this Agreement, the obligations of User hereunder shall continue and such permissive default shall not be construed as a renewal of the term hereof nor as a waiver of any of the rights of Owner or obligations of User hereunder.

(e) Applicable Law. This Agreement shall be governed by the laws of the State where the Property is located without regard to the principles of conflict of laws thereunder.

(f) Waiver of Jury Trial. To the extent permitted by law, the Parties hereby irrevocably and unconditionally waive trial by jury in any legal action or proceeding relating in any way to this Agreement, including any counterclaim made in such action or proceeding, and agree that any such action or proceeding shall be decided solely by a judge. Each Party hereby acknowledges that it has been represented by counsel in the negotiation, execution and delivery of this Agreement and that its lawyers have fully explained the meaning of this Agreement, including in particular the jury-trial waiver.

(g) Attorneys' Fees. In the event of any dispute between the Parties, the prevailing party shall be reimbursed for its reasonable attorneys' fees and other costs incurred in enforcing its rights or exercising its remedies under this Agreement. For all purposes under this Agreement, reasonable attorneys' fees of User will be based on the

fees regularly charged by private attorneys in San Francisco with comparable experience in the subject matter area practicing in firms of comparable size as the Office of the City Attorney. Such right of reimbursement shall be in addition to any other right or remedy that the prevailing Party may have under this Agreement.

(h) Counterparts; DocuSigned Signature Pages. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Any signature page signed via DocuSign hereof shall be considered an original signature page and be effective for all purposes to evidence such party's execution hereof.

(i) Owner and User Entity. Owner and User hereby covenant and warrant that: (i) each is a duly constituted organization (corporation, limited partnership, limited liability company, partnership non-profit corporation, etc.) qualified to do business in the state in which the Property is located; (ii) all corporate franchise or other entity-related taxes have been paid to date; (iii) all future forms, reports, fees and other documents necessary to comply with applicable laws will be filed by Owner or User, as applicable and when due; (iv) and such person signing on behalf of Owner or User is duly authorized by the governing body of such corporation to execute and deliver this Lease on behalf of the corporation.

(j) Representations and Warranties. Owner and User each represent and warrant to the other that it is legally qualified, empowered and able to enter into this Agreement, and that the execution, delivery and performance hereof shall not constitute a breach or violation of any agreement, contract or other obligation or any kind to which the party is subject or by which it is bound.

(k) User's Mandatory Provisions. Owner acknowledges that User, as a public entity, is subject to the laws, ordinance, and Charter of the City and County of San Francisco and that, accordingly, the provisions set forth on the attached Exhibit E are required by applicable law to be incorporated, and are hereby incorporated, into this Agreement.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

OWNER:

VB NIMBUS, LLC
a Delaware limited liability company

By: _____
Name:
Title:

USER:

CITY AND COUNTY OF SAN FRANCISCO,
a California municipal corporation

By: _____
Name: Dennis J. Herrera
Title: General Manager
San Francisco Public Utilities Commission

Date: _____

APPROVED AS TO FORM

DAVID CHIU
City Attorney

By: _____

EXHIBIT A

Property

The following described real property in the County of San Joaquin, State of California:

A portion of Section 24, Township 3 South, Range 4 East, Mount Diablo Base and Meridian, being Parcel A as shown upon Parcel Map filed January 20, 1976, in Volume 2 of Parcel Maps, at Page 113, San Joaquin County Records.

TOGETHER WITH AND SUBJECT TO

A 25-foot private right of way to be used for access to proposed radio tower only as shown upon Parcel Map filed January 20, 1976, in Volume 2 of Parcel Maps, at Page 113, San Joaquin County Records.

AND BEING the same property conveyed to Citadel Communications Corporation, a Nevada corporation from Fuller-Jeffrey Broadcasting Companies, Inc., a corporation by Corporation Grant Deed dated September 24, 1993 and recorded October 4, 1993 in Instrument No. 93114694.

Tax Parcel No. 251-120-080-000

EXHIBIT B-1

Co-location Application

COLOCATION APPLICATION
US-CA-5177
Version 5
City and County of San Francisco

Vertical Bridge REIT, LLC.
750 Park of Commerce Drive
Suite 200
Boca Raton, FL 33487

SUMMARY

PRIMARY INFO

Application #: P-006561
Application Version: 5 (Submitted: 4/21/2022 8:38:00 PM)
Application Type: Broadband
Application Name: Site Name: MD007 KHKK-FM KATM-FM
Lease Type: New Lease
ASR Number:
Description:
Approximately (8) sq. ft. of equipment rack space in shelter; Tower Space - (2)-3 diameter microwave antennas at 16 and 22-feet above ground level (AGL); (2)-9 receive antennas at 120 feet AGL; and (1)-9 transmit antenna at 100' AGL; Conduits - Space for power conduit and coaxial cables on ladder rack; Utility Power - Electrical sub-panel and power meter for On-Premises electricity.

VERTICAL BRIDGE SITE INFO

VB Site #: US-CA-5177
VB Site Name: MD007 KHKK-FM KATM-FM STL KHKK-FM
Latitude: 37.65252222
Longitude: -121.47806667
Structure Type: Guyed Tower
Structure Height: 346.0400
Site Address: 32322 Corral Hollow Road -
Tracy, CA 95377

VERTICAL BRIDGE DEAL TEAM

RLM: Tiffany McClurg
TMcClurg@verticalbridge.com
(206) 719-1639

RLS: Pilar Lozano
PLozano@verticalbridge.com
(561) 348-5212

ROM: Mark Stennett
MStennett@verticalbridge.com
(512) 569-3445

TENANT LEGAL INFO

Tenant Legal Name: City and County of San Francisco
State of Registration: California
Type of Entity: Public Utility
Carrier NOC #: 4155514357
Tenant Site #: US-CA-5177 (Same as Vertical Bridge site
Tenant Site Name: Corral Hollow

APPLICANT

Name: Brian Rolley
Address 525 Golden Gate Ave.
San Francisco, CA 94102
Phone Number: (415) 559-9722
Email Address: brolliet7@gmail.com

FINAL LEASED RIGHTS CONFIGURATION TOTALS

This is a summary of your remaining existing equipment plus the new equipment.

FINAL EQUIPMENT

Qty	Equipment Type
1	Panel
2	Microwave Dish
2	Omni/Whip

FINAL LINES

Qty	Line Type
2	Rigid
3	Heliax

Vertical Bridge REIT, LLC.
750 Park of Commerce Drive
Suite 200
Boca Raton, FL 33487

FREQUENCY & TECHNOLOGY INFO

Type of Technology: Public Safety

Is TX Frequency Licensed: Yes

TX Frequency: 771.73125, 800.26875, WRDP497; 813.5375, 813.8625, 814.6125, 858.53750, 858.8625, 859.61250, WRDF582

Is RX Frequency Licensed: Yes

RX Frequency: 770.26875, 801.73125, 800.26875, WRDP497; 813.5375, 813.8625, 814.6125, WRDF582

MOUNT & STRUCTURAL ANALYSIS

MOUNT ANALYSIS

Provided by Tenant: No

To Be Run by VB: Yes

Include Mount Mapping: No

STRUCTURAL HARD COPIES

Required: No

Number of Hard Copies

CONTACTS

INVOICE CONTACT

Attention To	Name	Address	Phone Number 1	Phone Number 2	Email 1	Email 2
Principal Administrative Analyst	Kristen McGuire	525 Golden Gate Ave., 5th Floor San Francisco, CA 94102	(401) 418-3085		KMcGuire@sfwater.org	jhorrisberger@sfwater.org

PO CONTACT

Name	Phone Number	Email
Alma Tam	(628) 255-9712	AlTam@sfwater.org

LEASING CONTACT

Name	Phone Number	Email
Brian Rolley	(415) 559-9722	BRolley@sfwater.org

NOTICE CONTACT

Notice To	Attention To	Name	Address
San Francisco Public Utilities Commission	SFPUC Radio Communications Services	Radio Communications Manager	525 Golden Gate Ave., 5th Floor San Francisco, CA 94102

COPY NOTICE CONTACT

Notice To	Attention To	Name	Address

Vertical Bridge REIT, LLC.
750 Park of Commerce Drive
Suite 200
Boca Raton, FL 33487

San Francisco Public Utilities Commission	SFPUC Real Estate Services	Christopher Wong	525 Golden Gate Ave., 10th Floor San Francisco, CA 94102

RF CONTACT		
Name	**Phone Number**	**Email**
Jay Horrisberger	(415) 214-0394	jhorrisberger@sfwater.org

TENANT CONSTRUCTION MANAGER CONTACT		
Name	**Phone Number**	**Email**
Jim Hardimon	(310) 413-0604	j.hardimon@motorolasolutions.com

EMERGENCY CONTACT		
Name	**Phone Number**	**Email**
SFPUC ITS HELP DESK	(415) 551-4357	ithelp@sfwater.org

LINE & EQUIPMENT

NEW LINE(S)

Qty	Line Type	Line Size(in.)	Line Location	Comments
3	Heliax	1	Exterior	
2	Rigid	1	Exterior	

NEW EQUIPMENT

Qty	Equipment Type	RAD Height	Mount (H')	Mount Type	Manufacturer	Model Number	Dimensions (H"xW"xD")	Weight (Lbs.)	Azimuth	Comments
1	Panel	100.00	100.00	Pipe Mount	RFI Technology Solutions	BPA-7496-180-11	60.00 x 10.40 x 6.00	17.00	80	Please see attached specification sheet. Proposed mount on North-East tower leg.
1	Microwave Dish	22.00	22.00	Pipe Mount	Radio Frequency Systems (RFS)	SC3-W100B	39.36 x 39.36 x 14.57	39.70	248	Please see attached specification sheet.
1	Microwave Dish	16.00	16.00	Pipe Mount	Radio Frequency Systems (RFS)	SC3-W100B	39.36 x 39.36 x 14.57	39.70	96	Please see attached specification sheet.

1	Omni/Whip	137.00	120.00	Pipe Mount	RFI Technology Solutions	CC807-11-P	205.00 x 3.00 x 3.00	49.00	80	Please see attached specification sheet. Proposed antenna mount on West tower leg.
1	Omni/Whip	137.00	120.00	Pipe Mount	RFI Technology Solutions	CC807-11-P	205.00 x 3.00 x 3.00	49.00	80	Please see attached specification sheet. Proposed antenna mount on South tower leg.

ADDITIONAL SITE REQUIREMENTS

GROUND & INTERIOR SPACE REQUIREMENTS

Requirement Type	Total Lease Area (L x W)	Cabinet Required	Cabinet Area (L x W)	Shelter Required	Shelter Pad (L x W)	Comments
New	21.00 x 12.00	No	x	Yes	21.00 x 12.00	The SFPUC through its contractor (Motorola) will provide all of the designs, plans, specifications, permits and fees to install a prefabricated radio shelter.

GENERATOR REQUIREMENTS

Requirement Type	Fuel Type	Kilowatt Size	Pad Dimensions (L x D)	Generator Manufacturer	Fuel Tank Manufacturer	Comments
New	Propane	35	7.00 x 3.00	Generac	Allied Propane Service, Inc.	The SFPUC through its contractor (Motorola) will design, plan, specify and purchase the generator and propane tanks. The generator will be installed in one half of the proposed radio shelter.

AC POWER REQUIREMENTS

Meter Type	Additional Details	Comments

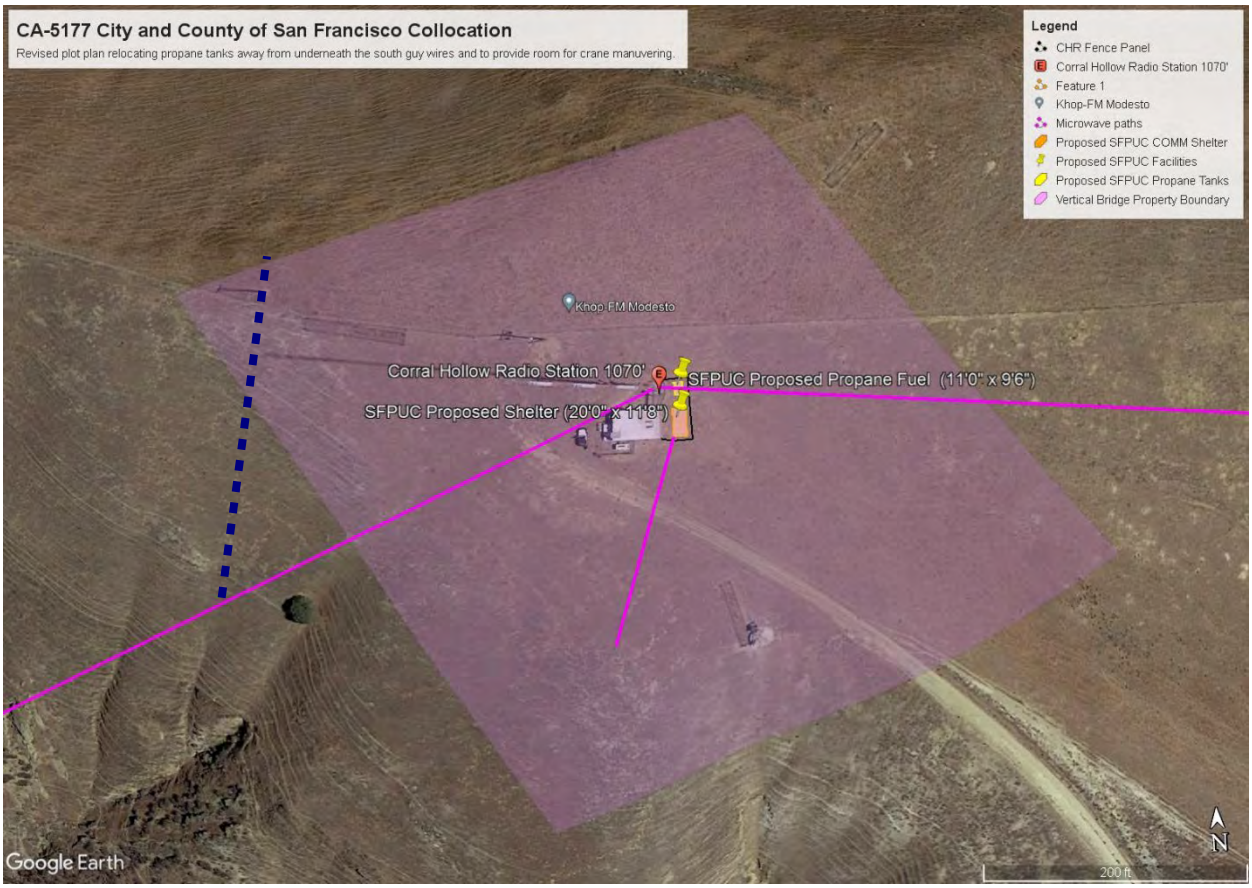
New Tenant Meter		The SFPUC will apply to the local power utility (Pacific Gas and Electric Company) for a 200 Amp 240 Volt Single Phase Service and will have a separate electric service and meter.

BACKHAUL REQUIREMENTS

Requirement Type	Cable Type	Number Of Points Of Entry	Riser Size (Inches)	Comments
Not Required				The SFPUC backhaul is integrated into their design and lease request.

EXHIBIT B-2

Installation Plans



Notes:

1. Proposed BLDG: VFP, Inc. Shelter Model 2560, Motorola, Size = 11'8" x 20'0" x 9'2" (VFP concrete shelters are constructed of reinforced panels, welded together for maximum structural strength. Joints are double-sealed with proprietary interlocking double key way and step joint designs for superior weather protection. This construction is inherently bullet resistant to UL-752 level 4 (30-06 at 15 feet), has a 2-hour fire rating, and provides a high level of vandal protection.)

2. Dashed Line = Galvanized and Grounded 2" Mesh Cyclone Fence

3. All dimensions are approximate and specified in inches unless otherwise noted.

EQUIPMENT SHELTER
20'–2" x 27'–8"

Propane Tanks

Radio Equipment Room

Generator Room

21'4"

74.67
132.87
42.66
112.60
36.66
86.73
140.37
24.90
124.40
24.77
120.56
240.53
293.50
25.67
288.24
24' of existing level ground

SHEET NOTES

ITEM	DESCRIPTION
	CHAIN LINK FENCE
	TRAY
	TANK
	ATOR

NOTES:
1.

REV NO:	DATE:	ENGR:	DESCRIPTION:
O	7–16–18	R.W.	ORIGINAL RELEASE

MOTOROLA SOLUTIONS

PROJECT: SAN FRANCISCO PUBLIC UTILITIES COMMISSION
P25 PHASE 2 TDMA

TITLE: CORRAL HOLLOW SITE
PLOT PLAN

CONTRACT:	ENGINEER: R. WAGNER	PROJECT MANAGER: J. HARDIMON	SCALE: 3/8"=1'	SIZE: D
PROGRAM: AUTOCAD 2006	DRAWN: L. DAYRIT	CHECKED: R. WAGNER	SHEET: 1 OF 1	REV:
FILE NAME: 1_SFPU_COH_05_01	DATE: 7–16–18	PROJECT NUMBER: CA–171101A	DRAWING NO:	

ORIGINAL DOCUMENT SIZE IS 22X34, CORRECT SCALE IS NOT GUARANTEED IF REDUCED OR ENLARGED

EXHIBIT B-3

Structural Analysis

City and County of San Francisco

Structural Analysis Report

Structure	**:** 343ft Guyed Tower
VB Site Name	**:** MD007 KHKK-FM KATM-FM STL KHKK-FM
VB Site Number	**:** US-CA-5177
Proposed Carrier	**:** City and County of San Francisco
Carrier Site Name	**:** Corral Hollow
Carrier Site Number	**:** US-CA-5177
Site Location	**:** 32322 Corral Hollow Road, Tracy, CA 95377 (Pima County) 37.65252222, -121.47806667
Date	**:** August 4, 2021
Max Member Stress Level	**:** 92.9% (Tower)

8/4/2021

Result **: PASS**

(Foundation was not analyzed due to lack of information)

B&P Job No.: 21.03.006.155

Prepared For:
Vertical Bridge Engineering, LLC.

verticalbridge
VERTICAL BRIDGE ENGINEERING, LLC

Prepared By:
Bennett & Pless, Inc.

bennett&pless
Experience Structural Expertise

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Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the loads proposed by City and County of San Francisco. The objective of the analysis was to determine if the tower meets the current structural codes and standards with the proposed equipment installation.

Existing Structural Information

The following documents for the existing structure were made available for our structural analysis.

Tower Information	Tower Mapping Report by Structural Components, Project No.: 210261 dated June 30, 2021
Foundation Information	Foundation Mapping Report by Structural Components, Project No.: 210261 dated June 30, 2021
Geotechnical Information	Geotechnical information was not provided.
Existing Equipment Information	Tower Mapping Report by Structural Components, Project No.: 210261 dated June 30, 2021 Vertical Bridge Colocation Application P-006561dated May 26, 2021.
Tower Reinforcement Information	Tower has not been previously reinforced.

Final Proposed Equipment Loading for City and County of San Francisco

The following proposed loading was obtained from the Vertical Bridge Collocation Application:

Antenna/Equipment					Coax	
Mount (ft).	RAD (ft.)	Qty.	Appurtenance	Type	Qty.	Size/Type
16.0	16.0	1	RFS SC3-W100B	MW Dish	3 2	1” Heliax 1” Rigid
		1	Pipe Mount	Mount		
22.0	22.0	1	RFS SC3-W100B	MW Dish		
		1	Pipe Mount	Mount		
100.0	100.0	1	RFI BPA-7496-180-11	Panel		
120.0	137.0	2	RFI CC80711-P	Omni/Whip		
		2	Pipe Mount	Mount		

Note: All equipment shown above is proposed.

Design Criteria

The tower was analyzed using tnxTower (Version 8.1.1) tower analysis software using the following design criteria.

Building Code	Building Code of the County of San Joaquin adopted from 2019 California Building Code & 2018 International Building Code
TIA/EIA Standard Code	TIA-222-H
Basic Wind Speed	93 MPH V_{ult}
Basic Wind Speed w/ Ice	30 MPH/ 0.0" Ice
Steel Grade	See Tower profile for steel grade
Exposure Category	C
Topographic Category (height)	5
Risk Category	II
Ground Elevation	1077.88 ft
Ss	1.462
Seismic Design Category	D

Analysis Results

Based on the foregoing information, our structural analysis determined that the existing tower **is structurally capable of supporting the proposed equipment loads.** The existing tower foundation **was not analyzed due to lack of information.** A seismic analysis was performed and was not found to be controlling.

Assumptions

The below assumptions are true, complete and accurate.

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. Foundations are considered to have been properly designed for the original design loads.
3. All member connections are considered to have been designed to meet the load carrying capacity of the connected member.
4. Antenna mount loads have been estimated based on generally accepted industry standards.
5. The mounts for the proposed antennas have been analyzed and designed by others.
6. See additional assumptions contained in the report attached.
7. Tower is within acceptable engineering tolerance at 105%.
8. Foundations are within acceptable engineering tolerance at 110%.

Conclusions

The existing tower described above **does have sufficient capacity** to support the proposed loading based on the governing Building Code. The existing tower foundation was **not analyzed due to lack of information.** A seismic analysis was performed and was not found to be controlling.

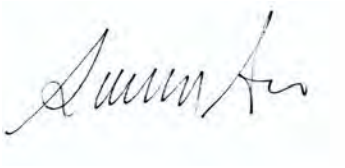
We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance, please call us anytime at 561-288-1187.

Sincerely,

Analysis by:

Kshitij Kadam
Design Engineer

Reviewed by:



Sweanum Soo, Ph.D. P.E. S.E.
Senior Structural Engineer

Standard Conditions

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

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and it components, or relevant information.

- Information from drawings in possession of Bennett & Pless, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Bennett & Pless and used in the performance of our engineering services is correct and complete. In the absence of information contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in a un-corroded condition and have not deteriorated; and we, therefore consider that their capacity has not significantly changed from the original design condition.

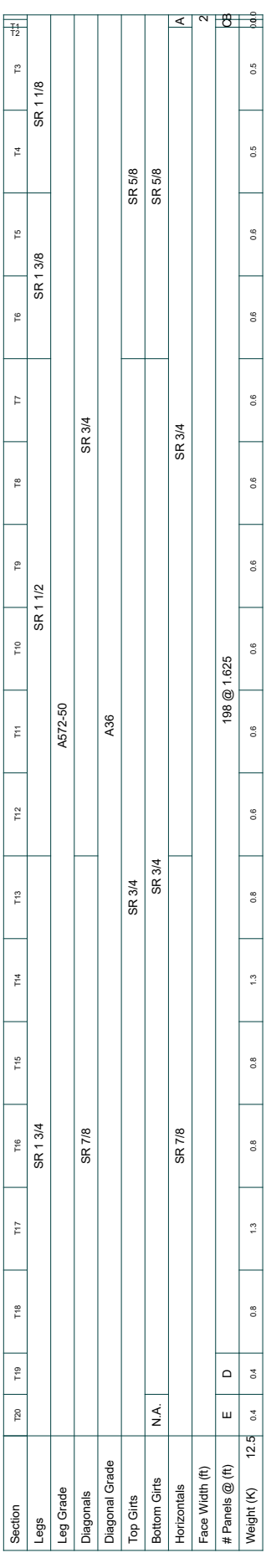
All services will be performed to the codes and standards specified by the client, and we do not imply to meet any other code and standard requirements unless explicitly agreed to in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes and standards, the client shall specify the exact requirements. In the absence of information to the contrary, all work will be performed in accordance with ANSI/TIA/EIA-222-Revision H.

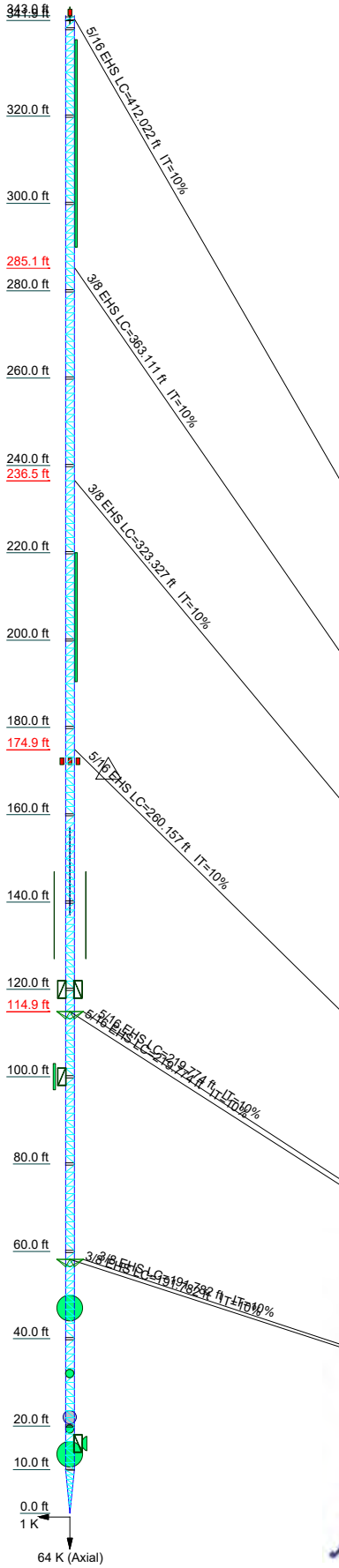
All services are performed, results obtained and recommendations made in accordance with the generally accepted engineering principles and practices. Bennett & Pless is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

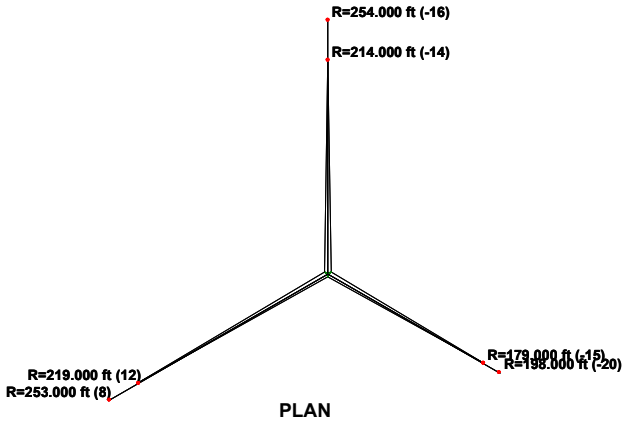
Disclaimer of Warranties

Bennett & Pless Inc. makes no warranties, expressed or implied, in connection with this report, and disclaims any liability arising from the ability of the existing structure to support the design loads for which it was originally designed. Bennett & Pless Inc. will not be responsible whatsoever for or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Bennett & Pless pursuant to this report will be limited to the total fee received for preparation of this report.

Attachment 1:
Calculations







PLAN

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Strobe Light (A11)	343	Pipe Mount 3'x4.5" (City and County of San Francisco)	100
45" x 5/8" Lightning Rod (A12)	343	6' Grid Dish (A6)	47
6-Bay FM antenna w/o Radomes (A10)	337.5 - 290	3' Yagi(.03k,2.08CAAA) (A5)	36
4-Bay FM Antenna (w/o Radomes) (A9)	220 - 190.5	8" Dish (A4)	32
Side Light (A8)	171.5	3' Yagi(.03k,2.08CAAA) (A3)	25.5
Side Light (A8)	171.5	Pipe Mount 3'x4.5" (City and County of San Francisco)	22
Side Light (A8)	171.5	RFS SC3-W100B Microwave Dish (City and County of San Francisco)	22
3' Stand-off (A7)	139.5	2' Dish (A2)	19.25
15'X2.5" Omni (A7)	139.5	12X12X3 ODU (A2)	19.25
Omni/Whip 205"x3" (City and County of San Francisco)	120	Junction Box (A2)	19.25
Omni/Whip 205"x3" (City and County of San Francisco)	120	Pipe Mount 3'x4.5" (City and County of San Francisco)	16
Pipe Mount 3'x4.5" (City and County of San Francisco)	120	RFS SC3-W100B Microwave Dish (City and County of San Francisco)	16
Pipe Mount 3'x4.5" (City and County of San Francisco)	120	6'*3' Paraflector (A1)	13.5
60"'x10.4"x6" Panel (City and County of San Francisco)	100		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	N.A.	D	6 @ 1.61111
B	1 @ 0.791667	E	10 @ 1.05093
C	1 @ 1.54167		

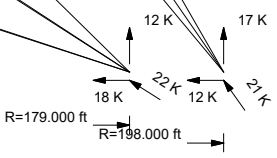
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in San Joaquin County, California.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-H Standard.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 5 with Crest Height of 756.000 ft
7. TOWER RATING: 92.9%

8/4/2021



ALL REACTIONS ARE FACTORED

Bennett and Pless
47 Perimeter Center E, Ste 500
Atlanta, GA 30346
Phone: (678) 990-8700
FAX:

Job: **US-CA-5177**		
Project: ***MD007 KHKK-FM KATM-FM STL KHKK-FM Aux (City of SF) 343ft Guye***		
Client: Vertical Bridge	Drawn by: CBlake	App'd:
Code: TIA-222-H	Date: 08/04/21	Scale: NTS
Path:		Dwg No. E-1

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 1077.88 ft (NAVD 88)
Latitude: 37.652522
Longitude: -121.478067

Wind

Results:

Wind Speed:	93 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	75 Vmph
100-year MRI	80 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Wed Jul 14 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.462	S_{D1} :	N/A
S_1 :	0.493	T_L :	8
F_a :	1.2	PGA :	0.616
F_v :	N/A	PGA_M :	0.74
S_{MS} :	1.754	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.17	C_v :	1.392

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Wed Jul 14 2021

Date Source: USGS Seismic Design Maps

Ice

Results:

Ice Thickness:	0.00 in.
Concurrent Temperature:	25 F
Gust Speed:	30 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Jul 14 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

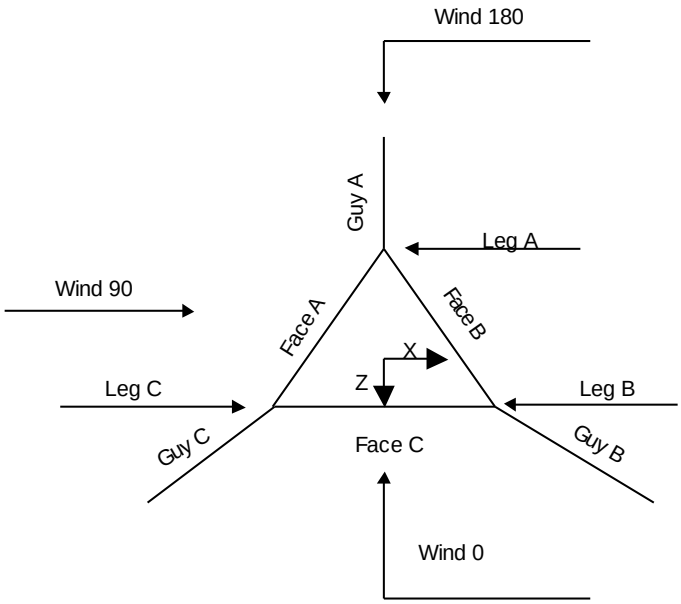
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 343.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 2.000 ft at the top and tapered at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

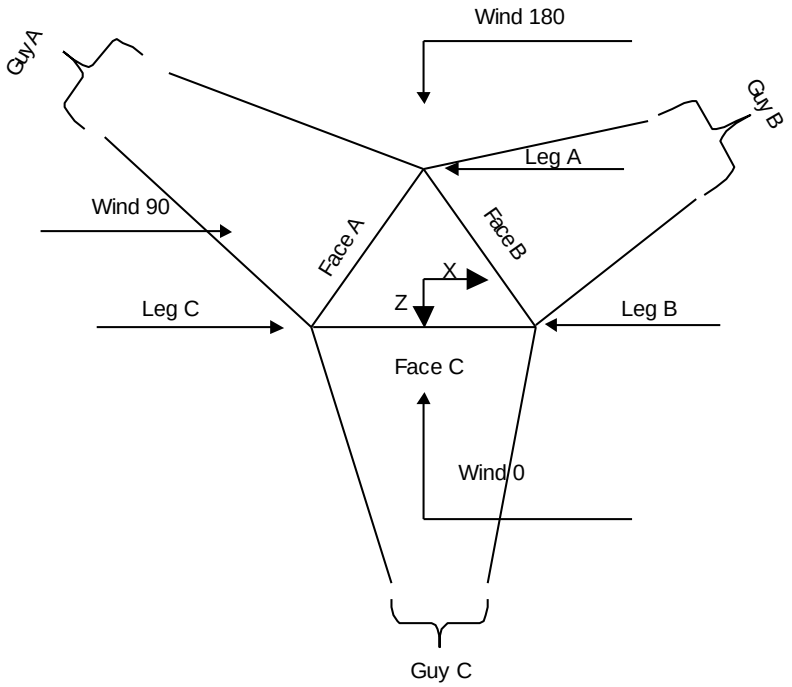
Tower is located in San Joaquin County, California.
Tower base elevation above sea level: 1077.880 ft.
Basic wind speed of 93 mph.
Risk Category II.
Exposure Category C.
Crest Height: 756.000 ft.
Rigorous Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Feature: Continuous Ridge.
Slope Distance L: 5808.000 ft.
Distance from Crest x: 0.000 ft.
Horizontal Distance Downwind: No.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Safety factor used in guy design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs	√	Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
√	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
√	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	343.000-341.875			2.000	1	1.125
T2	341.875-340.000			2.000	1	1.875
T3-T4	340.000-300.000			2.000	2	20.000
T5-T6	300.000-260.000			2.000	2	20.000
T7-T12	260.000-140.000			2.000	6	20.000
T13-T18	140.000-20.000			2.000	6	20.000
T19	20.000-10.000			2.000	1	10.000
T20	10.000-0.000			2.000	1	10.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	343.000-341.875	0.792	M Brace	No	Yes	3.0000	1.0000
T2	341.875-340.000	1.542	M Brace	No	Yes	1.0000	3.0000
T3-T4	340.000-300.000	1.625	M Brace	No	Yes	3.0000	3.0000
T5-T6	300.000-260.000	1.625	M Brace	No	Yes	3.0000	3.0000
T7-T12	260.000-140.000	1.625	M Brace	No	Yes	3.0000	3.0000
T13-T18	140.000-20.000	1.625	M Brace	No	Yes	3.0000	3.0000
T19	20.000-10.000	1.611	M Brace	No	Yes	3.0000	1.0000
T20	10.000-0.000	1.051	Diag Down	No	Yes	1.0000	5.5000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 343.000-341.875	Solid Round	1 1/8	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 341.875-340.000	Solid Round	1 1/8	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T3-T4 340.000-300.000	Solid Round	1 1/8	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T5-T6 300.000-260.000	Solid Round	1 3/8	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T7-T12 260.000-140.000	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T13-T18 140.000-20.000	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T19 20.000-10.000	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T20 10.000-0.000	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 343.000-341.875	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 341.875-340.000	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T3-T4 340.000-300.000	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T5-T6 300.000-260.000	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T7-T12 260.000-140.000	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T13-T18 140.000-20.000	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T19 20.000-10.000	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T20 10.000-0.000	Solid Round	3/4	A36 (36 ksi)	Flat Bar	11.5x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 343.000-341.875	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 341.875-340.000	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T3-T4 340.000-300.000	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T5-T6 300.000-260.000	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T7-T12 260.000-140.000	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T13-T18 140.000-20.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T19 20.000-10.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T20 10.000-0.000	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 343.000-341.875	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 341.875-340.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3-T4 340.000-300.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5-T6 300.000-260.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7-T12 260.000-140.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T13-T18 140.000-20.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T19 20.000-10.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T20 10.000-0.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Brace Diags X	K Brace Diags Y	Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1 343.000-341.875	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 341.875-340.000	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T3-T4 340.000-300.000	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T5-T6 300.000-260.000	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T7-T12 260.000-140.000	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T13-T18 140.000-20.000	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T19 20.000-10.000	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T20 10.000-0.000	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 343.000-341.875	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 341.875-340.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3-T4 340.000-300.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5-T6 300.000-260.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7-T12 260.000-140.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	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
T13-T18 140.000-20.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T19 20.000-10.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T20 10.000-0.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

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
T1 343.000-341.875	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 341.875-340.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3-T4 340.000-300.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5-T6 300.000-260.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7-T12 260.000-140.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13-T18 140.000-20.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T19 20.000-10.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T20 10.000-0.000	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
58.125	EHS	A	3/8	1.540	10%	21000.000	0.273	224.011	214.000	0.0000	-14.000	100%
		B	3/8	1.540	10%	21000.000	0.273	191.611	179.000	0.0000	-15.000	100%
		C	3/8	1.540	10%	21000.000	0.273	221.938	219.000	0.0000	12.000	100%
114.875	EHS	A	5/16	1.120	10%	21000.000	0.205	248.136	214.000	0.0000	-14.000	100%
		B	5/16	1.120	10%	21000.000	0.205	219.584	179.000	0.0000	-15.000	100%
		C	5/16	1.120	10%	21000.000	0.205	240.210	219.000	0.0000	12.000	100%

174.875	EHS	A	5/16	1.120	10%	21000.000	0.205	284.323	214.000	0.0000	-14.000	100%
		B	5/16	1.120	10%	21000.000	0.205	259.931	179.000	0.0000	-15.000	100%
		C	5/16	1.120	10%	21000.000	0.205	271.772	219.000	0.0000	12.000	100%
236.5	EHS	A	3/8	1.540	10%	21000.000	0.273	357.024	254.000	0.0000	-16.000	100%
		B	3/8	1.540	10%	21000.000	0.273	323.037	198.000	0.0000	-20.000	100%
		C	3/8	1.540	10%	21000.000	0.273	339.762	253.000	0.0000	8.000	100%
285.125	EHS	A	3/8	1.540	10%	21000.000	0.273	392.859	254.000	0.0000	-16.000	100%
		B	3/8	1.540	10%	21000.000	0.273	362.783	198.000	0.0000	-20.000	100%
		C	3/8	1.540	10%	21000.000	0.273	374.140	253.000	0.0000	8.000	100%
341.958	EHS	A	5/16	1.120	10%	21000.000	0.205	437.883	254.000	0.0000	-16.000	100%
		B	5/16	1.120	10%	21000.000	0.205	411.661	198.000	0.0000	-20.000	100%
		C	5/16	1.120	10%	21000.000	0.205	417.924	253.000	0.0000	8.000	100%

Guy Data *(cont'd)*

Guy Elevation ft	*Mount Type*	*Torque-Arm Spread ft*	*Torque-Arm Leg Angle °*	*Torque-Arm Style*	*Torque-Arm Grade*	*Torque-Arm Type*	*Torque-Arm Size*
58.125	Torque Arm	6.000	30.0000	Bat Ear	A36 (36 ksi)	Channel	C8x11.5
114.875	Torque Arm	6.000	30.0000	Bat Ear	A36 (36 ksi)	Channel	C8x11.5
174.875	Corner						
236.5	Corner						
285.125	Corner						
341.958	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	*Diagonal Grade*	*Diagonal Type*	*Upper Diagonal Size*	*Lower Diagonal Size*	*Is Strap.*	*Pull-Off Grade*	*Pull-Off Type*	*Pull-Off Size*
58.125	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Single Angle	
114.875	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Single Angle	
174.875	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Single Angle	
236.500	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Single Angle	
285.125	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Single Angle	
341.958	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Single Angle	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
58.125	0.061	0.052	0.061		4.424 3.6 sec/pulse	3.237 3.1 sec/pulse	4.353 3.6 sec/pulse	
114.875	0.051	0.045	0.049		5.575 4.1 sec/pulse	4.365 3.6 sec/pulse	5.237 4.0 sec/pulse	
174.875	0.058	0.053	0.056		7.280 4.7 sec/pulse	6.084 4.3 sec/pulse	6.667 4.5 sec/pulse	
236.5	0.097	0.088	0.093		11.063 5.7 sec/pulse	9.053 5.2 sec/pulse	10.040 5.5 sec/pulse	
285.125	0.107	0.099	0.102		13.339 6.3 sec/pulse	11.371 5.8 sec/pulse	12.124 6.0 sec/pulse	
341.958	0.090	0.084	0.086		17.010 7.1 sec/pulse	15.028 6.7 sec/pulse	15.528 6.8 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
58.125	No	No	1	1	1	1	1	1
114.875	No	No	1	1	1	1	1	1
174.875	No	No			1	1	1	1
236.5	No	No			1	1	1	1
285.125	No	No			1	1	1	1
341.958	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
58.125	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
114.875	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
174.875	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
236.5	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
285.125	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
341.958	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z ksf	q_z Ice ksf	Ice Thickness in
58.125	A	22.063	0.031		
	B	21.563	0.031		
	C	35.063	0.034		
114.875	A	50.438	0.037		
	B	49.938	0.037		
	C	63.438	0.038		
174.875	A	80.438	0.040		
	B	79.938	0.040		
	C	93.438	0.041		
236.5	A	110.250	0.042		
	B	108.250	0.042		
	C	122.250	0.043		
285.125	A	134.563	0.043		
	B	132.563	0.043		
	C	146.563	0.044		
341.958	A	162.979	0.044		
	B	160.979	0.044		
	C	174.979	0.045		

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
1/2" Coax	A	No	No	Ar (CaAa)	13.500 - 6.000	1	1	0.5800	0.5800		0.000
1/4" Coax	A	No	No	Ar (CaAa)	19.250 - 6.000	1	1	0.2500	0.2500		0.000
7/8" Coax	A	No	No	Ar (CaAa)	25.600 - 6.000	1	1	1.1000	1.1000		0.000
1/4" OD	B	No	No	Ar (CaAa)	32.000 - 6.000	1	1	0.8400	0.8400		0.001
7/8" Coax	A	No	No	Ar (CaAa)	36.000 - 6.000	1	1	1.1000	1.1000		0.000
7/8" Coax	A	No	No	Ar (CaAa)	47.000 - 6.000	1	1	1.1000	1.1000		0.000
7/8" Coax	A	No	No	Ar (CaAa)	139.500 - 6.000	1	1	1.1000	1.1000		0.000
1 1/16" OD	A	No	No	Ar (CaAa)	343.000 - 6.000	1	1	1.0625	1.0625		0.000
3" Coax	B	No	No	Ar (CaAa)	220.000 - 6.000	1	1	3.0100	3.0100		0.002
3" Coax	B	No	No	Ar (CaAa)	337.500 - 6.000	1	1	3.0100	3.0100		0.002
1" Heliax (City and County of San Francisco)	B	No	No	Ar (CaAa)	137.000 - 0.000	3	3	1.0000	1.0000		0.001
1" Rigid (City and County of San Francisco)	C	No	No	Ar (CaAa)	137.000 - 0.000	2	2	1.1630	1.0000		0.001

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	343.000-341.875	A	0.000	0.000	0.120	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T2	341.875-340.000	A	0.000	0.000	0.199	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T3	340.000-320.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	5.268	0.000	0.031

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.000	0.000	0.000
T4	320.000-300.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	6.020	0.000	0.036
		C	0.000	0.000	0.000	0.000	0.000
T5	300.000-280.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	6.020	0.000	0.036
		C	0.000	0.000	0.000	0.000	0.000
T6	280.000-260.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	6.020	0.000	0.036
		C	0.000	0.000	0.000	0.000	0.000
T7	260.000-240.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	6.020	0.000	0.036
		C	0.000	0.000	0.000	0.000	0.000
T8	240.000-220.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	6.020	0.000	0.036
		C	0.000	0.000	0.000	0.000	0.000
T9	220.000-200.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	12.040	0.000	0.071
		C	0.000	0.000	0.000	0.000	0.000
T10	200.000-180.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	12.040	0.000	0.071
		C	0.000	0.000	0.000	0.000	0.000
T11	180.000-160.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	12.040	0.000	0.071
		C	0.000	0.000	0.000	0.000	0.000
T12	160.000-140.000	A	0.000	0.000	2.125	0.000	0.003
		B	0.000	0.000	12.040	0.000	0.071
		C	0.000	0.000	0.000	0.000	0.000
T13	140.000-120.000	A	0.000	0.000	4.270	0.000	0.005
		B	0.000	0.000	17.140	0.000	0.112
		C	0.000	0.000	3.400	0.000	0.023
T14	120.000-100.000	A	0.000	0.000	4.325	0.000	0.005
		B	0.000	0.000	18.040	0.000	0.119
		C	0.000	0.000	4.000	0.000	0.027
T15	100.000-80.000	A	0.000	0.000	4.325	0.000	0.005
		B	0.000	0.000	18.040	0.000	0.119
		C	0.000	0.000	4.000	0.000	0.027
T16	80.000-60.000	A	0.000	0.000	4.325	0.000	0.005
		B	0.000	0.000	18.040	0.000	0.119
		C	0.000	0.000	4.000	0.000	0.027
T17	60.000-40.000	A	0.000	0.000	5.095	0.000	0.006
		B	0.000	0.000	18.040	0.000	0.119
		C	0.000	0.000	4.000	0.000	0.027
T18	40.000-20.000	A	0.000	0.000	8.901	0.000	0.009
		B	0.000	0.000	19.048	0.000	0.129
		C	0.000	0.000	4.000	0.000	0.027
T19	20.000-10.000	A	0.000	0.000	5.897	0.000	0.007
		B	0.000	0.000	9.860	0.000	0.068
		C	0.000	0.000	2.000	0.000	0.013
T20	10.000-0.000	A	0.000	0.000	2.517	0.000	0.003
		B	0.000	0.000	5.744	0.000	0.042
		C	0.000	0.000	2.000	0.000	0.013

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T1	343.000-341.875	-0.5434	-0.3137	-0.5434	-0.3137
T2	341.875-340.000	-0.6503	-0.3754	-0.6503	-0.3754
T3	340.000-320.000	0.9663	-1.1769	0.9663	-1.1769
T4	320.000-300.000	1.1472	-1.2637	1.1472	-1.2637
T5	300.000-280.000	1.0785	-1.1880	1.0785	-1.1880
T6	280.000-260.000	1.0785	-1.1880	1.0785	-1.1880
T7	260.000-240.000	1.0448	-1.1509	1.0448	-1.1509
T8	240.000-220.000	1.0448	-1.1509	1.0448	-1.1509
T9	220.000-200.000	2.1224	-1.6787	2.1224	-1.6787
T10	200.000-180.000	2.1224	-1.6787	2.1224	-1.6787
T11	180.000-160.000	2.1224	-1.6787	2.1224	-1.6787
T12	160.000-140.000	2.1224	-1.6787	2.1224	-1.6787
T13	140.000-120.000	1.8501	-1.4881	1.8501	-1.4881
T14	120.000-100.000	1.8884	-1.4629	1.8884	-1.4629
T15	100.000-80.000	1.8884	-1.4629	1.8884	-1.4629
T16	80.000-60.000	1.8884	-1.4629	1.8884	-1.4629
T17	60.000-40.000	1.7584	-1.4986	1.7584	-1.4986
T18	40.000-20.000	1.2673	-1.6976	1.2673	-1.6976
T19	20.000-10.000	0.9415	-1.8155	0.9415	-1.8155
T20	10.000-0.000	1.2882	-1.0253	1.2882	-1.0253

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	8	1 1/16" OD	341.88 - 343.00	0.6000	0.6000
T2	8	1 1/16" OD	340.00 - 341.88	0.6000	0.6000
T3	8	1 1/16" OD	320.00 - 340.00	0.6000	0.6000
T3	10	3" Coax	320.00 - 337.50	0.6000	0.6000
T4	8	1 1/16" OD	300.00 - 320.00	0.6000	0.6000
T4	10	3" Coax	300.00 - 320.00	0.6000	0.6000
T5	8	1 1/16" OD	280.00 - 300.00	0.6000	0.6000
T5	10	3" Coax	280.00 - 300.00	0.6000	0.6000
T6	8	1 1/16" OD	260.00 - 280.00	0.6000	0.6000
T6	10	3" Coax	260.00 - 280.00	0.6000	0.6000
T7	8	1 1/16" OD	240.00 - 260.00	0.6000	0.6000
T7	10	3" Coax	240.00 - 260.00	0.6000	0.6000
T8	8	1 1/16" OD	220.00 - 240.00	0.6000	0.6000
T8	10	3" Coax	220.00 - 240.00	0.6000	0.6000
T9	8	1 1/16" OD	200.00 - 220.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	9	3" Coax	200.00 - 220.00	0.6000	0.6000
T9	10	3" Coax	200.00 - 220.00	0.6000	0.6000
T10	8	1 1/16" OD	180.00 - 200.00	0.6000	0.6000
T10	9	3" Coax	180.00 - 200.00	0.6000	0.6000
T10	10	3" Coax	180.00 - 200.00	0.6000	0.6000
T11	8	1 1/16" OD	160.00 - 180.00	0.6000	0.6000
T11	9	3" Coax	160.00 - 180.00	0.6000	0.6000
T11	10	3" Coax	160.00 - 180.00	0.6000	0.6000
T12	8	1 1/16" OD	140.00 - 160.00	0.6000	0.6000
T12	9	3" Coax	140.00 - 160.00	0.6000	0.6000
T12	10	3" Coax	140.00 - 160.00	0.6000	0.6000
T13	7	7/8" Coax	120.00 - 139.50	0.6000	0.6000
T13	8	1 1/16" OD	120.00 - 140.00	0.6000	0.6000
T13	9	3" Coax	120.00 - 140.00	0.6000	0.6000
T13	10	3" Coax	120.00 - 140.00	0.6000	0.6000
T13	11	1" Heliax	120.00 - 137.00	0.6000	0.6000
T13	12	1" Rigid	120.00 - 137.00	0.6000	0.6000
T14	7	7/8" Coax	100.00 - 120.00	0.6000	0.6000
T14	8	1 1/16" OD	100.00 - 120.00	0.6000	0.6000
T14	9	3" Coax	100.00 - 120.00	0.6000	0.6000
T14	10	3" Coax	100.00 - 120.00	0.6000	0.6000
T14	11	1" Heliax	100.00 - 120.00	0.6000	0.6000
T14	12	1" Rigid	100.00 - 120.00	0.6000	0.6000
T15	7	7/8" Coax	80.00 - 100.00	0.6000	0.6000
T15	8	1 1/16" OD	80.00 - 100.00	0.6000	0.6000
T15	9	3" Coax	80.00 - 100.00	0.6000	0.6000
T15	10	3" Coax	80.00 - 100.00	0.6000	0.6000
T15	11	1" Heliax	80.00 - 100.00	0.6000	0.6000
T15	12	1" Rigid	80.00 - 100.00	0.6000	0.6000
T16	7	7/8" Coax	60.00 - 80.00	0.6000	0.6000
T16	8	1 1/16" OD	60.00 - 80.00	0.6000	0.6000
T16	9	3" Coax	60.00 - 80.00	0.6000	0.6000
T16	10	3" Coax	60.00 - 80.00	0.6000	0.6000
T16	11	1" Heliax	60.00 - 80.00	0.6000	0.6000
T16	12	1" Rigid	60.00 - 80.00	0.6000	0.6000
T17	6	7/8" Coax	40.00 - 47.00	0.6000	0.6000
T17	7	7/8" Coax	40.00 - 60.00	0.6000	0.6000
T17	8	1 1/16" OD	40.00 - 60.00	0.6000	0.6000
T17	9	3" Coax	40.00 - 60.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T17	10	3" Coax	40.00 - 60.00	0.6000	0.6000
T17	11	1" Heliax	40.00 - 60.00	0.6000	0.6000
T17	12	1" Rigid	40.00 - 60.00	0.6000	0.6000
T18	3	7/8" Coax	20.00 - 25.60	0.6000	0.6000
T18	4	1/4" OD	20.00 - 32.00	0.6000	0.6000
T18	5	7/8" Coax	20.00 - 36.00	0.6000	0.6000
T18	6	7/8" Coax	20.00 - 40.00	0.6000	0.6000
T18	7	7/8" Coax	20.00 - 40.00	0.6000	0.6000
T18	8	1 1/16" OD	20.00 - 40.00	0.6000	0.6000
T18	9	3" Coax	20.00 - 40.00	0.6000	0.6000
T18	10	3" Coax	20.00 - 40.00	0.6000	0.6000
T18	11	1" Heliax	20.00 - 40.00	0.6000	0.6000
T18	12	1" Rigid	20.00 - 40.00	0.6000	0.6000
T19	1	1/2" Coax	10.00 - 13.50	0.6000	0.6000
T19	2	1/4" Coax	10.00 - 19.25	0.6000	0.6000
T19	3	7/8" Coax	10.00 - 20.00	0.6000	0.6000
T19	4	1/4" OD	10.00 - 20.00	0.6000	0.6000
T19	5	7/8" Coax	10.00 - 20.00	0.6000	0.6000
T19	6	7/8" Coax	10.00 - 20.00	0.6000	0.6000
T19	7	7/8" Coax	10.00 - 20.00	0.6000	0.6000
T19	8	1 1/16" OD	10.00 - 20.00	0.6000	0.6000
T19	9	3" Coax	10.00 - 20.00	0.6000	0.6000
T19	10	3" Coax	10.00 - 20.00	0.6000	0.6000
T19	11	1" Heliax	10.00 - 20.00	0.6000	0.6000
T19	12	1" Rigid	10.00 - 20.00	0.6000	0.6000
T20	1	1/2" Coax	6.00 - 10.00	0.6000	0.6000
T20	2	1/4" Coax	6.00 - 10.00	0.6000	0.6000
T20	3	7/8" Coax	6.00 - 10.00	0.6000	0.6000
T20	4	1/4" OD	6.00 - 10.00	0.6000	0.6000
T20	5	7/8" Coax	6.00 - 10.00	0.6000	0.6000
T20	6	7/8" Coax	6.00 - 10.00	0.6000	0.6000
T20	7	7/8" Coax	6.00 - 10.00	0.6000	0.6000
T20	8	1 1/16" OD	6.00 - 10.00	0.6000	0.6000
T20	9	3" Coax	6.00 - 10.00	0.6000	0.6000
T20	10	3" Coax	6.00 - 10.00	0.6000	0.6000
T20	11	1" Heliax	0.00 - 10.00	0.6000	0.6000
T20	12	1" Rigid	0.00 - 10.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
3' Yagi(.03k,2.08CAAA) (A3)	A	None		0.0000	25.500	No Ice	2.080	2.080	0.030
12X12X3 ODU (A2)	A	None		0.0000	19.250	No Ice	1.200	0.407	0.003
Junction Box (A2)	A	None		0.0000	19.250	No Ice	0.450	0.200	0.020
3' Yagi(.03k,2.08CAAA) (A5)	A	None		0.0000	36.000	No Ice	2.080	2.080	0.030

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
15'X2.5" Omni (A7)	A	From Leg	3.000 0.000 7.500	0.0000	139.500	No Ice	4.500	4.500	0.030
3' Stand-off (A7)	A	From Leg	1.000 0.000 0.000	0.0000	139.500	No Ice	0.500	0.500	0.010
Side Light (A8)	A	From Leg	1.000 0.000 0.000	0.0000	171.500	No Ice	0.400	0.400	0.010
Side Light (A8)	B	From Leg	1.000 0.000 0.000	0.0000	171.500	No Ice	0.400	0.400	0.010
Side Light (A8)	C	From Leg	1.000 0.000 0.000	0.0000	171.500	No Ice	0.400	0.400	0.010
4-Bay FM Antenna (w/o Radomes) (A9)	B	From Leg	0.500 0.000 0.000	0.0000	220.000 - 190.500	No Ice	15.000	15.000	0.250
6-Bay FM antenna w/o Radomes (A10)	B	From Leg	0.500 0.000 0.000	0.0000	337.500 - 290.000	No Ice	25.000	25.000	1.070
Strobe Light (A11)	C	None		0.0000	343.000	No Ice	5.600	1.400	0.050
45" x 5/8" Lightning Rod (A12)	A	None		0.0000	343.000	No Ice	2.500	2.500	0.025
**********									
Omni/Whip 205"x3" (City and County of San Francisco)	B	From Leg	3.000 0.000 17.000	0.0000	120.000	No Ice	5.125	5.125	0.049
Omni/Whip 205"x3" (City and County of San Francisco)	C	From Leg	3.000 0.000 17.000	0.0000	120.000	No Ice	5.125	5.125	0.049
60'"x10.4"x6" Panel (City and County of San Francisco)	C	From Leg	3.000 0.000 0.000	0.0000	100.000	No Ice	6.556	3.750	0.030
Pipe Mount 3'x4.5" (City and County of San Francisco)	B	From Leg	1.000 0.000 0.000	0.0000	16.000	No Ice	0.879	0.879	0.032
Pipe Mount 3'x4.5" (City and County of San Francisco)	A	From Leg	1.000 0.000 0.000	0.0000	22.000	No Ice	0.866	0.866	0.032
Pipe Mount 3'x4.5" (City and County of San Francisco)	B	From Leg	1.000 0.000 0.000	0.0000	120.000	No Ice	0.808	0.808	0.032
Pipe Mount 3'x4.5" (City and County of San Francisco)	C	From Leg	1.000 0.000 0.000	0.0000	120.000	No Ice	0.808	0.808	0.032
Pipe Mount 3'x4.5" (City and County of San Francisco)	C	From Leg	1.000 0.000 0.000	0.0000	100.000	No Ice	0.813	0.813	0.032

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
6'*3' Paraflector (A1)		Grid	None		0.0000		13.500	6.000	No Ice	28.270	0.030
2' Dish (A2)		Paraboloid w/Shroud (HP)	None		0.0000		19.250	2.000	No Ice	6.250	0.030
8" Dish (A4)		Paraboloid w/o Radome	None		0.0000		32.000	2.000	No Ice	3.140	0.030
6' Grid Dish (A6)		Grid	None		0.0000		47.000	6.000	No Ice	11.480	0.250
**********											
RFS SC3-W100B Microwave Dish (City and County of San Francisco)	A	Grid	From Leg	2.000 0.000 0.000	0.0000		22.000	3.280	No Ice	8.450	0.040
RFS SC3-W100B Microwave Dish (City and County of San Francisco)	B	Grid	From Leg	2.000 0.000 0.000	0.0000		16.000	3.280	No Ice	8.450	0.040

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	6.647			
Bracing Weight	5.860			
Total Member Self-Weight	12.507			
Guy Weight	1.652			
Total Weight	17.995			
Wind 0 deg - No Ice		0.029	-19.604	3.858
Wind 30 deg - No Ice		9.905	-17.077	3.310
Wind 60 deg - No Ice		17.097	-9.872	1.967
Wind 90 deg - No Ice		19.541	-0.041	-0.006
Wind 120 deg - No Ice		16.972	9.766	-1.891
Wind 150 deg - No Ice		9.638	16.682	-3.192
Wind 180 deg - No Ice		-0.023	19.593	-3.854
Wind 210 deg - No Ice		-9.892	17.084	-3.289
Wind 240 deg - No Ice		-17.092	9.869	-1.967
Wind 270 deg - No Ice		-19.541	0.025	-0.013
Wind 300 deg - No Ice		-16.961	-9.767	1.887
Wind 330 deg - No Ice		-9.627	-16.689	3.191
Total Weight	17.995			
Wind 0 deg - Service		0.012	-8.166	1.604
Wind 30 deg - Service		4.126	-7.113	1.378
Wind 60 deg - Service		7.122	-4.112	0.822
Wind 90 deg - Service		8.140	-0.017	0.002
Wind 120 deg - Service		7.070	4.068	-0.782
Wind 150 deg - Service		4.015	6.949	-1.324
Wind 180 deg - Service		-0.010	8.162	-1.602
Wind 210 deg - Service		-4.121	7.116	-1.370
Wind 240 deg - Service		-7.120	4.111	-0.822
Wind 270 deg - Service		-8.140	0.010	-0.010
Wind 300 deg - Service		-7.065	-4.068	0.780

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Wind 330 deg - Service		-4.010	-6.952	1.324

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
14	Dead+Wind 0 deg - Service+Guy
15	Dead+Wind 30 deg - Service+Guy
16	Dead+Wind 60 deg - Service+Guy
17	Dead+Wind 90 deg - Service+Guy
18	Dead+Wind 120 deg - Service+Guy
19	Dead+Wind 150 deg - Service+Guy
20	Dead+Wind 180 deg - Service+Guy
21	Dead+Wind 210 deg - Service+Guy
22	Dead+Wind 240 deg - Service+Guy
23	Dead+Wind 270 deg - Service+Guy
24	Dead+Wind 300 deg - Service+Guy
25	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	343 - 341.875	Leg	Max Tension	3	0.071	-0.014	0.024
			Max. Compression	12	-5.444	0.000	-0.011
			Max. Mx	11	0.061	0.064	0.021
			Max. My	7	-4.237	-0.016	-0.073
			Max. Vy	11	0.809	0.064	0.021
			Max. Vx	8	-0.929	-0.022	-0.073
		Diagonal	Max Tension	9	0.320	0.000	0.000
			Max. Compression	3	-0.289	0.000	0.000
			Max. Mx	13	0.293	0.001	0.000
			Max. My	9	-0.095	0.000	0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	9	-0.000	0.000	0.000
		Top Girt	Max Tension	4	0.202	0.000	0.000
			Max. Compression	10	-0.173	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	6	0.125	0.001	0.000
			Max. My	2	-0.160	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	6	1.332	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	6	1.332	0.001	0.000
			Max. My	2	0.668	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Guy A	Bottom Tension	8	5.189		
			Top Tension	8	5.261		
			Top Cable Vert	8	4.395		
			Top Cable Norm	8	2.891		
			Top Cable Tan	8	0.002		
			Bot Cable Vert	8	-4.107		
			Bot Cable Norm	8	3.172		
			Bot Cable Tan	8	0.002		
		Guy B	Bottom Tension	12	6.171		
			Top Tension	12	6.242		
			Top Cable Vert	12	5.559		
			Top Cable Norm	12	2.839		
			Top Cable Tan	12	0.002		
			Bot Cable Vert	12	-5.296		
			Bot Cable Norm	12	3.167		
			Bot Cable Tan	12	0.002		
		Guy C	Bottom Tension	4	5.058		
			Top Tension	4	5.125		
			Top Cable Vert	4	4.188		
			Top Cable Norm	4	2.954		
			Top Cable Tan	4	0.004		
			Bot Cable Vert	4	-3.912		
			Bot Cable Norm	4	3.206		
			Bot Cable Tan	4	0.004		
T2	341.875 - 340	Leg	Max Tension	10	0.373	0.087	-0.030
			Max. Compression	12	-6.544	0.008	0.004
			Max. Mx	4	-4.456	-0.107	0.033
			Max. My	2	-4.236	-0.012	0.117
			Max. Vy	11	0.808	-0.003	0.000
			Max. Vx	8	-0.928	-0.004	0.004
		Diagonal	Max Tension	7	1.416	0.000	0.000
			Max. Compression	13	-1.357	0.000	0.000
			Max. Mx	13	-1.355	0.001	0.000
			Max. My	3	-1.085	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	3	0.000	0.000	0.000
		Top Girt	Max Tension	13	0.593	0.000	0.000
			Max. Compression	8	-0.202	0.000	0.000
			Max. Mx	6	0.168	0.001	0.000
			Max. My	2	0.578	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	4	0.611	0.000	0.000
			Max. Compression	7	-0.599	0.000	0.000
			Max. Mx	6	0.132	0.001	0.000
			Max. My	2	0.380	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T3	340 - 320	Leg	Max Tension	2	5.895	0.006	0.001
			Max. Compression	12	-12.524	-0.009	-0.008
			Max. Mx	5	-5.033	0.091	0.004

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	8	-1.436	-0.012	0.106
			Max. Vy	5	-0.396	-0.008	0.004
			Max. Vx	2	0.447	0.002	0.006
		Diagonal	Max Tension	7	1.324	0.000	0.000
			Max. Compression	13	-1.241	0.000	0.000
			Max. Mx	11	0.139	0.001	0.000
			Max. My	9	-0.017	0.000	0.000
			Max. Vy	11	-0.002	0.000	0.000
			Max. Vx	9	-0.000	0.000	0.000
		Horizontal	Max Tension	4	0.850	0.000	0.000
			Max. Compression	7	-0.902	0.000	0.000
			Max. Mx	6	0.061	0.001	0.000
			Max. My	2	0.042	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	2	0.569	0.000	0.000
			Max. Compression	8	-0.583	0.000	0.000
			Max. Mx	6	-0.239	0.001	0.000
			Max. My	2	0.569	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.083	0.000	0.000
			Max. Compression	10	-0.081	0.000	0.000
			Max. Mx	6	0.035	0.001	0.000
			Max. My	2	0.037	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T4	320 - 300	Leg	Max Tension	10	5.961	-0.003	-0.002
			Max. Compression	12	-12.495	0.012	-0.005
			Max. Mx	10	-4.732	-0.089	0.052
			Max. My	2	-4.620	0.020	-0.100
			Max. Vy	10	-0.539	0.045	-0.032
			Max. Vx	2	-0.563	-0.005	0.040
		Diagonal	Max Tension	8	1.599	0.000	0.000
			Max. Compression	2	-1.634	0.000	0.000
			Max. Mx	11	1.473	0.001	0.000
			Max. My	9	0.702	0.000	0.000
			Max. Vy	11	-0.002	0.000	0.000
			Max. Vx	9	-0.000	0.000	0.000
		Horizontal	Max Tension	2	1.100	0.000	0.000
			Max. Compression	10	-1.137	0.000	0.000
			Max. Mx	6	0.026	0.001	0.000
			Max. My	2	1.100	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	10	0.117	0.000	0.000
			Max. Compression	3	-0.110	0.000	0.000
			Max. Mx	6	-0.003	0.001	0.000
			Max. My	2	-0.100	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	2	0.681	0.000	0.000
			Max. Compression	8	-0.661	0.000	0.000
			Max. Mx	6	-0.212	0.001	0.000
			Max. My	2	0.681	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T5	300 - 280	Leg	Max Tension	4	7.003	0.002	0.006
			Max. Compression	6	-15.977	-0.012	-0.003
			Max. Mx	10	-4.752	0.180	-0.116
			Max. My	2	-4.639	-0.031	0.182

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	10	-0.542	0.180	-0.116
			Max. Vx	2	-0.569	-0.031	0.182
		Diagonal	Max Tension	8	2.244	0.000	0.000
			Max. Compression	2	-2.211	0.000	0.000
			Max. Mx	13	1.720	0.001	0.000
			Max. My	2	0.797	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	3	2.901	0.000	0.000
			Max. Compression	8	-1.716	0.000	0.000
			Max. Mx	6	2.242	0.001	0.000
			Max. My	2	-1.353	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	8	0.803	0.000	0.000
			Max. Compression	2	-0.814	0.000	0.000
			Max. Mx	6	0.267	0.001	0.000
			Max. My	2	-0.814	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.411	0.000	0.000
			Max. Compression	9	-0.365	0.000	0.000
			Max. Mx	6	0.111	0.001	0.000
			Max. My	2	0.092	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Guy A	Bottom Tension	8	6.554		
			Top Tension	8	6.634		
			Top Cable Vert	8	5.188		
			Top Cable Norm	8	4.135		
			Top Cable Tan	8	0.003		
			Bot Cable Vert	8	-4.877		
			Bot Cable Norm	8	4.378		
			Bot Cable Tan	8	0.003		
		Guy B	Bottom Tension	12	7.878		
			Top Tension	12	7.959		
			Top Cable Vert	12	6.771		
			Top Cable Norm	12	4.183		
			Top Cable Tan	12	0.002		
			Bot Cable Vert	12	-6.482		
			Bot Cable Norm	12	4.478		
			Bot Cable Tan	12	0.002		
		Guy C	Bottom Tension	4	6.357		
			Top Tension	4	6.431		
			Top Cable Vert	4	4.863		
			Top Cable Norm	4	4.208		
			Top Cable Tan	4	0.004		
			Bot Cable Vert	4	-4.569		
			Bot Cable Norm	4	4.419		
			Bot Cable Tan	4	0.004		
T6	280 - 260	Leg	Max Tension	8	1.165	-0.050	0.019
			Max. Compression	10	-15.120	-0.024	-0.016
			Max. Mx	2	-14.402	-0.073	-0.021
			Max. My	9	-11.969	0.018	0.096
			Max. Vy	4	-0.319	-0.019	0.000
			Max. Vx	9	-0.357	0.011	0.007
		Diagonal	Max Tension	3	1.045	0.000	0.000
			Max. Compression	9	-1.061	0.000	0.000
			Max. Mx	13	0.043	0.001	0.000
			Max. My	2	0.478	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	9	0.722	0.000	0.000
			Max. Compression	3	-0.722	0.000	0.000
			Max. Mx	6	-0.012	0.001	0.000
			Max. My	2	-0.306	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	9	0.358	0.000	0.000
			Max. Compression	3	-0.379	0.000	0.000
			Max. Mx	6	-0.083	0.001	0.000
			Max. My	2	-0.101	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.358	0.000	0.000
			Max. Compression	9	-0.317	0.000	0.000
			Max. Mx	6	-0.039	0.001	0.000
			Max. My	2	0.350	0.000	0.000
			Max. Vy	6	-0.001	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T7	260 - 240	Leg	Max Tension	12	7.381	-0.059	-0.047
			Max. Compression	10	-22.621	0.024	0.017
			Max. Mx	13	-19.861	-0.106	-0.066
			Max. My	2	-0.090	0.023	-0.118
			Max. Vy	10	-0.443	0.026	-0.013
			Max. Vx	2	-0.472	0.003	-0.000
		Diagonal	Max Tension	8	1.426	0.000	0.000
			Max. Compression	2	-1.554	0.000	0.000
			Max. Mx	13	0.777	0.001	0.000
			Max. My	2	0.579	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	2	1.037	0.000	0.000
			Max. Compression	10	-0.990	0.000	0.000
			Max. Mx	6	0.029	0.001	0.000
			Max. My	2	-0.714	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	9	0.369	0.000	0.000
			Max. Compression	3	-0.378	0.000	0.000
			Max. Mx	6	0.071	0.001	0.000
			Max. My	2	-0.375	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	2	0.639	0.000	0.000
			Max. Compression	8	-0.567	0.000	0.000
			Max. Mx	6	-0.185	0.001	0.000
			Max. My	2	0.639	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T8	240 - 220	Leg	Max Tension	12	8.818	-0.018	-0.005
			Max. Compression	2	-24.525	0.005	0.036
			Max. Mx	10	-0.038	0.137	-0.076
			Max. My	2	-10.499	0.009	0.158
			Max. Vy	5	-0.459	-0.105	-0.032
			Max. Vx	2	0.550	0.009	0.158
		Diagonal	Max Tension	3	1.750	0.000	0.000
			Max. Compression	9	-1.756	0.000	0.000
			Max. Mx	13	1.459	0.001	0.000
			Max. My	2	0.641	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Horizontal	Max Tension	10	2.424	0.000	0.000
			Max. Compression	3	-1.348	0.000	0.000
			Max. Mx	9	-0.370	0.001	0.000
			Max. My	2	-1.081	0.000	0.000
			Max. Vy	9	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	8	0.609	0.000	0.000
			Max. Compression	2	-0.644	0.000	0.000
			Max. Mx	6	0.214	0.001	0.000
			Max. My	2	-0.644	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.600	0.000	0.000
			Max. Compression	10	-0.584	0.000	0.000
			Max. Mx	6	0.257	0.001	0.000
			Max. My	2	-0.370	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Guy A	Bottom Tension	8	6.165		
			Top Tension	8	6.233		
			Top Cable Vert	8	4.499		
			Top Cable Norm	8	4.313		
			Top Cable Tan	8	0.002		
			Bot Cable Vert	8	-4.233		
			Bot Cable Norm	8	4.481		
			Bot Cable Tan	8	0.002		
		Guy B	Bottom Tension	12	7.291		
			Top Tension	12	7.360		
			Top Cable Vert	12	5.916		
			Top Cable Norm	12	4.378		
			Top Cable Tan	12	0.002		
			Bot Cable Vert	12	-5.663		
			Bot Cable Norm	12	4.593		
			Bot Cable Tan	12	0.002		
		Guy C	Bottom Tension	4	5.908		
			Top Tension	4	5.970		
			Top Cable Vert	4	4.102		
			Top Cable Norm	4	4.337		
			Top Cable Tan	4	0.003		
			Bot Cable Vert	4	-3.855		
			Bot Cable Norm	4	4.477		
			Bot Cable Tan	4	0.003		
T9	220 - 200	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	9	-18.370	0.057	0.020
			Max. Mx	5	-7.960	0.123	-0.002
			Max. My	9	-9.854	-0.041	0.151
			Max. Vy	5	-0.456	0.010	-0.017
			Max. Vx	2	0.549	0.013	0.021
		Diagonal	Max Tension	3	1.572	0.000	0.000
			Max. Compression	9	-1.654	0.000	0.000
			Max. Mx	11	0.279	0.001	0.000
			Max. My	2	0.225	0.000	-0.000
			Max. Vy	11	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	9	1.128	0.000	0.000
			Max. Compression	3	-1.098	0.000	0.000
			Max. Mx	9	-0.289	0.001	0.000
			Max. My	2	0.607	0.000	0.000
			Max. Vy	3	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	10	0.582	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	3	-0.551	0.000	0.000
			Max. Mx	6	-0.207	0.001	0.000
			Max. My	2	0.349	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.390	0.000	0.000
			Max. Compression	9	-0.355	0.000	0.000
			Max. Mx	6	-0.042	0.001	0.000
			Max. My	2	0.346	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T10	200 - 180	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	9	-17.764	-0.114	-0.018
			Max. Mx	13	-10.786	-0.161	-0.100
			Max. My	2	-10.493	0.072	-0.194
			Max. Vy	10	-0.575	0.014	-0.020
			Max. Vx	2	-0.702	0.011	-0.019
		Diagonal	Max Tension	8	2.299	0.000	0.000
			Max. Compression	2	-2.323	0.000	0.000
			Max. Mx	11	1.431	0.001	0.000
			Max. My	2	0.946	0.000	-0.000
			Max. Vy	11	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	2	1.557	0.000	0.000
			Max. Compression	8	-1.577	0.000	0.000
			Max. Mx	6	0.176	0.001	0.000
			Max. My	2	-0.835	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	9	0.445	0.000	0.000
			Max. Compression	3	-0.420	0.000	0.000
			Max. Mx	6	0.103	0.001	0.000
			Max. My	2	-0.395	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	2	0.926	0.000	0.000
			Max. Compression	8	-0.912	0.000	0.000
			Max. Mx	6	-0.312	0.001	0.000
			Max. My	2	0.926	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T11	180 - 160	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	9	-18.559	0.085	-0.023
			Max. Mx	10	-10.159	0.158	-0.122
			Max. My	8	-9.848	0.082	-0.192
			Max. Vy	4	0.577	-0.136	0.094
			Max. Vx	2	-0.707	-0.050	0.157
		Diagonal	Max Tension	2	2.329	0.000	0.000
			Max. Compression	8	-2.428	0.000	0.000
			Max. Mx	13	2.162	0.001	0.000
			Max. My	2	1.342	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	9	2.494	0.000	0.000
			Max. Compression	2	-1.663	0.000	0.000
			Max. Mx	6	0.243	0.001	0.000
			Max. My	2	-1.663	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	8	0.970	0.000	0.000
			Max. Compression	2	-0.936	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	6	0.361	0.001	0.000
			Max. My	2	-0.936	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.699	0.000	0.000
			Max. Compression	9	-0.600	0.000	0.000
			Max. Mx	6	-0.017	0.001	0.000
			Max. My	2	0.297	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Guy A	Bottom Tension	8	4.833		
			Top Tension	8	4.871		
			Top Cable Vert	8	3.289		
			Top Cable Norm	8	3.594		
			Top Cable Tan	8	0.002		
			Bot Cable Vert	8	-3.131		
			Bot Cable Norm	8	3.682		
			Bot Cable Tan	8	0.002		
		Guy B	Bottom Tension	12	5.335		
			Top Tension	12	5.373		
			Top Cable Vert	12	3.970		
			Top Cable Norm	12	3.621		
			Top Cable Tan	12	0.000		
			Bot Cable Vert	12	-3.817		
			Bot Cable Norm	12	3.728		
			Bot Cable Tan	12	0.000		
		Guy C	Bottom Tension	4	4.670		
			Top Tension	4	4.703		
			Top Cable Vert	4	2.868		
			Top Cable Norm	4	3.727		
			Top Cable Tan	4	0.002		
			Bot Cable Vert	4	-2.727		
			Bot Cable Norm	4	3.791		
			Bot Cable Tan	4	0.002		
T12	160 - 140	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	9	-20.272	0.001	0.003
			Max. Mx	9	-17.372	-0.147	0.025
			Max. My	8	-9.022	0.043	0.171
			Max. Vy	3	-0.522	-0.024	-0.000
			Max. Vx	8	-0.580	0.010	0.026
		Diagonal	Max Tension	3	1.740	0.000	0.000
			Max. Compression	2	-1.741	0.000	0.000
			Max. Mx	11	0.431	0.001	0.000
			Max. My	2	1.172	0.000	-0.000
			Max. Vy	11	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	2	1.192	0.000	0.000
			Max. Compression	3	-1.212	0.000	0.000
			Max. Mx	8	-0.956	0.001	0.000
			Max. My	2	-0.728	0.000	0.000
			Max. Vy	8	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	9	0.600	0.000	0.000
			Max. Compression	3	-0.641	0.000	0.000
			Max. Mx	6	0.071	0.001	0.000
			Max. My	2	-0.307	0.000	0.000
			Max. Vy	6	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	2	0.624	0.000	0.000
			Max. Compression	8	-0.557	0.000	0.000
			Max. Mx	8	-0.395	0.001	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	0.624	0.000	0.000
			Max. Vy	8	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T13	140 - 120	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	10	-25.672	0.001	0.020
			Max. Mx	13	-24.707	-0.245	-0.177
			Max. My	2	-6.393	0.090	-0.240
			Max. Vy	6	0.902	-0.063	-0.006
			Max. Vx	2	-0.822	0.013	-0.035
		Diagonal	Max Tension	7	3.096	0.000	0.000
			Max. Compression	13	-3.252	0.000	0.000
			Max. Mx	13	2.056	0.002	0.000
			Max. My	2	1.378	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	13	2.249	0.000	0.000
			Max. Compression	7	-2.201	0.000	0.000
			Max. Mx	12	0.849	0.001	0.000
			Max. My	2	-1.468	0.000	0.000
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	8	0.751	0.000	0.000
			Max. Compression	2	-0.741	0.000	0.000
			Max. Mx	8	0.415	0.001	0.000
			Max. My	2	-0.741	0.000	0.000
			Max. Vy	8	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	2	1.130	0.000	0.000
			Max. Compression	8	-1.016	0.000	0.000
			Max. Mx	12	0.700	0.001	0.000
			Max. My	2	1.130	0.000	0.000
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T14	120 - 100	Leg	Max Tension	12	5.037	0.068	0.103
			Max. Compression	2	-35.407	0.076	0.082
			Max. Mx	6	-5.454	-0.261	-0.155
			Max. My	8	-18.211	0.108	-0.255
			Max. Vy	10	-0.919	0.237	-0.118
			Max. Vx	2	-0.956	0.115	0.232
		Diagonal	Max Tension	2	3.355	0.000	0.000
			Max. Compression	8	-3.401	0.000	0.000
			Max. Mx	13	3.264	0.002	0.000
			Max. My	2	1.470	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	8	3.813	0.000	0.000
			Max. Compression	2	-2.481	0.000	0.000
			Max. Mx	12	0.288	0.001	0.000
			Max. My	9	-0.573	0.000	-0.000
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
		Top Girt	Max Tension	8	1.280	0.000	0.000
			Max. Compression	2	-1.252	0.000	0.000
			Max. Mx	12	-0.550	0.001	0.000
			Max. My	2	-1.252	0.000	0.000
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.534	0.000	0.000
			Max. Compression	9	-0.381	0.000	0.000
			Max. Mx	12	0.023	0.001	0.000
			Max. My	2	-0.019	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Guy A	Bottom Tension	8	4.091		
			Top Tension	8	4.117		
			Top Cable Vert	8	2.178		
			Top Cable Norm	8	3.494		
			Top Cable Tan	8	0.001		
			Bot Cable Vert	8	-2.071		
			Bot Cable Norm	8	3.528		
			Bot Cable Tan	8	0.002		
		Guy B	Bottom Tension	12	4.288		
			Top Tension	12	4.314		
			Top Cable Vert	12	2.587		
			Top Cable Norm	12	3.452		
			Top Cable Tan	12	0.001		
			Bot Cable Vert	12	-2.482		
			Bot Cable Norm	12	3.496		
			Bot Cable Tan	12	0.002		
		Guy C	Bottom Tension	4	3.876		
			Top Tension	4	3.897		
			Top Cable Vert	4	1.704		
			Top Cable Norm	4	3.505		
			Top Cable Tan	4	0.000		
			Bot Cable Vert	4	-1.614		
			Bot Cable Norm	4	3.524		
			Bot Cable Tan	4	0.002		
		Torque Arm Top	Max Tension	3	5.875	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	3	3.392	0.016	0.000
			Max. My	9	5.022	0.000	0.000
			Max. Vy	3	-0.021	0.000	0.000
			Max. Vx	9	-0.000	0.000	0.000
		Torque Arm Bottom	Max Tension	3	1.230	0.000	0.000
			Max. Compression	12	-6.919	0.000	0.000
			Max. Mx	13	-2.496	0.018	0.000
			Max. My	9	-0.121	0.000	0.000
			Max. Vy	13	-0.021	0.000	0.000
			Max. Vx	9	-0.000	0.000	0.000
T15	100 - 80	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	13	-26.210	-0.028	0.008
			Max. Mx	2	-25.498	-0.091	-0.033
			Max. My	9	-22.672	0.011	0.131
			Max. Vy	12	0.370	0.007	-0.014
			Max. Vx	2	0.486	0.009	0.024
		Diagonal	Max Tension	3	0.893	0.000	0.000
			Max. Compression	9	-0.840	0.000	0.000
			Max. Mx	13	-0.426	0.002	0.000
			Max. My	2	0.181	0.000	-0.000
			Max. Vy	13	-0.002	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Horizontal	Max Tension	9	0.518	0.000	0.000
			Max. Compression	3	-0.624	0.000	0.000
			Max. Mx	12	-0.018	0.001	0.000
			Max. My	9	0.116	0.000	-0.000
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
		Top Girt	Max Tension	10	0.271	0.000	0.000
			Max. Compression	4	-0.310	0.000	0.000
			Max. Mx	12	0.112	0.001	0.000
			Max. My	2	0.114	0.000	0.000
			Max. Vy	12	-0.002	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	3	0.297	0.000	0.000
			Max. Compression	9	-0.178	0.000	0.000
			Max. Mx	12	0.125	0.001	0.000
			Max. My	2	0.274	0.000	0.000
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T16	80 - 60	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-35.742	0.007	-0.058
			Max. Mx	5	-30.722	0.160	-0.052
			Max. My	2	-8.044	0.046	-0.147
			Max. Vy	5	0.608	0.008	-0.057
			Max. Vx	2	-0.559	-0.056	0.023
		Diagonal	Max Tension	8	1.415	0.000	0.000
			Max. Compression	2	-1.647	0.000	0.000
			Max. Mx	9	0.140	0.002	0.000
			Max. My	9	0.560	0.000	0.000
			Max. Vy	9	-0.002	0.000	0.000
			Max. Vx	9	-0.000	0.000	0.000
		Horizontal	Max Tension	4	1.091	0.000	0.000
			Max. Compression	8	-0.977	0.000	0.000
			Max. Mx	10	-0.059	0.001	0.000
			Max. My	9	0.115	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
		Top Girt	Max Tension	9	0.268	0.000	0.000
			Max. Compression	3	-0.274	0.000	0.000
			Max. Mx	12	-0.088	0.001	0.000
			Max. My	2	-0.253	0.000	0.000
			Max. Vy	12	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	2	0.602	0.000	0.000
			Max. Compression	8	-0.524	0.000	0.000
			Max. Mx	10	-0.221	0.001	0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T17	60 - 40	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-36.348	-0.053	0.017
			Max. Mx	6	-20.252	-0.203	-0.102
			Max. My	3	-25.343	-0.039	0.181
			Max. Vy	5	0.612	-0.144	-0.061
			Max. Vx	2	0.603	-0.010	0.147
		Diagonal	Max Tension	7	2.516	0.000	0.000
			Max. Compression	13	-2.923	0.000	0.000
			Max. Mx	9	0.769	0.002	0.000
			Max. My	8	0.252	0.000	0.000
			Max. Vy	9	-0.002	0.000	0.000
			Max. Vx	8	-0.000	0.000	0.000
		Horizontal	Max Tension	8	3.132	0.000	0.000
			Max. Compression	7	-1.931	0.000	0.000
			Max. Mx	10	-0.003	0.001	0.000
			Max. My	8	0.115	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000
		Top Girt	Max Tension	8	0.558	0.000	0.000
			Max. Compression	2	-0.453	0.000	0.000
			Max. Mx	10	0.276	0.001	0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	8	0.670	0.000	0.000
			Max. Compression	2	-0.591	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	10	0.286	0.001	0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	12	0.000	0.000	0.000
		Guy A	Bottom Tension	8	3.906		
			Top Tension	8	3.926		
			Top Cable Vert	8	1.299		
			Top Cable Norm	8	3.705		
			Top Cable Tan	8	0.000		
			Bot Cable Vert	8	-1.216		
			Bot Cable Norm	8	3.712		
			Bot Cable Tan	8	0.001		
		Guy B	Bottom Tension	12	4.105		
			Top Tension	12	4.124		
			Top Cable Vert	12	1.605		
			Top Cable Norm	12	3.799		
			Top Cable Tan	12	0.000		
			Bot Cable Vert	12	-1.527		
			Bot Cable Norm	12	3.810		
			Bot Cable Tan	12	0.001		
		Guy C	Bottom Tension	4	3.715		
			Top Tension	4	3.727		
			Top Cable Vert	4	0.807		
			Top Cable Norm	4	3.639		
			Top Cable Tan	4	0.000		
			Bot Cable Vert	4	-0.736		
			Bot Cable Norm	4	3.641		
			Bot Cable Tan	4	0.001		
		Torque Arm Top	Max Tension	12	4.666	0.000	0.000
			Max. Compression	6	-0.032	0.000	0.000
			Max. Mx	4	1.672	0.016	0.000
			Max. My	9	3.497	0.000	0.000
			Max. Vy	4	-0.021	0.000	0.000
			Max. Vx	9	-0.000	0.000	0.000
		Torque Arm Bottom	Max Tension	3	1.689	0.000	0.000
			Max. Compression	12	-5.291	0.000	0.000
			Max. Mx	9	-2.633	0.018	0.000
			Max. My	8	-4.947	0.000	0.000
			Max. Vy	9	-0.021	0.000	0.000
			Max. Vx	8	-0.000	0.000	0.000
T18	40 - 20	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	12	-35.470	-0.013	-0.009
			Max. Mx	12	-16.633	-0.182	-0.101
			Max. My	9	-15.276	-0.063	0.167
			Max. Vy	6	-0.606	-0.052	0.002
			Max. Vx	2	0.599	-0.053	-0.003
		Diagonal	Max Tension	7	1.893	0.000	0.000
			Max. Compression	13	-1.869	0.000	0.000
			Max. Mx	3	0.079	0.002	0.000
			Max. My	8	0.178	0.000	0.000
			Max. Vy	3	-0.002	0.000	0.000
			Max. Vx	8	-0.000	0.000	0.000
		Horizontal	Max Tension	13	1.241	0.000	0.000
			Max. Compression	7	-1.357	0.000	0.000
			Max. Mx	10	0.058	0.001	0.000
			Max. My	8	0.023	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000
		Top Girt	Max Tension	2	0.611	0.000	0.000
			Max. Compression	7	-0.564	0.000	0.000
			Max. Mx	10	-0.198	0.001	0.000
			Max. Vy	10	-0.002	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	12	0.000	0.000	0.000
		Bottom Girt	Max Tension	7	0.189	0.000	0.000
			Max. Compression	2	-0.043	0.000	0.000
			Max. Mx	10	0.149	0.001	0.000
			Max. My	8	0.178	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000
T19	20 - 10	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	12	-35.310	0.037	-0.055
			Max. Mx	12	-30.696	0.182	0.017
			Max. My	8	-29.236	0.042	-0.160
			Max. Vy	12	-1.801	0.182	0.017
			Max. Vx	8	2.041	0.042	-0.160
		Diagonal	Max Tension	7	1.180	0.000	0.000
			Max. Compression	13	-1.365	0.000	0.000
			Max. Mx	3	0.980	0.002	0.000
			Max. My	8	0.005	0.000	0.000
			Max. Vy	3	-0.002	0.000	0.000
			Max. Vx	8	-0.000	0.000	0.000
		Horizontal	Max Tension	13	0.963	0.000	0.000
			Max. Compression	7	-0.858	0.000	0.000
			Max. Mx	10	-0.187	0.001	0.000
			Max. My	8	0.143	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000
		Top Girt	Max Tension	4	0.220	0.000	0.000
			Max. Compression	10	-0.173	0.000	0.000
			Max. Mx	10	-0.017	0.001	0.000
			Max. My	8	-0.171	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000
		Bottom Girt	Max Tension	12	1.081	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	10	0.870	0.001	0.000
			Max. My	8	0.989	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000
T20	10 - 0	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	12	-31.552	-0.036	-0.002
			Max. Mx	12	-30.724	0.166	-0.076
			Max. My	13	-14.031	-0.003	0.453
			Max. Vy	13	1.546	0.157	-0.078
			Max. Vx	2	-0.515	-0.004	0.443
		Diagonal	Max Tension	13	0.187	0.000	0.000
			Max. Compression	13	-3.223	0.000	0.000
			Max. Mx	3	-0.010	0.001	0.000
			Max. My	12	0.094	0.000	-0.000
			Max. Vy	3	-0.002	0.000	0.000
			Max. Vx	12	0.000	0.000	0.000
		Horizontal	Max Tension	2	0.723	0.000	0.000
			Max. Compression	13	-0.092	0.000	0.000
			Max. Mx	10	0.070	0.001	0.000
			Max. My	8	0.003	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000
		Top Girt	Max Tension	11	0.921	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	10	0.881	0.001	0.000
			Max. My	8	0.896	0.000	-0.000
			Max. Vy	10	-0.002	0.000	0.000
			Max. Vx	8	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	11	64.113	1.159	0.081
	Max. H_x	11	64.113	1.159	0.081
	Max. H_z	2	62.565	-0.000	1.171
	Max. M_x	1	0.000	0.007	-0.005
	Max. M_z	1	0.000	0.007	-0.005
	Max. Torsion	8	-0.039	-0.041	-1.298
	Min. Vert	1	35.824	0.007	-0.005
	Min. H_x	5	57.686	-1.220	0.079
	Min. H_z	8	58.210	-0.041	-1.298
	Min. M_x	1	0.000	0.007	-0.005
	Min. M_z	1	0.000	0.007	-0.005
	Min. Torsion	13	-0.181	0.644	0.986
Guy C @ 219 ft Elev 12 ft Azimuth 240 deg	Max. Vert	10	-0.229	-0.709	0.410
	Max. H_x	10	-0.229	-0.709	0.410
	Max. H_z	4	-7.372	-15.577	8.997
	Min. Vert	4	-7.372	-15.577	8.997
	Min. H_x	4	-7.372	-15.577	8.997
	Min. H_z	10	-0.229	-0.709	0.410
Guy B @ 179 ft Elev -15 ft Azimuth 120 deg	Max. Vert	6	-0.642	0.677	0.390
	Max. H_x	12	-11.724	15.697	9.066
	Max. H_z	12	-11.724	15.697	9.066
	Min. Vert	12	-11.724	15.697	9.066
	Min. H_x	6	-0.642	0.677	0.390
	Min. H_z	6	-0.642	0.677	0.390
Guy A @ 214 ft Elev -14 ft Azimuth 0 deg	Max. Vert	2	-0.499	0.001	-0.914
	Max. H_x	11	-4.955	0.646	-9.327
	Max. H_z	2	-0.499	0.001	-0.914
	Min. Vert	8	-9.519	0.000	-17.782
	Min. H_x	5	-4.977	-0.642	-9.271
	Min. H_z	8	-9.519	0.000	-17.782
Guy C @ 253 ft Elev 8 ft Azimuth 240 deg	Max. Vert	22	-1.061	-0.728	0.421
	Max. H_x	22	-1.061	-0.728	0.421
	Max. H_z	3	-11.867	-9.893	6.150
	Min. Vert	4	-12.336	-10.476	6.061
	Min. H_x	4	-12.336	-10.476	6.061
	Min. H_z	22	-1.061	-0.728	0.421
Guy B @ 198 ft Elev -20 ft Azimuth 120 deg	Max. Vert	18	-2.165	1.069	0.617
	Max. H_x	12	-17.441	10.596	6.124
	Max. H_z	13	-17.038	10.113	6.312
	Min. Vert	12	-17.441	10.596	6.124
	Min. H_x	6	-2.577	0.973	0.561

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy A @ 254 ft Elev -16 ft Azimuth 0 deg	Min. H_z	7	-3.142	1.498	0.498
	Max. Vert	14	-1.298	0.001	-0.952
	Max. H_x	11	-7.480	0.838	-6.483
	Max. H_z	14	-1.298	0.001	-0.952
	Min. Vert	8	-13.217	0.007	-12.031
	Min. H_x	5	-7.935	-0.818	-6.867
	Min. H_z	8	-13.217	0.007	-12.031

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	35.824	-0.007	0.005	0.000	0.000	0.065
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	62.565	0.000	-1.171	0.000	0.000	0.177
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	59.748	0.692	-1.007	0.000	0.000	0.146
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	56.672	1.160	-0.636	0.000	0.000	0.106
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	57.686	1.220	-0.079	0.000	0.000	0.067
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	59.330	1.003	0.579	0.000	0.000	0.045
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	58.765	0.538	1.073	0.000	0.000	0.040
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	58.210	0.041	1.298	0.000	0.000	0.039
1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy	61.516	-0.493	1.075	0.000	0.000	0.076
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	64.055	-0.985	0.574	0.000	0.000	0.113
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	64.113	-1.159	-0.081	0.000	0.000	0.151
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	62.908	-1.088	-0.636	0.000	0.000	0.176
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	63.462	-0.644	-0.986	0.000	0.000	0.181
Dead+Wind 0 deg - Service+Guy	39.611	-0.006	-0.635	0.000	0.000	0.095
Dead+Wind 30 deg - Service+Guy	39.978	0.297	-0.530	0.000	0.000	0.086
Dead+Wind 60 deg - Service+Guy	40.351	0.518	-0.293	0.000	0.000	0.074
Dead+Wind 90 deg - Service+Guy	39.781	0.601	0.014	0.000	0.000	0.058
Dead+Wind 120 deg - Service+Guy	39.204	0.547	0.327	0.000	0.000	0.048
Dead+Wind 150 deg - Service+Guy	40.082	0.307	0.521	0.000	0.000	0.047
Dead+Wind 180 deg - Service+Guy	40.823	0.003	0.603	0.000	0.000	0.048
Dead+Wind 210 deg - Service+Guy	40.441	-0.313	0.532	0.000	0.000	0.059
Dead+Wind 240 deg -	39.832	-0.549	0.323	0.000	0.000	0.071

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Service+Guy						
Dead+Wind 270 deg - Service+Guy	41.613	-0.604	0.017	0.000	0.000	0.088
Dead+Wind 300 deg - Service+Guy	42.556	-0.515	-0.292	0.000	0.000	0.101
Dead+Wind 330 deg - Service+Guy	41.450	-0.293	-0.521	0.000	0.000	0.100

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-17.995	0.000	-0.000	17.995	0.001	0.006%
2	-0.186	-21.497	-24.679	0.185	21.497	24.671	0.022%
3	12.304	-21.182	-21.278	-12.306	21.182	21.272	0.019%
4	21.503	-20.882	-12.234	-21.505	20.882	12.230	0.013%
5	24.759	-21.232	0.092	-24.755	21.232	-0.088	0.018%
6	21.613	-21.573	12.512	-21.607	21.572	-12.508	0.020%
7	12.408	-21.314	21.257	-12.402	21.313	-21.255	0.019%
8	0.192	-21.031	24.668	-0.198	21.031	-24.668	0.016%
9	-12.292	-21.345	21.285	12.286	21.345	-21.283	0.020%
10	-21.498	-21.645	12.231	21.491	21.645	-12.228	0.023%
11	-24.759	-21.295	-0.108	24.754	21.295	0.113	0.022%
12	-21.601	-20.955	-12.513	21.602	20.955	12.521	0.025%
13	-12.396	-21.214	-21.264	12.396	21.214	21.256	0.023%
14	-0.078	-18.092	-10.278	0.077	18.092	10.277	0.008%
15	5.125	-17.961	-8.862	-5.125	17.961	8.861	0.008%
16	8.956	-17.836	-5.095	-8.956	17.836	5.094	0.007%
17	10.312	-17.982	0.038	-10.311	17.982	-0.037	0.007%
18	9.001	-18.124	5.211	-9.000	18.124	-5.210	0.007%
19	5.168	-18.016	8.853	-5.166	18.016	-8.853	0.008%
20	0.080	-17.898	10.274	-0.082	17.898	-10.274	0.009%
21	-5.120	-18.029	8.865	5.118	18.029	-8.865	0.008%
22	-8.954	-18.154	5.094	8.952	18.154	-5.093	0.007%
23	-10.312	-18.008	-0.045	10.310	18.008	0.047	0.010%
24	-8.996	-17.867	-5.211	8.995	17.867	5.215	0.017%
25	-5.163	-17.974	-8.856	5.163	17.974	8.854	0.012%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	17	0.00000001	0.00004039
2	Yes	68	0.00013968	0.00009944
3	Yes	68	0.00014337	0.00008464
4	Yes	59	0.00013997	0.00005177
5	Yes	59	0.00014562	0.00006468
6	Yes	57	0.00013662	0.00007531
7	Yes	58	0.00013674	0.00006472
8	Yes	62	0.00014207	0.00005340
9	Yes	73	0.00014021	0.00008392
10	Yes	73	0.00014391	0.00010108

11	Yes	76	0.00014071	0.00009049
12	Yes	39	0.00014013	0.00009230
13	Yes	69	0.00014588	0.00009755
14	Yes	48	0.00013850	0.00004040
15	Yes	48	0.00014068	0.00003505
16	Yes	40	0.00013468	0.00003064
17	Yes	40	0.00014840	0.00003194
18	Yes	43	0.00014256	0.00003394
19	Yes	39	0.00013951	0.00003399
20	Yes	41	0.00013333	0.00003322
21	Yes	49	0.00013881	0.00003507
22	Yes	48	0.00014304	0.00004046
23	Yes	48	0.00013758	0.00004218
24	Yes	25	0.00014077	0.00004226
25	Yes	46	0.00014916	0.00004832

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	343 - 341.875	15.050	24	0.1882	2.4134
T2	341.875 - 340	15.004	24	0.1883	2.4070
T3	340 - 320	14.935	24	0.1928	2.4217
T4	320 - 300	13.941	24	0.3003	2.4220
T5	300 - 280	12.424	24	0.3996	2.2982
T6	280 - 260	10.780	24	0.3568	2.0905
T7	260 - 240	9.398	24	0.3026	1.9142
T8	240 - 220	8.257	24	0.2242	1.7390
T9	220 - 200	7.515	24	0.1616	1.6195
T10	200 - 180	6.800	24	0.1925	1.4363
T11	180 - 160	5.915	24	0.2114	1.1543
T12	160 - 140	5.084	24	0.1992	0.8704
T13	140 - 120	4.192	24	0.2294	0.5588
T14	120 - 100	3.220	24	0.2151	0.3234
T15	100 - 80	2.492	24	0.1489	0.2327
T16	80 - 60	1.913	24	0.1296	0.1636
T17	60 - 40	1.461	20	0.0841	0.0914
T18	40 - 20	1.215	20	0.0696	0.1435
T19	20 - 10	0.792	20	0.1438	0.1730
T20	10 - 0	0.442	20	0.1816	0.1638

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
343.000	Strobe Light	24	15.050	0.1882	2.4134	15213
341.958	Guy	24	15.008	0.1883	2.4071	15213
337.500	6-Bay FM antenna w/o Radomes	24	14.839	0.2018	2.4446	12769
332.222	6-Bay FM antenna w/o Radomes	24	14.612	0.2261	2.4641	9169
326.944	6-Bay FM antenna w/o Radomes	24	14.349	0.2559	2.4552	8351
321.667	6-Bay FM antenna w/o Radomes	24	14.046	0.2893	2.4308	7775
316.389	6-Bay FM antenna w/o Radomes	24	13.700	0.3243	2.4031	8747
311.111	6-Bay FM antenna w/o Radomes	24	13.316	0.3571	2.3747	11607
305.833	6-Bay FM antenna w/o Radomes	24	12.903	0.3835	2.3424	17282

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300.556	6-Bay FM antenna w/o Radomes	24	12.470	0.3988	2.3029	33866
295.278	6-Bay FM antenna w/o Radomes	24	12.028	0.3997	2.2539	80741
290.000	6-Bay FM antenna w/o Radomes	24	11.585	0.3892	2.1982	23499
285.125	Guy	24	11.184	0.3740	2.1448	14200
236.500	Guy	24	8.103	0.2091	1.7121	9094
220.000	4-Bay FM Antenna (w/o Radomes)	24	7.515	0.1616	1.6195	54417
214.100	4-Bay FM Antenna (w/o Radomes)	24	7.319	0.1636	1.5773	31869
208.200	4-Bay FM Antenna (w/o Radomes)	24	7.113	0.1738	1.5256	20437
202.300	4-Bay FM Antenna (w/o Radomes)	24	6.892	0.1874	1.4636	15271
196.400	4-Bay FM Antenna (w/o Radomes)	24	6.649	0.1994	1.3903	17712
190.500	4-Bay FM Antenna (w/o Radomes)	24	6.388	0.2077	1.3080	33532
174.875	Guy	24	5.696	0.2078	1.0816	30857
171.500	Side Light	24	5.556	0.2045	1.0345	47937
139.500	15'X2.5" Omni	24	4.168	0.2299	0.5513	19466
120.000	Omni/Whip 205"x3"	24	3.220	0.2151	0.3234	13814
114.875	Guy	24	3.007	0.1986	0.2932	15156
100.000	60"'x10.4"x6" Panel	24	2.492	0.1489	0.2327	33612
58.125	Guy	20	1.432	0.0798	0.0917	14182
47.000	6' Grid Dish	20	1.298	0.0646	0.1201	63495
36.000	3' Yagi(.03k,2.08CAAA)	20	1.155	0.0786	0.1512	15036
32.000	8" Dish	20	1.084	0.0915	0.1565	14156
25.500	3' Yagi(.03k,2.08CAAA)	20	0.942	0.1183	0.1639	12935
22.000	RFS SC3-W100B Microwave Dish	20	0.850	0.1344	0.1691	12269
19.250	2' Dish	20	0.769	0.1474	0.1747	11766
16.000	RFS SC3-W100B Microwave Dish	20	0.665	0.1621	0.1810	11174
13.500	6'*3' Paraflector	20	0.577	0.1719	0.1806	10714

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	343 - 341.875	48.631	10	0.7045	4.3494
T2	341.875 - 340	48.467	10	0.7047	4.3380
T3	340 - 320	48.208	10	0.7133	4.3787
T4	320 - 300	44.870	10	0.9603	4.4387
T5	300 - 280	40.301	10	1.1955	4.1975
T6	280 - 260	35.454	10	1.0827	3.7928
T7	260 - 240	31.309	10	0.9328	3.5230
T8	240 - 220	27.831	10	0.7304	3.2366
T9	220 - 200	25.374	10	0.5715	3.0348
T10	200 - 180	22.983	10	0.6559	2.7527
T11	180 - 160	20.073	10	0.7253	2.2325
T12	160 - 140	17.116	10	0.7245	1.6673
T13	140 - 120	13.907	10	0.8077	1.1147
T14	120 - 100	10.509	10	0.7608	0.6774
T15	100 - 80	7.816	10	0.5590	0.4934
T16	80 - 60	5.757	9	0.4635	0.3769
T17	60 - 40	4.177	8	0.3032	0.2458
T18	40 - 20	3.384	8	0.2224	0.3487
T19	20 - 10	2.152	8	0.4011	0.4289
T20	10 - 0	1.192	8	0.4948	0.4159

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
343.000	Strobe Light	10	48.631	0.7045	4.3494	6277
341.958	Guy	10	48.479	0.7046	4.3379	6277
337.500	6-Bay FM antenna w/o Radomes	10	47.858	0.7319	4.4406	5244
332.222	6-Bay FM antenna w/o Radomes	10	47.061	0.7855	4.5028	3770
326.944	6-Bay FM antenna w/o Radomes	10	46.177	0.8540	4.4974	3458
321.667	6-Bay FM antenna w/o Radomes	10	45.199	0.9339	4.4549	3238
316.389	6-Bay FM antenna w/o Radomes	10	44.121	1.0177	4.4038	3664
311.111	6-Bay FM antenna w/o Radomes	10	42.954	1.0961	4.3505	4894
305.833	6-Bay FM antenna w/o Radomes	10	41.718	1.1583	4.2875	7325
300.556	6-Bay FM antenna w/o Radomes	10	40.438	1.1937	4.2072	14496
295.278	6-Bay FM antenna w/o Radomes	10	39.134	1.1943	4.1045	54957
290.000	6-Bay FM antenna w/o Radomes	10	37.832	1.1670	3.9871	10815
285.125	Guy	10	36.651	1.1277	3.8872	6209
236.500	Guy	10	27.339	0.6919	3.1956	4057
220.000	4-Bay FM Antenna (w/o Radomes)	10	25.374	0.5715	3.0348	29588
214.100	4-Bay FM Antenna (w/o Radomes)	10	24.708	0.5772	2.9717	11458
208.200	4-Bay FM Antenna (w/o Radomes)	10	24.019	0.6046	2.8949	7402
202.300	4-Bay FM Antenna (w/o Radomes)	10	23.285	0.6415	2.7976	5511
196.400	4-Bay FM Antenna (w/o Radomes)	10	22.489	0.6763	2.6737	6080
190.500	4-Bay FM Antenna (w/o Radomes)	10	21.639	0.7030	2.5258	9775
174.875	Guy	10	19.316	0.7234	2.0872	19924
171.500	Side Light	10	18.821	0.7197	1.9921	24674
139.500	15'X2.5" Omni	10	13.822	0.8091	1.1012	8386
120.000	Omni/Whip 205"x3"	10	10.509	0.7608	0.6774	4946
114.875	Guy	10	9.740	0.7124	0.6198	5150
100.000	60"'x10.4"x6" Panel	10	7.816	0.5590	0.4934	8021
58.125	Guy	8	4.088	0.2890	0.2469	4151
47.000	6' Grid Dish	8	3.655	0.2305	0.3055	18044
36.000	3' Yagi(.03k,2.08CAAA)	8	3.199	0.2319	0.3624	6784
32.000	8" Dish	8	2.986	0.2570	0.3758	6210
25.500	3' Yagi(.03k,2.08CAAA)	8	2.573	0.3210	0.3995	5464
22.000	RFS SC3-W100B Microwave Dish	8	2.313	0.3691	0.4165	5130
19.250	2' Dish	8	2.089	0.4140	0.4342	4884
16.000	RFS SC3-W100B Microwave Dish	8	1.799	0.4683	0.4543	4607
13.500	6'*3' Paraflector	8	1.558	0.4970	0.4559	4423

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	341.958 (A) (1416)	5/16 EHS	1.120	11.200	5.261	6.720	1.000	1.277 ✔
	341.958 (B) (1415)	5/16 EHS	1.120	11.200	6.242	6.720	1.000	1.077 ✔
	341.958 (C) (1414)	5/16 EHS	1.120	11.200	5.125	6.720	1.000	1.311 ✔
T5	285.125 (A) (1413)	3/8 EHS	1.540	15.400	6.634	9.240	1.000	1.393 ✔
	285.125 (B) (1412)	3/8 EHS	1.540	15.400	7.959	9.240	1.000	1.161 ✔
	285.125 (C) (1411)	3/8 EHS	1.540	15.400	6.431	9.240	1.000	1.437 ✔

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T8	236.500 (A) (1410)	3/8 EHS	1.540	15.400	6.233	9.240	1.000	1.483 ✔
	236.500 (B) (1409)	3/8 EHS	1.540	15.400	7.360	9.240	1.000	1.255 ✔
	236.500 (C) (1408)	3/8 EHS	1.540	15.400	5.970	9.240	1.000	1.548 ✔
T11	174.875 (A) (1407)	5/16 EHS	1.120	11.200	4.871	6.720	1.000	1.379 ✔
	174.875 (B) (1406)	5/16 EHS	1.120	11.200	5.373	6.720	1.000	1.251 ✔
	174.875 (C) (1405)	5/16 EHS	1.120	11.200	4.703	6.720	1.000	1.429 ✔
T14	114.875 (A) (1399)	5/16 EHS	1.120	11.200	4.117	6.720	1.000	1.632 ✔
	114.875 (A) (1400)	5/16 EHS	1.120	11.200	3.860	6.720	1.000	1.741 ✔
	114.875 (B) (1393)	5/16 EHS	1.120	11.200	4.218	6.720	1.000	1.593 ✔
	114.875 (B) (1394)	5/16 EHS	1.120	11.200	4.314	6.720	1.000	1.558 ✔
	114.875 (C) (1387)	5/16 EHS	1.120	11.200	3.778	6.720	1.000	1.779 ✔
	114.875 (C) (1388)	5/16 EHS	1.120	11.200	3.897	6.720	1.000	1.724 ✔
T17	58.125 (A) (1381)	3/8 EHS	1.540	15.400	3.926	9.240	1.000	2.354 ✔
	58.125 (A) (1382)	3/8 EHS	1.540	15.400	3.759	9.240	1.000	2.458 ✔
	58.125 (B) (1375)	3/8 EHS	1.540	15.400	3.980	9.240	1.000	2.321 ✔
	58.125 (B) (1376)	3/8 EHS	1.540	15.400	4.124	9.240	1.000	2.240 ✔
	58.125 (C) (1369)	3/8 EHS	1.540	15.400	3.704	9.240	1.000	2.494 ✔
	58.125 (C) (1370)	3/8 EHS	1.540	15.400	3.727	9.240	1.000	2.479 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	343 - 341.875	1 1/8	1.125	0.083	3.6 K=1.00	0.9940	1.00	-5.444	44.690	0.122 [1] ✔
T2	341.875 - 340	1 1/8	1.875	1.542	65.8 K=1.00	0.9940	0.99	-5.956	32.151	0.185 [1] ✔
T3	340 - 320	1 1/8	20.000	1.625	69.3 K=1.00	0.9940	1.00	-12.524	31.374	0.399 [1] ✔
T4	320 - 300	1 1/8	20.000	1.625	69.3 K=1.00	0.9940	1.00	-12.453	31.370	0.397 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	300 - 280	1 3/8	20.000	1.625	56.7 K=1.00	1.4849	0.99	-15.977	52.247	0.306 [1]
T6	280 - 260	1 3/8	20.000	1.625	56.7 K=1.00	1.4849	0.99	-15.120	52.289	0.289 [1]
T7	260 - 240	1 1/2	20.000	1.625	52.0 K=1.00	1.7672	0.95	-22.440	61.934	0.362 [1]
T8	240 - 220	1 1/2	20.000	1.625	52.0 K=1.00	1.7672	0.94	-24.388	61.293	0.398 [1]
T9	220 - 200	1 1/2	20.000	1.625	52.0 K=1.00	1.7672	0.91	-18.370	59.571	0.308 [1]
T10	200 - 180	1 1/2	20.000	1.625	52.0 K=1.00	1.7672	0.91	-17.656	59.366	0.297 [1]
T11	180 - 160	1 1/2	20.000	1.625	52.0 K=1.00	1.7672	0.89	-18.559	58.325	0.318 [1]
T12	160 - 140	1 1/2	20.000	1.625	52.0 K=1.00	1.7672	0.90	-20.272	58.701	0.345 [1]
T13	140 - 120	1 3/4	20.000	1.625	44.6 K=1.00	2.4053	0.92	-24.823	85.923	0.289 [1]
T14	120 - 100	1 3/4	20.000	1.625	44.6 K=1.00	2.4053	0.94	-35.407	88.018	0.402 [1]
T15	100 - 80	1 3/4	20.000	1.625	44.6 K=1.00	2.4053	0.90	-25.927	84.647	0.306 [1]
T16	80 - 60	1 3/4	20.000	1.625	44.6 K=1.00	2.4053	0.93	-34.961	86.622	0.404 [1]
T17	60 - 40	1 3/4	20.000	1.625	44.6 K=1.00	2.4053	0.93	-36.348	86.825	0.419 [1]
T18	40 - 20	1 3/4	20.000	1.625	44.6 K=1.00	2.4053	0.91	-35.470	85.209	0.416 [1]
T19	20 - 10	1 3/4	10.000	1.611	44.2 K=1.00	2.4053	0.90	-35.155	84.517	0.416 [1]
T20	10 - 0	1 3/4	10.066	1.519	41.7 K=1.00	2.4053	0.88	-30.903	83.593	0.370 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	343 - 341.875	3/4	2.151	2.050	91.8 K=0.70	0.4418	-0.289	9.181	0.031 [1]
T2	341.875 - 340	3/4	2.525	2.407	107.8 K=0.70	0.4418	-1.357	7.761	0.175 [1]
T3	340 - 320	3/4	2.577	2.456	110.0 K=0.70	0.4418	-1.241	7.567	0.164 [1]
T4	320 - 300	3/4	2.577	2.456	110.0 K=0.70	0.4418	-1.634	7.567	0.216 [1]
T5	300 - 280	3/4	2.577	2.429	108.8 K=0.70	0.4418	-2.211	7.673	0.288 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	280 - 260	3/4	2.577	2.429	108.8 K=0.70	0.4418	-1.061	7.673	0.138 [1]
T7	260 - 240	3/4	2.577	2.416	108.2 K=0.70	0.4418	-1.554	7.726	0.201 [1]
T8	240 - 220	3/4	2.577	2.416	108.2 K=0.70	0.4418	-1.756	7.726	0.227 [1]
T9	220 - 200	3/4	2.577	2.416	108.2 K=0.70	0.4418	-1.654	7.726	0.214 [1]
T10	200 - 180	3/4	2.577	2.416	108.2 K=0.70	0.4418	-2.323	7.726	0.301 [1]
T11	180 - 160	3/4	2.577	2.416	108.2 K=0.70	0.4418	-2.428	7.726	0.314 [1]
T12	160 - 140	3/4	2.577	2.416	108.2 K=0.70	0.4418	-1.741	7.726	0.225 [1]
T13	140 - 120	7/8	2.577	2.389	91.7 K=0.70	0.6013	-3.252	12.509	0.260 [1]
T14	120 - 100	7/8	2.577	2.389	91.7 K=0.70	0.6013	-3.401	12.509	0.272 [1]
T15	100 - 80	7/8	2.577	2.389	91.7 K=0.70	0.6013	-0.840	12.509	0.067 [1]
T16	80 - 60	7/8	2.577	2.389	91.7 K=0.70	0.6013	-1.647	12.509	0.132 [1]
T17	60 - 40	7/8	2.577	2.389	91.7 K=0.70	0.6013	-2.923	12.509	0.234 [1]
T18	40 - 20	7/8	2.577	2.389	91.7 K=0.70	0.6013	-1.869	12.509	0.149 [1]
T19	20 - 10	7/8	2.568	2.381	91.4 K=0.70	0.6013	-1.365	12.547	0.109 [1]
T20	10 - 0	7/8	1.129	0.729	40.0 K=1.00	0.6013	-3.223	17.911	0.180 [1]

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	340 - 320	3/4	2.000	1.906	85.4 K=0.70	0.4418	-0.902	9.750	0.092 [1]
T4	320 - 300	3/4	2.000	1.906	85.4 K=0.70	0.4418	-1.137	9.750	0.117 [1]
T5	300 - 280	3/4	2.000	1.885	84.5 K=0.70	0.4418	-1.716	9.832	0.175 [1]
T6	280 - 260	3/4	2.000	1.885	84.5 K=0.70	0.4418	-0.722	9.832	0.073 [1]
T7	260 - 240	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.990	9.873	0.100 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T8	240 - 220	3/4	2.000	1.875	84.0 K=0.70	0.4418	-1.348	9.873	0.137 [1]
T9	220 - 200	3/4	2.000	1.875	84.0 K=0.70	0.4418	-1.098	9.873	0.111 [1]
T10	200 - 180	3/4	2.000	1.875	84.0 K=0.70	0.4418	-1.577	9.873	0.160 [1]
T11	180 - 160	3/4	2.000	1.875	84.0 K=0.70	0.4418	-1.663	9.873	0.168 [1]
T12	160 - 140	3/4	2.000	1.875	84.0 K=0.70	0.4418	-1.212	9.873	0.123 [1]
T13	140 - 120	7/8	2.000	1.854	85.1 K=0.84	0.6013	-2.201	13.301	0.165 [1]
T14	120 - 100	7/8	2.000	1.854	85.1 K=0.84	0.6013	-2.481	13.301	0.187 [1]
T15	100 - 80	7/8	2.000	1.854	85.1 K=0.84	0.6013	-0.624	13.301	0.047 [1]
T16	80 - 60	7/8	2.000	1.854	85.1 K=0.84	0.6013	-0.977	13.301	0.073 [1]
T17	60 - 40	7/8	2.000	1.854	85.1 K=0.84	0.6013	-1.931	13.301	0.145 [1]
T18	40 - 20	7/8	2.000	1.854	85.1 K=0.84	0.6013	-1.357	13.301	0.102 [1]
T19	20 - 10	7/8	2.000	1.854	85.1 K=0.84	0.6013	-0.858	13.301	0.065 [1]
T20	10 - 0	7/8	1.773	1.627	83.1 K=0.93	0.6013	-0.549	13.549	0.041 [1]

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	343 - 341.875	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.173	5.718	0.030 [1]
T2	341.875 - 340	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.202	5.718	0.035 [1]
T3	340 - 320	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.583	5.718	0.102 [1]
T4	320 - 300	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.239	5.718	0.042 [1]
T5	300 - 280	5/8	2.000	1.885	101.4 K=0.70	0.3068	-0.814	5.788	0.141 [1]
T6	280 - 260	5/8	2.000	1.885	101.4 K=0.70	0.3068	-0.379	5.788	0.065 [1]
T7	260 - 240	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.392	9.873	0.040 [1]
T8	240 - 220	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.644	9.873	0.065 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T9	220 - 200	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.551	9.873	0.056 [1]
T10	200 - 180	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.420	9.873	0.042 [1]
T11	180 - 160	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.936	9.873	0.095 [1]
T12	160 - 140	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.641	9.873	0.065 [1]
T13	140 - 120	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.741	9.851	0.075 [1]
T14	120 - 100	3/4	2.000	1.854	84.3 K=0.71	0.4418	-1.252	9.851	0.127 [1]
T15	100 - 80	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.454	9.851	0.046 [1]
T16	80 - 60	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.619	9.851	0.063 [1]
T17	60 - 40	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.630	9.851	0.064 [1]
T18	40 - 20	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.614	9.851	0.062 [1]
T19	20 - 10	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.612	9.851	0.062 [1]
T20	10 - 0	3/4	1.983	1.837	84.4 K=0.72	0.4418	-0.549	9.835	0.056 [1]

[1] $P_u / \phi P_n$ controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	343 - 341.875	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.094	5.718	0.016 [1]
T2	341.875 - 340	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.599	5.718	0.105 [1]
T3	340 - 320	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.239	5.718	0.042 [1]
T4	320 - 300	5/8	2.000	1.906	102.5 K=0.70	0.3068	-0.661	5.718	0.116 [1]
T5	300 - 280	5/8	2.000	1.885	101.4 K=0.70	0.3068	-0.365	5.788	0.063 [1]
T6	280 - 260	5/8	2.000	1.885	101.4 K=0.70	0.3068	-0.317	5.788	0.055 [1]
T7	260 - 240	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.567	9.873	0.057 [1]
T8	240 - 220	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.584	9.873	0.059 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T9	220 - 200	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.355	9.873	0.036 [1] ✔
T10	200 - 180	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.912	9.873	0.092 [1] ✔
T11	180 - 160	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.600	9.873	0.061 [1] ✔
T12	160 - 140	3/4	2.000	1.875	84.0 K=0.70	0.4418	-0.557	9.873	0.056 [1] ✔
T13	140 - 120	3/4	2.000	1.854	84.3 K=0.71	0.4418	-1.016	9.851	0.103 [1] ✔
T14	120 - 100	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.613	9.851	0.062 [1] ✔
T15	100 - 80	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.454	9.851	0.046 [1] ✔
T16	80 - 60	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.619	9.851	0.063 [1] ✔
T17	60 - 40	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.630	9.851	0.064 [1] ✔
T18	40 - 20	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.614	9.851	0.062 [1] ✔
T19	20 - 10	3/4	2.000	1.854	84.3 K=0.71	0.4418	-0.612	9.851	0.062 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T17	60 - 40 (1378)	C8x11.5	3.055	2.982	57.3 K=1.00	3.3800	-0.032	92.153	0.000 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T14	120 - 100 (1391)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-5.311	87.761	0.061 [1] ✔
T14	120 - 100 (1392)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-5.420	87.761	0.062 [1] ✔
T14	120 - 100 (1397)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-6.919	87.761	0.079 [1] ✔
T14	120 - 100	C8x11.5	3.460	3.378	64.9	3.3800	-4.423	87.761	0.050 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(1398)				K=1.00				✔
T14	120 - 100 (1403)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-5.936	87.761	0.068 [1] ✔
T14	120 - 100 (1404)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-5.954	87.761	0.068 [1] ✔
T17	60 - 40 (1373)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-3.905	87.761	0.044 [1] ✔
T17	60 - 40 (1374)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-4.035	87.761	0.046 [1] ✔
T17	60 - 40 (1379)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-5.291	87.761	0.060 [1] ✔
T17	60 - 40 (1380)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-3.022	87.761	0.034 [1] ✔
T17	60 - 40 (1385)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-4.470	87.761	0.051 [1] ✔
T17	60 - 40 (1386)	C8x11.5	3.460	3.378	64.9 K=1.00	3.3800	-4.969	87.761	0.057 [1] ✔

[1] $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	343 - 341.875	1 1/8	1.125	0.792	33.8	0.9940	0.071	44.731	0.002 [1] ✔
T2	341.875 - 340	1 1/8	1.875	0.250	10.7	0.9940	0.373	44.731	0.008 [1] ✔
T3	340 - 320	1 1/8	20.000	1.625	69.3	0.9940	5.895	44.731	0.132 [1] ✔
T4	320 - 300	1 1/8	20.000	1.625	69.3	0.9940	5.961	44.731	0.133 [1] ✔
T5	300 - 280	1 3/8	20.000	1.625	56.7	1.4849	7.003	66.820	0.105 [1] ✔
T6	280 - 260	1 3/8	20.000	1.625	56.7	1.4849	1.165	66.820	0.017 [1] ✔
T7	260 - 240	1 1/2	20.000	0.250	8.0	1.7672	7.381	79.522	0.093 [1] ✔
T8	240 - 220	1 1/2	20.000	1.625	52.0	1.7672	8.818	79.522	0.111 [1] ✔
T14	120 - 100	1 3/4	20.000	1.625	44.6	2.4053	5.037	108.238	0.047 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	343 - 341.875	3/4	2.151	2.050	131.2	0.4418	0.320	14.314	0.022 [1] ✔
T2	341.875 - 340	3/4	2.525	2.407	154.0	0.4418	1.416	14.314	0.099 [1] ✔
T3	340 - 320	3/4	2.577	2.456	157.2	0.4418	1.324	14.314	0.092 [1] ✔
T4	320 - 300	3/4	2.577	2.456	157.2	0.4418	1.599	14.314	0.112 [1] ✔
T5	300 - 280	3/4	2.577	2.429	155.5	0.4418	2.244	14.314	0.157 [1] ✔
T6	280 - 260	3/4	2.577	2.429	155.5	0.4418	1.045	14.314	0.073 [1] ✔
T7	260 - 240	3/4	2.577	2.416	154.6	0.4418	1.426	14.314	0.100 [1] ✔
T8	240 - 220	3/4	2.577	2.416	154.6	0.4418	1.750	14.314	0.122 [1] ✔
T9	220 - 200	3/4	2.577	2.416	154.6	0.4418	1.572	14.314	0.110 [1] ✔
T10	200 - 180	3/4	2.577	2.416	154.6	0.4418	2.299	14.314	0.161 [1] ✔
T11	180 - 160	3/4	2.577	2.416	154.6	0.4418	2.329	14.314	0.163 [1] ✔
T12	160 - 140	3/4	2.577	2.416	154.6	0.4418	1.740	14.314	0.122 [1] ✔
T13	140 - 120	7/8	2.577	2.389	131.1	0.6013	3.096	19.483	0.159 [1] ✔
T14	120 - 100	7/8	2.577	2.389	131.1	0.6013	3.355	19.483	0.172 [1] ✔
T15	100 - 80	7/8	2.577	2.389	131.1	0.6013	0.893	19.483	0.046 [1] ✔
T16	80 - 60	7/8	2.577	2.389	131.1	0.6013	1.415	19.483	0.073 [1] ✔
T17	60 - 40	7/8	2.577	2.389	131.1	0.6013	2.516	19.483	0.129 [1] ✔
T18	40 - 20	7/8	2.577	2.389	131.1	0.6013	1.893	19.483	0.097 [1] ✔
T19	20 - 10	7/8	2.568	2.381	130.6	0.6013	1.180	19.483	0.061 [1] ✔
T20	10 - 0	7/8	2.153	1.753	96.2	0.6013	0.187	19.483	0.010 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	340 - 320	3/4	2.000	1.906	122.0	0.4418	0.850	14.314	0.059 [1] ✔
T4	320 - 300	3/4	2.000	1.906	122.0	0.4418	1.100	14.314	0.077 [1] ✔
T5	300 - 280	3/4	2.000	1.885	120.7	0.4418	2.901	14.314	0.203 [1] ✔
T6	280 - 260	3/4	2.000	1.885	120.7	0.4418	0.722	14.314	0.050 [1] ✔
T7	260 - 240	3/4	2.000	1.875	120.0	0.4418	1.037	14.314	0.072 [1] ✔
T8	240 - 220	3/4	2.000	1.875	120.0	0.4418	2.424	14.314	0.169 [1] ✔
T9	220 - 200	3/4	2.000	1.875	120.0	0.4418	1.128	14.314	0.079 [1] ✔
T10	200 - 180	3/4	2.000	1.875	120.0	0.4418	1.557	14.314	0.109 [1] ✔
T11	180 - 160	3/4	2.000	1.875	120.0	0.4418	2.494	14.314	0.174 [1] ✔
T12	160 - 140	3/4	2.000	1.875	120.0	0.4418	1.192	14.314	0.083 [1] ✔
T13	140 - 120	7/8	2.000	1.854	101.7	0.6013	2.249	19.483	0.115 [1] ✔
T14	120 - 100	7/8	2.000	1.854	101.7	0.6013	3.813	19.483	0.196 [1] ✔
T15	100 - 80	7/8	2.000	1.854	101.7	0.6013	0.518	19.483	0.027 [1] ✔
T16	80 - 60	7/8	2.000	1.854	101.7	0.6013	1.091	19.483	0.056 [1] ✔
T17	60 - 40	7/8	2.000	1.854	101.7	0.6013	3.132	19.483	0.161 [1] ✔
T18	40 - 20	7/8	2.000	1.854	101.7	0.6013	1.241	19.483	0.064 [1] ✔
T19	20 - 10	7/8	2.000	1.854	101.7	0.6013	0.963	19.483	0.049 [1] ✔
T20	10 - 0	7/8	0.302	0.156	8.6	0.6013	0.723	19.483	0.037 [1] ✔

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	343 - 341.875	5/8	2.000	1.906	146.4	0.3068	0.202	9.940	0.020 [1] ✔
T2	341.875 - 340	5/8	2.000	1.906	146.4	0.3068	0.593	9.940	0.060 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	340 - 320	5/8	2.000	1.906	146.4	0.3068	0.569	9.940	0.057 [1]
T4	320 - 300	5/8	2.000	1.906	146.4	0.3068	0.239	9.940	0.024 [1]
T5	300 - 280	5/8	2.000	1.885	144.8	0.3068	0.803	9.940	0.081 [1]
T6	280 - 260	5/8	2.000	1.885	144.8	0.3068	0.358	9.940	0.036 [1]
T7	260 - 240	3/4	2.000	1.875	120.0	0.4418	0.392	14.314	0.027 [1]
T8	240 - 220	3/4	2.000	1.875	120.0	0.4418	0.609	14.314	0.043 [1]
T9	220 - 200	3/4	2.000	1.875	120.0	0.4418	0.582	14.314	0.041 [1]
T10	200 - 180	3/4	2.000	1.875	120.0	0.4418	0.445	14.314	0.031 [1]
T11	180 - 160	3/4	2.000	1.875	120.0	0.4418	0.970	14.314	0.068 [1]
T12	160 - 140	3/4	2.000	1.875	120.0	0.4418	0.600	14.314	0.042 [1]
T13	140 - 120	3/4	2.000	1.854	118.7	0.4418	0.751	14.314	0.052 [1]
T14	120 - 100	3/4	2.000	1.854	118.7	0.4418	1.280	14.314	0.089 [1]
T15	100 - 80	3/4	2.000	1.854	118.7	0.4418	0.454	14.314	0.032 [1]
T16	80 - 60	3/4	2.000	1.854	118.7	0.4418	0.619	14.314	0.043 [1]
T17	60 - 40	3/4	2.000	1.854	118.7	0.4418	0.630	14.314	0.044 [1]
T18	40 - 20	3/4	2.000	1.854	118.7	0.4418	0.614	14.314	0.043 [1]
T19	20 - 10	3/4	2.000	1.854	118.7	0.4418	0.612	14.314	0.043 [1]
T20	10 - 0	3/4	1.983	1.837	117.6	0.4418	0.921	14.314	0.064 [1]

[1] $P_u / \phi P_n$ controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	343 - 341.875	5/8	2.000	1.906	146.4	0.3068	1.332	9.940	0.134 [1]
T2	341.875 - 340	5/8	2.000	1.906	146.4	0.3068	0.611	9.940	0.061 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	340 - 320	5/8	2.000	1.906	146.4	0.3068	0.239	9.940	0.024 [1] ✔
T4	320 - 300	5/8	2.000	1.906	146.4	0.3068	0.681	9.940	0.068 [1] ✔
T5	300 - 280	5/8	2.000	1.885	144.8	0.3068	0.411	9.940	0.041 [1] ✔
T6	280 - 260	5/8	2.000	1.885	144.8	0.3068	0.358	9.940	0.036 [1] ✔
T7	260 - 240	3/4	2.000	1.875	120.0	0.4418	0.639	14.314	0.045 [1] ✔
T8	240 - 220	3/4	2.000	1.875	120.0	0.4418	0.600	14.314	0.042 [1] ✔
T9	220 - 200	3/4	2.000	1.875	120.0	0.4418	0.390	14.314	0.027 [1] ✔
T10	200 - 180	3/4	2.000	1.875	120.0	0.4418	0.926	14.314	0.065 [1] ✔
T11	180 - 160	3/4	2.000	1.875	120.0	0.4418	0.699	14.314	0.049 [1] ✔
T12	160 - 140	3/4	2.000	1.875	120.0	0.4418	0.624	14.314	0.044 [1] ✔
T13	140 - 120	3/4	2.000	1.854	118.7	0.4418	1.130	14.314	0.079 [1] ✔
T14	120 - 100	3/4	2.000	1.854	118.7	0.4418	0.613	14.314	0.043 [1] ✔
T15	100 - 80	3/4	2.000	1.854	118.7	0.4418	0.454	14.314	0.032 [1] ✔
T16	80 - 60	3/4	2.000	1.854	118.7	0.4418	0.619	14.314	0.043 [1] ✔
T17	60 - 40	3/4	2.000	1.854	118.7	0.4418	0.670	14.314	0.047 [1] ✔
T18	40 - 20	3/4	2.000	1.854	118.7	0.4418	0.614	14.314	0.043 [1] ✔
T19	20 - 10	3/4	2.000	1.854	118.7	0.4418	1.081	14.314	0.075 [1] ✔

[1] $P_u / \phi P_n$ controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T14	120 - 100 (1389)	C8x11.5	3.055	2.982	57.3	3.3800	4.151	109.512	0.038 [1] ✔
T14	120 - 100 (1390)	C8x11.5	3.055	2.982	57.3	3.3800	4.393	109.512	0.040 [1] ✔
T14	120 - 100 (1395)	C8x11.5	3.055	2.982	57.3	3.3800	5.875	109.512	0.054 [1] ✔
T14	120 - 100 (1396)	C8x11.5	3.055	2.982	57.3	3.3800	3.912	109.512	0.036 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T14	120 - 100 (1401)	C8x11.5	3.055	2.982	57.3	3.3800	5.022	109.512	0.046 [1] ✔
T14	120 - 100 (1402)	C8x11.5	3.055	2.982	57.3	3.3800	5.256	109.512	0.048 [1] ✔
T17	60 - 40 (1371)	C8x11.5	3.055	2.982	57.3	3.3800	3.272	109.512	0.030 [1] ✔
T17	60 - 40 (1372)	C8x11.5	3.055	2.982	57.3	3.3800	3.993	109.512	0.036 [1] ✔
T17	60 - 40 (1377)	C8x11.5	3.055	2.982	57.3	3.3800	4.529	109.512	0.041 [1] ✔
T17	60 - 40 (1378)	C8x11.5	3.055	2.982	57.3	3.3800	3.263	109.512	0.030 [1] ✔
T17	60 - 40 (1383)	C8x11.5	3.055	2.982	57.3	3.3800	3.722	109.512	0.034 [1] ✔
T17	60 - 40 (1384)	C8x11.5	3.055	2.982	57.3	3.3800	4.666	109.512	0.043 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T14	120 - 100 (1391)	C8x11.5	3.460	3.378	64.9	3.3800	1.230	109.512	0.011 [1] ✔
T14	120 - 100 (1392)	C8x11.5	3.460	3.378	64.9	3.3800	0.845	109.512	0.008 [1] ✔
T14	120 - 100 (1397)	C8x11.5	3.460	3.378	64.9	3.3800	0.700	109.512	0.006 [1] ✔
T14	120 - 100 (1398)	C8x11.5	3.460	3.378	64.9	3.3800	0.873	109.512	0.008 [1] ✔
T14	120 - 100 (1403)	C8x11.5	3.460	3.378	64.9	3.3800	0.639	109.512	0.006 [1] ✔
T14	120 - 100 (1404)	C8x11.5	3.460	3.378	64.9	3.3800	0.345	109.512	0.003 [1] ✔
T17	60 - 40 (1373)	C8x11.5	3.460	3.378	64.9	3.3800	1.689	109.512	0.015 [1] ✔
T17	60 - 40 (1374)	C8x11.5	3.460	3.378	64.9	3.3800	1.004	109.512	0.009 [1] ✔
T17	60 - 40 (1379)	C8x11.5	3.460	3.378	64.9	3.3800	0.988	109.512	0.009 [1] ✔
T17	60 - 40 (1380)	C8x11.5	3.460	3.378	64.9	3.3800	1.529	109.512	0.014 [1] ✔
T17	60 - 40 (1385)	C8x11.5	3.460	3.378	64.9	3.3800	1.531	109.512	0.014 [1] ✔
T17	60 - 40 (1386)	C8x11.5	3.460	3.378	64.9	3.3800	0.944	109.512	0.009 [1] ✔

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	

[1] $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	343 - 341.875	Leg	1 1/8	2	-5.444	44.690	12.2	Pass
T2	341.875 - 340	Leg	1 1/8	14	-5.956	32.151	18.5	Pass
T3	340 - 320	Leg	1 1/8	26	-12.524	31.374	39.9	Pass
T4	320 - 300	Leg	1 1/8	104	-12.453	31.370	39.7	Pass
T5	300 - 280	Leg	1 3/8	182	-15.977	52.247	30.6	Pass
T6	280 - 260	Leg	1 3/8	259	-15.120	52.289	28.9	Pass
T7	260 - 240	Leg	1 1/2	337	-22.440	61.934	36.2	Pass
T8	240 - 220	Leg	1 1/2	417	-24.388	61.293	39.8	Pass
T9	220 - 200	Leg	1 1/2	495	-18.370	59.571	30.8	Pass
T10	200 - 180	Leg	1 1/2	571	-17.656	59.366	29.7	Pass
T11	180 - 160	Leg	1 1/2	651	-18.559	58.325	31.8	Pass
T12	160 - 140	Leg	1 1/2	729	-20.272	58.701	34.5	Pass
T13	140 - 120	Leg	1 3/4	805	-24.823	85.923	28.9	Pass
T14	120 - 100	Leg	1 3/4	885	-35.407	88.018	40.2	Pass
T15	100 - 80	Leg	1 3/4	963	-25.927	84.647	30.6	Pass
T16	80 - 60	Leg	1 3/4	1040	-34.961	86.622	40.4	Pass
T17	60 - 40	Leg	1 3/4	1118	-36.348	86.825	41.9	Pass
T18	40 - 20	Leg	1 3/4	1196	-35.470	85.209	41.6	Pass
T19	20 - 10	Leg	1 3/4	1274	-35.155	84.517	41.6	Pass
T20	10 - 0	Leg	1 3/4	1316	-30.903	83.593	37.0	Pass
T1	343 - 341.875	Diagonal	3/4	12	-0.289	9.181	3.1	Pass
T2	341.875 - 340	Diagonal	3/4	23	-1.357	7.761	17.5	Pass
T3	340 - 320	Diagonal	3/4	101	-1.241	7.567	16.4	Pass
T4	320 - 300	Diagonal	3/4	113	-1.634	7.567	21.6	Pass
T5	300 - 280	Diagonal	3/4	209	-2.211	7.673	28.8	Pass
T6	280 - 260	Diagonal	3/4	336	-1.061	7.673	13.8	Pass
T7	260 - 240	Diagonal	3/4	347	-1.554	7.726	20.1	Pass
T8	240 - 220	Diagonal	3/4	474	-1.756	7.726	22.7	Pass
T9	220 - 200	Diagonal	3/4	570	-1.654	7.726	21.4	Pass
T10	200 - 180	Diagonal	3/4	581	-2.323	7.726	30.1	Pass
T11	180 - 160	Diagonal	3/4	725	-2.428	7.726	31.4	Pass
T12	160 - 140	Diagonal	3/4	737	-1.741	7.726	22.5	Pass
T13	140 - 120	Diagonal	7/8	815	-3.252	12.509	26.0	Pass
T14	120 - 100	Diagonal	7/8	959	-3.401	12.509	27.2	Pass
T15	100 - 80	Diagonal	7/8	1038	-0.840	12.509	6.7	Pass
T16	80 - 60	Diagonal	7/8	1049	-1.647	12.509	13.2	Pass
T17	60 - 40	Diagonal	7/8	1187	-2.923	12.509	23.4	Pass
T18	40 - 20	Diagonal	7/8	1271	-1.869	12.509	14.9	Pass
T19	20 - 10	Diagonal	7/8	1283	-1.365	12.547	10.9	Pass
T20	10 - 0	Diagonal	7/8	1325	-3.223	17.911	18.0	Pass
T3	340 - 320	Horizontal	3/4	98	-0.902	9.750	9.2	Pass
T4	320 - 300	Horizontal	3/4	115	-1.137	9.750	11.7	Pass
T5	300 - 280	Horizontal	3/4	205	2.901	14.314	20.3	Pass
T6	280 - 260	Horizontal	3/4	333	-0.722	9.832	7.3	Pass
T7	260 - 240	Horizontal	3/4	349	-0.990	9.873	10.0	Pass
T8	240 - 220	Horizontal	3/4	482	2.424	14.314	16.9	Pass
T9	220 - 200	Horizontal	3/4	567	-1.098	9.873	11.1	Pass
T10	200 - 180	Horizontal	3/4	584	-1.577	9.873	16.0	Pass
T11	180 - 160	Horizontal	3/4	710	2.494	14.314	17.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T12	160 - 140	Horizontal	3/4	801	-1.212	9.873	12.3	Pass
T13	140 - 120	Horizontal	7/8	818	-2.201	13.301	16.5	Pass
T14	120 - 100	Horizontal	7/8	943	3.813	19.483	19.6	Pass
T15	100 - 80	Horizontal	7/8	1035	-0.624	13.301	4.7	Pass
T16	80 - 60	Horizontal	7/8	1052	-0.977	13.301	7.3	Pass
T17	60 - 40	Horizontal	7/8	1189	3.132	19.483	16.1	Pass
T18	40 - 20	Horizontal	7/8	1268	-1.357	13.301	10.2	Pass
T19	20 - 10	Horizontal	7/8	1286	-0.858	13.301	6.5	Pass
T20	10 - 0	Horizontal	7/8	1363	-0.549	13.549	4.1	Pass
T1	343 - 341.875	Top Girt	5/8	6	-0.173	5.718	3.0	Pass
T2	341.875 - 340	Top Girt	5/8	17	0.593	9.940	6.0	Pass
T3	340 - 320	Top Girt	5/8	29	-0.583	5.718	10.2	Pass
T4	320 - 300	Top Girt	5/8	106	-0.239	5.718	4.2	Pass
T5	300 - 280	Top Girt	5/8	185	-0.814	5.788	14.1	Pass
T6	280 - 260	Top Girt	5/8	264	-0.379	5.788	6.5	Pass
T7	260 - 240	Top Girt	3/4	342	-0.392	9.873	4.0	Pass
T8	240 - 220	Top Girt	3/4	419	-0.644	9.873	6.5	Pass
T9	220 - 200	Top Girt	3/4	498	-0.551	9.873	5.6	Pass
T10	200 - 180	Top Girt	3/4	575	-0.420	9.873	4.2	Pass
T11	180 - 160	Top Girt	3/4	653	-0.936	9.873	9.5	Pass
T12	160 - 140	Top Girt	3/4	732	-0.641	9.873	6.5	Pass
T13	140 - 120	Top Girt	3/4	809	-0.741	9.851	7.5	Pass
T14	120 - 100	Top Girt	3/4	887	-1.252	9.851	12.7	Pass
T15	100 - 80	Top Girt	3/4	965	-0.454	9.851	4.6	Pass
T16	80 - 60	Top Girt	3/4	1042	-0.619	9.851	6.3	Pass
T17	60 - 40	Top Girt	3/4	1120	-0.630	9.851	6.4	Pass
T18	40 - 20	Top Girt	3/4	1198	-0.614	9.851	6.2	Pass
T19	20 - 10	Top Girt	3/4	1276	-0.612	9.851	6.2	Pass
T20	10 - 0	Top Girt	3/4	1319	0.921	14.314	6.4	Pass
T1	343 - 341.875	Bottom Girt	5/8	9	1.332	9.940	13.4	Pass
T2	341.875 - 340	Bottom Girt	5/8	20	-0.599	5.718	10.5	Pass
T3	340 - 320	Bottom Girt	5/8	31	-0.239	5.718	4.2	Pass
T4	320 - 300	Bottom Girt	5/8	110	-0.661	5.718	11.6	Pass
T5	300 - 280	Bottom Girt	5/8	189	-0.365	5.788	6.3	Pass
T6	280 - 260	Bottom Girt	5/8	266	-0.317	5.788	5.5	Pass
T7	260 - 240	Bottom Girt	3/4	344	-0.567	9.873	5.7	Pass
T8	240 - 220	Bottom Girt	3/4	423	-0.584	9.873	5.9	Pass
T9	220 - 200	Bottom Girt	3/4	501	-0.355	9.873	3.6	Pass
T10	200 - 180	Bottom Girt	3/4	578	-0.912	9.873	9.2	Pass
T11	180 - 160	Bottom Girt	3/4	657	-0.600	9.873	6.1	Pass
T12	160 - 140	Bottom Girt	3/4	734	-0.557	9.873	5.6	Pass
T13	140 - 120	Bottom Girt	3/4	812	-1.016	9.851	10.3	Pass
T14	120 - 100	Bottom Girt	3/4	890	-0.613	9.851	6.2	Pass
T15	100 - 80	Bottom Girt	3/4	968	-0.454	9.851	4.6	Pass
T16	80 - 60	Bottom Girt	3/4	1045	-0.619	9.851	6.3	Pass
T17	60 - 40	Bottom Girt	3/4	1123	-0.630	9.851	6.4	Pass
T18	40 - 20	Bottom Girt	3/4	1201	-0.614	9.851	6.2	Pass
T19	20 - 10	Bottom Girt	3/4	1280	1.081	14.314	7.5	Pass
T1	343 - 341.875	Guy A@341.958	5/16	1416	5.261	6.720	78.3	Pass
T5	300 - 280	Guy A@285.125	3/8	1413	6.634	9.240	71.8	Pass
T8	240 - 220	Guy A@236.5	3/8	1410	6.233	9.240	67.5	Pass
T11	180 - 160	Guy A@174.875	5/16	1407	4.871	6.720	72.5	Pass
T14	120 - 100	Guy A@114.875	5/16	1399	4.117	6.720	61.3	Pass
T17	60 - 40	Guy A@58.125	3/8	1381	3.926	9.240	42.5	Pass
T1	343 - 341.875	Guy B@341.958	5/16	1415	6.242	6.720	92.9	Pass
T5	300 - 280	Guy B@285.125	3/8	1412	7.959	9.240	86.1	Pass
T8	240 - 220	Guy B@236.5	3/8	1409	7.360	9.240	79.7	Pass
T11	180 - 160	Guy B@174.875	5/16	1406	5.373	6.720	80.0	Pass
T14	120 - 100	Guy B@114.875	5/16	1394	4.314	6.720	64.2	Pass
T17	60 - 40	Guy B@58.125	3/8	1376	4.124	9.240	44.6	Pass
T1	343 - 341.875	Guy C@341.958	5/16	1414	5.125	6.720	76.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T5	300 - 280	Guy C@285.125	3/8	1411	6.431	9.240	69.6	Pass
T8	240 - 220	Guy C@236.5	3/8	1408	5.970	9.240	64.6	Pass
T11	180 - 160	Guy C@174.875	5/16	1405	4.703	6.720	70.0	Pass
T14	120 - 100	Guy C@114.875	5/16	1388	3.897	6.720	58.0	Pass
T17	60 - 40	Guy C@58.125	3/8	1370	3.727	9.240	40.3	Pass
T14	120 - 100	Torque Arm Top@114.875	C8x11.5	1395	5.875	109.512	5.4	Pass
T17	60 - 40	Torque Arm Top@58.125	C8x11.5	1384	4.666	109.512	4.3	Pass
T14	120 - 100	Torque Arm Bottom@114.875	C8x11.5	1397	-6.919	87.761	7.9	Pass
T17	60 - 40	Torque Arm Bottom@58.125	C8x11.5	1379	-5.291	87.761	6.0	Pass

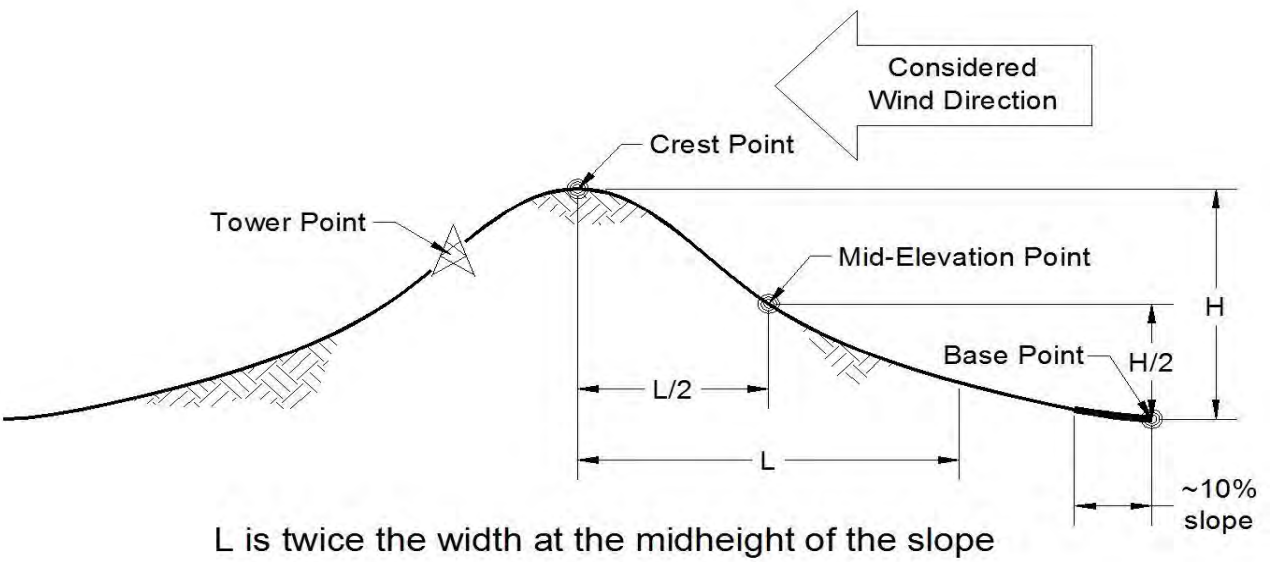
Summary		
Leg (T17)	41.9	Pass
Diagonal (T11)	31.4	Pass
Horizontal (T5)	20.3	Pass
Top Girt (T5)	14.1	Pass
Bottom Girt (T1)	13.4	Pass
Guy A (T1)	78.3	Pass
Guy B (T1)	92.9	Pass
Guy C (T1)	76.3	Pass
Torque Arm Top (T14)	5.4	Pass
Torque Arm Bottom (T14)	7.9	Pass
RATING =	**92.9**	**Pass**

Topographic Factors for use in tnxTower

(v. 3.1, effecitve 10.14.13)

per SEAW RSM-03 Figure 3-3

BU#:	
Site Name:	US-CA-5177
App#:	



L is twice the width at the midheight of the slope

Topographic Feature

- (●) Continuous Ridge
- ( ) Flat Topped Ridge
- ( ) Hill
- ( ) Flat Topped Hill
- ( ) Continuous Escarpment

Exposure Category

- ( ) Exposure B
- (●) Exposure C
- ( ) Exposure D

Notes:

1) Feature is assumed to be isolated per section 1.8 of the Crown Castle standard for the Determination of Topographic Factors (ENG-PRC-10040).

2) Base Kzt may differ slightly from TNX value due to differences in where the base line is established. This does not effect the results in anyway.

Topographic Input	
Crest Point Elevation (ft. AMSL)	1071
Base Point Elevation (ft. AMSL)	315
Mid-Height Elevation (ft. AMSL)	693
Crest to Mid-Height Distance (L/2) (ft.)	2904
Tower Point Elevation (ft. AMSL)	1071
Structure Upwind/Downwind Distance (x)(ft.)	0

tnxTower Input		K_{ZT} (RSM-03)
Topographic Category	5	**At Base:** **1.905²**
Crest Height, H (ft.)	756	
Slope Distance, L (ft.)	5808	
Distance from Crest, x (ft.)	0	

BU:	US-CA-5177	Structure:	A
WO:			
Order:		Rev:	

Location

	Decimal Degrees		Deg	Min	Sec
Lat:	37.652522	+	37	39	9.08
Long:	-121.478067	-	121	28	41.04

Code and Site Parameters

Seismic Design Code:	TIA-222-H	
Site Soil:	D (Default)	Default
Risk Category:	II	

USGS Seismic Reference			
	S_S:	1.4620	g
	S_1:	0.4930	g
	T_L:	8	s

Seismic Design Category Determination

Importance Factor, I_e:	1	
Acceleration-based site coefficient, F_a:	1.2000	
Velocity-based site coefficient, F_v:	1.8070	
Design spectral response acceleration short period, S_{DS}:	1.1696	g
Design spectral response acceleration 1 s period, S_{D1}:	0.5939	g
Seismic Design Category Based on S_{DS}:	D	
Seismic Design Category Based on S_{D1}:	D	
Seismic Design Category Based on S_1:	N/A	
Controlling Seismic Design Category:	D	

BU:	US-CA-5177	Structure:	A
WO:			
Order:		Rev:	

Tower Details

Tower Type:	Guyed Tower		
Height, h:	343	ft	
Effective Seismic Weight, W:	18.05	kips	
Amplification Factor, A_s:	1.0		2.7.8.1

Seismic Base Shear

Response Modification Factor, R:	3		
C_g:	176.5		
K_g:	0.0020		
F_a:	1.8132	hz	
Approximate Fundamental Period Guyed Towers, T_a:	0.5515	s	2.7.7.1.3.4
Seismic Response Coefficient, C_s	0.3899		2.7.7.1.1
Seismic Response Coefficient Max 1, C_{smax}	0.3589		2.7.7.1.1
Seismic Response Coefficient Max 2, C_{smax}	N/A		2.7.7.1.1
Seismic Response Coefficient Min 1, C_{smin}	0.0515		2.7.7.1.1
Seismic Response Coefficient Min 2, C_{smin}	N/A		2.7.7.1.1
Controlling Seismic Response Coefficient, C_{sc}	0.3589		
Seismic Base Shear, V	6.480	kips	2.7.7.1.1

Vertical Distribution Factors

Period Related Exponent, k:	1.026	2.7.7.1.2
Sum of $w_i h_i^k$	3268.13	2.7.7.1.2

EXHIBIT B-4

Use Fee Schedule

Exhibit B-4

Use Fee Schedule - US-CA-5177

Annual Increases	**3.00%**
Year One - Monthly	$ 2,500.00
Year One - Annual	$ 30,000.06

	YEAR(S) (Five (5) Year Term)				
Month	1	2	3	4	5
1	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
2	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
3	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
4	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
5	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
6	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
7	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
8	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
9	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
10	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
11	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
12	$ 2,500.00	$ 2,575.00	$ 2,652.26	$ 2,731.82	$ 2,813.78
Yearly Total:	**$ 30,000.06**	**$ 30,900.06**	**$ 31,827.06**	**$ 32,781.87**	**$ 33,765.33**

TOTAL LICENSE PAYMENTS - 5-YR TERM: 159,274.38

EXHIBIT C

Prime Agreement

REQUESTED THRU :
SIMPLIFILE

Recording Requested By & When Recorded, Return To:

Name: FIDELITY NATIONAL TITLE
Street: 7130 GLEN FOREST DR #300
Post Office Box #:
City / St. / Zip: RICHMOND, VA 23226

Doc #: 2020-144956
10/27/2020 11:55:17 AM
Page 1 of 5 Fee: $36.00 Tax Paid: $251.90
Steve J. Bestolarides
San Joaquin County Recorder
Paid By: FIDELITY NATIONAL TITLE INSURANCE

This space for recorder's use only

Special Warranty Deed

(Document Title)

THE UNDERSIGNED GRANTOR DECLARES:
DOCUMENTARY TRANSFER TAX $ 251.90 CO. $ 0.00 CY.
_x_ COMPUTED ON FULL VALUE OF PROPERTY CONVEYED, OR
___ COMPUTED ON FULL VALUE LESS LIENS REMAINING AT TIME OF SALE
CITY OF Tracy UNINCORPORATED___

This page added to provide adequate space for the above information only.
(Government Code 27361.6)
(Additional recording fee applies)

This Instrument Was Prepared by and Record and Return to:

Cumulus Media Tower Co., LLC
750 Park of Commerce Drive, Suite 200
Boca Raton, Florida 33487
Attn: Daniel Marinberg, Esq., General Counsel

Site Number: US-CA-5177
Commitment #: 32027623

Send Tax Statement to:
Cumulus Media Tower Co LLC
750 Park of Commerce Dr.
Boca Raton FL 33487

(Space Above for Recorder's Use)

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED made this 30th day of Sept., 2020 between, CUMULUS RADIO LLC, a Delaware limited liability company, successor by conversion to Cumulus Radio Corporation, a Nevada corporation, formerly known as Citadel Broadcasting Company, a Nevada corporation, formerly known as Citadel Communications Corporation, a Nevada corporation ("Grantor"), whose address is 3280 Peachtree Street, NW, Suite 2200 Atlanta, GA 30305, and CUMULUS MEDIA TOWER CO., LLC, a Delaware limited liability company ("Grantee"), whose address is 750 Park of Commerce Drive, Suite 200, Boca Raton, Florida 33487.

WITNESSETH:

That Grantor, for and in consideration of the sum of TEN DOLLARS ($10.00) and other good and valuable consideration, to it in hand paid by Grantee, the receipt whereof is hereby acknowledged, has granted, bargained, and sold to Grantee, its heirs and assigns forever, the following described land (the "Property") located in San Joaquin County, California, and more particularly described as follows:

LEGAL DESCRIPTION ATTACHED AS EXHIBIT A.

Tax Parcel No. 251-120-080-000

TOGETHER with all the improvements, tenements, hereditaments and appurtenances belonging or in any way appertaining to the Property.

TO HAVE AND TO HOLD the same in fee simple forever.

AND GRANTOR hereby covenants with Grantee that Grantor is lawfully seized of the Property in fee simple; Grantor has good, right, and lawful authority to sell and convey the Property; and Grantor does hereby fully warrant the title to said Property, and will defend the same against the lawful claims of all persons whomsoever, subject, however, to any Permitted

RECORDING ORDER

Encumbrances (as defined in that certain Master Agreement dated as of August 7, 2020 among Cumulus Media New Holdings Inc., a Delaware limited liability company, Vertical Bridge REIT, LLC, a Delaware limited liability company, VB Nimbus, LLC, a Delaware limited liability company, and Grantee).

[Remainder of page intentionally left blank; signature page immediately following]

[*Grantor Signature Page to Warranty Deed*]

IN WITNESS WHEREOF, the undersigned have executed this Special Warranty Deed as of the date first written above.

CUMULUS RADIO LLC, a Delaware limited liability company, successor by conversion to Cumulus Radio Corporation, a Nevada corporation, formerly known as Citadel Broadcasting Company, a Nevada corporation, formerly known as Citadel Communications Corporation, a Nevada corporation

By: Richard S. Denning

Print Name: Richard S. Denning

Title: EVP + GC

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document

State of Georgia)
County of Fulton)

On Sept. 30, 2020 before me, Hope Reed (insert name and title of the officer) personally appeared Richard S. Denning (name of signatory), who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature Hope Reed (Seal)

HOPE REED NOTARY PUBLIC BARROW COUNTY GEORGIA EXPIRES Oct. 21, 2020

EXHIBIT A - LEGAL DESCRIPTION

The following described real property in the County of San Joaquin, State of California:

A portion of Section 24, Township 3 South, Range 4 East, Mount Diablo Base and Meridian, being Parcel A as shown upon Parcel Map filed January 20, 1976, in Volume 2 of Parcel Maps, at Page 113, San Joaquin County Records.

TOGETHER WITH AND SUBJECT TO
A 25-foot private right of way to be used for access to proposed radio tower only as shown upon Parcel Map filed January 20, 1976, in Volume 2 of Parcel Maps, at Page 113, San Joaquin County Records.

AND BEING the same property conveyed to Citadel Communications Corporation, a Nevada corporation from Fuller-Jeffrey Broadcasting Companies, Inc., a corporation by Corporation Grant Deed dated September 24, 1993 and recorded October 4, 1993 in Instrument No. 93114694.

Tax Parcel No. 251-120-080-000

EXHIBIT D

City's Letter of Self-Insurance

City & County of San Francisco
London N. Breed, Mayor

Office of the City Administrator
Carmen Chu, City Administrator
Matt Hansen, Director, Risk Management

March 17, 2022

VB NIMBUS, LLC
Attn: Pilar Lozano, Regional Leasing Specialist
750 Park of Commerce Drive, Suite 200
Boca Raton, Florida 33487

RE: SFPUC Water Radio Replacement Project

This letter certifies that the City and County of San Francisco is self-insured and self-funded for the following insurance coverages, which cover the City and County of San Francisco, its officers and employees.

Comprehensive General Liability insurance in the amount of $6,000,000 per occurrence and $6,000,000 general aggregate for bodily injury, property damage, and personal injury to third parties for liability arising out of the City's negligence in performance of this agreement.

Automobile Liability insurance with limits not less than $1,000,000 combined single limit per accident for bodily injury and property damage including owned, and non-owned and hired auto coverage as applicable.

Workers' Compensation in statutory amounts with Employer's Liability of $1,000,000 per accident, injury or illness.

The City and County of San Francisco's self-insurance program is not commercial insurance and has no legal capacity to name another entity as additional insured.

Do not hesitate to contact this office should you have any questions.

Sincerely,

Matt Hansen
Director

cc: Sondra Greene, SFPUC

EXHIBIT E

City Requirements

EXHIBIT E

CITY PROVISION

1. MacBride Principles - Northern Ireland. The provisions of San Francisco Administrative Code Section 12F are incorporated into this Agreement by this reference and made part of this Agreement. Owner confirms that Owner has read and understood that City and County of San Francisco ("**City**") urges companies doing business in Northern Ireland to resolve employment inequities and to abide by the MacBride Principles, and urges San Francisco companies to do business with corporations that abide by the MacBride Principles.

2. Controller's Certification of Funds. The terms of this Agreement are governed by and subject to the budgetary and fiscal provisions of City's Charter. Notwithstanding anything to the contrary contained in this Agreement, there will be no obligation for the payment or expenditure of money by City under this Agreement unless the Controller of the City and County of San Francisco first certifies, under Section 3.105 of City's Charter, that there is a valid appropriation from which the expenditure may be made and that unencumbered funds are available from the appropriation to pay the expenditure. Without limiting the foregoing, if in any fiscal year of City after the fiscal year in which the Term of this Agreement commences, sufficient funds for the payment of Rent are not appropriated, then City may terminate this Agreement, without penalty, liability, or expense of any kind to City, as of the last date on which sufficient funds are appropriated. City will use its reasonable efforts to give Owner reasonable advance notice of the termination.

3. Non Discrimination in City Contracts and Benefits Ordinance.

(a) Covenant Not to Discriminate

In the performance of this Agreement, Owner will not to discriminate against any employee of Owner, any City employee working with Owner, any applicant for employment with Owner, or against any person seeking accommodations, advantages, facilities, privileges, services, or membership in all business, social, or other establishments or organizations on the basis of the fact or perception of a person's race, color, creed, religion, national origin, ancestry, age, height, weight, sex, sexual orientation, gender identity, domestic partner status, marital status, disability or Acquired Immune Deficiency Syndrome or HIV status (AIDS/HIV status), or association with members of those protected classes, or in retaliation for opposition to discrimination against those classes.

(b) Subcontracts

Owner will include in all subcontracts relating to the Site a non-discrimination clause applicable to the subcontractor in substantially the form of subsection (a) above. In addition, Owner will incorporate by reference in all subcontracts the provisions of San Francisco Administrative Code Sections 12B.2(a), 12B.2(c)-(k), and 12C.3 and require all subcontractors to comply with those provisions. Owner's failure to comply with the obligations in this subsection will constitute a material breach of this Agreement.

(c) Non-Discrimination in Benefits

Owner does not as of the date of this Agreement, and will not during the Term, in any of its operations in San Francisco, on real property owned by City, or where the work is being performed for City or elsewhere within the United States, discriminate in the provision of bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pension and retirement benefits, or travel benefits, as well as any benefits other than the benefits specified above, between employees with domestic partners and

employees with spouses, and/or between the domestic partners and spouses of the employees, where the domestic partnership has been registered with a governmental entity under state or local law authorizing that registration, subject to the conditions set forth in San Francisco Administrative Code Section 12B.2(b).

(d) CMD Form

As a condition to this Agreement, Owner will execute the "Chapter 12B Declaration: Nondiscrimination in Contracts and Benefits" form (Form CMD-12B-101) with supporting documentation and secure the approval of the form by the San Francisco Contract Monitoring Division (the "**CMD**"). Owner represents that before execution of the Agreement: **(i)** Owner executed and submitted to the CMD Form CMD-12B-101 with supporting documentation, and **(ii)** the CMD approved the form.

(e) Incorporation of Administrative Code Provisions by Reference

The provisions of San Francisco Administrative Code Chapters 12B and 12C relating to non-discrimination by parties contracting for the lease of property to City are incorporated into this Section by reference and made a part of this Agreement as though fully set forth. Owner will comply fully with and be bound by all of the provisions that apply to this Agreement under Administrative Code Chapters 12B and 12C, including the remedies provided in those Chapters. Without limiting the foregoing, Owner understands that under San Francisco Administrative Code Section 12B.2(h) a penalty of Fifty Dollars ($50) for each person for each calendar day during which that person was discriminated against in violation of the provisions of this Agreement may be assessed against Owner and/or deducted from any payments due Owner.

4. Resource-Efficient City Buildings. Owner acknowledges that the City and County of San Francisco has enacted San Francisco Environment Code Sections 700 to 713 relating to green building requirements for the design, construction, and operation of City buildings. Owner will comply with all applicable provisions of those code sections.

5. Sunshine Ordinance. In accordance with San Francisco Administrative Code Section 67.24(e), contracts, contractors' bids, leases, agreements, responses to Requests for Proposals, and all other records of communications between City and persons or firms seeking contracts will be open to inspection immediately after a contract has been awarded. Nothing in this provision requires the disclosure of a private person's or organization's net worth or other proprietary financial data submitted for qualification for a contract, lease, agreement, or other benefit until and unless that person or organization is awarded the contract, lease, agreement, or benefit. Information provided that is covered by this Section will be made available to the public on request.

6. Conflicts of Interest. Through its execution of this Agreement, Owner acknowledges that it is familiar with the provisions of City's Campaign and Governmental Conduct Code Article III, Chapter 2 and California Government Code Section 87100 et seq. and Section 1090 et seq., and certifies that it does not know of any facts that would constitute a violation of those provisions. If Owner becomes aware of any such fact during the Term of this Agreement, Owner will immediately notify City.

7. Notification of Prohibition on Contributions. By executing this Agreement, Owner acknowledges its obligations under Section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who leases, or seeks to lease, to or from any department of the City any land or building from making any campaign contribution to **(a)** a City elected official if the lease must be approved by that official, **(b)** a candidate for that City elective office, or **(c)** a committee controlled by that elected official or a candidate for that

office, at any time from the submission of a proposal for the lease until the later of either the termination of negotiations for the lease or twelve (12) months after the date the City approves the lease. Owner acknowledges that the foregoing restriction applies only if the lease or a combination or series of leases or other contracts approved by the same individual or board in a fiscal year have a total anticipated or actual value of One Hundred Thousand Dollars ($100,000) or more. Owner further acknowledges that **(i)** the prohibition on contributions applies to each prospective party to the lease; any person with an ownership interest of more than ten percent (10%) in Owner; any subcontractor listed in the lease; and any committee that is sponsored or controlled by Owner; and **(ii)** within thirty (30) days of the submission of a proposal for the Lease, the City department with whom Owner is leasing is obligated to submit to the Ethics Commission the parties to the lease and any subcontractor. Additionally, Owner certifies that it has informed each such person of the limitation on contributions imposed by Section 1.126 by the time it submitted a proposal for the lease, and has provided the names of the persons required to be informed to the City department with whom it is leasing.

8. Preservative-Treated Wood Containing Arsenic

Owner may not purchase preservative-treated wood products containing arsenic in the performance of this Agreement unless an exemption from the requirements of Environment Code Chapter 13 is obtained from the Department of Environment under Environment Code Section 1304. The term "preservative-treated wood containing arsenic" means wood treated with a preservative that contains arsenic, elemental arsenic, or an arsenic copper combination, including chromated copper arsenate preservative, ammoniac copper zinc arsenate preservative, or ammoniacal copper arsenate preservative. Owner may purchase preservative-treated wood products on the list of environmentally preferable alternatives prepared and adopted by the Department of Environment. This provision does not preclude Owner from purchasing preservative-treated wood containing arsenic for saltwater immersion. The term "saltwater immersion" means a pressure-treated wood that is used for construction purposes or facilities that are partially or totally immersed in saltwater.

9. Contractor Vaccination Requirements

(a) Owner acknowledges that it has read the requirements of the 38th Supplement to Mayoral Proclamation Declaring the Existence of a Local Emergency ("**Emergency Declaration**"), dated February 25, 2020, and the Contractor Vaccination Policy for City Contractors issued by the City Administrator ("**Contractor Vaccination Policy**"), as those documents may be amended from time to time. A copy of the Contractor Vaccination Policy can be found at: https://sf.gov/confirm-vaccine-status-your-employees-and-subcontractors. Any undefined, initially-capitalized term used in this Section has the meaning given to that term in the Contractor Vaccination Policy.

(b) A Contract, as defined in the Emergency Declaration, is an agreement between the City and any other entity or individual and any subcontract under such agreement, where Covered Employees of the contractor or subcontractor work in-person with City employees at a facility owned, leased, or controlled by the City. A Contract includes such agreements currently in place or entered into during the term of the Emergency Declaration. A Contract does not include an agreement with a state or federal governmental entity or agreements that does not involve the City paying or receiving funds.

(c) Owner has read the Contractor Vaccination Policy. In accordance with the Emergency Declaration, if this Agreement is (or becomes) a Contract as defined in the Contractor Vaccination Policy, Owner agrees that:

(I) Owner shall ensure it complies with the requirements of the Contractor Vaccination Policy pertaining to Covered Employees, as they are defined under the Emergency Declaration and the Contractor Vaccination Policy, and insure such Covered religious grounds; and

(II) If Owner grants Covered Employees an exemption based on medical or religious grounds, Owner will promptly notify City by completing and submitting the Covered Employees Granted Exemptions Form ("**Exemptions Form**"), which can be found at https://sf.gov/confirm-vaccine-status-your-employees-and-subcontractors (navigate to "**Exemptions**" to download the form).

San Francisco Planning

49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103
www.sfplanning.org

PUBLIC PROJECT APPLICATION

The purpose of the Public Project Application is to collect all relevant information necessary for the Planning Department to appropriately conduct environmental review for a public agency project that does not require an entitlement decision from the San Francisco Planning Commission and/or review of a building permit by the department's Current Planning division. Unless otherwise specified by your liaison at Environmental Planning, please submit a completed Public Project Application, along with necessary materials to CPC.EPIntake@sfgov.org.

For projects requiring an entitlement and/or review by the department's Current Planning division, please complete a regular Project Application and submit according to the submittal instructions outlined in the application.

Once a project is received, you will be contacted regarding payment and/or any additional materials necessary. When payment and/or all missing materials are received, you will receive an email with the ENV case number and contact information for the assigned planner.

PROJECT INFORMATION

Water Radio Replacement - East Bay

Property Information

ProjectAddress: Various Locations

Block/Lot(s):

Applicant Information

Public Agency: SFPUC

Name: Kimberly Stern Liddel

Telephone: 415-601-8578

Email Address: KHStern@sfwater.org

REQUIRED MATERIALS

☐ Electronic set of plans (11x17) Please see the Department's Plan Submittal Guidelines for more information.

☐ Photos of proposed work areas/project site.

☐ Necessary background reports and supplemental applications (specified in Environmental Evaluation Screening Form)

☐ MTA only: Synchro data for lane reductions and traffic calming projects.

PROJECT INFORMATION

PROJECT DESCRIPTION:

Please provide a narrative project description that summarizes the project and its purpose. If additional space is necessary, please attach a seperate document with a complete project description.

The San Francisco Public Utilities Commission (SFPUC) proposes to implement the Water Radio Replacement Project (WRRP) in the East Bay region to improve the SFPUC's radio communications and thereby improve the water and power system reliability. The project proposes to replace antiquated radio infrastructure to provide better communications coverage needed for the maintenance of the infrastructure, safety of personnel, and to prepare SFPUC's infrastructure and personnel for natural and man-made disasters. The project is also adding radio stations to provide coverage to infrastructure that was previously not covered; a critical requirement from user interviews, a requirement from a SFPUC personnel safety perspective, and a requirement from SFPUC Divisions for infrastructure maintenance and operations perspectives.

APPROVAL ACTION

In accordance with Chapter 31 of the San Francisco Administrative Code, an appeal of an exemption determination can only be filed within 30 days of the project receiving the first approval action.

Project Approval Action: Administrative approval

Will the approval action be taken at a noticed public hearing? ☐ Yes ☑ No

*If YES is checked, please see below. **Email CPC.EPIntake@sfgov.org the date of approval

IF APPROVAL ACTION IS TAKEN AT A NOTICED PUBLIC HEARING, INCLUDE THE FOLLOWING CALENDAR LANGUAGE:

End of Calendar:
CEQA Appeal Rights under Chapter 31 of the San Francisco Administrative Code. If the Commission approves an action identified by an exemption or negative declaration as the Approval Action (as defined in S.F. Administrative Code Chapter 31, as amended, Board of Supervisors Ordinance Number 161-13), then the CEQA decision prepared in support of that Approval Action is thereafter subject to appeal within the time frame specified in S.F. Administrative Code Section 31.16. Typically, an appeal must be filed within 30 calendar days of the Approval Action. For information on filing an appeal under Chapter 31, contact the Clerk of the Board of Supervisors at City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102, or call (415) 554-5184. If the Department's Environmental Review Officer has deemed a project to be exempt from further environmental review, an exemption determination has been prepared and can be obtained on-line at http://sf-planning.org/index.aspx?page=3447. Under CEQA, in a later court challenge, a litigant may be limited to raising only those issues previously raised at a hearing on the project or in written correspondence delivered to the Board of Supervisors, Planning Commission, Planning Department or other City board, commission or department at, or prior to, such hearing, or as part of the appeal hearing process on the CEQA decision. Individual calendar items: This proposed action is the Approval Action as defined by S.F. Administrative Code Chapter 31.

Individual calendar items:
This proposed action is the Approval Action as defined by S.F. Administrative Code Chapter 31.

ENVIRONMENTAL EVALUATION SCREENING FORM

This form will determine the level environmental review is required. You will be contacted by CPC.EPIntake@sfgov.org with a payment request and planner contact information.

If you are submitting an application for entitlement, please submit the Project Application with either Building Permit or Entitlement Intake Appointment.

Environmental Topic	Information	Applicable to Proposed Project?	Notes/Requirements
1a. General	Estimated construction duration (months):	N/A	Approximately 120 working days
1b. General	Does the project involve replacement or repair of a building foundation? If yes, please provide the foundation design type (e.g., mat foundation, spread footings, drilled piers, etc.)	☐ Yes ☑ No	
1c. General	Does Chapter 29 of the San Francisco Administrative Code apply to the proposed project?	☐ Yes ☑ No	If yes, please attach feasibility study to application. If applicant is unclear about Chapter 29 applicability, please contact the city attorney assiged to advise your agency. Planning will not accept the application without applicant verification that Chapter 29 does not apply, or a completed feasibility study.
2a. Transportation	Does the project involve a child care facility or school with 30 or more students, or a location 1,500 square feet or greater?	☐ Yes ☑ No	If yes, submit an Environmental Supplemental- School and Child Care Drop-Off & Pick-Up Management Plan.
2b. Transportation	Would the project involve the intensification of or a substantial increase in vehicle trips at the project site or elsewhere in the region due to autonomous vehicle or for-hire vehicle fleet maintenance, operations, or charging?	☐ Yes ☑ No	
3. Shadow	Would the project result in any construction over 40 feet in height?	☐ Yes ☑ No	If yes, an initial review by a shadow expert, including a recommendation as to whether a shadow analysis is needed, may be required, as determined by Planning staff. (If the project already underwent Preliminary Project Assessment, refer to the shadow discussion in the PPA letter.) An additional fee for a shadow review may be required.
4. Biological Resources	Does the project include the removal or addition of trees on, over, or adjacent to the project site?	☐ Yes ☑ No	If yes: Number of existing trees on, over, or adjacent to the project site: Number of existing trees on, over, or adjacent to the project site that would be removed by the project: Number of trees on, over, or adjacent to the project site that would be added by the project:
5a. Historic Preservation	Would the project involve changes to the front façade or an addition visible from the public right-of-way of a structure built 45 or more years ago or located in a historic district?	☐ Yes ☑ No	If yes, submit a complete Historic Resource Determination Supplemental Application. Include all materials required in the application, including a complete record (with copies) of all building permits.

Please see the Property Information Map or speak with staff at the Planning Counter to determine if this applies.

Environmental Topic	Information	Applicable to Proposed Project?	Notes/Requirements
5b. Historic Preservation	Would the project involve demolition of a structure constructed 45 or more years ago, or a structure located within a historic district?	☐ Yes ☑ No	If yes, a historic resource evaluation (HRE) report will be required. The scope of the HRE will be determined in consultation with CPC-HRE@sfgov.org.
6. Archeology	Would the project result in soil disturbance/ modification greater than two (2) feet below grade in an archeologically sensitive area or eight (8) feet below grade in a non-archeologically sensitive area?	☑ Yes ☐ No	If Yes, provide depth of excavation/ disturbance below grade (in feet*): Max depth of disturbance 18 feet *Note this includes foundation work
7. Geology and Soils	Is the project located within a Landslide Hazard Zone, Liquefaction Zone or on a lot with an average slope of 25% or greater? Area of excavation/disturbance (in square feet): 519 square feet Amount of excavation (in cubic yards): 39 cubic yards	☐ Yes ☐ No	A geotechnical report prepared by a qualified professional must be submitted if one of the following thresholds apply to the project: The project involves: • new building construction, except one-story storage or utility occupancy; • horizontal additions, if the footprint area increases more than 50%; • horizontal and vertical additions increase more than 500 square feet of new projected roof area; or • grading performed at a site in the landslide hazard zone. A geotechnical report may also be required for other circumstances as determined by Environmental Planning staff.
8. Air Quality	Would the project add new sensitive receptors (residences, schools, child care facilities, hospitals residential dwellings, and senior-care facilities) within an Air Pollutant Exposure Zone?	☐ Yes ☑ No	If yes, the property owner must submit copy of initial filed application with the Department of Public Health. More information is found here.
9a. Hazardous Materials	Is the project site located within the Maher area or on a site containing potential subsurface soil or groundwater contamination and would it involve ground disturbance of at least 50 cubic yards or a change of use from an industrial use to a residential or institutional use?	☐ Yes ☑ No	If yes, submit a Maher Application Form to the Department of Public Health and submit documentation of Maher enrollment with this Project Application. Certain projects may be eligible for a waiver from the Maher program. For more information, refer to the Department of Public Health's Environmental Health Division. Maher enrollment may also be required for other circumstances as determined by Environmental Planning staff.
9b. Hazardous Materials	Is the project site located on a Cortese site or would the project involve work on a site with an existing or former gas station, parking lot, auto repair, dry cleaners, or heavy manufacturing use, or a site with current or former underground storage tanks?	☐ Yes ☑ No	If yes, submit documentation of enrollment in the Maher Program (per above), or a Phase I Environmental Site Assessment prepared by a qualified consultant.

Please see the Property Information Map or speak with staff at the Planning Counter to determine if this applies.

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. **22-0187**

WHEREAS, The San Francisco Public Utilities Commission (SFPUC) Water Enterprise currently operates a low-band voice radio systems for communications across its seven-county, 2,400 mile coverage area; and

WHEREAS, On September 12, 2017, by Resolution No. 17-0195, this Commission approved the SFPUC Water Enterprise – Water Radio Replacement Project (Project); and

WHEREAS, The SFPUC seeks to replace an outdated and inadequate low-band Water Enterprise voice radio system with a modern, digital communications system which is inherently portable, easy to use, improves coverage, enhances safety, and provides wider coverage for business and disaster communications; and

WHEREAS, The SFPUC seeks certain radio site locations to construct, install, use, operate, maintain, enhance, repair, and replace radio communications equipment to meet coverage requirements and provide sufficient communications coverage throughout the Water Enterprise coverage area; and

WHEREAS, The SFPUC selected the Corral Hollow radio communications site to install radio communications equipment to provide key radio coverage for Water Enterprise's maintenance and service crews for Tuolumne and San Joaquin Counties, more specifically from Sonora to Tracy, and specific coverage for the City's power line infrastructure in remote San Joaquin and Alameda Counties; and

WHEREAS, The City and County of San Francisco (City), through the SFPUC, as licensee, desires to enter into a five-year Site Use Agreement (Agreement), with four, five-year extension options with VB Nimbus, LLC, a Delaware limited liability company, as landlord (Owner), to use approximately three hundred forty-five (345) square feet of ground space and certain tower space on the Owner's existing tower located at 32322 S Corral Hollow Road in Tracy (Premises) for the construction, installation, operation, maintenance, repair and replacement of SFPUC radio equipment at a rental rate of $2,500 per month ($30,000 per year), with annual increases of three-percent (3%); and

WHEREAS, On September 26, 2022, the San Francisco Planning Department determined the Project to be categorically exempt from environmental review under California Environmental Quality Act (CEQA) Guidelines Section 15301, Class 1 (Existing Facilities) and CEQA Guidelines Section 15302, Class 2 (Replacement and Construction) under Case Number 2022-008210ENV; and

WHEREAS, This action constitutes the Approval Action for the Project for the purposes of the CEQA pursuant to Section 31.04(h) of the San Francisco Administrative Code; now, therefore, be it

RESOLVED, That this Commission hereby approves the terms and conditions of the Agreement; and, be it

FURTHER RESOLVED, That this Commission recommends to the Board of Supervisors the approval of the Agreement; and, be it

FURTHER RESOLVED, That this Commission hereby authorizes the General Manager, upon approval by the Board of Supervisors and the Mayor of the authorizing resolution, to execute the Agreement and enter into any amendments or modifications to the Agreement, including, without limitation, the modification, addition, or deletion of exhibits, and to enter into any related documents, instruments, memoranda, or other agreements reasonably necessary to consummate the transaction contemplated in the Agreement that the General Manager determines, in consultation with the City Attorney, are in the best interests of the City, do not materially increase the liabilities or obligations of the City or materially diminish the benefits to the City, and to comply with all applicable laws, including the City Charter; and, be it

FURTHER RESOLVED, That upon approval by City's Board of Supervisors and the Mayor, this Commission authorizes the General Manager to take any and all other steps, in consultation with the City Attorney, deemed necessary and advisable to effectuate the purpose and intent of this Resolution.

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at its meeting of October 24, 2022.

Donna Hood

Secretary, Public Utilities Commission

PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. **17-0195**

WHEREAS, The San Francisco Public Utilities Commission's ("SFPUC") Wastewater Enterprise, Power Enterprise, Customer Service Bureau, and City Distribution Division's Auxiliary Water Supply System currently use a Motorola 700/800 MHz standard public safety radio system operated by the Department of Emergency Management ("DEM") while the SFPUC's Water Enterprise uses a low-frequency radio system that spans seven counties but offers incomplete system hardware, incomplete coverage, lacks many features needed in today's utility business, and is end-of-life; and

WHEREAS, In January 2017, SFPUC's Information Technology Services ("IT Services") issued a Request for Proposal ("RFP") to find a qualified Proposer to replace the Water Enterprise's low-frequency radio system with a solution that best meets the coverage and feature requirements outlined in the RFP; and

WHEREAS, The SFPUC received proposals from Metro Mobile Communications, Crystal Communications and Motorola Solutions; and

WHEREAS, The proposals were evaluated by the Contract Monitoring Division ("CMD") and Subject Matter Experts consisting of City employees from SFPUC IT Services, SFPUC Hetch Hetchy Water and the Department of Technology; and

WHEREAS, The Motorola 700/800 MHz standard public safety radio system proposed by Motorola Solutions received the highest number of points, was ranked number 1 and approved for selection by CMD; and

WHEREAS, The SFPUC now wishes to enter into Agreement No. CS-1074 ("Agreement") with Motorola Solutions for the purchase, installation and maintenance of a new Water Enterprise land mobile radio system subject to approval by the Board of Supervisors pursuant to Section 9.118 of the City and County of San Francisco's Charter;

WHEREAS, The Agreement is anticipated to begin on December 1, 2017 and end on February 28, 2027 for a duration of nine years, two months, 28 days; and

WHEREAS, The cost of the Agreement shall not exceed $10,906,297 and will consist of an initial investment in the amount of $9,121,131 for complete system design, installation and system network equipment and, thereafter, system maintenance fees in the amount of $1,785,166 which shall be paid annually, over eight years; and

WHEREAS, Capital project CUW276 shall provide $2,306,281 towards the initial investment required for this project and the remaining funds shall require the Commission's approval of a supplemental appropriation in the amount of $6,814,850 in capital funds subject to final approval by the Board of Supervisors pursuant to Section 9.103 of the City and County of San Francisco's Charter; and

WHEREAS, System maintenance fees shall be funded annually by the operating budget of the Water Enterprise; and

WHEREAS, CMD's sub-contracting goal for this contract is 3% and CMD has determined that Motorola's proposal is compliant with meeting those goals; and

WHEREAS, Motorola Solutions is in compliance with the Equal Benefits Provisions of Chapter 12B of the City's Administrative Code; now, therefore, be it

RESOLVED, That this Commission hereby authorizes the General Manager of the SFPUC to negotiate and execute Agreement No. CS-1074 with Motorola Solutions for the design and installation of a new Water Enterprise land mobile radio system in the amount of $10,906,297 with a duration of up to 3,376 days, subject to Board of Supervisors approval pursuant to Charter Section 9.118; and approves a supplemental appropriation of $6,814,850 in capital project funding, subject to Board of Supervisors approval pursuant to Charter Section 9.103.

I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at its meeting of September 12, 2017.

Alonna Wood

Secretary, Public Utilities Commission

FILE NO. 171006 RESOLUTION NO. 405-17

[Land Mobile Radio System Purchase, Installation, and Maintenance Agreement - Motorola Solutions Inc. - Not to Exceed $10,906,297]

Resolution authorizing the General Manager of the San Francisco Public Utilities Commission to execute Agreement No. CS-1074 with Motorola Solutions Inc. for the purchase, installation, and maintenance of a land mobile radio system, for an amount not to exceed $10,906,297 and with an anticipated term to commence December 1, 2017, through February 28, 2027.

WHEREAS, The San Francisco Public Utilities Commission's (SFPUC) Water Enterprise currently uses a low frequency radio system for its daily operations and for emergency, natural disaster, and job site accident purposes; and

WHEREAS, The current system has reached its end-of-life and offers incomplete system hardware, incomplete coverage, and lacks critical features needed in today's utility business such as built-in portability and GPS; and

WHEREAS, It is necessary to secure a vendor to replace the SFPUC Water Enterprise's low frequency radio system with a new land mobile radio system that best meets necessary coverage and feature requirements for its seven county span; and

WHEREAS, On January 3, 2017, the SFPUC advertised a Request for Proposals Agreement No. CS-1074 for the purchase, installation, and maintenance of a land mobile radio system; and

WHEREAS, The proposals were evaluated by the Contract Monitoring Division (CMD) and subject matter experts consisting of employees from SFPUC and the Department of Technology; and

WHEREAS, The evaluation of the proposals received in response to Agreement No. CS-1074 resulted in the determination that Motorola Solutions Inc. ("Motorola Solutions") was the best qualified vendor; and

WHEREAS, The SFPUC now wishes to enter into Agreement No. CS-1074 ("Agreement") with Motorola Solutions for the purchase, installation, and maintenance of a land mobile radio system; and

WHEREAS, The cost of the Agreement will not exceed $10,906,297, and will consist of an initial investment of $9,121,131 for complete system design, installation and system network equipment and, thereafter, system maintenance fees totaling $1,785,166 which shall be paid over eight years; and

WHEREAS, SFPUC Capital project CUW276 shall provide $2,306,281 towards the initial investment amount of $9,121,131 and the remaining funds for the initial investment shall be provided by a supplemental appropriation of $6,814,850 as authorized by SFPUC Commission Resolution No. 17-0195, pending approval by the San Francisco Board of Supervisors pursuant to Charter, Section 9.103; and

WHEREAS, The system maintenance fees totaling $1,785,166 shall be funded by the operating budget of the SFPUC Water Enterprise; and

WHEREAS, The Agreement is anticipated to begin on December 1, 2017, and end on February 28, 2027, and the duration of this agreement is up to nine years, two months, and twenty-eight days; and

WHEREAS, Pursuant to Charter, Section 9.118, all non-construction contracts entered into by a department requiring anticipated expenditures of $10,000,000 or more shall be subject to approval of the Board of Supervisors by Resolution; and

WHEREAS, Motorola Solutions is in compliance with the Equal Benefits Provisions of Administrative Code, Chapter 12B; and

WHEREAS, On September 12, 2017, the SFPUC Commission approved Resolution No. 17-0195 authorizing the General Manager of the SFPUC to execute an agreement with Motorola Solutions for the purchase, installation, and maintenance of a new low-frequency radio system for an amount not to exceed $10,906,297 and with a duration of up to nine years, two months, and twenty-eight days pending approval by the San Francisco Board of Supervisors pursuant to Charter, Section 9.118; now, therefore, be it

RESOLVED, That the Board of Supervisors authorizes the General Manager of the SFPUC to enter into an agreement with Motorola Solutions in substantially the form of agreement on file with the Clerk of the Board of Supervisors in File No. 171006 in an amount not to exceed $10,906,297.00 and a term not to exceed nine years, two months, and twenty-eight days commencing in 2017 and concluding in 2027; and, be it

FURTHER RESOLVED, That within thirty (30) days of the execution of the Agreement CS-1074 the General Manager of the San Francisco Public Utilities Commission shall provide the signed contract to the Clerk of the Board for inclusion in the official file.

City and County of San Francisco
Tails
Resolution

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

File Number: 171006 **Date Passed:** October 31, 2017

Resolution authorizing the General Manager of the San Francisco Public Utilities Commission to execute Agreement No. CS-1074 with Motorola Solutions Inc. for the purchase, installation, and maintenance of a land mobile radio system, for an amount not to exceed $10,906,297 and with an anticipated term to commence December 1, 2017, through February 28, 2027.

October 19, 2017 Budget and Finance Committee - RECOMMENDED

October 31, 2017 Board of Supervisors - ADOPTED

Ayes: 11 - Breed, Cohen, Farrell, Fewer, Kim, Peskin, Ronen, Safai, Sheehy, Tang and Yee

File No. 171006

I hereby certify that the foregoing Resolution was ADOPTED on 10/31/2017 by the Board of Supervisors of the City and County of San Francisco.

Angela Calvillo
Clerk of the Board

Mayor

11/9/2017
Date Approved

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

Environmental Management
525 Golden Gate Avenue, 6th Floor
San Francisco, CA 94102
T 415.934.5700
F 415.934.5750
TTY 415.554.3488

September 23, 2022

Mr. Timothy Johnston, MP, Senior Environmental Planner
Environmental Planning Division
San Francisco Planning Department
49 South Van Ness Avenue, Suite 1400
San Francisco, CA 94103

RE: CEQA Categorical Exemption Request
Water Radio Replacement – East Bay Regional Network Sites
Project No.: 10015118
COA: 10015118 0001 26570 232146 15514

Dear Mr. Timothy Johnston:

The San Francisco Public Utilities Commission (SFPUC) requests review of the proposed Water Radio Replacement – East Bay Regional Network Sites (Project) under the California Environmental Quality Act (CEQA). The SFPUC requests San Francisco Planning Department – Environmental Planning Division (EP) concurrence that the proposed Project is categorically exempt under CEQA Sections 15301 Class 1 (Existing Facilities) and 15302 Class 2 (Replacement or Reconstruction). Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use. Class 2 consists of the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

The following analysis demonstrates the proposed Project would not result in adverse environmental effects and provides support for our recommendation that it is categorically exempt under CEQA. The Project would be conducted in compliance with applicable federal, State, and local regulations and under contractual provisions prohibiting work in violation of applicable regulations and plans.

BACKGROUND

The SFPUC Water Enterprise radio system is antiquated and needs to be

replaced and expanded at some locations for better coverage. As part of an overall effort, the SFPUC plans to replace dated radio infrastructure along its entire system to provide better communications and coverage needed for the maintenance of the infrastructure, safety of personnel, and to prepare for natural and man-made disasters, and add radio sites to gain coverage in areas not previously covered.

By design, the overall Water Radio Replacement Project is divided into four independent radio networks: Hetch Hetchy Water and Power Region network, East Bay Region network, West Bay Region network, and City Region network. Each regional network consists of several radio sites that provide reception and overlap of reception to provide what is called “coverage”. The radio facilities within each of these regional networks can work cohesively or independently from each other. Thus, if a regional network or an individual radio site were to fail or not be upgraded, the other networks and radio sites would provide some redundancy and continue to offer some percentage of coverage. If all the networks and radio sites are upgraded over time as planned, they would cover 90% of the SFPUC’s infrastructure and access routes. If some sites are not built, coverage would be less; however, upgrades at each site would still be an improvement to the SFPUC’s communication system in and of itself. The individual radio site improvements are also neither dependent upon nor necessitate improvements at other sites. Therefore, each regional network and each radio site within them has independent utility. As such, it is acceptable to request separate environmental review of the networks and even of individual sites.

The Hetch Hetchy network sites were approved in August 2022 (Case No. 2022-006240ENV). Currently, the SFPUC requests environmental review of the radio sites in the East Bay Region network. The SFPUC will request environmental review of other radio sites at a future time and no work will occur at those locations until then.

PROJECT DESCRIPTION

The Project involves work at seven existing sites as described below and shown in Table 1. All the sites are in Alameda County, except for the Corral Hollow and Thomas Shaft sites, which are in San Joaquin County. The sites are existing and fenced facilities and are either developed, fully or partially graded and graveled, or comprised of natural exposed rock and gravel.

A detailed description of the proposed Project components and activities,

ground disturbance, and land ownership at each site is provided in Table 1. Where not SFPUC property, the radio equipment proposed by this Project would be authorized within the SFPUC's leases with these entities. Ground disturbance would only occur at the Corral Hollow and Thomas Shaft sites. Construction at the Corral Hollow and Thomas Shaft sites would be completed in approximately thirty working days and forty-five working days, respectively.

Duration and Schedule
The Project would be initiated upon completion of environmental review and construction contract approval and award. Construction of all the sites would be completed in approximately 17 weeks, or 120 working days. Project activities would primarily be conducted between 7:00 a.m. to 5:00 p.m. Monday through Friday.

Equipment and Personnel
Construction would be completed using only hand tools, except for the Corral Hollow and Thomas Shaft sites, which would require use of a backhoe, rammer, vibratory plate, trencher, drill rig, a mobile 15-ton crane mounted to a rubber-tired truck, and a bucket truck. Four to six crew members are expected to be onsite during construction at each site. Additionally, the contractor's supervisor and an SFPUC engineer and/or technician would be on site to provide oversight for each site. Approximately eight passenger vehicles would be used to transport work crew members, the contractor's supervisor, and SFPUC engineer/technician to and from the site each day.

Site Access and Staging
Access to the Project sites would be via existing public roads that are paved, dirt, and gravel roads. Trucks and equipment would park at the Project sites.

SFPUC STANDARD CONSTRUCTION MEASURES

The SFPUC requires the Standard Construction Measures issued July 1, 2015 (on file at the Environmental Planning Division) be implemented for all projects, as applicable. These measures would be applied to this Project as well.

ENVIRONMENTAL INFORMATION

Aesthetics

The Corral Hollow, Thomas Shaft, Crane Ridge, Sunol Ridge, Sunol Valley Water Treatment Plant, and Mt. Allison sites are in remote locations. Due to the remote locations of all these sites, construction activities would not be readily

Table 1 Proposed Project Details by Site Location

Site/Property Owner and Existing Site Conditions	Ground Disturbance	Antennae and Associated Equipment	Generator and Propane Tank	Other
Corral Hollow/Private (SFPUC to lease land and tower space) Commercial FM Radio Station, with a tower, cinder block communication equipment shelter, and generator with diesel fuel tank.	498 square feet; maximum 4 feet deep.	Install two vertical antennas, one panel antenna, and two 3-foot diameter dish antenna onto the existing 343-foot tower.	Install two propane tanks and an emergency backup generator on a new approximately 11-foot-long by 9.5-foot-wide by 1.5-foot-deep concrete pad with a manifold. Install a new underground approximately 0.25-inch propane fuel line from the new propane tanks manifold to the new generator in the new communication equipment shelter in an approximately 25-foot-long by 0.5-foot-wide by 1.5-foot-deep trench.	Install a prefabricated concrete communication equipment shelter with separate radio equipment and generator rooms on a new approximately 17-foot-long by 9-foot-wide by 0.5-foot-deep concrete pad and a new fence to encompass it. Install one 2-inch and one 4-inch electric conduit from existing PG&E service pole to the new communications equipment shelter in an approximately 143-foot-long by 0.5-foot- wide by 1.5-foot- deep trench. Construct an elevated cable tray with supports to carry the communication cables between the new radio communications shelter and the tower.
Thomas Shaft/SFPUC Water Treatment Facility, with a large building and several ancillary structures.	22 square feet; maximum 18 feet deep.	Install a 160-foot-tall communications tower, including tower foundation and fence. Install one 2-foot diameter dish antenna, one transit antenna or a bidirectional amplifier with receive and transmit antennas, and one lighting rod at the top of the new 160-foot-tall communications tower.	None.	Install new fence around the new tower.
Crane Ridge/Alameda County	None	Install three vertical	None.	Install microwave and radio

Site/Property Owner and Existing Site Conditions	Ground Disturbance	Antennae and Associated Equipment	Generator and Propane Tank	Other
(SFPUC to lease rack and tower space) Public safety Radio Station owned by Alameda County, with, one tower and antenna, a steel communication equipment shelter, and a generator with an integrated diesel fuel tank.		antennas, one 3-foot diameter dish antenna, and two 6-foot diameter dish antenna onto the existing 60-foot-tall tower.		communication equipment in two new racks and the supporting electrical, monitoring, and controls within the existing steel equipment shelter.
Sunol Ridge/Alameda County (SFPUC to lease rack and tower space) Public safety Radio Station owned by Alameda County, with, with towers and antenna, a cinder block and steel communication equipment shelters, and a generator with an integrated diesel fuel tank.	None.	Install two vertical antennas onto the existing 100-foot-tall tower and one 4-foot diameter dish antenna onto the existing monopole on the side of the existing steel r communication equipment shelter.	None.	Install microwave and radio communication equipment in three new racks and the supporting electrical, monitoring, and controls within the existing steel equipment shelter.
Mt. Allison/Private (SFPUC to least additional rack and tower space) Commercial and public safety Radio Station owned by Communications Control Inc., with several towers and antenna, steel communication equipment shelters, and a generator with an integrated diesel fuel tank.	None.	Install four vertical antennas onto the existing 150-foot-tall tower. Install one 10-foot diameter dish antenna, one 6-foot diameter dish antenna, and one 4-foot diameter dish antenna onto the existing 80-foot tower.	None.	Install an electrical manual transfer switch and receptacle for portable emergency power generation. Install microwave and radio communication equipment in two new racks and the supporting electrical, monitoring, and controls within the existing steel communication equipment shelter.

Site/Property Owner and Existing Site Conditions	Ground Disturbance	Antennae and Associated Equipment	Generator and Propane Tank	Other
Sunol Valley Water Treatment Plant/SFPUC Wastewater Treatment Plan with existing tower.	None	Install vertical antenna onto the existing 70-foot-tall tower Install a bidirectional amplifier in a communication rack on the existing tower.	None	None.
Sunol Yard Server Room and Sunol Communications Shop/SFPUC Shops and Equipment Yards.	None.	None.	None.	Install one Network Control Station (a computer) in the Sunol Yard Server room, with possible relocation to the Sunol Communication Shop yard off Main Street. At both locations, installation requires a radio network switch, router, and a dedicated console within existing buildings. If relocated to the Sunol Communication Shop yard, phone and fiber optic lines would be installed from an existing utility pole overhead approximately 15 to 20 feet to the existing building (no ground disturbance).

visible to the public and, in any event, would be temporary and short-term. Construction at the Sunol Yard Communication Shop site may be visible from Main Street; however, there are trees along the road that screen views of the site and work would be completed in approximately five working days. Therefore, adverse effects to aesthetics from construction are not anticipated.

Since the Project would replace existing equipment with similar equipment and/or install additional and similar equipment to what is already present at the sites and in inside structures in some cases, the newly installed Project components are largely anticipated to be visibly indiscernible.

At the Corral Hollow site, one small, prefabricated steel communication equipment shelter and two propane tanks would be installed next to the existing building structure. Although this new structure would be more visually discernable (than for example, an additional dish antenna on a tower), it would be consistent with the existing aesthetic character of the site.

At the Thomas Shaft site, the Project would install a 160-foot-tall tower to expand communications at this site where the only method of communication is currently over a copper phone line or through satellite. While the new tower would be taller than the other existing facilities at this site, it would be among existing water treatment facilities and utility poles and the site is in a very remote location with minimal public visibility (ranchers driving by). Therefore, adverse effects to the aesthetics character of the Corral Hollow and Thomas Shaft sites are not anticipated. Therefore, for the reasons discussed above, adverse effects to aesthetics from the Project are not expected.

Air Quality

Equipment for the Project construction would be limited to hand tools, except at Corral Hollow and Thomas Shaft sites where a backhoe, rammer, vibratory plate, trencher, drill rig, and a mobile 15-ton crane mounted to a rubber-tired truck would be used. Although construction would take approximately 35 days and 45 days to complete at these sites respectively, the use of fueled equipment would be less than 10 hours at each site. Given the limited equipment to be used, criteria air pollutant emissions during construction are reasonably expected to be minor and were thus not modeled. Ground disturbance would be limited to 411 square feet at the Corral Hollow site and 22 square feet at the Thomas Shaft site and would be completed within a few days at each site such that dust emissions during construction would be minor.

Two propane tanks and a new SFPUC emergency backup generator would be installed at the Corral Hollow site to power the new radio equipment to be installed in the shelter. The generator would be propane unlike the existing diesel generator because it burns cleaner than diesel fuel. The emergency backup generator would only be tested intermittently and use propane such that operational emissions would be negligible. As a result, the Project is not anticipated to result in a substantial increase in emissions during operation. After construction, the disturbed areas would be covered with gravel and rock similar to existing conditions, such that dust emissions are not anticipated to increase during operation of the sites.

Given the Project would generate minimal criteria air pollutant emissions during construction and operation and would generate only short-term and minimal dust emissions during construction, adverse effects on air quality are not expected.

Biological Resources

The Project sites are within previously disturbed or paved/gravel areas and there is no critical habitat present at any of the sites. The Project would not trim or remove trees or demolish buildings with eaves that could have nesting migratory birds or roosting bats. The Thomas Shaft, Sunol Ridge, Sunol Valley Water Treatment Plant, and the Sunol Yard Communication Shop sites are among trees that could provide habitat for nesting birds. Additionally, pallid bat (*Antrozous pallidus*) is known to occur in the Sunol Valley Water Treatment Plant site area.. It is unlikely that nesting birds and roosting bats, if present in the trees adjacent to the Sunol Ridge, Sunol Valley Water Treatment Plant, and Sunol Yard Communication Shop sites, would be adversely affected given the use of hand tools only at these sites.

However, at the Thomas Shaft site where some heavy equipment would be used, and out of an abundance of caution at the Sunol Ridge, Sunol Valley Water Treatment Plant, and Sunol Yard Communication Shop sites, in accordance with SFPUC Standard Construction Measure Number 7, if work would occur at these sites during the nesting season (February 15 to August 31) or at the Sunol Valley Water Treatment Plant site during the bat roosting season (April 15 through August 31), a qualified biologist would conduct a survey of the sites and the immediate surrounding area for active migratory bird nests (containing eggs or chicks or raptors showing mating behavior) and roosting bats. If present, measures would be implemented in consultation with the Project biologist to ensure active nests or roosts are not destroyed or

adversely affected, such as establishing work buffer zones, restricting certain types of activities, monitoring, or delaying activities until the young have fledged.

Additionally, the following special-status wildlife are known to generally occur in the Project areas (CNDDB, 2022):

- **Corral Hollow**: San Joaquin pocket mouse, California glossy snake (*Arizona elegans occidentalis*), California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), least Bell's vireo (Vireo bellii pusillus), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), San Joaquin kit fox (*Vulpes macrotis mutica*), and western spadefoot (*Spea hammondii*)

- **Thomas Shaft**: Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), San Joaquin pocket mouse (*Perognathus inornatus*), coast horned lizard (*Phrynosoma blainvillii*), and California tiger salamander (*Ambystoma californiense)*

Although Townsend's big-eared bat has been observed in the Thomas Shaft site area, the site does not provide suitable habitat for Townsend's big-eared bat (typically caves, tunnels, mines, and buildings).

In accordance with SFPUC Standard Construction Measure Number 7, a qualified biologist would survey these sites and the immediate surrounding area to identify if any of these species are present. If species are present, measures would be implemented, in consultation with the Project biologist, to ensure the species are not adversely affected.

With the inclusion of these measures, adverse effects to biological resources are not expected.

Cultural Resources

The Project would not affect any built environment features except the existing lattice towers and existing concrete and steel communications equipment shelters within the sites. The existing shelters and towers were built in the 1950s and 1960s, although some shelters have been added over time and the tower at Corral Hollow was replaced in 2007 by the other communication equipment owners. Although the shelters and towers are greater than 50 years old, the Project would not modify the exterior of the shelters and the same type of equipment as already exists on the towers would be replaced or added.

Thus, the Project would not be anticipated to adversely affect these communications structures.

Only two Project sites, Corral Hollow and Thomas Shaft, would involve ground disturbance. As per consultation with the San Francisco Planning Department Archaeologist (Lentz, 2022), the Corral Hollow site has low sensitivity for prehistoric and historical resources. Prehistoric sensitivity is low because the Corral Hollow site it on top of a hill, there are no bedrock outcroppings, and the site does not have characteristics that would make it a prime hunting or transportation place. The site has low historic sensitivity because there is no evidence that it would have any deposits associated with ranching or subsequent activities per historical maps. The Thomas Shaft site was previously reviewed for pre-historic archeological resources and no existing sites were identified and it was determined that sensitivity for buried prehistoric resources at the site is low.[1] As per consultation with the San Francisco Planning Department Archaeologist (Lentz, 2022), because the previous evaluation is dated, the tower foundation would be deep, and there are known resources with the general area, including historic period use, cultural resource awareness training is required. Accordingly, SFPUC Standard Construction Measure 9, Archaeological Measure I (Unanticipated Discovery) is included in the Project to address the potential for archaeological discoveries during construction at the Corral Hollow and Thomas Shaft sites. This measure requires resources protection and assessment measures to be implemented in the event of a discovery during construction and requires on-site discovery training for the Thomas Shaft site. Archaeological Measure II (monitoring) and/or Archaeological Measure III (Testing/Data Recovery) would be implemented in the event of a discovery during construction. With the inclusion of this measures, adverse effects to archaeological resources are not expected.

Hazards and Hazardous Materials

Based on the State Water Resources Control Board (SWRCB) Geotracker and State Department of Toxic Substances Control (DTSC) Envirostor databases, there are no leaking underground (fuel) storage tank cleanup sites or other hazardous materials sites in the Project vicinity.

The SFPUC and its contractor would comply with SFPUC Standard Construction Measure Number 6, which requires the appropriate storage and

[1] San Joaquin Regional Water Quality Improvement Project (Final Environmental Impact Report, Case No. 2007.0427E)

handling of construction materials, including any hazardous materials (i.e., paints, fuel, etc.) while on site, as well as the appropriate treatment, containment, and removal of hazardous materials (i.e., soil, groundwater or vapor) should they be encountered during Project activities, which is unlikely given the absence of any known contamination sources and limited ground disturbance. Therefore, adverse effects related to hazardous materials are not expected.

Noise

Short-term and intermittent daytime noise would be generated by Project construction activities between 7:00 a.m. and 5:00 p.m. Monday through Friday, which complies with the allowable construction hours in the noise ordinances for Alameda County and San Joaquin County. Further, except for the Sunol Yard Communication Shop site as discussed below, there are no sensitive noise receptors near the sites that could be affected by noise.

The Sunol Yard Communication Shop site is located approximately 200 feet from a school and directly adjacent to a residence (approximately 50 feet). If the Network Control Station (a computer) is located at this site[2], it would be placed within the existing building and approximately15 to 20 feet of phone and communication lines would be installed from an existing utility pole to the building. This work would completed with a crew using a bucket truck and hand tools(no heavy equipment would be used), and the installation would take approximately five working days. Because any noise generated at this site would occur during daytime allowable construction house and would be minor and temporary and short in duration, adverse noise effects during construction are not expected

The only new noise source associated with operation of the Project would be the new emergency backup generator to be installed at the Corral Hollow site. This site is in a remote location such that there are no sensitive noise receptors that would hear the generator when it is tested intermittently.

Therefore, adverse noise effects from the Project are not expected.

Transportation

Traffic generated by the Project would be limited to a minimal number of

[2] Alternative as described in Table 1, the Network Control Station maybe installed at the Sunol Yard in the existing server room, which is among other Yard facilities and away from sensitive receptors.

vehicles (eight per day per site) using existing paved and dirt roads. Vehicles and equipment would be parked at the existing sites during construction. Based on the limited number of vehicles and equipment, short Project duration, and remote location of roads and sites, traffic delays are not expected. Therefore, adverse effects to transportation are not expected.

Water Quality

No construction would occur within waters of the United States or the State. Ground disturbance would be limited to two sites and would occur on rocky soil that is typically not susceptible to erosion. Project activities would not alter any drainage patterns or adversely affect water quality. Therefore, adverse effects to water quality are not expected.

CEQA COMPLIANCE/RECOMMENDATION

Based on the description of the proposed Project and evaluation above, the SFPUC recommends that it is categorically exempt under CEQA Sections 15301 Class 1 (Existing Facilities) and 15302 Class 2 (Replacement or Reconstruction). Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use. Class 2 consists of the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

Sincerely,

Kimberly Stern Liddell

On Behalf of Karen E. Frye, AICP
Acting Manager, Environmental Management

Attachment 1: Water Radio East Bay Region Sites Locations Map

cc: Fonda Davidis, SFPUC Project Manager
Kimberly Liddell, SFPUC Environmental Construction Compliance Manger/Environmental Project Manager
Whitney Broeking, SFPUC Environmental Project Manager

Legend

Project Site -

Los Vaqueros Reservoir

HWY 580/205 Junction

Altamont Pass HWY 580

Corral Hollow Radio Site - 1067'

Dirrane Property - 1125'

Marcial Pk. 2269'

Mitchell Shaft

Del Valle Reservoir

Mocho Shaft

Thomas Shaft

Crane Ridge - 2945'

Alameda County IT Dept Sunol Ridge 2171'

Sunol Yard

San Antonio Reservoir

Indian Shaft

SVWTP Tower

Diversion Dam MW -1103'

Diversion Dam

Mt. Allison 2635'

Calaveras Reservoir

BDPL/SPRR Crossing

BDPL/HWY 85 Crossing

BDPL/San Thomas Aquino Creek Crossing

BDPL/HWY 101 Crossing

Hetch Hetchy Regional Water System

Services of the San Francisco Public Utilities Commission

Water Radio Replacement Project

SAN FRANCISCO
PLANNING DEPARTMENT

CEQA CATEGORICAL EXEMPTION FORM

PROJECT NAME: SFPUC - Water Radio Replacement Project, East Bay Site

PROJECT LOCATION: Alameda & San Joaquin Counties

CASE NUMBER: 2022-008210ENV

PROJECT TYPE: ☑ New Facility ☑ Replacement Facility/Equipment

☐ Repair/Maintenance/Upgrade ☐ Other: _____

1. EXEMPTION CLASS

☑ Class 1: Existing Facilities

☑ Class 2: Replacement or Reconstruction

☐ Class 3: New Construction or Conversion of Small Structures

☐ Class 6: Information Collection

☐ Other: _____

2. CEQA Impacts

For any box checked below, refer to the attached Environmental Evaluation Application with supporting analysis and documentation.

☐ **Air Quality:** Would the project affect sensitive receptors (specifically schools, colleges, universities, day care facilities, hospitals, residential dwellings, or senior-care facilities)? Would project construction or operations exceed air quality screening criteria using either the SFPUC Air Quality Screening Tool or CalEEMOD?

☐ **Noise:** Would the project conflict with the applicable local Noise Ordinance?

☐ **Hazardous Materials:** Would the project be located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code, or impact an area with known hazardous materials such as a former gas station, auto repair, dry cleaners, heavy manufacturing use, or site with underground storage tanks? If the project site is suspected of containing hazardous materials, would the project involve 50 cubic yards or more of soil disturbance?

☐ **Soils Disturbance/Modification:** Would the project result in soil disturbance greater than 2 feet below grade in an archeological sensitive area or 8 feet in a non-archeological sensitive area?

☐ **Slope/Geological Hazards:** If located on slopes of 20% or greater, in a landslide or liquefaction zone, does the project involve excavation of 50 cubic yards of soil or more, new construction, or square footage expansion greater than 1,000 sq. ft. outside of the existing building footprint?

☐ **Hydrology/Water Quality:** Would the project cause flooding impacts, violate water quality standards, result in on- or off-site erosion impacts, or otherwise substantially degrade water quality?

☐ **Biology:** Would the project have the potential to impact sensitive species, rare plants or designated critical habitat? Is the project consistent with the applicable tree protection ordinance?

☐ **Visual:** Is the project located within or adjacent to a designated scenic roadway, or would the project have the potential to impact scenic resources that are visible from public locations?

☐ **Transportation:** Would project construction or operation have the potential to adversely affect existing traffic patterns, transit operations, pedestrian and/or bicycle safety (hazards), or the adequacy of nearby transit, pedestrian and/or bicycle facilities?

☐ **Historical Resources:** Is the project located on a site with a known or potential historical resource?

☐ Other: _____

3. CATEGORICAL EXEMPTION DETERMINATION

☐ Further Environmental Review Required.

Notes: _____

☑ No Further Environmental Review Required. Project is categorically exempt under CEQA.

Timothy Johnston Digitally signed by Timothy Johnston Date: 2022.09.26 16:26:46 -07'00'

Planner's Signature

9/26/2022

Date

Timothy Johnston, senior environmental planner

Name, Title

Project Approval Action: SFPUC administrative approval

Once signed and dated, this document constitutes a categorical exemption pursuant to CEQA Guidelines and Chapter 31 of the Administrative Code.

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

TO: **Angela Calvillo, Clerk of the Board**

FROM: **Jeremy Spitz, Policy and Government Affairs**

DATE: **October 31, 2022**

SUBJECT: **[Site Use Agreement - VB Nimbus, LLC – San Francisco Public Utilities Commission- Radio Equipment at 32322 S Corral Hollow Road, Tracy, CA 95377 for an initial annual rent of $30,000]**

Please see attached a proposed Resolution authorizing the General Manager of the San Francisco Public Utilities Commission (SFPUC) to enter into a Site Use Agreement with VB Nimbus, LLC, a Delaware limited liability company for the installation, operation, maintenance, repair, and replacement of radio equipment at 32322 S Corral Hollow Road in Tracy, California, at an initial annual use fee of $30,000 with annual increases of three percent for an initial five-year term, commencing January 1, 2023 through December 21, 2028, with four, five-year extension options for the SFPUC Water Enterprise Radio Replacement Project (Project) , pursuant to Charter Section 9.118; and affirming the San Francisco Planning Department's determination that the project is categorically exempt from environmental review under the California Environmental Quality Act.

The following is a list of accompanying documents:

- Proposed Resolution (Word Doc Version)
- BOS Resolution 405-17 (PDF)
- CEQA CATEGORICAL EXEMPTION FORM (PDF)
- Site Use Agreement and Exhibits (PDF)
- SFPUC Resolution 17-0195 (PDF)
- SFPUC Resolution 22-0187 (PDF)
- SF Planning Dept PUBLIC PROJECT APPLICATION (PDF)
- SFPUC Letter to SF Planning Department (PDF)

Please contact Jeremy Spitz at jspitz@sfwater.org if you need any additional information on these items.