



FREMONT COUNTY COLLOCATION OF ANTENNA ON AN EXISTING TOWER APPLICATION

1. Name and Number of Existing SRU Permit Not known
2. Name: AT&T New Cingular Wireless Address: 7670 S. Chester St.
City: Englewood State: CO Zip Code: 80112
Telephone #: 720-331-0822 Facsimile #: N/A
Name of Contact: Elizabeth Pope Email Address: ew1044@att.com
3. The Applicant Applying for Collocation is:
Name: Smartlink Group Address: 10 Church Circle
City: Annapolis State: MD Zip Code: 21401
Telephone #: 720-331-0822 Facsimile #: N/A
Name of Contact: Audra Kirk Email Address: audra.kirk@smartlinkgroup.com
4. Property Owner: State board of Land Commissioners Address: 1127 Sherman Street
City: Denver State: CO Zip Code: 80203
Telephone #: 303-866-3454 x3328 Facsimile #: N/A
Name of Contact: David Rodenberg Email Address: david.rodenberg@state.co.us
5. Consultant: N/A Address: _____
City: _____ State: _____ Zip Code: _____
Telephone #: _____ Facsimile #: _____
Name of Contact: _____ Email Address: _____

Please read prior to completion of this application

An application for Special Review Use Permit, instead of a Collocation Application, will be required for the following:

1. An increase in the height of the existing tower;
2. The relocation of an existing tower;
3. The placement of an additional tower on the existing tower site;
4. An attachment of an antenna on an existing non-commercial tower, which is less than one-hundred (100) feet in height.

Any application which is not complete or does not include all minimum submittal requirements will not be accepted by the Fremont County Department of Planning and Zoning (Department).

The applicant shall provide one (1) original document of the application and all of its attachments (*copies of deeds, contracts, leases etcetera are acceptable*) at the time of application submittal. After submittal, the Department will review the application and all attachments and prepare a Department Submittal Deficiency and Comment Letter (D & C Letter), which will list the deficiencies, comments and questions

about the application, which must be addressed by the applicant. The applicant shall provide one (1) original document of all requirements of the D & C letter to the Department.

Attachments can be made to this application to provide expanded narrative for any application item including supportive documentation or evidence for provided application item answers. Please indicate at the application item that there is an attachment and label it as an exhibit with the application item number, a period and the number of the attachment for that item (*as an example, the first attached document providing evidence in support of the answer given at application item number 22 would be marked - Exhibit 22.1, the fifth attached document supporting the narrative provided for application item 22 would be marked - Exhibit 22.5*). **Please label all exhibits in the lower right-hand corner of the page.**

An additional review fee of two-hundred fifty dollars (\$250.00) will be charged to the applicant, if all deficiencies as per the initial D & C Letter are not adequately addressed or provided. Each subsequent D & C Letter, based on resubmitted items, will result in another two-hundred fifty dollar (\$250.00) review fee. All such fees shall be paid along with the deficiency submittal, prior to any further review of the application.

If the application is approved by the Department, with contingencies and the contingencies are not submitted or addressed within six (6) months after approval, an additional fee of one-hundred fifty dollars (\$150.00) will be charged to the applicant for a request for an extension of time to submit the contingencies. All such fees shall be paid along with a written request, explaining the need for extension.

The Department may require additional information at any time during the application process as may be deemed necessary in determining if the application is in compliance with all applicable regulations and to make an informed decision with regard to recommendations, approval or disapproval of the application.

6. The legal description and/or address of the existing site is: _____
24860 HIGHWAY 115 PENROSE, CO 81240

7. The type of construction of the existing tower is: unmanned telecommunication facility
8. The total height of the existing tower (*with antenna*) is 155' feet.
9. What will be the total height of the tower (*with antenna(s)*) after collocation? 155' feet.
10. The existing tower currently has 9 antennas.
11. After the proposed collocation the tower would house 4 antennas.
12. Please provide documentation from a Licensed Professional Engineer demonstrating that the tower is capable of accommodating the proposed number of antennas. (*Mark as EXHIBIT 13.1*)
13. The existing site contains 1 accessory structures.
14. Will the proposed collocation require additional accessory structures? Yes --- No If yes, please provide how many, the sizes, the heights, the location and the reason such additional structures are necessary (*a new site plan may be required*): _____

15. If a design plan addressing materials, colors, textures, screening and landscaping in the design of the tower or antenna was required with the issuance of the original permit, will it be adequate for the proposed collocation? Yes --- No If no, it may be required to comply with the original design plan.
16. The existing site contains 1 off-street parking spaces.
17. Will the proposed collocation require additional off-street parking spaces? Yes --- No If yes, please provide how many additional spaces will be necessary: _____ off-street parking spaces.
18. Was surfacing, lighting and or landscaping of driveways and parking areas required with issuance of the original permit? Yes --- No If no, was it waived by the Board? Yes --- No
19. Will the surfacing, lighting and or landscaping of driveways and parking areas required with issuance of the original permit be adequate for the proposed collocation? Yes --- No Please explain: _____

20. Will the existing access to the site be adequate for the proposed collocation? Yes --- No If No, what is the proposed access for the proposed collocation? _____

21. Was a stormwater drainage plan required and approved with the issuance of the original permit? Yes --- No If yes, will the stormwater drainage plan required and approved with the issuance of the original permit be adequate with the addition of the accessory structures (if any)? Yes --- No Please explain: _____

22. Please explain how the existing tower and additional uses meet the minimum requirements of the Federal Aviation Administration. **The existing tower and the new equipment will meet all FAA requirement. This tower is not tall enough to be registered with the FAA, all other requirements are met.** _____

23. If the existing permit holder is not the site property owner, does the agreement, lease, or the like between the site property owner and the existing permit holder allow the collocation? Yes --- No Please show (highlight) in the agreement, lease or the like that grants the permission to collocate.
24. Please attach a copy of a lease or agreement between the permit holder and the collocation applicant as to right to use of the tower by the collocation applicant, marked as Exhibit 25.1.
25. A submittal fee of \$250.00 must accompany this application (Check # 902805 cash)

- [Application Forms](#)
- [Board of Zoning Adjustment](#)
- [Code Enforcement](#)
- [General Information](#)
- [Master Plan](#)
- [Planning Commission](#)
- [Right To Farm and Ranch Policy](#)
- [Services We Offer](#)
- [Subdivision and Zoning Regulations](#)
- [Zoning and Subdivision Fees](#)
- [Zoning Verification Form](#)

External Links

- [Facebook Page](#)
- [GIS Zoning Viewer](#)
- [Zoning Portal](#)

Office Information

Planning and Zoning

615 Macon Ave.
 Room 210
 Cañon City, CO 81212

Office Hours:
 7:00 a.m. - 5:00 p.m.
 Monday - Thursday
 Except Holidays

(719) 276-7360
 Fax: (719) 276-7374

planning@fremontco.com

Employee Information

Dan Victoria
 Director

[Public Meeting](#)

Resolution: None of the previous application fees changed and there were no changes to the Subdivision Application Fee Schedule.

At the January 24, 2006 meeting of the Board of County Commissioners, the Board adopted new schedules for subdivision and zoning fees. The Board modified fees as the result of citizens' comments at a January 10th public hearing. The fee increases stem from a comprehensive study of time and services that the staff in the Planning and Zoning Department performs in connection with each application. The study was conducted over the past several months by Eric Parish of Public Resource Management Group (PRM) of Denver. The study was conducted to identify the true cost of fee related activities ensuring a clear relationship between the cost of the service and the fees that are charged. PRM looked at actual costs of time spent on applications in the Planning and Zoning Office in fiscal year 2004 and looked at 2004 and 2005 volumes of activity in the office.

**DEPARTMENT OF PLANNING & ZONING
 ZONING APPLICATION FEES
 EFFECTIVE FEBRUARY 15, 2012**

TYPE OF APPLICATION	FEE
Amendment to Contingencies or Conditions of Approval	\$175.00
Board of Zoning Adjustment	\$750.00 +
Certificate of Designation	\$750.00 +
Collocation of Antenna on Existing Tower	\$250.00
Commercial Development Plan (CDP)	\$1,750.00 +
CDP Major Modification	\$500.00
Conditional Use Permit (CUP)	\$1,750.00 +
CUP Renewal	\$1,550.00 +
CUP Transfer	\$300.00
CUP Cessation	\$150.00
CUP Annual Report (penalty if delinquent)	\$150.00 *
CUP Change of Operator	\$250.00
CUP Major Modification	\$500.00
Development Plan Review for MHP and TTP&CG	\$525.00
Home Occupation	\$205.00

Property Record Card

Fremont Assessor

HEDRICK RON
C/O: GCC RIO GRANDE
INC

Account: N012282
 Tax Area: 29M - 29M
 Acres: 0.000

Parcel: 99910011
 Situs Address:
 24860 STATE HWY 115

5506 W HWY 290 STE-200
 AUSTIN, TX 78735-8810

Value Summary

Value By:	Market	Override
Land (1)	\$924,980	\$924,980
Total	\$924,980	\$924,980

Legal Description

A PARCEL OF LD IN SEC 26-17-68: BEG AT THE NE COR OF SD SEC 26 BEING MARKED B Y A BLM BRASS CAP, FROM WH THE N4 COR OF SD SEC BEARS N 89 DEG 20'00"W A DIST OF 2627.12 FT; TH S 03 DEG 20'37"W ALG THE E LN OF SD SEC 26 A DIST OF 1734.76 FT TO THE NLY R/W OF STATE HWY 115; TH ALG SD HWY R/W THE FOLL SIX COURSES: FIRST S 43 DEG 12'05"W A DIST OF 563.35 FT; TH S 40 DEG 36'35"W A DIST OF 322.7 0 FT TO THE BEG OF A NON-TANGENT CURVE TO THE LEFT, SD CURVE HAVING A RADIUS OF 864.84 FT, A CHORD WICH BEARS S 27 DEG 06'50"W, A DIST OF 392.15 FT; TH ALG SD CURVE A DIST OF 395.59 FT THROUGH A CENTRAL ANGLE OF 26 DEG 12'28" TO A PT OF TANGENCY; TH S 13 DEG 37'05 "W A DIST OF 322.70 FT; TH S 11 DEG 02'05"W A DIST OF 760.60 FT TO THE BEG OF A TANGENT CURVE TO THE RGT, SD CURVE HAVING A RADIUS OF 5555.00 FT, A CHORD WHICH BEARS S 19 DEG 25'59"W A DIST OF 1622.65 FT; TH ALG SD CURVE A DIST OF 1628.47 FT THROUGH A CENTRAL ANGLE OF 16 DEG 47'47" TO THE S LN OF THE SE4 OF SEC 26; TH ALG SD S LN S 89 DEG 05'36" W A DIST OF 1283.57 FT TO THE S4 COR OF SEC 26 BEING MARKED BY A BLM BRASS CAP; TH ALG THE S LN OF THE SW4 OF SEC 26, N 88 DEG 24'05"W A DIST OF 2605.45 FT TO THE SW COR OF SEC 26 BEING MARKED BY A BLM BRASS CAP; TH ALG THE W LN OF SD SW4 N 06 DEG 25'14"E A DIST OF 2677.85 FT TO THE W4 COR SEC 26 BEING MARKED BY A BLM BRASS CAP; TH ALG THE W LN OF THE NW4 OF SEC 26 N 02 DEG 37'26"E A DIST OF 2559.61 FT TO THE NW COR OF SD SEC BEING MARKED BY A BLM BRASS CAP; TH ALG THE N LN OF SD NW4 N 87 DEG 59'24 "E A DIST OF 2482.81 FT TO THE N4 COR OF SEC 26 BEING MARKED BY A BLM BRASS CAP; TH ALG THE N LN OF THE NE4 OF SD SEC 89 DEG 20'00"E A DIST OF 2627.12 FT TO THE POB
 REF FROM 3663-0000-00-027
 CUP 08-003 SALT CANYON PROJECT
 P156918-I, P157019

Land Occurrence 1

Property Code	5120 - EARTH OR STONE PROD		Property Code	100			
SubArea	Actual	Basement	Effective	FinBsmnt	Garage	Heated	LiveArea
LAND_U	25922						
Total	25,922.00						
	Value	Rate	Rate	Rate	Rate	Rate	Rate
	\$924,980	35.68					

Abstract Summary

Code	Classification	Actual Value	Taxable Value	Actual Override	Taxable Override
5120	EARTH OR STONE PROD	\$924,980	\$258,069	NA	NA
Total		\$924,980	\$258,069	NA	NA

**STATE OF COLORADO
STATE BOARD OF LAND COMMISSIONERS
TOWER SITE LEASE OF STATE TRUST LANDS**

State Land Board Tower Site Lease No. **COMM-49010**

New Cingular Wireless PCS LLC

Site Number: DNVRCO 6032

Site Name: Median Point

THIS LEASE is entered into at Denver, Colorado, this 1st day of March, 2010, by and between the State of Colorado, acting through its State Board of Land Commissioners ("Board"), whose address is 1313 Sherman Street, Room 621, Denver, CO 80203, and New Cingular Wireless PCS, LLC ("Lessee"), a Delaware limited liability company, having an address of 12555 Cingular Way, Suite 1300, Alpharetta, GA 30004.

1. DESCRIPTION OF THE PREMISES

The Board leases to the Lessee and Lessee leases from the Board, exclusively for the purposes indicated below, the School trust lands, in the County(s) of Fremont, Colorado, described in Exhibit "A" (the "Premises"). The School Trust land where the Premises are situated is legally described in Exhibit "A".

2. CONDITION OF LEASED PREMISES

Lessee represents that Lessee has had an opportunity to inspect the Premises prior to entering into this lease, and Lessee accepts the Premises in their present condition and acknowledges that the Premises are in all respects suitable for the purposes permitted. The Board disclaims any and all obligation to provide access to the Premises (except as expressly set forth in this lease), or to fence, make any repairs to or construct any improvements upon the Premises; and the Board does not warrant that the Premises are suitable for the permitted purposes.

3. USE OF THE LEASED PREMISES

The use of the Premises shall be limited to constructing, operating, repairing, replacing, upgrading, removing and maintaining a communications tower site and related appurtenances ("Facilities") for Commercial Mobile Radio Services (CMRS) or wireless telephone service, including cellular phones, PCS, and point-to-point wireless communications. The use of the Premises shall also include the right of ingress and egress 24 hours per day, 7 days per week for the sole purpose of constructing, operating, repairing, replacing, upgrading, removing and maintaining said Facilities, including the installation, repair, replacement, upgrading, and maintenance of utilities. The sole and singular user of the Premises shall be the Lessee named herein and its agents and subcontractors.

4. LEASE TERM

This lease is effective from the this 1st day of March, 2010 for the term of five (5) years, being until the 28st day of February, 2015, subject to the covenants and agreements herein.

5. EXTENSION TERMS AND ADJUSTMENTS

The Board and the Lessee may agree to an extension of this lease for one (1) additional ten (10) year period on terms and conditions set forth by the Board and agreed to by both parties provided a notice of intent to enter into such extension shall be given in writing to the Board no later than six (6) months prior to the expiration of the initial lease term. An extension will only be granted if the Lessee is in full compliance with all requirements of this Lease. The rental amount will be subject to review and adjustment at approximately the beginning of the ten (10) year period by the Board, and shall replace any prior rental amount.

6. RENTAL

The rental amount for the first year shall be the sum of Thirteen Thousand and no/100 Dollars (\$13,000.00), with an annual increase of three percent (3%). Lessee shall pay to the Board the rental due each and every year, in advance, during the term of this lease at the office of the State Board of Land Commissioners, Denver, Colorado. No portion of any prepaid rental amount is refundable, unless otherwise stated herein. The initial rent payment will be due September 1, 2010. The month and day of the initial rent payment shall be the Annual Payment Date. For every year after the initial year, Lessee must pay the annual rent prior to the Annual Payment Date.

7. INSURANCE

The Lessee at its sole cost and expense, shall during the entire term hereof procure, pay for and keep in full force and effect the following types of insurance:

A. Property Insurance

A policy of property insurance covering all insurable improvements located on the Premises (except for land, foundation, excavation, and other matters normally excluded from coverage), in an amount not less than necessary to cover the replacement cost. Such insurance shall afford protection against at least the following: (i) loss or damage from fire and other perils normally covered by the standard extended coverage endorsement; and (ii) such risks as shall customarily be covered with respect to projects similar in construction, location and use, including all perils normally covered by the standard "all risk" endorsement where such is available. Permission is granted to Lessee to self insure this coverage as provided in Section E below.

B. Liability Insurance

A commercial general liability insurance covering the improvements and Premises insuring the Lessee in an amount not less than two million dollars, and covering bodily injury, including death to persons, personal injury, and property damage liability. Such coverage shall include legal liability of the insured for property damage, bodily injuries and deaths of persons in connection with the operation, maintenance or use of the Premises. Coverage shall also include all legal expenses and other costs incurred by the Board or the School District related to any claim under this Lease.

C. Other Risks

In addition, the Lessee shall obtain insurance against such other risks of a similar or dissimilar nature, as the Board or the School District shall deem appropriate. Lessee shall also provide workers compensation insurance.

D. General Provisions of Insurance Policies

1. All policies of insurance carried by the Lessee shall name the Lessee as insured and shall include the Board and the School District as an additional insureds.
2. The policy shall contain a provision that it cannot be cancelled until insurers have endeavored to provide at least thirty (30) days prior written notice thereof is given to the Board and the School District.
3. Intentionally deleted
4. Notwithstanding anything to the contrary contained herein, the Lessee's obligation to carry insurance as provided herein may be brought within the coverage of a "blanket" policy or policies of insurance carried and maintained by the Lessee, so long as such policy(s) segregates the amount of coverage applicable to the Premises.
5. A current certificate(s) of insurance shall be provided to the Board and the School District prior to the commencement of this Lease, upon renewal, and at the request of the Board. The certificate shall refer to the location of the Premises and the lease number of this lease.

E. Deductibles and Self Insurance: Any deductibles or self-insured retentions must be declared to the Board and the School District. All deductibles, retentions, or "self-insured" amounts shall be subject to the following:

1. Lessee shall be responsible for all claims and liabilities that fall within the Lessee's deductible.
2. At such times as Lessee meets certain requirements (the "Self-Insurance Qualifications"), such limit shall be Twenty-Five Million and no/100 Dollars (\$25,000,000.00). Lessee shall meet the Self-Insurance Qualifications from time to time if and only if Lessee has a net worth of Five Hundred Million and No/100 Dollars (\$500,000,000.00).
3. Any self-insured exposure shall be deemed to be an insured risk under this Agreement.
4. Lessee shall provide to the beneficiaries of all such amounts no less insurance protection than if such self-insured portion was fully insured by an insurance company of the quality and caliber required hereunder.

5. At any time Lessee does not meet the Self-Insurance Qualifications, the Board and the School District may require Lessee from time to time to secure payment of any deductible or self-insured retention by a surety bond in content and form satisfactory to the Board and the School District.

8. RESTORATION BOND

The Lessee shall execute a bond (or other sureties as may be approved by the Board) at the time this lease is executed by the parties in the amount of Twenty-Five Thousand and no/100 Dollars (\$25,000.00). The bond shall guarantee restoration of the Premises to a native vegetative condition or to such other conditions as may be approved by the Board. The bond shall consist of cash, bank certificate of deposit, or other sureties as may be approved by the Board. However, if the bond is other than cash, the bond must be in a form that will guarantee payment in cash to the Board upon receipt by any bank or insurance company of written demand by the Board, without further condition. Lessee shall commence restoration work not less than six months prior to the expiration of this lease. The Board shall return the bond to the lessee if and when it deems the Premises have been restored to the required conditions.

9. SURVEY

The Lessee shall provide to the Board, within ninety (90) days of the date this lease was executed by the parties, a mylar and two copies of a current perimeter, boundary and improvement survey of the Premises prepared and certified by a professional land surveyor or engineer licensed in the State of Colorado, based on an actual monumented and pinned inspection, certified to the Board designating location of all improvements, driveways running adjacent to and across the Premises, easements running across the Premises and all easements appurtenant to the Premises. Such survey shall be in form and substance sufficient to meet the Board's survey standards. The survey shall include a metes and bounds legal description of the Premises, and shall be attached hereto as Exhibit "B" and made part of this lease.

10. CONSTRUCTION OF IMPROVEMENTS

- A. No improvements or Facilities (including access roads) shall be built or placed upon the Premises without the prior written consent of the Board, which shall not be unreasonably withheld, conditioned, or delayed. Lessee shall provide designs, construction plans, and building specifications for the Board's review and approval prior to construction of any improvements. Lessee shall not commence to build any structure or permanent improvement or construct replacements, additions, or significant alterations of any kind without first obtaining said approval. Improvements placed upon the Premises by the Lessee with the Board's written authorization shall be referred to herein as "Authorized Improvements".
- B. Upon the termination of this lease, and provided Lessee is not then in breach of or in default under this lease, all Authorized Improvements shall, at the Lessee's option, either be:
 1. Removed by Lessee without damage to the Premises; or
 2. Sold by Lessee to a subsequent lessee.
- C. All Authorized Improvements not so removed or sold within ninety (90) days after termination of this lease shall be deemed abandoned and may, at the Board's option, be removed by the Board at the Lessee's expense, retained by the Board for use by subsequent lessees, or sold by the Board with all proceeds going to the Board. Lessee shall not be entitled to compensation for, or to sell or remove, any authorized improvements when the lease is terminated by the Board for violation by the Lessee of the lease provisions.

11. NO PARTNERSHIP

Nothing in this lease shall cause the Board in any way to be construed as a partner, a joint venturer or associated in any way with the Lessee in the operation of the Premises, or subject the Board to any obligation, loss, charge or expense connected with or arising from the operation or use of the Premises or any part thereof.

12. MAINTENANCE AND REPAIR

The Board shall have no duty of maintenance or repair with respect to the Premises or any improvements constructed thereon. The Lessee shall keep and maintain the Premises and improvements thereon in constant good order and repair in the same condition as when initially constructed, ordinary wear and tear excepted. All repairs made by the Lessee shall be at least equal in quality to the original improvements.

13. DAMAGE OR DESTRUCTION

In case of damage to or destruction of the Premises or any part thereof, by any cause whatever, the Lessee shall give or cause to be given to the Board prompt notice of such occurrence and shall promptly proceed with due diligence to repair, restore, replace or rebuild so as to make the Premises at least equal in quality to the original improvements, restore the same to such modified plans as shall be previously approved in writing by the Board, or remove all improvements and restore the Premises to a native vegetative condition. .

14. TAXES, UTILITIES AND OTHER EXPENSES

It is understood and agreed that this Lease shall be a net lease with respect to the Board, and that all taxes, assessments, insurance, utilities and other operating costs including those which could otherwise result in a lien being placed against the Premises as well as the cost of all repairs, remodeling, renovations, alterations, and improvements, and all other direct costs, charges and expenses of any kind whatsoever respecting the Premises shall be borne by the Lessee and not by the Board so that the rental return to the Board shall not be reduced, offset or diminished directly or indirectly by any cost or charge, nor subject to suspension or termination for any cause.

15. INSPECTION RIGHTS

The Board or its authorized representatives may from time to time, at any reasonable hour, and with prior notice and escort, enter upon and inspect the Premises, or any portion thereof or improvements thereon to ascertain and secure compliance with this Lease, but without obligation to do so or liability therefor. However, no prior notice or escort shall be required by the Board to enter upon and inspect unfenced areas of the Premises and in emergencies. Lessee hereby grants to the Board a non-revocable license for such access over and across Lessee's other lands during the term of this lease.

16. LIABILITY AND INDEMNITY

- A. The Board shall not be liable to the Lessee, its agents, employees, invitees, patrons or any other person whomsoever, for injury to or death of any person or damage to or loss of property in, upon or adjacent to the Premises or other property contiguous or appurtenant thereto, which may arise during the Lessee's development, use or occupancy of the Premises or by any person so doing through or under the Lessee or with its permission, express or implied, unless and to the extent caused by the Board's negligence. The Lessee further waives any claim against the Board regarding the Board's approval or disapproval of any plans or specifications whether or not defective.
- B. The Lessee agrees to indemnify the Board, to the extent allowed by law, and save it harmless against and from any and all claims by or on behalf of any person(s), firm(s), corporation(s) arising from the conduct or management of or from any work or thing done on or about the Premises and to indemnify and save the Board harmless against and from any and all claims arising during the term hereof from: (i) any of those matters specified in this Article; (ii) any breach or default on the part of the Lessee hereunder; and (iii) any act or omission of the Lessee or any of its agents, contractors, servants, assignees, employees, invitees or licensees, on or about the Premises or other property contiguous or appurtenant to the Premises, including all costs, attorneys fees, expenses and liabilities incurred in or about any such claim or any action or proceeding brought thereon; and in case any action or proceeding be brought against the Board by reason of any such claim upon notice from the Board, the Lessee covenants to promptly effect the dismissal thereof or to diligently resist and defend such action or proceeding by counsel satisfactory to the Board, at the sole cost and expense of the Lessee. The foregoing indemnity, defense and hold harmless obligations shall not apply to claims or losses to the extent that they are caused by the Board's negligence.

17. RESERVATIONS TO THE BOARD

This lease is subject to any and all presently existing easements, rights-of-way and other interests, whether or not visible on the ground; and, in addition to its reversion upon termination of this lease, the Board hereby reserves:

- A. The right to sell, exchange, or otherwise dispose of all or any portion of the Premises during the term of this lease.
- B. The right to cancel this lease as to all or any portion of the Premises, upon one year's prior written notice to the Lessee, if the Board elects to sell, exchange, otherwise dispose of, or otherwise lease all or any portion of the Premises free and clear of this lease, refunding to Lessee the unearned portion of the prepaid rental amounts.
- C. The right to lease all or any portion of the premises to other persons for the purposes of exploring for and removing timber, minerals, ores, metals, coal, asphaltum, oil, gas, sand, gravel, clay, quarry products, peat, geothermal resources, and all other naturally occurring resources, together with reasonable and adequate rights of entry and surface rights necessary or convenient to exercise such reserved rights, so long as the exercise of such rights do not unreasonably interfere with Lessee's authorized use of the Premises. including but not limited to the right, upon ninety- (90) days' prior written notice to the Lessee, to cancel this lease as to all or any portion of the Premises, refunding to Lessee the unearned portion of the prepaid rental amounts.

- D. All water, water rights, ditch rights, water stock and/or ditch stock appurtenant to or used in connection with the Premises including wells, rights in ditch, water in canal organizations or companies. All such uses shall be and remain the property of the Board. The Lessee may not explore, drill, or establish any water use right or well without written permission of the Board. If the Lessee establishes or adjudicates any water right or use on the Premises, it shall be in the name of the Board.
- E. The right to administrative access to the Premises under Section 15 above entitled "INSPECTION RIGHTS".
- F. The right at any time to grant any right-of-way or easement upon, over or across all or any portion of the Premises so long as the exercise of such rights do not unreasonably interfere with Lessee's authorized use of the Premises. If and when such right-of-way or easement is granted, the Lessee shall be compensated by the grantee for any damages to Lessee's personal property and leasehold improvements.
- G. The right to put the Premises to additional uses by granting additional leases, permits, access, or rights to the Premises or any portion thereof, at any time and for any purpose, including but not limited to hunting, fishing and other recreational purposes so long as the exercise of such rights do not unreasonably interfere with Lessee's authorized use of the Premises.
- H. All rights, privileges and uses of every kind or nature not specifically granted to Lessee by this lease so long as the exercise of such rights do not unreasonably interfere with Lessee's authorized use of the Premises.

18. ASSIGNMENTS, SUBLEASING AND ENCUMBRANCES

This lease shall be binding on the parties hereto, their heirs, representatives, successors, and permitted assigns.

- A. This lease shall not be assigned, transferred or sold, voluntarily or by operation of law, without the prior written consent and upon such terms and conditions as determined by the Board, which shall not be unreasonably withheld, conditioned, or delayed. It shall be understood that any name change, or changes in ownership of the Lessee shall be considered an assignment. A change in name and/or ownership resulting from a merger or acquisition between Lessee, Cingular Wireless, and/or AT&T Wireless Services Inc., its partners, members or affiliates shall be considered an approved assignment. Lessee shall be required to submit an assignment fee of ten percent (10%) of the current annual rental amount at the time of its notification to the Board. There shall be no partial assignments of this lease.
- B. Assignment or other transfer without written consent of the Board shall not effect a novation of this lease, and shall, nevertheless, make the assignee responsible and liable, along with the Lessee, for performing this lease. The acceptance by the Board of any payment due hereunder from any person other than the Lessee shall not be deemed a waiver by the Board of any provision of this lease or to be consent to any assignment.
- C. Subleasing, encumbering, pledging or otherwise transferring this lease is expressly prohibited under the terms of this lease except as expressly provided in this lease.
- D. Subleasing (including co-location of facilities not belonging to Lessee) is prohibited without the prior written consent of the Board, which consent will not be unreasonably withheld, conditioned or delayed. Lessee shall request and obtain the Board's approval of any proposed subleasing or co-location of facilities prior to entering into any agreement to co-locate and prior to co-location of facilities on the Premises. Within thirty- (30) calendar days of the anniversary date of this lease (one-year after this lease is entered into and each subsequent one-year date thereafter), the Lessee shall provide a report of all approved subleases including an accounting of the related sublease income and gross receipts received, including in-kind services and equipment. At that time, Lessee shall pay to the Board an amount equal to 25% of gross receipts received during the previous year from subtenants.
- E. Lessee shall be responsible to assure that the sublessees comply with all the terms, conditions, and covenants of this lease. A breach or default of this lease by a sublessee shall be considered a breach of the lease as if the Lessee had committed the breach.

19. PROTECTION, CONSERVATION AND COOPERATION

Lessee shall not permit, commit, or allow, and shall protect the Premises against, any loss, damage, any dangerous condition, injury, or waste, except as caused by persons granted other uses of the Premises by the Board. Lessee may use the Premises only for the purposes granted and in accordance with good resource conservation practices. Lessee shall not cut, remove, or use or allow to be cut, removed or used, any timber or trees, or remove, use or allow to be removed or used any minerals, ores, metals, coal, asphaltum, oil, gas, sand, gravel, clay, quarry products, peat, geothermal resources or other naturally occurring resources unless approved in advance in writing by the Board. Lessee shall conduct all activities on the Premises in a manner that protects soil fertility and forage production, and does not contribute to soil erosion, noxious weeds or pests. Lessee shall comply with all applicable federal, state and local laws, ordinances, and regulations, including but not limited to criminal, land use, fencing, noxious weed, environmental, wetlands protection, hazardous waste, health and safety laws, ordinances and regulations.

20. DEFAULTS AND REMEDIES

A. Defaults

The occurrences of any one or more of the following events shall constitute a default hereunder by the Lessee:

1. Failure by the Lessee to make any payment of rental or other payment of additional rental or charge required to be made by the Lessee hereunder, as and when due.
2. Use of the Premises by the Lessee, its successors and assigns or attempted use of the Premises for any other purpose than those permitted by this lease without the written consent of the Board.
3. Failure by the Lessee to perform any of the covenants, conditions or requirements contained herein. Provided further that if the nature of the Lessee's default is such that more than thirty (30) days are reasonably required to cure such default then the Lessee shall not be deemed to be in default if the Lessee shall commence such cure within said thirty (30) day period and thereafter diligently pursue such cure to completion.

Any of the above events of default may be cured by the Lessee within thirty (30) days after written notice thereof from the Board to the Lessee in accordance with Section 25.I below, entitled "Notices".

B. Remedies

In any event of default, and in addition to any or all other rights or remedies of the Board hereunder or by the law provided, the Board may exercise the following remedies at its sole option:

1. Termination. Terminate the Lessee's right to possession of the Premises by any lawful means, in which case this lease shall terminate and the Lessee shall immediately surrender possession of the Premises to the Board according to the terms of Section 21 below, entitled "SURRENDER". In such event of termination the Board shall be entitled to recover from the Lessee:
 - a. The unpaid rental, taxes and damages which have accrued up until the time of termination together with interest; and
 - b. Any other amount necessary to compensate the Board for the Lessee's failure to perform its obligations under this lease or which would be likely to result therefrom, including, but not limited to, the cost of recovering possession of the Premises, expenses of reletting, including necessary repair, renovation and alteration of the Premises, reasonable attorneys fees, and any other reasonable costs.
 - c. The interest shall be three percent (3%) per month or portion thereof. Said interest shall accrue from the dates such amounts accrued to the Board until paid by the Lessee.
2. Rental During Unlawful Detainer. In any successful action for unlawful detainer commenced by the Board against the Lessee by reason of any default hereunder, the reasonable rental value of the Premises for the period of the unlawful detainer shall be two (2) times the current rental and other charges or payments, prorated on a per diem basis, to be made by the Lessee under this lease for such period.
3. Interest and Processing Fees. Interest and processing fees in the amount of three percent (3%) per month or portion thereof shall be imposed for late payments and improper or partial payments. Said interest and processing fees shall accrue from the dates such amounts accrued to the Board until paid by the Lessee.
4. Cumulative Rights. The rights and remedies reserved to the Board, including those not specifically described, shall be cumulative, and the Board may pursue any or all of such rights and remedies, at the same time or separately.

21. SURRENDER

- A. Upon expiration or termination of this lease, the Lessee shall peaceably and quietly leave, and surrender possession of the Premises to the Board, and at its own expense shall promptly and diligently within one-hundred twenty (120) days remove, demolish and/or clear off from the Premises all improvements and personal property and restore the Premises to its original or native vegetative condition. Any improvements and personal property remaining after thirty (30) days shall, at the option of the Board, become the property of the Board.
- B. Notwithstanding any provisions to the contrary, the Lessee shall have no right to remove, alter or demolish all or part of the Lessee's improvements at anytime the Lessee is in default or breach of any term, provision or covenant of this lease.

22. HAZARDOUS SUBSTANCES

- A. The Lessee shall not place, store, use or dispose on the Premises, temporarily or permanently, any substance that is hazardous, toxic, dangerous or harmful or which is defined as a hazardous substance by the Comprehensive Environmental Response Compensation and Liability Act, 42 USC §9601; except any potentially "hazardous substance" contained within batteries installed by Lessee at the Premises, which shall be used and stored in compliance with all federal, state, and local environmental laws for the sole purpose of supplying electrical power to the Facilities. These substances shall be referred to collectively as "hazardous substances".
- B. The Lessee is also prohibited from storing any gasoline or other fuel on the Premises without the Board's prior written permission; except Lessee is permitted to store diesel, propane or gasoline fuel in a tank on the Premises for the sole purpose of supplying fuel to the Facilities in the event of an electrical power outage, provided that a spill containment structure is installed in a manner that is capable of holding the entire volume of the tank in the event of a tank spill or rupture. Such written permission shall be at the Board's sole discretion and upon such terms and conditions as determined by the Board.
- C. The Lessee shall immediately notify the Board of all spills, releases, inspections, correspondence, orders, citations, notices, fines, response and/or cleanup actions, and violation of laws, regulation or ordinance which effect the Premises.

23. CONDEMNATION

- A. In the event Board receives notification of any condemnation proceedings affecting the Premises, Board will provide notice of the proceeding to Lessee within ten (10) business days.
- B. If all of the Premises are taken by any public authority under the power of eminent domain, this lease shall terminate as of the date possession was taken by said public authority pursuant to such condemnation. If part of the Premises is taken and, in the opinion of either the Board or the Lessee, it is not economically feasible to continue this lease, either party may terminate this lease.
- C. Such termination by either party shall be made by notice to the other party given not later than thirty (30) days after possession is so taken. If part of the Premises is taken and neither the Board nor the Lessee elects to terminate this lease, the payment due under this lease shall be abated in the same proportion as the portion of the Premises so taken bears to the whole of the Premises.
- D. All damages awarded for the taking or damaging of all or any part of the Premises, or Board-owned improvements thereon, shall belong to and become the property of the Board, and the Lessee hereby disclaims and assigns to the Board any and all claims to such award. The Board shall not claim any interest in any authorized improvements. Lessee may pursue a separate award from the condemnation authority for its relocation expenses and for the loss of or damage to its Facilities.
- E. If the temporary use (defined as less than one year) of the whole or any part of the Premises shall be taken at any time during the term of this lease, the Lessee shall give prompt notice thereof to the Board; however, the term, rentals and other obligations of the Lessee under this lease shall not be reduced or affected in any way. The Lessee shall be entitled to compensation as determined by applicable law for any such temporary taking of the Premises.

24. LIENS AND CLAIMS

A. Mechanics' Liens

- 1. The Lessee shall not suffer or permit to be enforced against the Premises, or any part thereof, or any improvements thereon, any mechanics', materialmen's, contractors', or subcontractors' liens arising from, or any claim for damage growing out of the work of any construction, repair, restoration, replacement or improvement, or any other claim or demand howsoever the same may arise, but the Lessee shall pay or cause to be paid all of said liens, claims, or demands before any action is brought to enforce the same against the Premises or improvements.
- 2. The Lessee agrees to defend, indemnify and hold the Board and the Premises free and harmless from all liability for any and all such liens, claims, demands, and actions (collectively, the "liens") together with reasonable attorneys fees and all costs and expenses in connection herewith.

B. Rights to Contest

Notwithstanding the foregoing, if the Lessee shall in good faith contest the validity of any such lien, then the Lessee shall at its sole expense defend itself and the Board against the same and shall pay and satisfy any adverse expense or cost or adverse judgment that may be rendered thereon before the enforcement thereof against the Board or the Premises, upon the condition that if the Board shall require, the Lessee shall furnish a surety bond satisfactory in form and amount to the Board. Said bond shall not be less than one hundred twenty percent (120%) of such contested lien indemnifying the Board against liability for the same, and holding the Premises free from the effect of such lien.

C. Posted Notice

The Lessee shall, upon execution of this lease at its cost, prepare a Notice, pursuant to CRS §38-22-105, and cause the same to be posted for the purpose of protecting the Board against any liens or encumbrances upon the Premises by reason of work, labor, services or materials contracted for or supplied to the Lessee.

25. MISCELLANEOUS

A. False Statements

Any false certification or statement by the Lessee in the application, public disclosure statement or qualification of financial responsibility statement required to be submitted with the application for the lease, or in any other document or report required to be submitted under this lease, shall at the discretion of the Board, result in termination of this lease and an action for damages.

B. Lease Document Controls

In the event of inconsistency or conflict between this lease and documents incorporated herein by reference, this lease agreement shall control.

C. Compliance with Laws

The Lessee shall comply with all applicable federal, state and local ordinances, regulations and laws regarding the Premises and activities conducted thereon or by virtue thereof. Furthermore the Lessee shall not use or permit the Premises to be used in violation of any such rule, regulation or law or for any purpose tending to damage or harm the Premises or improvements thereon or adjacent thereto, or the image or attractiveness thereof, or for any improper, offensive or immoral use or purpose, or in any manner which shall constitute waste, nuisance or public annoyance.

D. Lessee's Authority

If the Lessee is an entity other than an individual, each individual executing this lease on behalf of said entity represents and warrants that he or she is duly authorized to execute and deliver this lease on behalf of said entity and that this lease is binding upon said entity in accordance with its terms. The Lessee shall deliver a certified copy of the appropriate document evidencing authorization for such execution.

E. Entire Agreement

This lease and all documents incorporated herein by reference represent the entire agreement between the parties hereto. No oral agreement or implied covenant shall be held to vary the provisions hereof.

F. Amendments

This lease shall not be amended or ratified except by written document executed by the parties hereto.

G. Certain Rules of Construction

Time is of the essence in the performance of this lease. Unless the context clearly implies otherwise, each and every act to be performed or obligation to be fulfilled by the Lessee under this lease shall be performed or fulfilled at the Lessee's sole cost and expense.

H. Governing Law and Venue

This lease shall be governed by and construed in accordance with the laws of the State of Colorado and Venue shall be in the City and County of Denver.

I. Notices

Every notice, demand, request, designation, consent, approval or other document or instrument required or permitted to be served hereunder shall be in writing, shall be deemed to have been duly served on the day of receipt or rejection and shall be sent by registered or certified United States mail, postage prepaid, return receipt requested, or by a nationally recognized overnight courier service which provides written evidence of delivery, as addressed to the parties hereto. The parties may change the place for serving of such papers on it, or provide for the delivery of not more than two (2) additional copies, by giving the other party at least thirty (30) days prior written notice to such effect. Notices shall be sent to:

Lessee:
New Cingular Wireless PCS LLC
Re: Site # DN6032 Site Name: Median Point (CO)
Fixed Asset No.: 10114750
12555 Cingular Way, Suite 1300
Alpharetta, GA 30004

Board:
Colorado State Board of Land Commissioners
/co COMM 49010 – Cingular Wireless at Table Mountain
1313 Sherman Street Suite 621
Denver Colorado 80203

With a required copy of the notice sent to the addresses above to AT&T Legal at:

If sent via certified or registered mail:

New Cingular Wireless PCS, LLC
Attn: AT&T Legal Department
Re: Site # DN6032 Site Name: Median Point (CO)
Fixed Asset No.: 10114750
PO Box 97061
Redmond, WA 98073-9761

Or

If sent via nationally recognized overnight courier:

New Cingular Wireless PCS, LLC
Attn: AT&T Legal Department
Re: Site # DN6032 Site Name: Median Point (CO)
Fixed Asset No.: 10114750
16331 NE 72nd Way
Redmond, WA 98052-7827

J. Severability

If for any reason provisions of this lease or the application thereof to any person or circumstances, shall to any extent, be deemed invalid or unenforceable, the remainder of this lease shall not necessarily be affected thereby and each provision of the lease shall be valid and enforceable to the fullest extent permitted by law.

K. Costs of Suit: Attorneys Fees

In the event that the Board shall, without fault on the Board's part, be made party to any litigation instituted by the Lessee or by any third party against the Lessee, or by or against any person holding under or using the Premises by license of the Lessee, or for the foreclosure of any lien for labor or material furnished to or for the Lessee or any such other person or otherwise arising out of or resulting from any action or transaction of the Lessee or of any such other person, the Lessee hereby indemnifies and holds the Board harmless from and against any judgment rendered against the Board or the improvements or any part thereof, and all costs and expenses, including reasonable attorneys fees, incurred by the Board in or in connection with such litigation.

26. HOLDING OVER

If Lessee remains in possession of the Premises after the termination of this lease (by expiration or otherwise) Lessee shall be liable for rental during such holdover possession. The rental shall not be less than the rate agreed upon in this lease, and the Board may fix a new rate, which shall be paid by the Lessee during continued occupancy. At the Board's option, the Lessee shall be construed to be in possession of the Premises and to be occupying the same so long as the Premises are used in any way to any extent by Lessee, or so long as any of his authorized or unauthorized improvements remain on the Premises. Continued occupancy shall not establish a new or extended lease term or other right, no matter how long maintained and regardless of the Board's knowledge thereof.

27. BOARD'S AUTHORITY

This lease is entered into pursuant to the authority granted to the Board by Colorado law.

28. ADDITIONAL CONDITIONS


Additional conditions, if any, are set forth on an attached rider(s), and made a part hereof. In addition, the following shall apply and supersede any conflicting terms or conditions set forth above:

- A. Lessee may terminate this Agreement upon written notice to the Board if Lessee is unable to obtain, or maintain as required approval(s) or the issuance of, a license or permit by any agency, board, court or other governmental authority necessary for the construction or operation of the Facilities as now or hereafter intended by Lessee so long as Lessee pays a termination fee equal to three (3) months Rent at the then-current rate.
- B. Warranties.
 - 1. Tenant and Landlord each acknowledge and represent that it is duly organized, validly existing and in good standing and has the right, power and authority to enter into this Agreement and bind itself hereto through the party set forth as signatory for the party below.
 - 2. Landlord represents and warrants that: (i) Landlord solely owns the Property as a legal lot in fee simple, or controls the Property by lease or license; (ii) the Property is not encumbered by any liens, restrictions, mortgages, covenants, conditions, easements, leases, or any other agreements of record or not of record, which would adversely affect Tenant's Permitted Use and enjoyment of the Premises under this Agreement; (iii) as long as Tenant is not in default then Landlord grants to Tenant sole, actual, quiet and peaceful use, enjoyment and possession of the Premises; (iv) Landlord's execution and performance of this Agreement will not violate any laws, ordinances, covenants or the provisions of any mortgage, lease or other agreement binding on the Landlord; and (v) if the Property is or becomes encumbered by a deed to secure a debt, mortgage or other security interest, Landlord will use best efforts to provide promptly to Tenant a mutually agreeable Subordination, Non-Disturbance and Attornment Agreement.

IN WITNESS WHEREOF, the Board and the Lessee, by their signatures below, agree to the terms of this lease:

LESSEE:

NEW CINGULAR WIRELESS PCS, LLC,
a Delaware limited liability company
By: AT&T Mobility Corporation
Its: Manager

By: 
 Name: Dennis Neal
 Title: Real Estate and Construction Manger

BOARD:

STATE OF COLORADO BY THE
STATE BOARD OF LAND COMMISSIONERS

By: 
 Name: Britt L. Weygandt
 Title: Director


 Brannett M. Rowley

EXHIBIT "A"
"THE PREMISES"

STATE PROPERTY
FREMONT COUNTY

SCHOOL TRUST LAND

TOWNSHIP SEVENTEEN SOUTH (T 17 S), RANGE SIXTY-EIGHT WEST (R 68 W)
OF THE SIXTH PRINCIPAL MERIDIAN (6TH P.M.)

Section Twenty-Four (Sec. 24)

A 50-foot by 50-foot tract of land located northeast of the intersection of Colorado State Highway 115 and Fremont County Road 132, County of Fremont, State of Colorado.

0.06 acres +/-

Containing Six Hundredths (0.06) acres, more or less, according to U.S. Government Survey.

EXHIBIT "B"
BOUNDARY AND IMPROVEMENT SURVEY

Boundary Survey is attached.

May 16, 2024

Jason Skaggs
Smartlink, LLC
10 Church Circle
Annapolis, MD 21401
(510) 778-2166



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
Structures@tepgroup.net

Subject: Structural Analysis Report

Carrier Designation: **AT&T Mobility Reconfiguration**
Carrier Site Number: COL06032
Carrier Site Name: MEDIAN POINT
FA Location Code: 10114750

Engineering Firm Designation: **TEP Project Number:** 340423.957317

Site Data: **24860 Highway 115, Penrose, Fremont County, CO 81240**
Latitude 38° 31' 42.82", Longitude -104° 58' 08.04"
151± Foot – Monopole

Dear Jason Skaggs,

Tower Engineering Professionals is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the stress level for the tower and foundation structure, under the following load case, to be:

LC1: Existing + Proposed + Reserved Loading

Note: See Table 1 for the existing, proposed, and reserved loading

Sufficient Capacity

Structure Capacity	Foundation Capacity
45.2%	58.1%

The analysis has been performed in accordance with the ANSI/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas, and Small Wind Turbine Support Structures and the 2021 International Building Code.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals* appreciate the opportunity of providing our continuing professional services to you and *Smartlink, LLC*. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Aaron T. Rucker, P.E.



05/16/2024

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tnxTower Output

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Additional Calculations

1) INTRODUCTION

The tower is a 151± Foot Monopole designed by Sabre in December of 2010. The original design standard and wind speed were unavailable for review. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	ANSI/TIA-222-H
Type of Analysis:	Comprehensive
Risk Category:	II
Wind Speed:	106 mph (Ultimate)
Exposure Category:	C
Topographic Procedure:	Method 1 (Kzt = 1.00)
Ice Thickness:	0.25 in
Wind Speed with Ice:	50 mph
Seismic Design Category:	B
Seismic Ss:	0.224
Seismic S1:	0.063
Service Wind Speed:	60 mph

Table 1 - Existing, Proposed, and Reserved Antenna and Cable Information

Existing/ Proposed/ Reserved	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size	Coax Location	Owner/ Tenant
<i>Proposed</i>	151.0	151.0	2	<i>CCI TPA65R-BU8DA-K</i>	-	-	-	-	<i>AT&T</i>
			2	<i>Ericsson 4490 B5/B12A</i>					
			2	<i>Ericsson 4890 B25/B66</i>					
			2	<i>Ericsson 4478 B14</i>					
Existing	151.0	151.0	2	CCI TPA65R-BU8DA-K	(1) Platform Mount	2	Fiber DC Trunk AVA7-50A	Inside	AT&T
			2	Raycap DC6-48-60-18-8F		4			
<i>To Be Removed</i>	151.0	151.0	2	<i>Andrew DBXNH-6565B-R2M</i>	-	-	-	-	<i>AT&T</i>
			2	<i>Nokia AHCA</i>					
			2	<i>Nokia AHLBA</i>					
			2	<i>Nokia AHFIB</i>					
			2	<i>Powerwave TT19-08BP111-001</i>					
4	<i>Powerwave CM1007-DBXBC-100</i>								
Existing	40.5	40.5	1	Commscope VHLPX4-11W-6GR	(1) Pipe Mount	-	-	-	AT&T

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Source
Previous Structural Analysis	Infinigy, dated December 4, 2019 Job No. 4078-A0001-B	Smartlink
Mount Analysis	Tower Engineering Professionals TEP No. 340423.957324	TEP
Correspondence	Correspondence from Smartlink in reference to the existing, proposed, and reserved loading.	Smartlink

3.1) Analysis Method

tnxTower (version 8.2.4.3), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Analysis Assumptions

- 1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
- 2) Unless specified by the client or tower mapping, the location of the existing and proposed coax is assumed by TEP and listed in Table 1.
- 3) All tower components are in sufficient condition to carry their full design capacity.
- 4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.
- 6) Existing tower and foundation geometry, geotechnical information and existing loading are based solely on documents provided in Table 2. TEP assumed that the information interpreted in these documents, from the original documents, was accurate.

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)¹

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	ϕP_{allow} (lb)	% Capacity	Pass / Fail
L1	151 - 100.25	Pole	TP26.15x18x0.188	1	-6218.080	927059.688	45.2	Pass
L2	100.25 - 50.5	Pole	TP33.76x25.173x0.313	2	-12618.100	1991366.875	36.7	Pass
L3	50.5 - 2	Pole	TP40.91x32.373x0.375	3	-23288.100	2963561.750	37.2	Pass
							Summary	
						Pole (L1)	45.2	Pass
						RATING =	45.2	Pass

Table 4 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	35.9	Pass
1,2	Base Plate	-	24.3	Pass

Structure Rating (max from all components)¹ =	45.2%
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Notes:

- 1) Rating per TIA-222-H, Section 15.5
- 2) See additional documentation in "Appendix B - Additional Calculations" for calculations supporting the % capacity listed.

Table 5 - Foundation Reaction Comparison

Notes	Component	Design Reactions	Analysis Reactions	% Capacity	Pass / Fail
1	Axial (kip)	40.1	23.29	58.1	Pass
1	Shear (kip)	26.1	10.49	40.2	Pass
1	Overturning Moment (kip-ft)	2885.0	1104.0	38.2	Pass

Notes:

- 1) Capacities calculated are based on comparisons to design reactions and do not represent an actual analysis of the foundation. Design loads were multiplied by 1.35 for comparison as allowed by TIA-222-H, Section 15.6.2.

Table 6 - Dish Twist/Sway Results for 60 mph Service Wind Speed

Elevation (ft)	Dish Model	Beam Deflection		
		Deflection (in)	Tilt (deg)	Twist (deg)
40.50	VHLPX4-11W-6GR	1.679	0.356	0.001

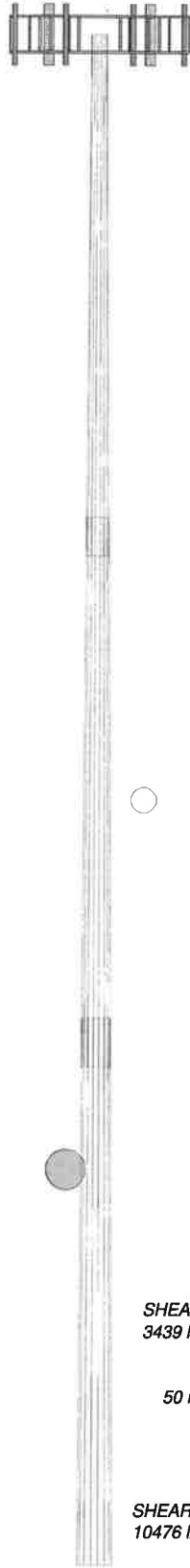
4.1) Recommendations

- 1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A
TNX TOWER OUTPUT

Section	1	2	3
Length (ft)	50.750	53.500	53.250
Number of Sides	18	18	18
Thickness (in)	0.188	0.312	0.375
Socket Length (ft)	3.750	4.750	32.373
Top Dia (in)	18.000	25.173	40.910
Bot Dia (in)	26.150	33.760	7821.6
Grade		A572-65	
Weight (lb)	2249.4	5264.3	15335.4

151.0 ft
100.2 ft
50.5 ft
2.0 ft



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Low Profile Platform	151	DC6-48-60-18-8F	151
(2) TPA65R-BU8DA-K w/ Mount Pipe	151	(2) 2.9" x 10' Pipe	151
(2) TPA65R-BU8DA-K w/ Mount Pipe	151	(2) 2.9" x 10' Pipe	151
4490 B5/B12	151	(4) 2.9" x 10' Pipe	151
4490 B5/B12	151	(2) 2.9" x 10' Pipe	151
RADIO 4890HP B2/B25 B66	151	(2) 2.9" x 10' Pipe	151
RADIO 4890HP B2/B25 B66	151	(2) 2.9" x 10' Pipe	151 - 98
RADIO 4478 B14	151	Dish Pipe Mount	40.5
RADIO 4478 B14	151	VHLPX4-11W-6GR	40.5
DC6-48-60-18-8F	151		

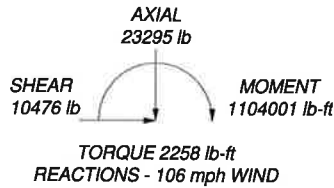
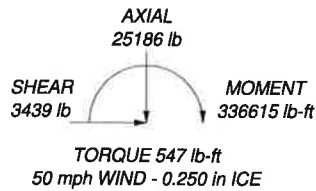
MATERIAL STRENGTH


GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fremont County, Colorado.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 106 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 0.25 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 45.2%

ALL REACTIONS
ARE FACTORED



 Tower Engineering Professionals	Tower Engineering Professionals		MEDIAN POINT (COL06032)	
	326 Tryon Road		Project: 340423.957317	
	Raleigh, NC 27603		Client: Smartlink LLC	
	Phone: (919) 661-6351		Drawn by: RAD	
	FAX: (919) 661-6350		Date: 05/16/24	
		Code: TIA-222-H	Scale: NTS	App'd:
		Path:	Dwg No. E-1	

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	MEDIAN POINT (COL06032)	Page	1 of 10
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	Client	Smartlink LLC	Designed by	RAD

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:
Tower is located in Fremont County, Colorado
Tower base elevation above sea level: 6314.930 ft.
Basic wind speed of 106 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 0.250 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on larger reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{st}(F_s) = 0.95$, $K_{st}(t) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- Consider Moments - Legs
- Consider Moments - Horizontals
- Use Clear Spans For Wind Area
- Use Moment Magnification
- Use Code Stress Ratios
- Use Code Safety Factors - Gys
- Escalate Ice
- Always Use Max Kz
- Use Special Wind Profile
- Include Bolts in Member Capacity
- Leg Bolts Are At Top Of Section
- Use Diamond Inner Bracing (4 Sided)
- Secondary Horizontal Braces Leg
- SR Members Have Cut Ends
- SR Members Are Concentric
- Distribute Leg Loads As Uniform
- Assume Legs Pinned
- Ignore Redundant Members in FEA
- SR Leg Bolts Resist Compression
- All Leg Panels Have Same Allowable
- Offset Girt At Foundation
- Bypass Mast Stability Checks
- Use Azimuth Dish Coefficients
- Project Wind Area of Appurtenances
- Alternative Appurt. EPA Calculation
- Autocable Torque Arm Areas
- Add IBC 6DA-W Combination
- Sort Capacity Reports By Component
- Triangulate Diamond Inner Bracing
- Treat Feed Line Bundles As Cylinder
- Ignore KCFY For 60 Deg. Angle Legs
- Use ASCE 10 X-Brace L3 Rules
- Calculate Redundant Bracing Forces
- Ignore Redundant Members in FEA
- SR Leg Bolts Resist Compression
- All Leg Panels Have Same Allowable
- Offset Girt At Foundation
- Include Angle Block Shear Check
- Use TIA-222-H Bracing Rests. Exemption
- Use TIA-222-H Tension Splice Exemption Poles
- Include Shear-Torsion Interaction
- Always Use Sub-Critical Flow
- Use Top Mounted Sockets
- Pole Without Linear Attachments
- Pole With Staircut Or No Appurtenances
- Outside and Inside Corner Radii Are Known

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	MEDIAN POINT (COL06032)	Page	2 of 10
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Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Band Radius in	Pole Grade
L1	151,000-100,250	50,750	3,750	18	18,000	26,150	0.188	0.750	A572-65 (65 ksi)
L2	100,250-50,500	53,500	4,750	18	25,173	33,760	0.312	1.250	A572-65 (65 ksi)
L3	50,500-2,000	53,250		18	32,373	40,910	0.375	1,500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	J in ⁶	C in ³	I/C in ²	J/C in ³	r in	W in	wt wt
L1	18,249	10,601	424,933	6,323	9,144	46,471	850,425	5,301	2,838	15,136
L2	26,524	15,451	1,315,786	9,217	13,284	99,049	2,633,303	7,727	4,272	22,786
L3	34,229	24,668	1,925,363	8,825	12,788	150,563	3,853,259	12,331	3,680	12,417
	33,587	38,085	4,689,056	11,874	17,150	273,413	9,984,281	16,591	5,392	17,254
	41,483	48,287	10,015,351	14,390	20,782	481,918	20,043,880	24,128	6,540	17,44

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Adjust. Factor	Weight Multi.	Double Angle Spacing Diagonals	Double Angle Spacing Horizontals	Double Angle Spacing Redundants
L1	151,000-100,250	50	1	1	1	1	1
L2	100,250-50,500	0	1	1	1	1	1
L3	50,500-2,000	0	1	1	1	1	1

Feed Line/Linear Appurtenances - Entered As Area

Description	Face Allow or Leg	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _v A _u ft ²	Weight plf
3/8" Fiber Cable	A	No	Inside Pole	151,000 - 10,000	2	0.000	0.180
3/8" DC Power	A	No	Inside Pole	151,000 - 10,000	4	0.000	0.620
AVAT-50	A	No	Inside Pole	151,000 - 10,000	4	0.000	0.700

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Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350		MEDIAN POINT (COL06032)		Date 16:24:21 05/16/24	
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Client		Smartlink LLC		RAD	

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _k ft ²	A _r ft ²	C _A A _r In Face ft ²	C _A A _r Out Face ft ²	Weight lb
L1	151,000-100,250	A	0.000	0.000	0.000	0.000	286,230
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L2	100,250-50,500	A	0.000	0.000	0.000	0.000	280,590
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L3	50,500-2,000	A	0.000	0.000	0.000	0.000	228,420
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _k ft ²	A _r ft ²	C _A A _r In Face ft ²	C _A A _r Out Face ft ²	Weight lb
L1	151,000-100,250	A	0.243	0.000	0.000	0.000	0.000	286,230
		B	0.000	0.000	0.000	0.000	0.000	
		C	0.000	0.000	0.000	0.000	0.000	
L2	100,250-50,500	A	0.231	0.000	0.000	0.000	0.000	280,590
		B	0.000	0.000	0.000	0.000	0.000	
		C	0.000	0.000	0.000	0.000	0.000	
L3	50,500-2,000	A	0.208	0.000	0.000	0.000	0.000	228,420
		B	0.000	0.000	0.000	0.000	0.000	
		C	0.000	0.000	0.000	0.000	0.000	

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _y in	CP _x in	CP _y in
L1	151,000-100,250	0.000	0.000	0.000	0.000
L2	100,250-50,500	0.000	0.000	0.000	0.000
L3	50,500-2,000	0.000	0.000	0.000	0.000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

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Project		340423.957317		Designed by RAD	
Client		Smartlink LLC		RAD	

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets			Azimuth Adjustment	Placement	C _A A _r Front ft ²	C _A A _r Side ft ²	Weight lb
			Horz. Lateral	Vert.	Dist.					
151										
Low Profile Platform	A	None	0.000	0.000	0.000	0.000	151,000	No Ice	26,100	150,000
(2) TPAGR-BURDA-K w/ Mount Pipe	A	From Centroid-Face	4.000	0.000	0.000	0.000	151,000	1/2" Ice	31,600	170,000
(2) TPAGR-BURDA-K w/ Mount Pipe	B	From Centroid-Face	4.000	0.000	0.000	0.000	151,000	1/2" Ice	18,109	134,950
(2) TPAGR-BURDA-K w/ Mount Pipe	B	From Centroid-Face	4.000	0.000	0.000	0.000	151,000	1/2" Ice	18,843	134,950
4490 B5/B12	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	18,109	134,950
4490 B5/B12	A	From Centroid-Face	2.000	0.000	0.000	0.000	151,000	1/2" Ice	2,202	20,830
4490 B5/B12	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,387	37,856
4490 B5/B12	B	From Centroid-Face	2.000	0.000	0.000	0.000	151,000	1/2" Ice	2,387	37,856
RADIO 4890RP B2/B25 B66	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,202	68,000
RADIO 4890RP B2/B25 B66	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	2,387	85,166
RADIO 4890RP B2/B25 B66	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,202	68,000
RADIO 4890RP B2/B25 B66	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	2,387	85,166
RADIO 4478 B14	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,021	59,400
RADIO 4478 B14	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	2,200	77,013
RADIO 4478 B14	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,021	59,400
RADIO 4478 B14	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	2,200	77,013
DC6-48-60-18-8F	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	0.850	18,900
DC6-48-60-18-8F	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	1,356	35,591
DC6-48-60-18-8F	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	0.850	18,900
DC6-48-60-18-8F	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	1,356	35,591
(2) 2.9" x 10" Pipe	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,900	58,000
(2) 2.9" x 10" Pipe	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	3,932	79,157
(2) 2.9" x 10" Pipe	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,900	58,000
(2) 2.9" x 10" Pipe	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	3,932	79,157
(4) 2.9" x 10" Pipe	C	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,900	58,000
(4) 2.9" x 10" Pipe	C	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	3,932	79,157
(2) 2.9" x 10" Pipe	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,900	58,000
(2) 2.9" x 10" Pipe	A	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	3,932	79,157
(2) 2.9" x 10" Pipe	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,900	58,000
(2) 2.9" x 10" Pipe	B	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	3,932	79,157
(2) 2.9" x 10" Pipe	C	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	No Ice	2,900	58,000
(2) 2.9" x 10" Pipe	C	From Centroid-Face	0.000	0.000	0.000	0.000	151,000	1/2" Ice	3,932	79,157

Dish Pipe Mount	A	From Face	1.000	0.000	0.000	0.000	40,500	No Ice	0.000	0.000
Dish Pipe Mount	A	From Face	1.000	0.000	0.000	0.000	40,500	1/2" Ice	0.000	0.000

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Description	Face or Leg	Offset Type	Offset: Horiz. Lateral	Offset: Vert.	Asimuth Adjustment	Placement	C/A's From	C/A's Side	Weight

Dishes												
Description	Face or Leg	Dish Type	Offset Type	Offset: Horiz. Lateral	Offset: Vert.	Asimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
VHLPX4-11W-6GR A		Paraboloid w/Straud (RP)	Face	2.000	0.000	0.000	0	40.500	4.108	No Ice 12" Ice	13.256 13.800	88.000 159.000

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 90 deg - No Ice
4	1.2 Dead+1.0 Wind 180 deg - No Ice
5	0.9 Dead+1.0 Wind 270 deg - No Ice
6	1.2 Dead+1.0 Wind 0 deg - No Ice
7	0.9 Dead+1.0 Wind 90 deg - No Ice
8	1.2 Dead+1.0 Wind 180 deg - No Ice
9	0.9 Dead+1.0 Wind 270 deg - No Ice
10	1.2 Dead+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
12	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
13	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
14	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
15	Dead+Wind 0 deg - Service
16	Dead+Wind 90 deg - Service
17	Dead+Wind 180 deg - Service
18	Dead+Wind 270 deg - Service

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Section No.	Elevation	Component Type	Condition	Gov. Load Comb.	Axial	Major Axis Moment	Minor Axis Moment
L2	100.25 - 50.5	Pole	Max. My	2	-6293.454	20.195	219843.464
			Max. Vy	4	6169.554	-245463.20	1163.917
			Max. Vx	2	-5598.280	20.195	219843.464
			Max. Torque	4	0.000	0.000	0.000
			Max. Tension	10	-14171.409	6.400	1747.095
			Max. Compression	4	-12618.127	-597552.83	1170.553
L3	50.5 - 2	Pole	Max. My	2	-12653.886	56.767	543967.644
			Max. Vy	4	8241.181	-897552.83	1170.553
			Max. Vx	2	-7672.606	56.767	543967.644
			Max. Torque	4	0.000	0.000	0.000
			Max. Tension	10	-25185.568	413.623	1982.185
			Max. Compression	4	-23288.096	-1103995.2	-3549.809
L2	100.25 - 50.5	Pole	Max. My	2	-23289.121	3218.740	1016009.16
			Max. Vy	4	10491.885	-1103995.2	-3549.809
			Max. Vx	6	9835.694	-7506.254	-1013841.2
			Max. Torque	8	0.000	0.000	0.000
			Max. Tension	10	-2257.619	102.829	102.829
			Max. Compression	8	-2257.619	102.829	102.829

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical	Horizontal, X	Horizontal, Z
Pole	Max. Vert	12	25185.568	-3438.570	238.726
	Max. Hx	9	23292.471	10396.968	102.829
	Max. Hz	2	23292.471	10396.968	102.829
	Max. Mx	2	1016009.168	125.096	9807.707
	Max. My	4	1103995.296	-10475.499	9807.707
	Max. Vy	4	2173.691	-126.846	-126.846
	Max. Vx	9	17471.693	10396.968	102.829
	Min. Vert	4	23295.471	-10475.499	-126.846
	Min. Hx	6	23295.472	-200.143	-9820.449
	Min. Hz	6	-1013841.230	10396.968	102.829
	Min. Mx	8	-1101574.339	10396.968	102.829
	Min. My	8	-2257.619	102.829	102.829

Tower Mast Reaction Summary

Load Combination	Vertical	Shear, X	Shear, Z	Overturning Moment, Mx	Overturning Moment, My	Torque
Dead Only	19412.893	-0.000	-0.000	-1140.531	264.414	0.002
1.2 Dead+1.0 Wind 0 deg - No Ice	23295.472	-125.096	-9802.707	-1016009.168	5218.619	-612.500

Maximum Member Forces

Section No.	Elevation	Component Type	Condition	Gov. Load Comb.	Axial	Major Axis Moment	Minor Axis Moment
L1	151 - 100.25	Pole	Max. Tension	10	0.000	-0.000	-0.011
			Max. Compression	10	-7455.888	2.931	1756.897
			Max. Mx	4	-6218.077	-245463.20	1163.917

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Client		Smartlink LLC		RAD	

Load Combination	Vertical lb	Shear lb	Shear lb	Overturning Moment, M _t lb-ft	Overturning Moment, M _t lb-ft	Torque lb-ft
0.9 Dead+1.0 Wind 0 deg - No Ice	17471.604	-125.096	-9802.705	-1003039.655	5115.269	-611.678
1.2 Dead+1.0 Wind 90 deg - No Ice	23295.471	10475.499	126.846	3550.274	-1103995.296	-2173.691
0.9 Dead+1.0 Wind 0 deg - No Ice	17471.603	10475.499	126.846	3908.593	-1090232.681	-2139.672
1.2 Dead+1.0 Wind 180 deg - No Ice	23295.472	200.143	9820.449	1013841.230	-7506.330	389.919
0.9 Dead+1.0 Wind 180 deg - No Ice	17471.604	200.143	9820.446	1001657.162	-7556.813	389.099
1.2 Dead+1.0 Wind 270 deg - No Ice	23295.471	-10396.968	-102.829	-5435.739	1101574.339	2257.619
0.9 Dead+1.0 Wind 270 deg - No Ice	17471.603	-10396.968	-102.829	-5040.056	1087657.976	2225.614
1.2 Dead+1.0 Ice+1.0 Temp	25185.568	-0.000	-1982.185	413.623	0.004	0.004
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	25185.568	-28.329	-3292.808	-319425.215	1532.371	-139.419
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	25185.568	3438.570	28.726	-903.657	-336455.239	-527.890
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	25185.568	45.324	3296.825	315520.823	-11354.954	89.078
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	25185.568	-3420.786	-23.287	-2942.618	336601.853	546.861
Dead+Wind 0 deg - Service	19412.893	-37.749	-2960.383	-305399.891	1742.623	-184.854
Dead+Wind 90 deg - Service	19412.893	3163.406	38.277	317.819	-330865.433	-657.476
Dead+Wind 180 deg - Service	19412.893	60.395	2965.737	303254.527	-2086.985	117.763
Dead+Wind 270 deg - Service	19412.893	-3139.709	-31.030	-2386.556	330480.204	682.740

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.000	-19412.893	0.000	19412.893	0.000	0.000	0.000%
2	-125.096	-23295.471	-9802.703	125.096	23295.472	9802.707	0.000%
3	10475.499	-17471.603	126.846	-10475.499	17471.604	-126.846	0.000%
4	10475.499	-17471.603	126.846	-10475.499	17471.603	-126.846	0.000%
5	200.143	-23295.471	9820.445	-200.143	23295.472	-9820.446	0.000%
6	200.143	-17471.603	9820.445	-200.143	17471.604	-9820.446	0.000%
7	-10396.968	-23295.471	-102.829	10396.968	23295.471	102.829	0.000%
8	-10396.968	-23295.471	-102.829	10396.968	23295.471	102.829	0.000%
9	0.000	-25185.568	-3292.803	25185.568	3292.808	0.001	0.000%
10	0.000	-25185.568	-3292.803	25185.568	3292.808	0.001	0.000%
11	3438.566	-25185.568	28.726	-3438.570	25185.568	-28.726	0.000%
12	3438.566	-25185.568	28.726	-3438.570	25185.568	-28.726	0.000%
13	-3420.782	25185.568	-23.287	3420.786	-25185.568	23.287	0.000%
14	-3420.782	25185.568	-23.287	3420.786	-25185.568	23.287	0.000%
15	3163.406	-19412.893	-2965.737	-3163.406	19412.893	2966.383	0.000%
16	3163.406	-19412.893	-2965.737	-3163.406	19412.893	2966.383	0.000%
17	-3139.709	-31.030	2386.556	3139.709	-2386.556	-31.030	0.000%
18	-3139.708	-19412.893	-31.030	3139.709	19412.893	31.030	0.000%

Non-Linear Convergence Results

tnxTower		Job		Page 8 of 10	
Tower Engineering Professionals 336 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 Fax: (919) 661-6350		MEDIAN POINT (COL06032)		Date 16:24:21 05/16/24	
Project		340423.957317		Designed by RAD	
Client		Smartlink LLC		RAD	

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	4	0.0000001	0.00071924
3	Yes	4	0.0000001	0.00027385
4	Yes	5	0.0000001	0.00016108
5	Yes	5	0.0000001	0.00007896
6	Yes	4	0.0000001	0.00068717
7	Yes	4	0.0000001	0.00024278
8	Yes	5	0.0000001	0.00016647
9	Yes	5	0.0000001	0.00068163
10	Yes	5	0.0000001	0.00016116
11	Yes	5	0.0000001	0.0007584
12	Yes	5	0.0000001	0.00068234
13	Yes	5	0.0000001	0.0007337
14	Yes	5	0.0000001	0.00068247
15	Yes	4	0.0000001	0.00049769
16	Yes	4	0.0000001	0.00025070
17	Yes	4	0.0000001	0.00044121
18	Yes	4	0.0000001	0.00025413

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft.	Horz. Deflection in.	Gov. Load Comb.	Tilt °	Twist °
L1	151 - 100.25	24.478	18	1.580	0.021
L2	104 - 50.5	10.920	18	1.050	0.005
L3	55.25 - 2	2.883	18	0.504	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft.	Appearance	Gov. Load Comb.	Deflection in.	Tilt °	Twist °	Radius of Curvature ft.
151.000	Low Profile Platform	18	24.478	1.580	0.021	34.44
145.700	(2) 2.9" x 10" Pipe	18	21.817	1.521	0.019	32871
140.400	(2) 2.9" x 10" Pipe	18	21.165	1.461	0.017	16435
135.100	(2) 2.9" x 10" Pipe	18	19.534	1.402	0.015	10957
129.800	(2) 2.9" x 10" Pipe	18	17.954	1.342	0.013	8217
124.500	(2) 2.9" x 10" Pipe	18	16.375	1.283	0.011	6573
119.200	(2) 2.9" x 10" Pipe	18	14.867	1.223	0.009	5477
113.900	(2) 2.9" x 10" Pipe	18	13.421	1.163	0.008	4695
108.600	(2) 2.9" x 10" Pipe	18	12.047	1.102	0.006	4108
103.300	(2) 2.9" x 10" Pipe	18	10.755	1.042	0.005	3770
98.000	(2) 2.9" x 10" Pipe	18	9.552	0.981	0.004	3815
40.500	VHLPX4-11W-6GR	18	1.679	0.356	0.001	6886

Maximum Tower Deflections - Design Wind

tnxTower		Job		MEDIAN POINT (COL06032)		Page	
Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6331 FAX: (919) 661-6330		Project		340423.957317		9 of 10	
Client		Smartlink LLC		Date		16:24:21 05/16/24	
Designed by		RAD		Designed by		RAD	

Section No.	Elevation	Horc. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	"
L1	151 - 100.25	81.742	4	5.281	0.070
L2	104 - 50.5	36.473	4	3.509	0.018
L3	55.25 - 2	9.628	4	1.684	0.006

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appearance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
151,000	Low Profile Platform	4	81.742	5.281	0.070	10551
145,700	(2) 2.9" x 10" Pipe	4	76.194	5.083	0.063	9954
140,400	(2) 2.9" x 10" Pipe	4	70.680	4.884	0.056	4876
135,100	(2) 2.9" x 10" Pipe	4	65.235	4.686	0.049	3316
129,800	(2) 2.9" x 10" Pipe	4	59.892	4.487	0.043	2486
124,500	(2) 2.9" x 10" Pipe	4	54.687	4.287	0.037	1988
119,200	(2) 2.9" x 10" Pipe	4	49.653	4.087	0.031	1655
113,900	(2) 2.9" x 10" Pipe	4	44.824	3.886	0.026	1418
108,600	(2) 2.9" x 10" Pipe	4	40.235	3.684	0.021	1239
103,300	(2) 2.9" x 10" Pipe	4	35.920	3.482	0.017	1136
98,000	(2) 2.9" x 10" Pipe	4	31.903	3.278	0.014	1149
40,500	VHL-PX4-11W-AGR	4	5.608	1.188	0.005	2002

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	T _w	Kilr	A	P _w	φP _w	Ratio
	ft		ft	ft	in ²	lb	lb	lb	φP _w
L1	151 - 100.25	TP26.15x18x0.188	50.750	0.000	0.0	15.092	-6218.080	882914.000	0.007
L2	100.25 - 50.5	TP33.76x25.173x0.313	51.500	0.000	0.0	32.419	-12618.100	1896540.000	0.007
L3	50.5 - 2 (3)	TP40.91x32.373x0.375	51.250	0.000	0.0	48.247	-23288.100	2822440.000	0.008

Pole Bending Design Data

Section No.	Elevation	Size	M _w	φM _w	Ratio	M _{wy}	φM _{wy}	Ratio
	ft		lb-ft	lb-ft	lb-ft	lb-ft	lb-ft	lb-ft
L1	151 - 100.25	TP26.15x18x0.188	245465.833	526055.833	0.467	0.000	526055.833	0.000
L2	100.25 - 50.5	TP33.76x25.173x0.313	597554.167	1577508.333	0.379	0.000	1577508.333	0.000
L3	50.5 - 2 (3)	TP40.91x32.373x0.375	1104000.000	2886175.000	0.383	0.000	2886175.000	0.000

tnxTower		Job		MEDIAN POINT (COL06032)		Page	
Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6331 FAX: (919) 661-6330		Project		340423.957317		10 of 10	
Client		Smartlink LLC		Date		16:24:21 05/16/24	
Designed by		RAD		Designed by		RAD	

Pole Shear Design Data

Section No.	Elevation	Size	Actual V _w	φV _w	Ratio	Actual T _w	φT _w	Ratio
	ft		lb	lb	lb-ft	lb-ft	lb-ft	lb-ft
L1	151 - 100.25	TP26.15x18x0.188	6169.550	264874.000	0.023	2064.508	588265.833	0.004
L2	100.25 - 50.5	TP33.76x25.173x0.313	8241.180	568962.000	0.014	1986.850	1628591.667	0.001
L3	50.5 - 2 (3)	TP40.91x32.373x0.375	10492.700	846731.000	0.012	2173.633	3005766.667	0.001

Pole Interaction Design Data

Section No.	Elevation	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio	Ratio	Allow. Stress Ratio	Criteria
	ft	φP _w	φM _w	φV _w	φT _w	φP _w	φM _w	φV _w	φT _w	
L1	151 - 100.25	0.007	0.467	0.000	0.023	0.004	0.474	0.000	1.050	
L2	100.25 - 50.5	0.007	0.379	0.000	0.014	0.001	0.386	0.000	1.050	
L3	50.5 - 2 (3)	0.008	0.383	0.000	0.012	0.001	0.391	0.000	1.050	

Section Capacity Table

Section No.	Elevation	Component Type	Size	Critical Element	P	φP _{allow}	% Capacity	Pass/Fail
	ft				lb	lb		
L1	151 - 100.25	Pole	TP26.15x18x0.188	1	-6218.080	927059.688	45.2	Pass
L2	100.25 - 50.5	Pole	TP33.76x25.173x0.313	2	-12618.100	1991366.87	36.7	Pass
L3	50.5 - 2	Pole	TP40.91x32.373x0.375	3	-23288.100	2965561.75	37.2	Pass

Summary
Pole (L1) 45.2
Pole (L2) 36.7
Pole (L3) 37.2
RATING = 45.2

Program Version 8.2.4.3

APPENDIX B
ADDITIONAL CALCULATIONS

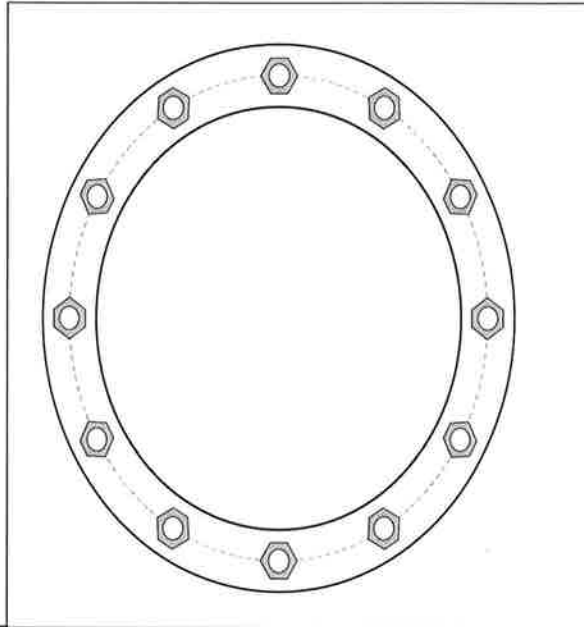
Monopole Base Plate Connection

Site Info	
Site #	COL06032
Site Name	MEDIAN POINT
TEP #	340423.957317

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	1104.00
Axial Force (kips)	23.29
Shear Force (kips)	10.49

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data	
(12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 47" BC	

Base Plate Data	
53" OD x 2.5" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi)	

Stiffener Data	
N/A	

Pole Data	
40.91" x 0.375" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)	

Anchor Rod Summary		(units of kips, kip-in)
$Pu_t = 91.93$	$\phi Pn_t = 243.75$	Stress Rating
$Vu = 0.87$	$\phi Vn = 149.1$	35.9%
$Mu = n/a$	$\phi Mn = n/a$	Pass

Base Plate Summary		
Max Stress (ksi):	11.5	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	24.3%	Pass

May 17, 2024

Jason Skaggs
Smartlink, LLC
10 Church Circle
Annapolis, MD 21401
(510) 778-2166



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
Structures@tepgroup.net

Subject: Appurtenance Mount Analysis

Carrier Designation: AT&T Mobility Reconfiguration

Site Number: COL06032
Site Name: Median Point
FA Location Code: 10114750

Engineering Firm Designation: TEP Project Number: 340423.957324

Site Data: 24860 Highway 115, Penrose, Fremont County, CO 81240
Latitude 38° 31' 42.80", Longitude -104° 58' 08.16"
151.0± Foot - Monopole Tower
151.0 Foot Mount Height - Platform

Dear Jason Skaggs,

Tower Engineering Professionals is pleased to submit this "Appurtenance Mount Analysis" to determine the structural integrity of the antenna mount on the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount structure, under the following load case, to be:

LC1: Existing + Proposed + Reserved Loading

Sufficient Capacity

Note: See Table 2 for the existing, proposed, and reserved loading

Mount Capacity
99.5%

The analysis has been performed in accordance with the ANSI/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas, and Small Wind Turbine Support Structures, the 2018 International Building Code, and the AT&T Mount Technical Guidance – Revision 22.

All equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 2 for the determined available structural capacity to be effective.

We at Tower Engineering Professionals appreciate the opportunity of providing our continuing professional services to you and Smartlink, LLC. If you have any questions or need further assistance on this or any other projects, please give us a call.

Respectfully submitted by:

Aaron T. Rucker, P.E.



05/17/2024

ANALYSIS CRITERIA

Table 1 - Mount Analysis Parameters

Ultimate Wind Speed (MPH)	Ice Thickness (in)	Ice Wind Speed (MPH)	Exposure Category	Risk Category	Topo Procedure	Kzt	Seismic Design Category	Maintenance Loads
106	0.25	50	C	II	Method 1	1.0	B	Lm = 250 lbs Lv = 250 lbs

Table 2 - Existing, Proposed, and Reserved Antenna Loading Configuration

Existing/Proposed/Reserved	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Owner/Tenant
Proposed	151.0	151.0	2	CCI TPA65R-BU8DA-K	Platform Mount	AT&T
			2	Ericsson 4490 B5/B12A		
			2	Ericsson 4890 B25/B66		
			2	Ericsson 4478 B14		
Existing	151.0	151.0	2	Commscope TPA65R-BU8DA-K	-	AT&T
			2	Raycap DC6-48-60-18-8F		
To Be Removed	151.0	151.0	2	Nokia AHCA	-	AT&T
			2	Nokia AHLBA		
			2	Nokia AHFIB		

ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

Notes	Component	% Capacity	Pass / Fail
-	Face Horizontals	99.5	Pass
-	Support Arms	19.9	Pass
-	Bottom Connection Plates	30.4	Pass
-	Internals	20.4	Pass
-	Mount Pipes	25.0	Pass
1	Connection Bolts	15.2	Pass
1	Connection Plates	59.9	Pass

Structure Rating (max from all components) =	99.5%
---	--------------

Notes:

- See additional documentation in "Appendix B - Additional Calculations" for calculations supporting the % capacity listed.

Table 4 - TARP Mount Specification

RAD Center	Number of Loaded Mount Pipes / Sector	Allowable EPA per Pipe ¹ (ft ²)	Allowable Weight per Pipe ¹ (lbf)
151.0	5	-	-

Notes:

- This allowable value is an average of the loaded mount pipes per sector.

Table 5 - Documents Provided

Document	Remarks	Source
Previous Mount Analysis	Infinigy, dated November 11, 2019 Infinigy Job No. 4078-A0001-B	Smartlink
Correspondence	Correspondence from Smartlink in reference to the existing, proposed, and reserved loading.	Smartlink

RECOMMENDATIONS

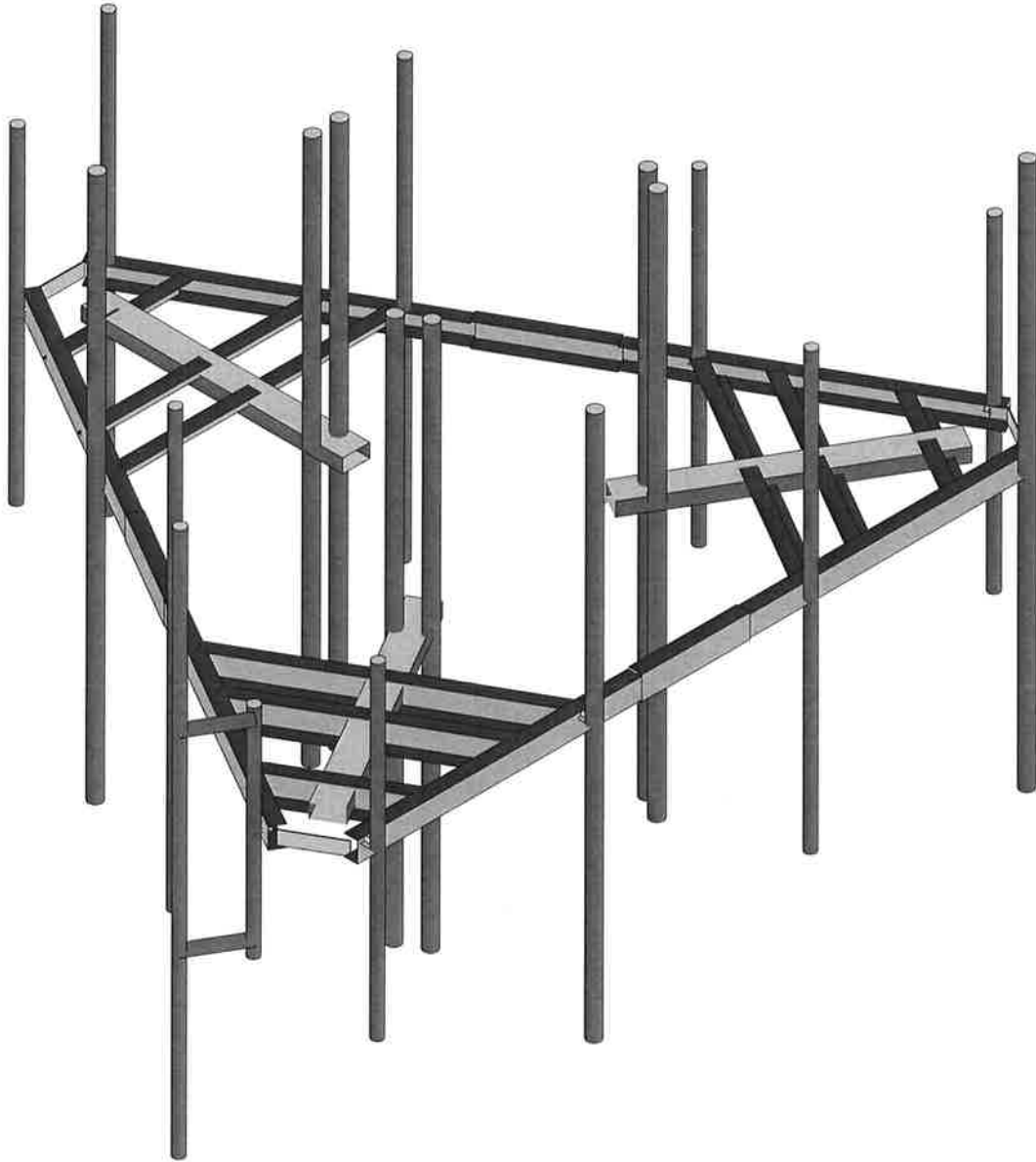
- 1) If the load differs from that described in Table 2 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) The modification of the existing structure could not be completed with existing approved AT&T item master part numbers. Our custom solution is required to complete the project up to AT&T and current jurisdictional standards.
- 3) The proposed mount has sufficient capacity to carry the existing, proposed, and reserved loading. In order for the results of this analysis to be valid, the mount listed below must be installed:
 - a) (1) Kenwood T1309MT12-120 12" Stand-off Bracket (CONMAT No. ANT.56788)
 - b) (9) SitePro P30120 Mount Pipe kits (CONMAT Item No. ANT.16008)
 - c) (6) UB1300 3" U-Bolts (Non-CONMAT Part)
 - d) (2) UB1212 2-1/2" U-Bolts (Non-CONMAT Part)
 - e) (3) SitePro BBPM-K2 Crossover kits (NON-CONMAT Part).

ANALYSIS ASSUMPTIONS

- 1) The mount was built in accordance with the manufacturer's specifications.
- 2) The mount has been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Table 2. All mount components have been assumed to be in sufficient condition to carry their full design capacity for this analysis. Refer to the issued mapping for any structural and/or maintenance issues found during our site visit.
- 4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 5) TEP did not analyze the collar mount connection to the pole and assumes it to have sufficient structural capacity to transfer the applied forces from the mount to the tower.
- 6) All material grades used for this analysis, unless verified by mount manufacturer design, were assumed per AISC Table 2-4, 15th Edition. See RISA 3-D output for confirmation on grades used in this analysis.
- 7) Existing mount geometry and existing loading are based solely on documents provided in Table 5. TEP assumed that the information interpreted in these documents was accurate.

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the mount.

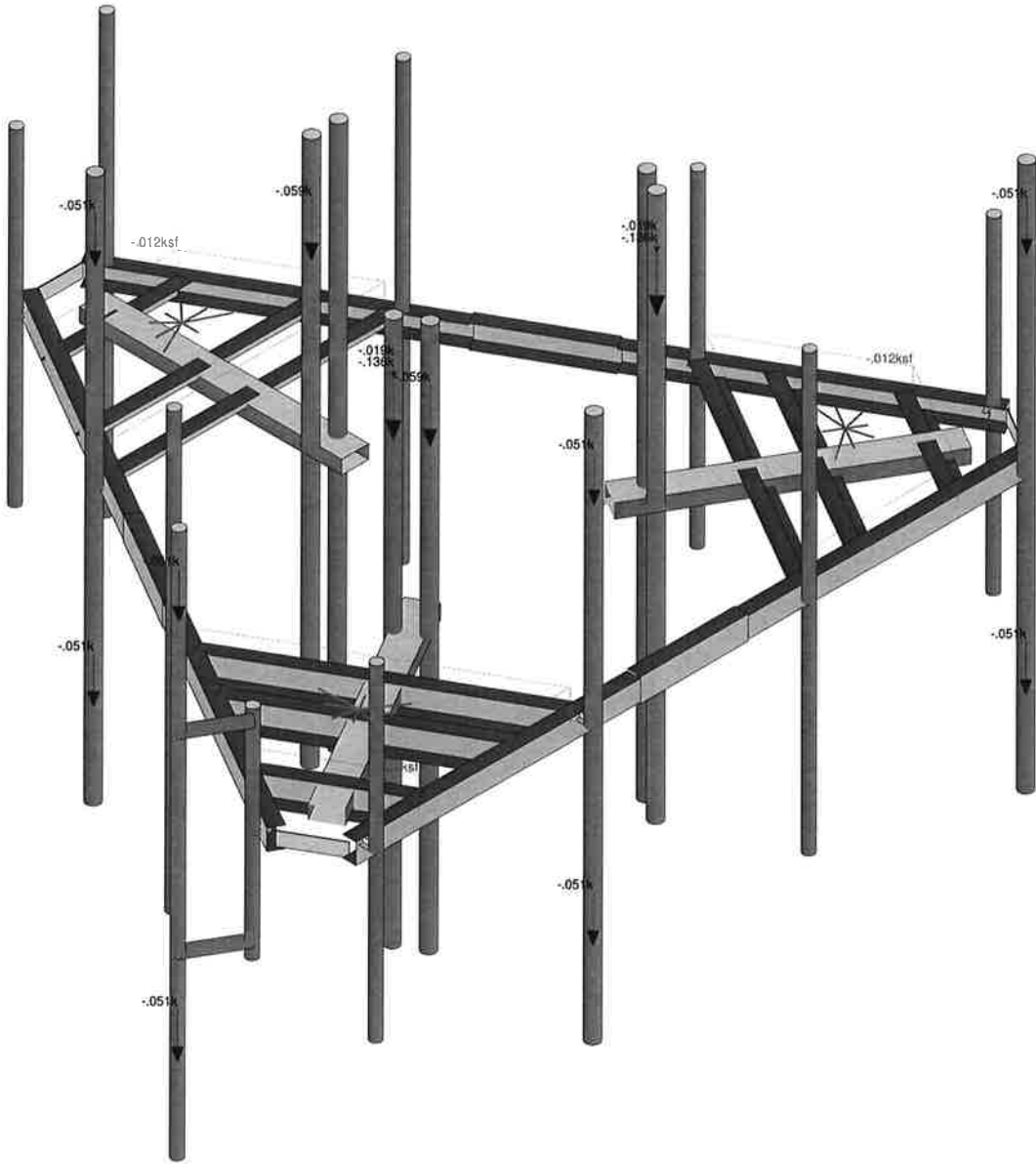
APPENDIX A
RISA-3D OUTPUT



Tower Engineering Profes...
GK
TEP No. 340423.957324

Median Point (10114750)

SK - 1
May 17, 2024 at 12:07 PM
Mount (3).r3d

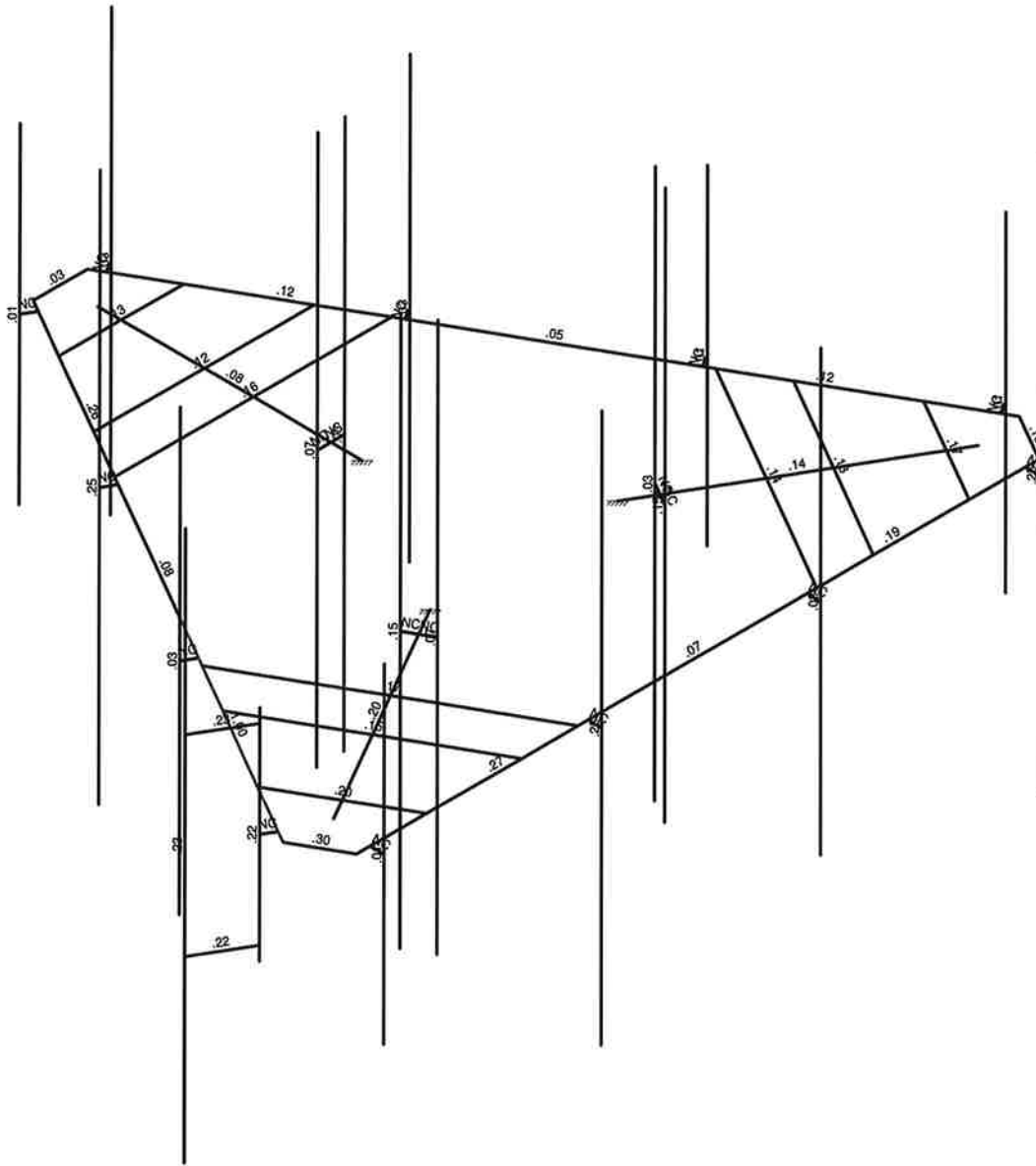
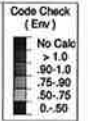


Loads: BLC 1, Dead

Tower Engineering Profes...
GK
TEP No. 340423.957324

Median Point (10114750)

SK - 2
May 17, 2024 at 12:08 PM
Mount (3).r3d

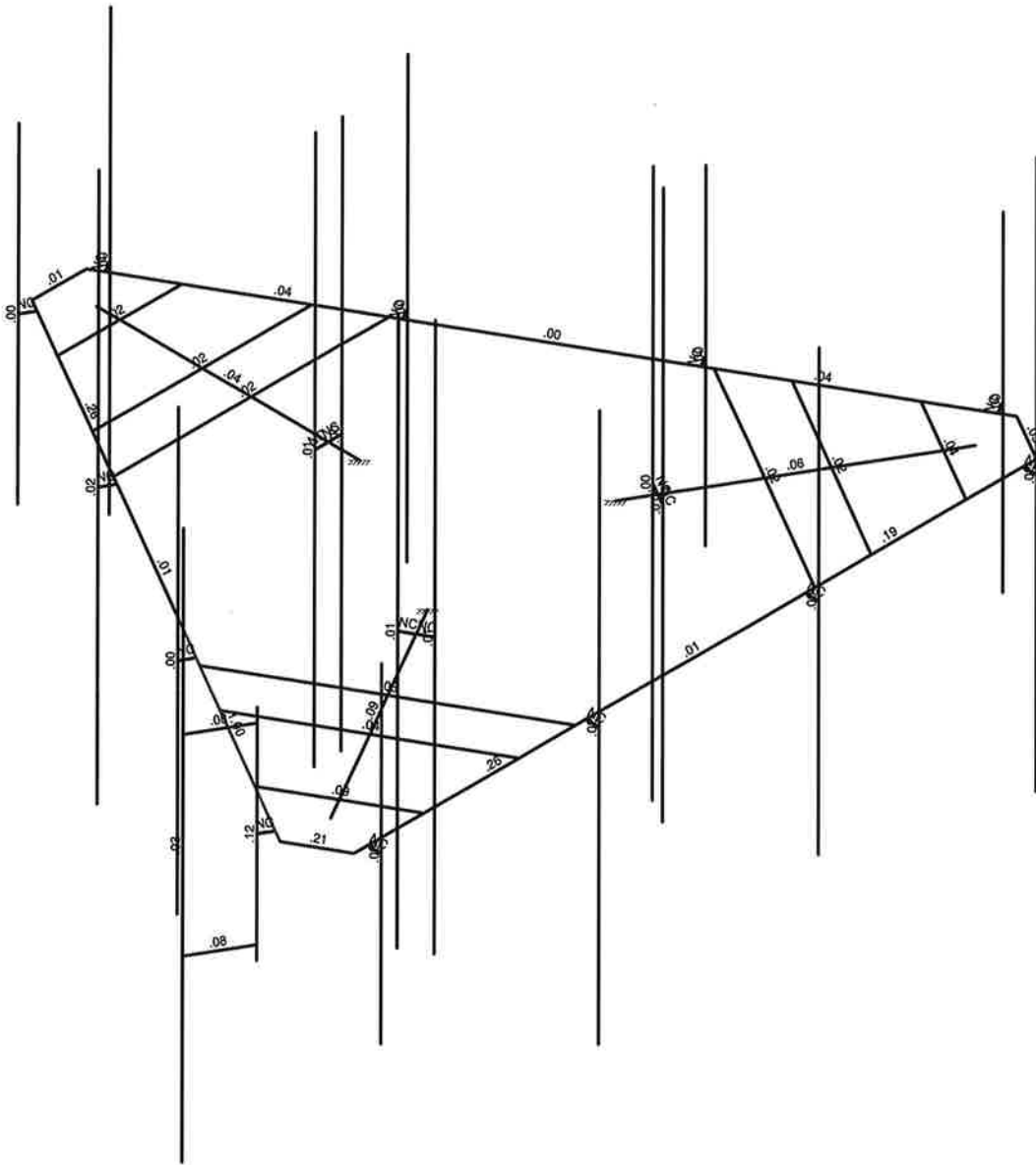
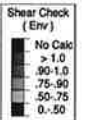


Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.4D

Tower Engineering Profes...
GK
TEP No. 340423.957324

Median Point (10114750)

SK - 3
May 17, 2024 at 12:09 PM
Mount (3).r3d



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.4D

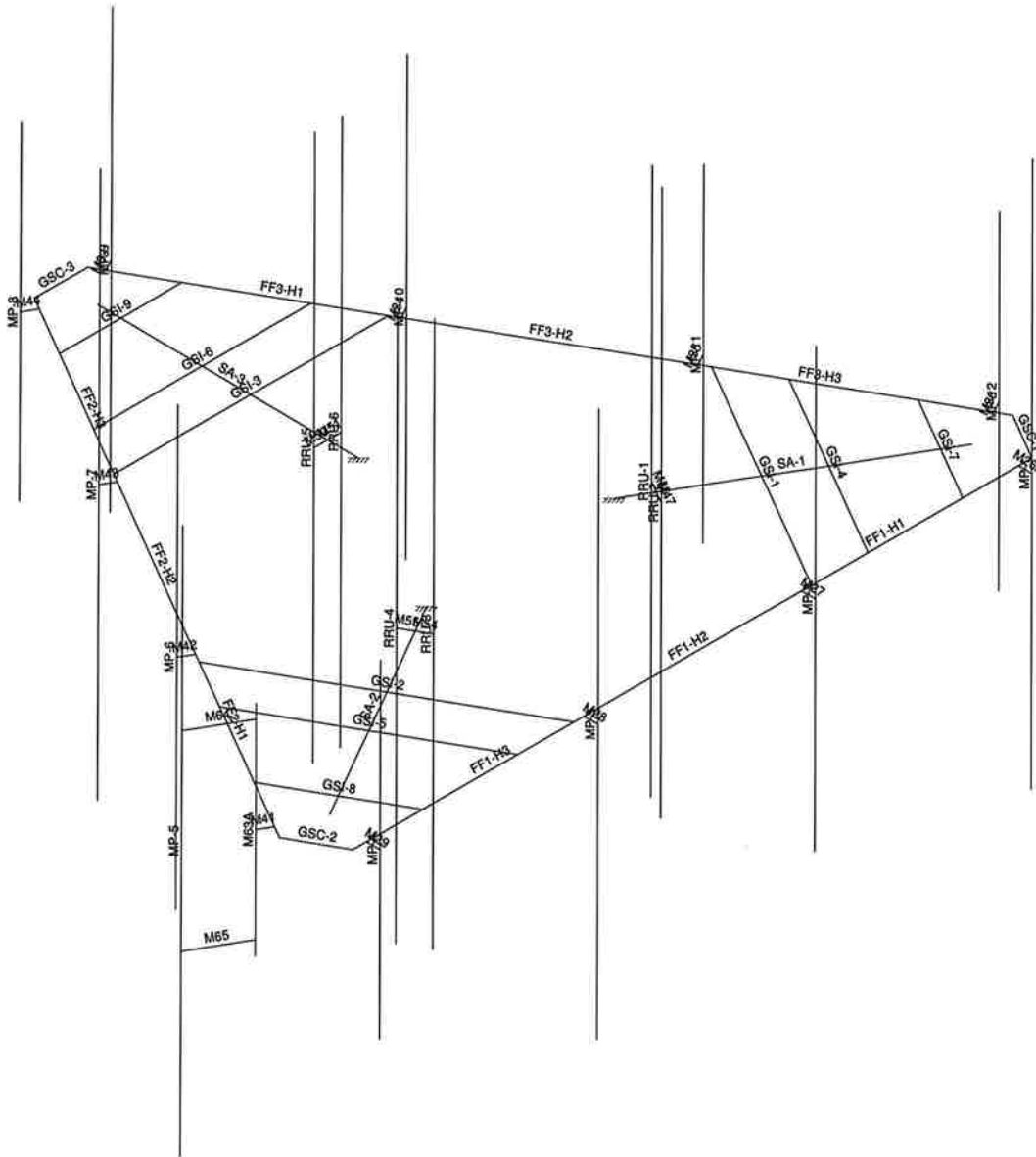
Tower Engineering Profes...
GK
TEP No. 340423.957324

Median Point (10114750)

SK - 4

May 17, 2024 at 12:09 PM

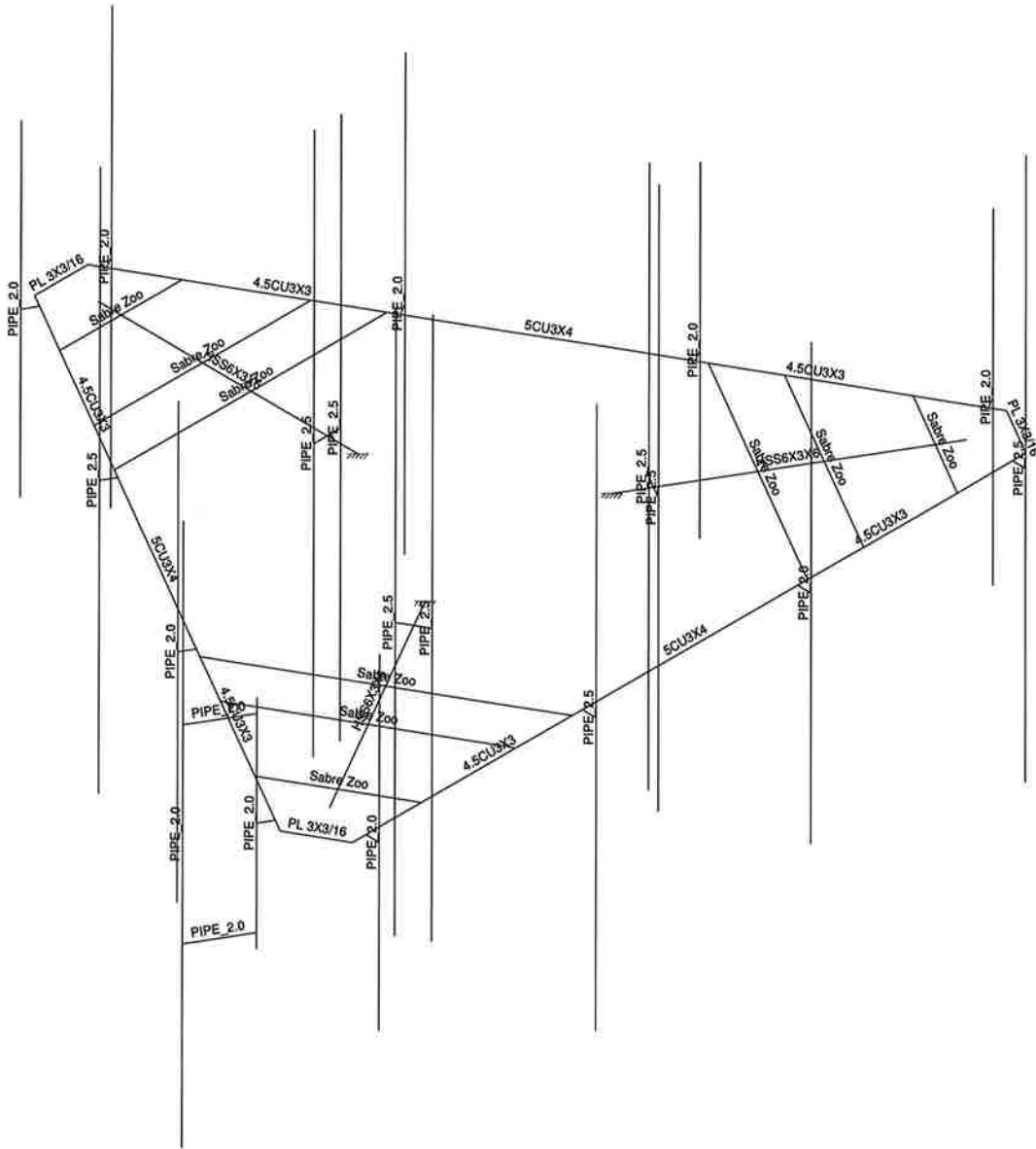
Mount (3).r3d



Tower Engineering Profes...
GK
TEP No. 340423.957324

Median Point (10114750)

SK - 5
May 17, 2024 at 12:09 PM
Mount (3).r3d



Tower Engineering Profes...
GK
TEP No. 340423.957324

Median Point (10114750)

SK - 6
May 17, 2024 at 12:09 PM
Mount (3).r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load B/wm Intersecting Wood Wall?	Yes
Area Load Mesh (in ²)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec ²)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E.)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	No
RISAC-Connection Code	None
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Plume Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR SET ASTM A615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings. Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
TL (sec)	1
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

Label	E (ksi)	G (ksi)	Nu	Therm (1.E., Density/ft ³ ...)	Yield(ksi)	Ry	F _u (ksi)	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1
4	A500 Gr. B RND	29000	11154	.3	.65	.527	42	1.4
5	A500 Gr. B Rect	29000	11154	.3	.65	.527	46	1.4
6	A53 Gr. B	29000	11154	.3	.65	.49	35	1.6
7	A1085	29000	11154	.3	.65	.49	50	1.4

Hot Rolled Steel Section Sets

Label	Shape	Type	Design Li...	Material	Design R...	A [in2]	Iy [in4]	Izz [in4]	J [in4]
1	Mount Pipe 2.0	Pipe 2.0	None	None	Typical	1.02	627	627	1.95
2	Grate Support	C3x1 5x3/16	None	A53 Gr. B	Typical	1.055	.22	1.357	.012
3	Mount Pipe 2.5	PIPE 2.5	None	A36 Gr. B	Typical	1.61	1.45	1.45	2.89
4	Handrail Connection	PL4.75x.375	None	A36 Gr.36	Typical	1.781	.021	3.349	.079
5	Support Arms	HSS6X3X6	None	A500 Gr. B Rect	Typical	5.48	7.48	22.7	19.3
6	Bottom Connection	PL 3X3/16	None	A36 Gr.36	Typical	.563	.002	.422	.006

Cold Formed Steel Section Sets

Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iy [in4]	Izz [in4]	J [in4]
1	Grating Infr...	Sabre Zoo	Beam	None	Typical	1.761	3.069	4.781	.021
2	Main Horiz...	4.5CU3X3	Beam	A36	Typical	1.843	1.702	6.051	.022
3	Middle Horiz...	5CU3X4	Beam	A36	Typical	2.549	2.272	10.277	.053

Material Takeoff

Material General	Size	Pieces	Length[ft]	Weight[KG]
1	RIGID	18	4.5	0
2	Total General	18	4.5	0
3	Hot Rolled Steel			
4	PI 3X3/16	3	3	0
5	A36 Gr.36	12	72	2
6	PIPE 2.0	9	90	5
7	A53 Gr.B	3	14.5	3
8	PIPE 2.5	27	179.5	1
9	A500 Gr.B Rect			
10	HSS6X3X6	6	31.5	2
11	Total HR Steel	3	6	0
12	Cold Formed Steel			
13	A36	3	34	2
14	5CU3X4	9	34	2
15	A36	18	71.5	3
16	Total CF Steel			

Joint Boundary Conditions

Joint Label	X [ft/in]	Y [ft/in]	Z [ft/in]	X Rot [ft/in/rad]	Y Rot [ft/in/rad]	Z Rot [ft/in/rad]
1	SA3	Reaction	Reaction	Reaction	Reaction	Reaction
2	M09B	Reaction	Reaction	Reaction	Reaction	Reaction
3	N59A	Reaction	Reaction	Reaction	Reaction	Reaction
4	N71	Reaction	Reaction	Reaction	Reaction	Reaction
5	N101	Reaction	Reaction	Reaction	Reaction	Reaction
6	N104	Reaction	Reaction	Reaction	Reaction	Reaction
7	N107	Reaction	Reaction	Reaction	Reaction	Reaction
8	N60B	Reaction	Reaction	Reaction	Reaction	Reaction
9	N63A	Reaction	Reaction	Reaction	Reaction	Reaction
10	N64C	Reaction	Reaction	Reaction	Reaction	Reaction
11	N68	Reaction	Reaction	Reaction	Reaction	Reaction
12	N72B	Reaction	Reaction	Reaction	Reaction	Reaction
13	N74	Reaction	Reaction	Reaction	Reaction	Reaction
14	N81	Reaction	Reaction	Reaction	Reaction	Reaction
15	N85	Reaction	Reaction	Reaction	Reaction	Reaction
16	N88	Reaction	Reaction	Reaction	Reaction	Reaction
17	N91	Reaction	Reaction	Reaction	Reaction	Reaction
18	N98A	Reaction	Reaction	Reaction	Reaction	Reaction
19	N99A	Reaction	Reaction	Reaction	Reaction	Reaction
20	N100	Reaction	Reaction	Reaction	Reaction	Reaction
21	N101A	Reaction	Reaction	Reaction	Reaction	Reaction
22	N102	Reaction	Reaction	Reaction	Reaction	Reaction
23	N103	Reaction	Reaction	Reaction	Reaction	Reaction
24	N106	Reaction	Reaction	Reaction	Reaction	Reaction
25	N107A	Reaction	Reaction	Reaction	Reaction	Reaction
26	N108	Reaction	Reaction	Reaction	Reaction	Reaction
27	N109	Reaction	Reaction	Reaction	Reaction	Reaction
28	N110	Reaction	Reaction	Reaction	Reaction	Reaction
29	N111	Reaction	Reaction	Reaction	Reaction	Reaction
30	N114	Reaction	Reaction	Reaction	Reaction	Reaction
31	N115	Reaction	Reaction	Reaction	Reaction	Reaction
32	N116	Reaction	Reaction	Reaction	Reaction	Reaction
33	N117	Reaction	Reaction	Reaction	Reaction	Reaction
34	N118	Reaction	Reaction	Reaction	Reaction	Reaction
35	N119	Reaction	Reaction	Reaction	Reaction	Reaction

Joint Boundary Conditions (Continued)

Joint Label	X [ft/in]	Y [ft/in]	Z [ft/in]	X Rot [ft/in/rad]	Y Rot [ft/in/rad]	Z Rot [ft/in/rad]
36	N120A					
37	N122					
38	N124					
39	N126					
40	N127					

Member Primary Data

Label	I-Joint	J-Joint	K-Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	GSC-1	N45	FF2		Bottom Conne.	None	None	A36 Gr.36	Typical
2	GSC-2	FE1	N35		Bottom Conne.	None	None	A36 Gr.36	Typical
3	GSC-3	N34	N45		Bottom Conne.	None	None	A36 Gr.36	Typical
4	GS1-1	N47A	N48A		Grating Internal	Bearm	None	A36	Typical
5	GS1-2	N60A	N61A		Grating Internal	Bearm	None	A36	Typical
6	GS1-3	N40A	N41		Grating Internal	Bearm	None	A36	Typical
7	GS1-4	N49	N50		Grating Internal	Bearm	None	A36	Typical
8	GS1-5	N62A	N63		Grating Internal	Bearm	None	A36	Typical
9	GS1-6	N42	N43A		Grating Internal	Bearm	None	A36	Typical
10	GS1-7	N51A	N52A		Grating Internal	Bearm	None	A36	Typical
11	GS1-8	N64	N65		Grating Internal	Bearm	None	A36	Typical
12	GS1-9	N44	N45A		Grating Internal	Bearm	None	A36	Typical
13	FE1-H2	N113	N112	180	Middle Horiz.	Bearm	None	A36	Typical
14	FE1-H3	FF1	N113	180	Main Horizontal	Bearm	None	A36	Typical
15	FF1-H1	N112	FF2	180	Main Horizontal	Bearm	None	A36	Typical
16	FF3-H2	N116A	N115A	180	Middle Horiz.	Bearm	None	A36	Typical
17	FF3-H3	N45	N116A	180	Main Horizontal	Bearm	None	A36	Typical
18	FF2-H1	N115A	N46	180	Main Horizontal	Bearm	None	A36	Typical
19	FF2-H2	N119A	N118A	180	Middle Horiz.	Bearm	None	A36	Typical
20	FF2-H3	N34	N119A	180	Main Horizontal	Bearm	None	A36	Typical
21	FF2-H1	N118A	N35	180	Main Horizontal	Bearm	None	A36	Typical
22	MP-2	N71	N72		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
23	MP-4	N63A	N64A		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
24	MP-10	N68	N69		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
25	MP-11	N72B	N73A		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
26	MP-12	N74	N75		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
27	MP-9	N81	N82		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
28	MP-6	N85	N86		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
29	MP-8	N91	N92		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
30	M63A	N120A	N121A		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
31	M64	N122	N124		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
32	M65	N123	N125		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
33	MP-3	N60B	N61B		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
34	MP-1	N64C	N65B		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
35	MP-7	N89	N90		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
36	RRU-2	N100	N102		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
37	RRU-1	N101A	N103		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
38	RRU-6	N108	N110		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
39	RRU-5	N109	N111		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
40	RRU-4	N116	N118		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
41	RRU-3	N117	N119		Mount Pipe 2.5	None	None	A53 Gr.B	Typical
42	MP-5	N126	N127		Mount Pipe 2.0	None	None	A53 Gr.B	Typical
43	M26A	N60	N62B		RIGID	None	None	RIGID	Typical
44	M27	N70	N63B		RIGID	None	None	RIGID	Typical
45	M28	N59	N64B		RIGID	None	None	RIGID	Typical
46	M29	N61C	N65A		RIGID	None	None	RIGID	Typical
47	M33	N66	N77		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

Label	J.Joint	K.Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
48	M34	N67	N78	RIGID	None	None	RIGID	Typical
49	M35	N71A	N79	RIGID	None	None	RIGID	Typical
50	M36	N76	N80	RIGID	None	None	RIGID	Typical
51	M41	N83	N84	RIGID	None	None	RIGID	Typical
52	M42	N84	N85	RIGID	None	None	RIGID	Typical
53	M43	N88	N96A	RIGID	None	None	RIGID	Typical
54	M44	N93	N97	RIGID	None	None	RIGID	Typical
55	M46	N99A	N104	RIGID	None	None	RIGID	Typical
56	M47	N104	N98A	RIGID	None	None	RIGID	Typical
57	M50	N107A	N101	RIGID	None	None	RIGID	Typical
58	M51	N101	N106	RIGID	None	None	RIGID	Typical
59	M54	N115	N107	RIGID	None	None	RIGID	Typical
60	M55	N107	N114	RIGID	None	None	RIGID	Typical
61	SA-1	N40B	N41A	Support Arms	None	None	A500 Gr.B Rect	Typical
62	SA-2	N53A	N54A	Support Arms	None	None	A500 Gr.B Rect	Typical
63	SA-3	SA3	SA6	Support Arms	None	None	A500 Gr.B Rect	Typical

Member Advanced Data

Label	I.Release	J.Release	K.Release	J.Offset(in)	J.Offset(ft)	T/C Only	Physical	Defl Ratio Options	Analysis...	Inactive	Seismi...
1	GSC-1						Yes	** NA **			None
2	GSC-2						Yes	** NA **			None
3	GSC-3						Yes	** NA **			None
4	GSI-1						Yes				None
5	GSI-2						Yes				None
6	GSI-3						Yes				None
7	GSI-4						Yes				None
8	GSI-5						Yes				None
9	GSI-6						Yes				None
10	GSI-7						Yes				None
11	GSI-8						Yes				None
12	GSI-9						Yes				None
13	FE1-H2						Yes				None
14	FE1-H3						Yes				None
15	FE1-H1						Yes				None
16	FE2-H2						Yes				None
17	FE2-H3						Yes				None
18	FE2-H1						Yes				None
19	FE2-H2						Yes				None
20	FE2-H3						Yes				None
21	FE2-H1						Yes				None
22	MP-2						Yes	** NA **			None
23	MP-4						Yes	** NA **			None
24	MP-10						Yes	** NA **			None
25	MP-11						Yes	** NA **			None
26	MP-12						Yes	** NA **			None
27	MP-9						Yes	** NA **			None
28	MP-6						Yes	** NA **			None
29	MP-8						Yes	** NA **			None
30	M63A						Yes	** NA **			None
31	M64						Yes	** NA **			None
32	M65						Yes	** NA **			None
33	MP-3						Yes	** NA **			None
34	MP-1						Yes	** NA **			None
35	MP-7						Yes	** NA **			None
36	RRU-2						Yes	** NA **			None

Member Advanced Data (Continued)

Label	I.Release	J.Release	K.Release	J.Offset(in)	J.Offset(ft)	T/C Only	Physical	Defl Ratio Options	Analysis...	Inactive	Seismi...
37	RRU-1						Yes	** NA **			None
38	RRU-6						Yes	** NA **			None
39	RRU-4						Yes	** NA **			None
40	RRU-5						Yes	** NA **			None
41	RRU-3						Yes	** NA **			None
42	MP-5						Yes	** NA **			None
43	M26A						Yes	** NA **			None
44	M27						Yes	** NA **			None
45	M28						Yes	** NA **			None
46	M29						Yes	** NA **			None
47	M33						Yes	** NA **			None
48	M34						Yes	** NA **			None
49	M35						Yes	** NA **			None
50	M36						Yes	** NA **			None
51	M41						Yes	** NA **			None
52	M42						Yes	** NA **			None
53	M43						Yes	** NA **			None
54	M44						Yes	** NA **			None
55	M45						Yes	** NA **			None
56	M47						Yes	** NA **			None
57	M50						Yes	** NA **			None
58	M51						Yes	** NA **			None
59	M54						Yes	** NA **			None
60	M55						Yes	** NA **			None
61	SA-1						Yes	** NA **			None
62	SA-2						Yes	** NA **			None
63	SA-3						Yes	** NA **			None

Hot Rolled Steel Design Parameters

Label	Shape	Length(ft)	Loyz(ft)	Lxozz(ft)	Lcomp top(ft)	Lcomp bot(ft)	L-torq...	Kyy	Kzz	Ch	Function
1	GSC-1	Bottom Con...	987					1	1	1	Lateral
2	GSC-2	Bottom Con...	987					1	1	1	Lateral
3	GSC-3	Bottom Con...	987					1	1	1	Lateral
4	MP-2	Mount Pipe	8	Segment	Segment			2.1	2.1	2.1	Lateral
5	MP-4	Mount Pipe	8	Segment	Segment			2.1	2.1	2.1	Lateral
6	MP-10	Mount Pipe	6	Segment	Segment			2.1	2.1	2.1	Lateral
7	MP-11	Mount Pipe	6	Segment	Segment			2.1	2.1	2.1	Lateral
8	MP-9	Mount Pipe	6	Segment	Segment			2.1	2.1	2.1	Lateral
9	MP-6	Mount Pipe	6	Segment	Segment			2.1	2.1	2.1	Lateral
10	MP-8	Mount Pipe	6	Segment	Segment			2.1	2.1	2.1	Lateral
11	MP-5	Mount Pipe	6	Segment	Segment			2.1	2.1	2.1	Lateral
12	M63A	Mount Pipe	4	Segment	Segment			2.1	2.1	2.1	Lateral
13	M64	Mount Pipe	1	Segment	Segment			.65	.65	.65	Lateral
14	M65	Mount Pipe	1	Segment	Segment			.65	.65	.65	Lateral
15	MP-3	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
16	MP-1	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
17	MP-7	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
18	RRU-2	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
19	RRU-1	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
20	RRU-6	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
21	RRU-5	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
22	RRU-4	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
23	RRU-3	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
24	MP-5	Mount Pipe	10	Segment	Segment			2.1	2.1	2.1	Lateral
25	SA-1	Support Arms	4.83					2.1	2.1	2.1	Lateral

APPENDIX B
ADDITIONAL CALCULATIONS



Median Point(10114750)

TEP No. 340423.957324
 Analysis By: GK 5/17/2024
 Checked By: RAL 5/17/2024

Code Revisions:	TIA-222-H	IBC 2018
Tower Type:	Monopole	

Wind Inputs:		
Ult. Wind Velocity:	106	mph
Live Load Velocity:	30	mph
Ice Wind Velocity:	50	mph
Base Ice Thickness:	0.25	inches
Mount Centerline:	151.0	ft
Antenna Centerline:	151.0	ft
Exposure Category:	C	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	6315	ft

Wind Calculations:		
K_{zt} :	1.000	Section 2.6.6
K_d :	0.950	
$K_{z-Mount}$:	1.380	Section 2.6.5.2
$K_{z-Antenna}$:	1.380	Section 2.6.5.2
K_{iz} :	1.164	Section 2.6.10
Ice Thickness:	0.247	inches - Section 2.6.10
$K_{es-wind}$:	0.95	Annex S (Table S-1)
K_{es-ice} :	0.85	Annex S (Table S-1)
K_e :	0.796	Table 2-6

Without Ice - (psf)	With Ice - (psf)
$(q_z G_h)_{Mount}$: 28.51	$(q_z G_h)_{Mount}$: 6.68
$(q_z G_h)_{Antenna}$: 28.51	$(q_z G_h)_{Antenna}$: 6.68

Seismic Code Revisions:	TIA-222-H
Seismic Risk Category:	II

Seismic Input		
S_{DS} :	0.239	Design Short Period Spectral Accel.
I_p :	1.0	Importance Factor
R_p :	2.0	Response Modification Factor
ρ :	1.0	
A_s :	1.0	Applification Factor - TIA-222-H Section 2.7.8.1
S_1 :	0.063	Spectral Acceleration at a Period of 1 Second

Seismic Design Force		
C_s :	0.120	kips/kip TIA-H Sec 2.7.7.1.1
C_{s-min} :	0.030	kips/kip TIA-H Sec 2.7.7.1.1



Median Point(10114750)
 340423.957324
 TEK No. 5/17/2024
 Analysis By: GK
 Checked By: RAL 5/17/2024

Antenna Loads are Calculated in Accordance with TIA-222-H
 Azimuth is the absolute angle measured clockwise from RISA-3D global X-axis.

MFR	Model	Height (in)	Width (in)	Depth (in)	Wt. (lbs)	Azimuth*	Qty	Shape	Member Label	Distance from start node of the member		
										Location #1 (ft,%)	Location #2 (ft,%)	Location #3 (ft,%)
CCI ANTENNAS	TPA65R-BU8DA-K	96.00	20.70	7.70	102.10	0.00	1	Flat	MP-1	1.50	8.50	
CCI ANTENNAS	TPA65R-BU8DA-K	96.00	20.70	7.70	102.10	0.00	1	Flat	MP-3	1.50	8.50	
ERICSSON	Radio 4490 B5/B12A	17.50	15.10	6.80	68.00	-150.00	1	Flat	RRU-2	2.00		
ERICSSON	4890 B25/B66	17.50	15.10	6.90	68.00	-150.00	1	Flat	RRU-2	2.00		
ERICSSON	RRUS 4478 B14	18.10	13.40	8.26	59.40	150.00	1	Flat	RRU-3	2.00		
RAYCAP	DC6-48-60-18-8F	22.25	11.00	11.00	18.90	0.00	1	Round	RRU-2	1.00		
CCI ANTENNAS	TPA65R-BU8DA-K	96.00	20.70	7.70	102.10	130.00	1	Flat	MP-5	1.50	8.50	
CCI ANTENNAS	TPA65R-BU8DA-K	96.00	20.70	7.70	102.10	130.00	1	Flat	MP-7	1.50	8.50	
ERICSSON	Radio 4490 B5/B12A	17.50	15.10	6.80	68.00	150.00	1	Flat	RRU-4	2.00		
ERICSSON	4890 B25/B66	17.50	15.10	6.90	68.00	150.00	1	Flat	RRU-4	2.00		
ERICSSON	RRUS 4478 B14	18.10	13.40	8.26	59.40	90.00	1	Flat	RRU-5	2.00		
RAYCAP	DC6-48-60-18-8F	22.25	11.00	11.00	18.90	0.00	1	Round	RRU-4	1.00		



Median Point(10114750)

TEP No. 340423.957324
 Analysis By: GK 5/17/2024
 Checked By: RAL 5/17/2024

Member Forces are Calculated in Accordance with TIA-222-H

Member Name	Wind Proj. (in)	Length (in)	Shape	θ (°)	Perimeter (in)
GSC-1	3.000	11.85	Flat	-30.00	6.00
GSC-2	3.000	11.85	Flat	30.00	6.00
GSC-3	3.000	11.85	Flat	90.00	6.00
GSI-1	4.063	60.69	Flat	-30.00	16.25
GSI-2	4.063	60.69	Flat	30.00	16.25
GSI-3	4.063	60.69	Flat	90.00	16.25
GSI-4	4.063	48.22	Flat	-30.00	16.25
GSI-5	4.063	48.22	Flat	30.00	16.25
GSI-6	4.063	48.22	Flat	90.00	16.25
GSI-7	4.063	27.23	Flat	-30.00	16.25
GSI-8	4.063	27.23	Flat	30.00	16.25
GSI-9	4.063	27.23	Flat	90.00	16.25
FF1-H2	5.125	24.00	Flat	90.00	21.00
FF1-H3	4.500	63.00	Flat	90.00	21.00
FF1-H1	4.500	63.00	Flat	90.00	21.00
FF3-H2	5.125	24.00	Flat	30.00	21.00
FF3-H3	4.500	63.00	Flat	30.00	21.00
FF3-H1	4.500	63.00	Flat	30.00	21.00
FF2-H2	5.125	24.00	Flat	-30.00	21.00
FF2-H3	4.500	63.00	Flat	-30.00	21.00
FF2-H1	4.500	63.00	Flat	-30.00	21.00
MP-2	2.375	96.00	Round		7.46
MP-4	2.375	72.00	Round		7.46
MP-10	2.375	96.00	Round		7.46
MP-11	2.375	72.00	Round		7.46
MP-12	2.375	72.00	Round		7.46
MP-9	2.375	96.00	Round		7.46
MP-6	2.375	96.00	Round		7.46
MP-8	2.375	72.00	Round		7.46
M63A	2.375	48.00	Round		7.46
M64	2.375	12.00	Round	60.00	7.46
M65	2.375	12.00	Round	60.00	7.46
MP-3	2.875	120.00	Round		9.03

MP-1	2.875	120.00	Round		9.03
MP-7	2.875	120.00	Round		9.03
RRU-2	2.875	120.00	Round		9.03
RRU-1	2.875	120.00	Round		9.03
RRU-6	2.875	120.00	Round		9.03
RRU-5	2.875	120.00	Round		9.03
RRU-4	2.875	120.00	Round		9.03
RRU-3	2.875	120.00	Round		9.03
MP-5	2.375	120.00	Round		7.46
SA-1	3.000	57.95	Flat	60.00	18.00
SA-2	3.000	57.95	Flat	-60.00	18.00
SA-3	3.000	57.95	Flat	0.00	18.00



Median Point(10114750)

TEP No. 340423.957324

Analysis By: GK 5/17/2024

Checked By: RAL 5/17/2024

Moment Bolt Group - Support Arm

Code Revisions:	ANSI/TIA-222-H
Bolt Type:	Headed Bolts

Connection Inputs:

Bolt Size:	0.625	
# Bolts:	4	
Plate Width:	11.50	in
Plate Height:	11.50	in
Bolt H Gap:	9.25	in
Bolt V Gap:	9.25	in
Plate T:	0.500	in
Slip Member ϕ :	N/A	in
Bolt Grade:	A325N	

Capacities:

Bolt Capacity=	15.2%	PASS
Plate Capacity=	59.9%	PASS

Bolt Properties:

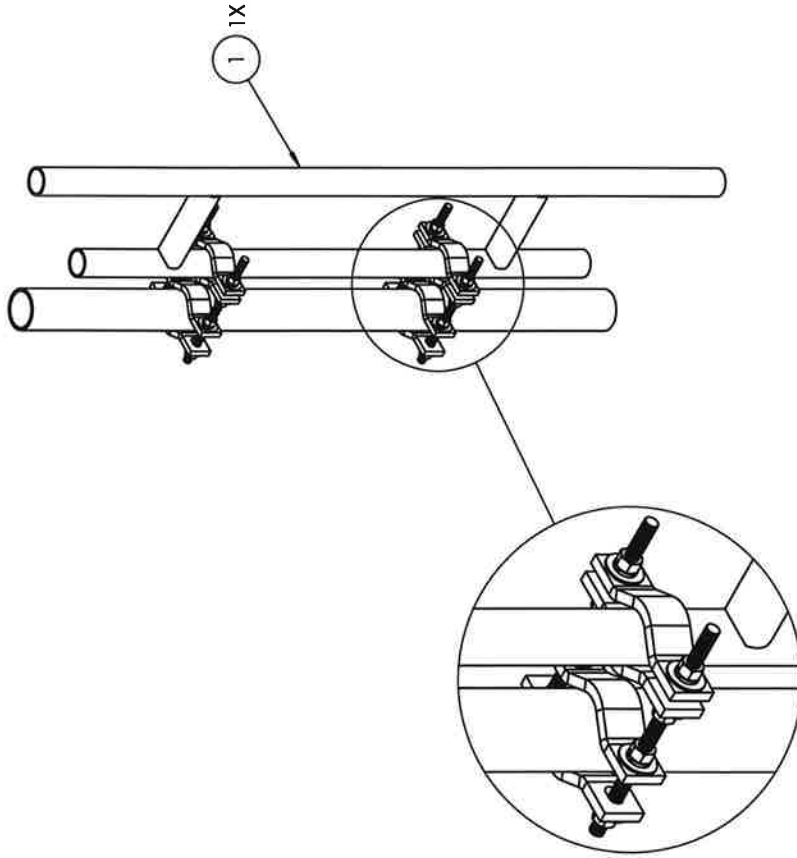
$F_{y\text{bolt}}$:	92.0	ksi
$F_{u\text{bolt}}$:	120.0	ksi
r:	6.5	in
J:	171.1	in ⁴ /in ²
A_{bolt} :	0.3	in ²
$A_{\text{bolt, Net Tensile}}$:	0.2	in ²
Pretension:	19.0	kips

Member Properties:


Member Shape:	Flat	
Plate F_y :	36.0	ksi
Plate F_u :	58.0	ksi
Member Height:	4.0	in
Member Width:	4.0	in

APPENDIX C
SUPPLEMENTAL DRAWINGS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	T1309MT12	Panel Antenna Stand-off Bracket, 12"	1

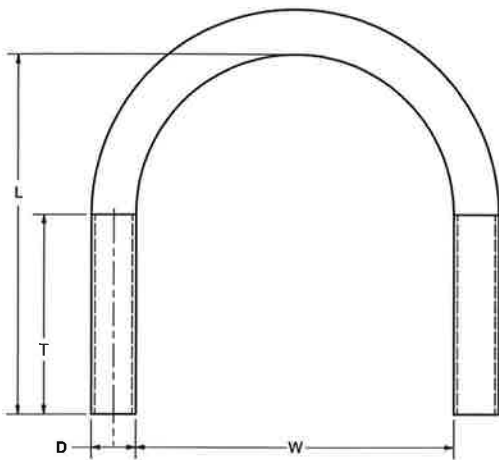


DETAIL A
SCALE 1 : 5

		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES DECIMALS: ± 0.005 FRACTIONAL: ± 1/32 ANGULAR: ± 2° ONE PLACE DECIMAL: ± 0.06 TWO PLACE DECIMAL: ± 0.03 THREE PLACE DECIMAL: ± 0.010 INTERPRET GEOMETRIC TOLERANCING PER:		NAME: PG DATE: 10/21/14	KENWOOD TELECOM TITLE: Panel Antenna Stand-Off Bracket 12" SIZE: DWG. NO. B T1309MT12 REV
MATERIAL: FINISH: NEXT ASSY:	COMMENTS: DO NOT SCALE DRAWING	DRAWN: CHECKED: ENG APPR: MFG APPR: Q.A.	SCALE: 1:10 WEIGHT:	SHEET 1 OF 1	

U-bolts

A **valmont** COMPANY



Features: Includes nuts, locks, and flat washers, long thread lengths. Hot-dip galvanized.

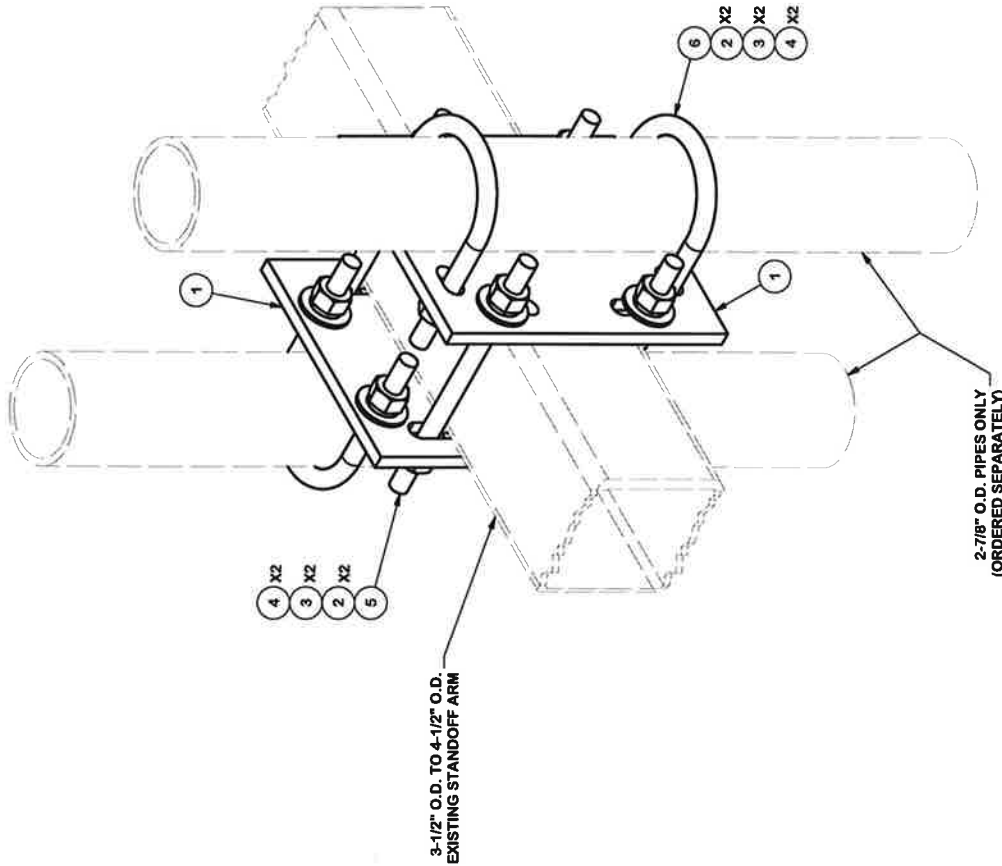
Construction: SAE J429 Gr. 2. Coarse threads.

Design Criteria: Conforms to the minimum requirements as stated in SAE J429 (Latest Revision) Grade 2 Stud, Rolled or Cut CNC threads. SAE J429 Grade 2 (Yield Fy = 57 ksi / Tensile Fu = 74 ksi). All finished goods are Hot Dip Galvanized in accordance with ASTM A123 requirements.

Part #	Diameter (D)	Width (W)	Length (L)	Thread (T)	Weight
UB3200	3/8"	2"	3"	1-1/4"	0.40 lb.
UB3212	3/8"	2-1/2"	3-5/8"	1-3/4"	0.45 lb.
UB3300	3/8"	3"	4-1/4"	2"	0.50 lb.
UB3312	3/8"	3-1/2"	4-3/4"	2"	0.50 lb.
UB3418	3/8"	4"	5-3/4"	2-1/2"	0.60 lb.
UB1400	1/2"	2"	4"	2"	0.65 lb.
UB1212	1/2"	2-1/2"	4-1/2"	2"	0.65 lb.
UB1300	1/2"	3"	5"	2"	0.70 lb.
UB1358	1/2"	3-5/8"	5-1/2"	3"	0.75 lb.
UB1306	1/2"	3-5/8"	6"	3"	0.80 lb.
UB1418	1/2"	4-1/8"	6"	3"	0.90 lb.
UB1458	1/2"	4-5/8"	7"	3"	0.90 lb.
UB5258	5/8"	2-5/8"	4-1/2"	2"	1.20 lb.
UB5358	5/8"	3-5/8"	6"	3"	1.45 lb.
UB5458	5/8"	4-5/8"	7"	3"	1.60 lb.

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	12.04
2	16	G12FW	1/2" HDG USS FLATWASHER		0.03	0.55
3	16	G12LW	1/2" HDG LOCKWASHER		0.01	0.22
4	16	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.15
5	4	G12R-8	1/2" x 8" THREADED ROD (HDG.)		0.35	1.41
6	4	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.66	2.63
					TOTAL WT. #	16.00



TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES (± 0.0307)
 DRILLED AND GAS CUT HOLES (± 0.0307) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES (± 0.0107) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING (± 0.0307)
 ALL OTHER ASSEMBLY (± 0.0607)

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT
 AND ARE NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL,
 INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

DESCRIPTION	BACK TO BACK PIPE MOUNT 2-7/8" PIPES		
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
81	CEK	1/29/2013	BBPM-K2
CLASS	DRAWING USAGE	CHECKED BY	DWG. NO.
03	CUSTOMER	BMC	1/30/2013

Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Dallas, TX
 Houston, TX
 Salt Lake City, UT

Engineering
 Support Team:
 1-888-735-7446

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