



July 29, 2024

Fremont County Planning Department  
ATTN: Daniel Victoria  
615 Macon Avenue  
Room 210  
Canon City, CO 81212  
**Sent via FED EX**

RE: Zoning submittal for 10149418 – DEER MTN

Mr. Victoria,

Please find the attached documents for a zoning submittal for AT&T upgrades to an existing tower at 2084 County Road 27A, Cotopaxi, CO.

- Zoning Permit Fee - \$250.00
- Antenna Collocation application (2)
- Lease Agreement (2)
- Property Deed Record (2)
- Final CD's
- Passing MA
- Passing SA

Please let me know if any additional information is needed.

Thank you.

Sincerely,

Audra L. Kirk  
Real Estate Specialist III  
720-331-0822  
Audra.kirk@smartlinkgroup.com



## FREMONT COUNTY COLLOCATION OF ANTENNA ON AN EXISTING TOWER APPLICATION

1. Name and Number of Existing SRU Permit \_\_\_\_\_
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: Christy Lyn Brooks Address: 1073 Greenland Forest Drive  
City: Monument State: CO Zip Code: 80132  
Telephone #: 3328 Facsimile #: N/A  
Name of Contact: Christy Lyn Brooks Email Address: \_\_\_\_\_
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: \_\_\_\_\_  
2084 County Road 27A, Cotopaxi, 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 42' feet.
9. What will be the total height of the tower (*with antenna(s)*) after collocation? 42' feet.
10. The existing tower currently has 9 antennas.
11. After the proposed collocation the tower would house 12 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 #902806  cash)

**Collocation Applicant's Endorsement:**

By signing this Application, the Applicant, or the agent/representative acting with due authorization on behalf of the Applicant, hereby certifies that all information contained in the application and any attachments to the Application, is true and correct to the best of Applicant's knowledge and belief.

Fremont County hereby advises Applicant that if any material information contained herein is determined to be misleading, inaccurate or false, the Board of Commissioners may take any and all reasonable and appropriate steps to declare actions of the Board regarding the Application to be null and void.

Further the applicant understands that if collocation is approved the applicant must comply with the conditions of the original permit, as issued or as may be amended, and applicable regulations of the Fremont County Zoning Resolution.

Signing this Application is a declaration by the Applicant to conform to all plans, drawings, and commitments submitted with or contained within this Application, provided that the same is in conformance with the Fremont County Zoning Resolution.

AUDRA KIRK  
Applicant Printed Name  
  
Applicant Signature

REAL ESTATE Specialist III  
Applicant Title & Company Name SmartLink Group  
7-29-24  
Date

**Existing Permit Holder's Endorsement:**

By signing this Application, the Permit Holder, or the agent/representative acting with due authorization on behalf of the Permit Holder, hereby certifies that all information contained in the application and any attachments to the Application, is true and correct to the best of Permit Holder's knowledge and belief.

Fremont County hereby advises Permit Holder that if any material information contained herein is determined to be misleading, inaccurate or false, the Board of Commissioners may take any and all reasonable and appropriate steps to declare actions of the Board regarding the Application to be null and void.

Further the existing permit holder understands that if collocation is approved the applicant and existing permit holder must comply with the conditions of the original permit, as issued or as may be amended, and applicable regulations of the Fremont County Zoning Resolution.

Signing this Application is a declaration by the Permit Holder to conform to all plans, drawings, and commitments submitted with or contained within this Application, provided that the same is in conformance with the Fremont County Zoning Resolution.

**THIS SIGNATURE ALSO SERVES AS THE EXISTING PERMIT HOLDERS APPROVAL FOR COLLOCATION.**

Permit Holder Printed Name  
  
Permit Holder Signature

Permit Holder Title & Company Name  
  
Date

June 20, 2024

Jason Harms  
Smartlink, LLC.  
10 Church Circle  
Annapolis, MD 21401  
(888) 828-5465



B+T Group  
1717 S. Boulder, Suite 300  
Tulsa, OK 74119  
(918) 587-4630  
towersupport@btgrp.com

**Subject:** Appurtenance Mount Modification Report

**Carrier Designation:** **Site Number:** 10149418  
**Site Name:** ZOD\_CTF\_ALLTEL\_CO04\_Deer Mountain  
**Site PACE Number:** MRUTH064431  
**IWM Job Number:** WSUTH0036094

**Engineering Firm Designation:** **B+T Group Project Number:** 170942.001.01.0003

**Site Data:** 2084 County Road 27A, Cotopaxi, CO, 81223, Fremont County  
Latitude 38.32362°, Longitude -105.48473°  
40' Monopole  
Existing 13.67' SitePro1 Part# QMSP Platform Mount

Dear Mr. Hinton,

B+T Group is pleased to submit this "Appurtenance Mount Modification Report" to determine the structural integrity of the antenna mount on the above-mentioned structure.

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 under the following load case to be:

Existing + Proposed Equipment

Note: See Table 1 for the final loading configuration

**Sufficient Capacity**  
**(Passing at 77.4%)**

This analysis has been performed in accordance with the 2021 International Building Code based upon an ultimate 3-second gust wind speed of 105 mph. Applicable standard references and design criteria are listed in Section 2 - Analysis Criteria.

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

We at B+T Group 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.

Mount structural modification prepared by: Luke Antloger

Respectfully submitted by: B&T Engineering, Inc.

Chad E. Tuttle, P.E.



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## 1) INTRODUCTION

The appurtenance mount consists of existing SitePro1 platform mounts Part# QMSP at 40 ft., attached to monopole at 2084 County Road 27A, Cotopaxi, CO, 81223, Fremont County. The proposed antenna loading information was obtained from Smartlink, LLC. All information provided to B+T Group was assumed accurate and complete.

## 2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 105 mph with no ice and 50 mph with 0-inch escalated ice thickness. Exposure Category C, Topographic Category 5 with maximum topographic Category Kzt of 2.103 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 250-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

**Table 1 – Proposed and Existing Equipment Information**

Loading	RAD Center Elev. (ft.)	Position	Qty.	Manufacturer	Model / Type	Note
Proposed	40	2	3	Ericsson	AIR6419 B77G	1
		-	3	Ericsson	SXK1092064/1	
	38	1	6	Commscope	NNH4-65C-R6-V4	
		-	3	Ericsson	4490 B5/B12A	
			3	Ericsson	4890 B25/B66	
			3	Ericsson	4478 B14	
	6	Ericsson	SXK1255394/2			
	36	2	3	Ericsson	AIR6419 B77D	1
-		3	Ericsson	SXK1092064/1		
Existing	38	-	3	Raycap	DC6-48-60-18-8F	3

Note:

- (1) Proposed antenna to be installed on the existing Mount Pipes.
- (2) Proposed Equipment to be installed on proposed equipment mounting pipes.
- (3) Existing Equipment installed on the mount.

**Table 2 – Documents Provided**

Documents	Remarks	Reference	Source
10149418_COL06256_DEERMO UNTAIN_DE130_Scoping Checklist COMPLETE – DE130	Existing Loading Proposed Loading	Date: 05/07/2024	Smartlink, LLC.
Appurtenance Mount Analysis Report	B+T Group	Date: 06/05/2024	On File

## 3) ANALYSIS PROCEDURE

### 3.1) Analysis Method

RISA-3D (Version 22.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.



Manufacturers drawing were used to create the model.

### 3.2) 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 specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

The following assumptions have been included in the analysis of the mount:

Component	Section	Length	Note
Proposed Equipment Mounting Pipes	SitePro1 Mount Pipes Part# P296, (P/N: ANT.55983) or approved equal (2" Std. Pipe)	8'-0"	Using (3) SitePro1 Part# BBPM-K3, (P/N: ANT.56902) or approved equal crossover plates to support RRU and Raycap in all sectors
Existing Mount Pipes	2" Std. Pipe	10'-0"	All Positions All Sectors

6. 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.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The following material grades were assumed (Unless Noted Otherwise):
  - a) Connection Bolts : ASTM A325
  - b) Steel Pipe : ASTM A53 (GR. 35)
  - c) HSS (Round) : ASTM 500 (GR. B-42)
  - d) HSS (Rectangular) : ASTM 500 (GR. B-46)
  - e) Channel : ASTM A36 (GR. 36)
  - f) Steel Solid Rod : ASTM A36 (GR. 36)
  - g) Steel Plate : ASTM A36 (GR. 36)
  - h) Steel Angle : ASTM A36 (GR. 36)
  - i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the antenna mounting system.

#### 4) ANALYSIS RESULTS

**Table 3 – Mount Component Stresses vs. Capacity**

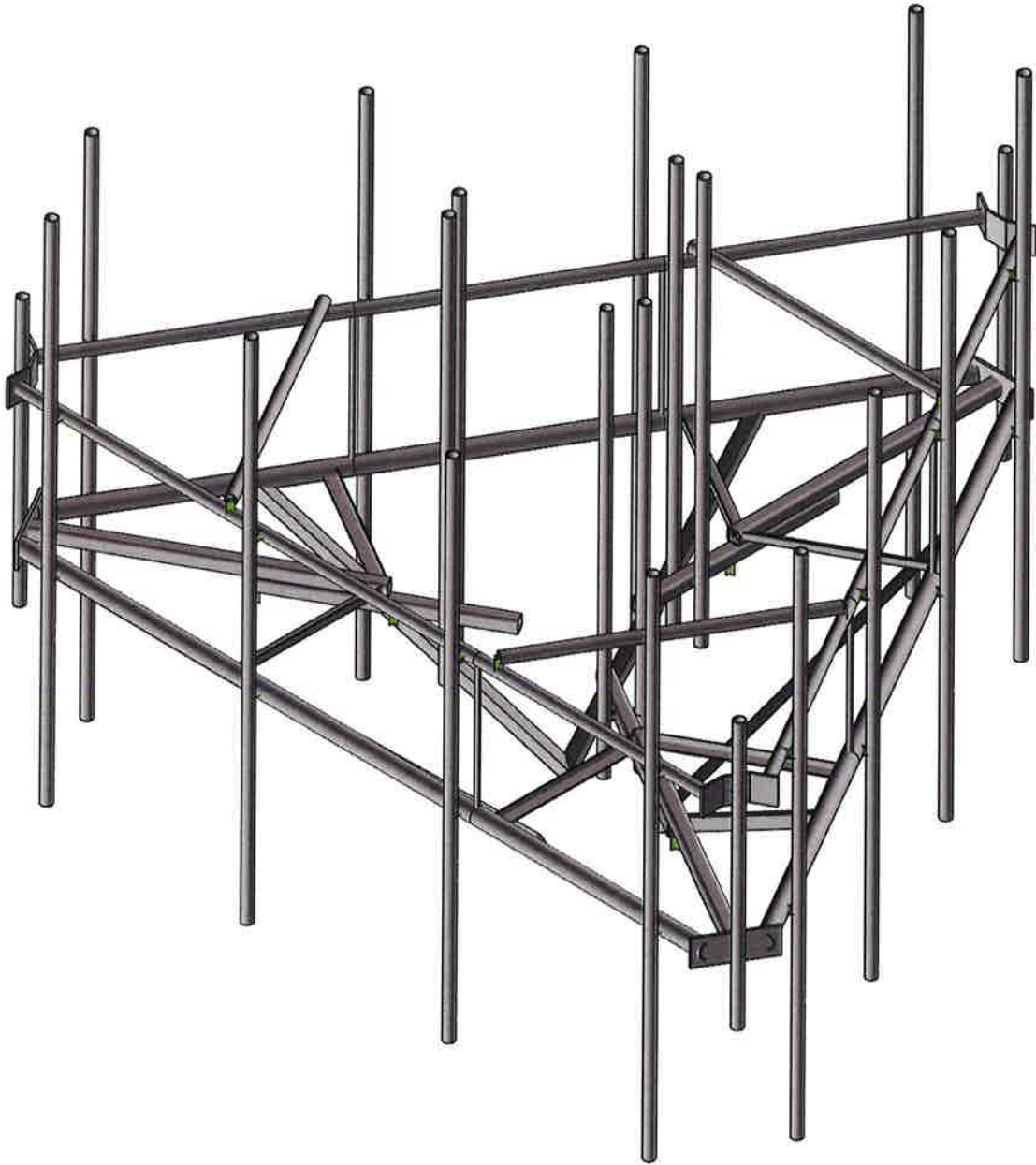
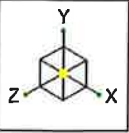
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	40	29.9	Pass
-	Bracing Pipes	40	10.2	Pass
-	Support Rails	40	46.3	Pass
-	Mount Pipes	40	77.4	Pass
-	Support Tubes	40	58.8	Pass
-	Support Angles	40	6.1	Pass
-	Verticals	40	42.4	Pass
-	Connection Plates	40	57.1	Pass
-	Vertical Pipes	40	28.9	Pass
-	New Mod kits	40	75.8	Pass
-	Connection Bolts	40	44.3	Pass

##### 4.1) Structural Notes:

- 1) All modifications proposed in this report shall be installed in accordance with the attached drawing for the determined available structural capacity to be effective.
- 2) If the loading 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.
- 3) B+T Group certifies that carrier's entire antenna structure will support the equipment deployment.
- 4) No erection or modification of the structure shall be made without approval of the structural engineer.

## APPENDIX A

(RISA-3D Output)



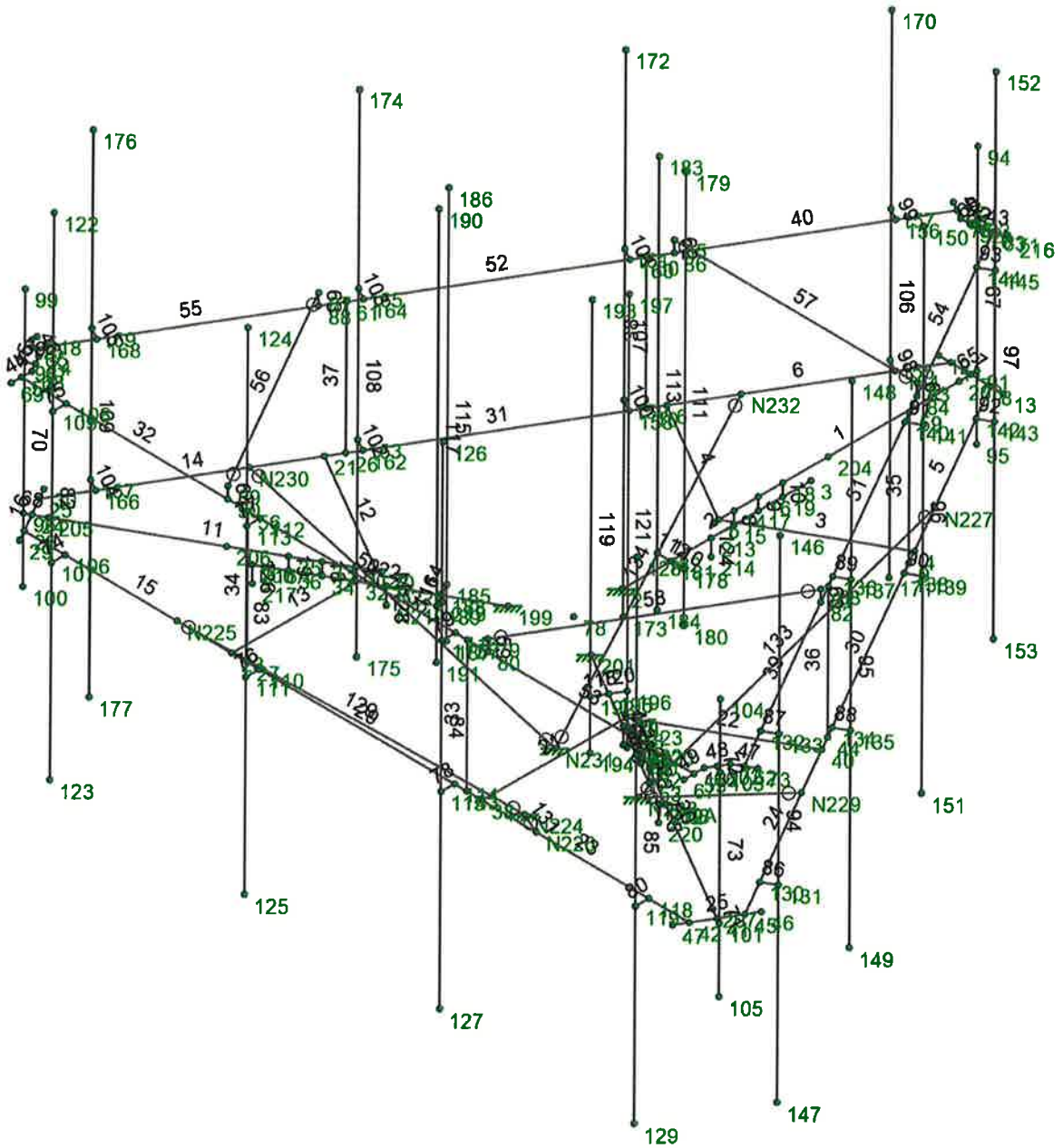
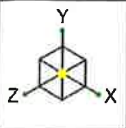
Envelope Only Solution



B+T Group  
GRG  
170942.001.01.0003

10149418 - ZOD\_CTF\_ALLTEL\_CO04\_Deer ...  
ountain

GRG-1  
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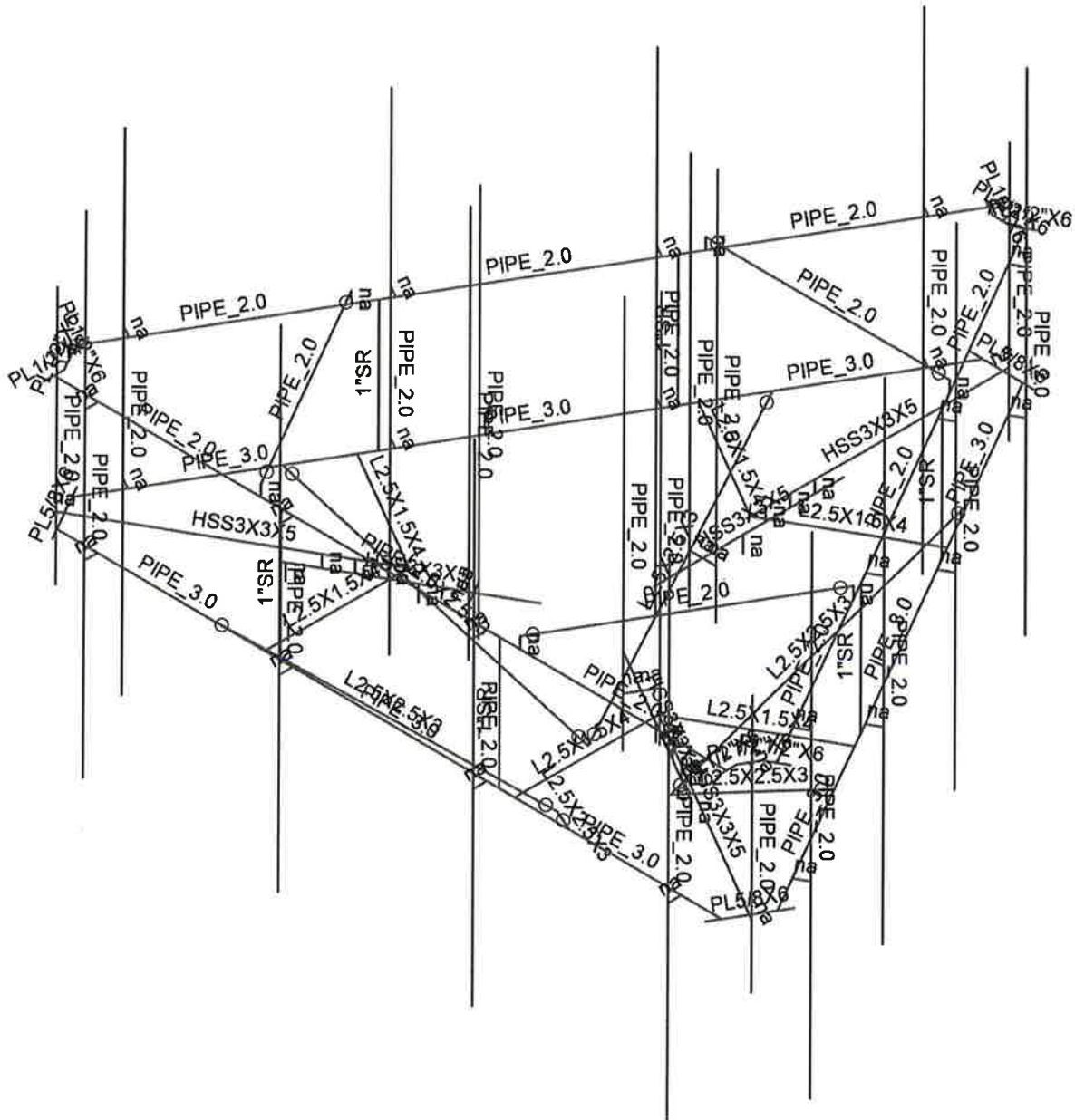
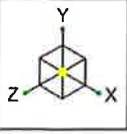
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B+T Group  
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170942.001.01.0003

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ountain

GRG-2  
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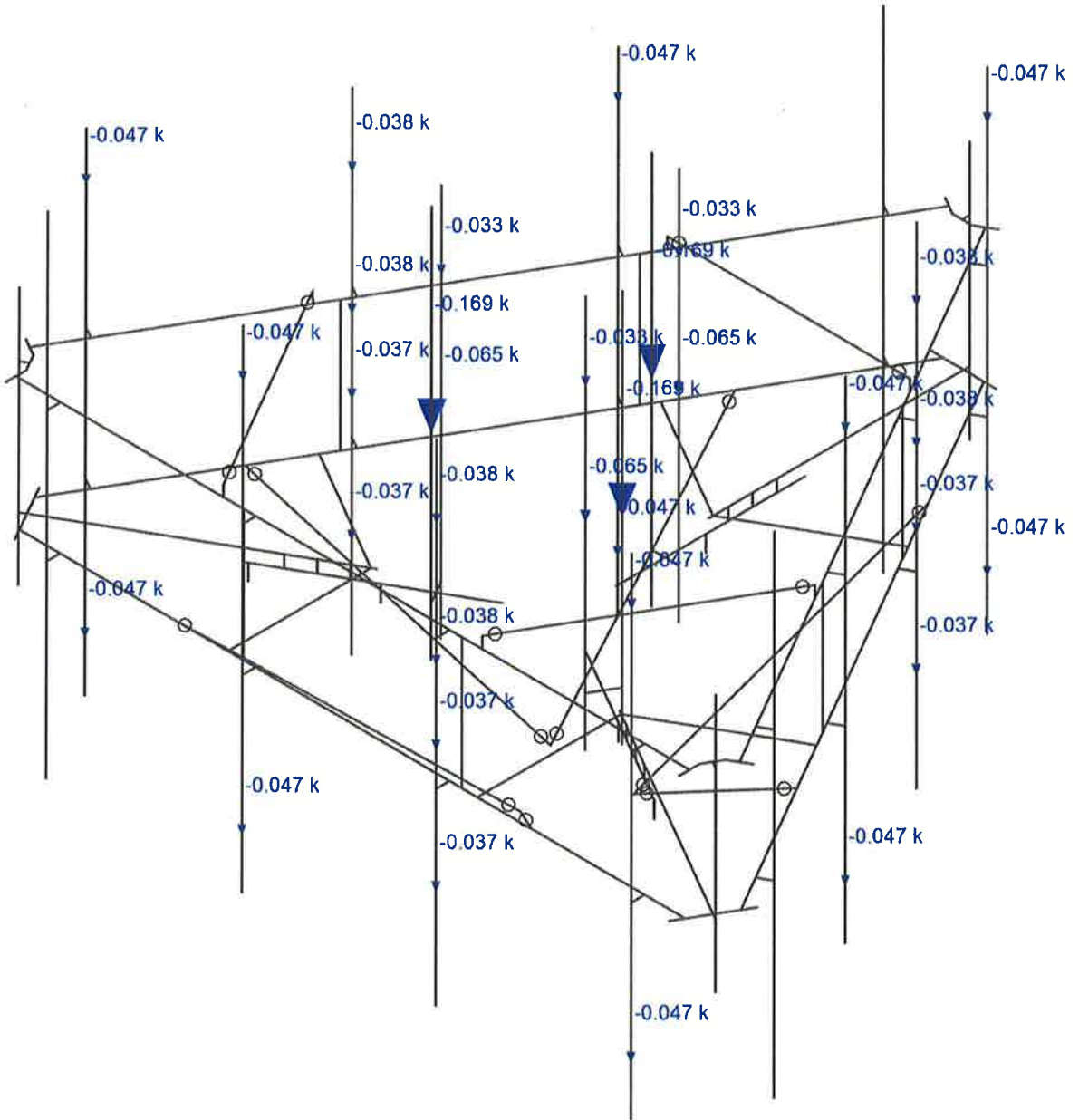
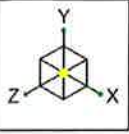
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B+T Group  
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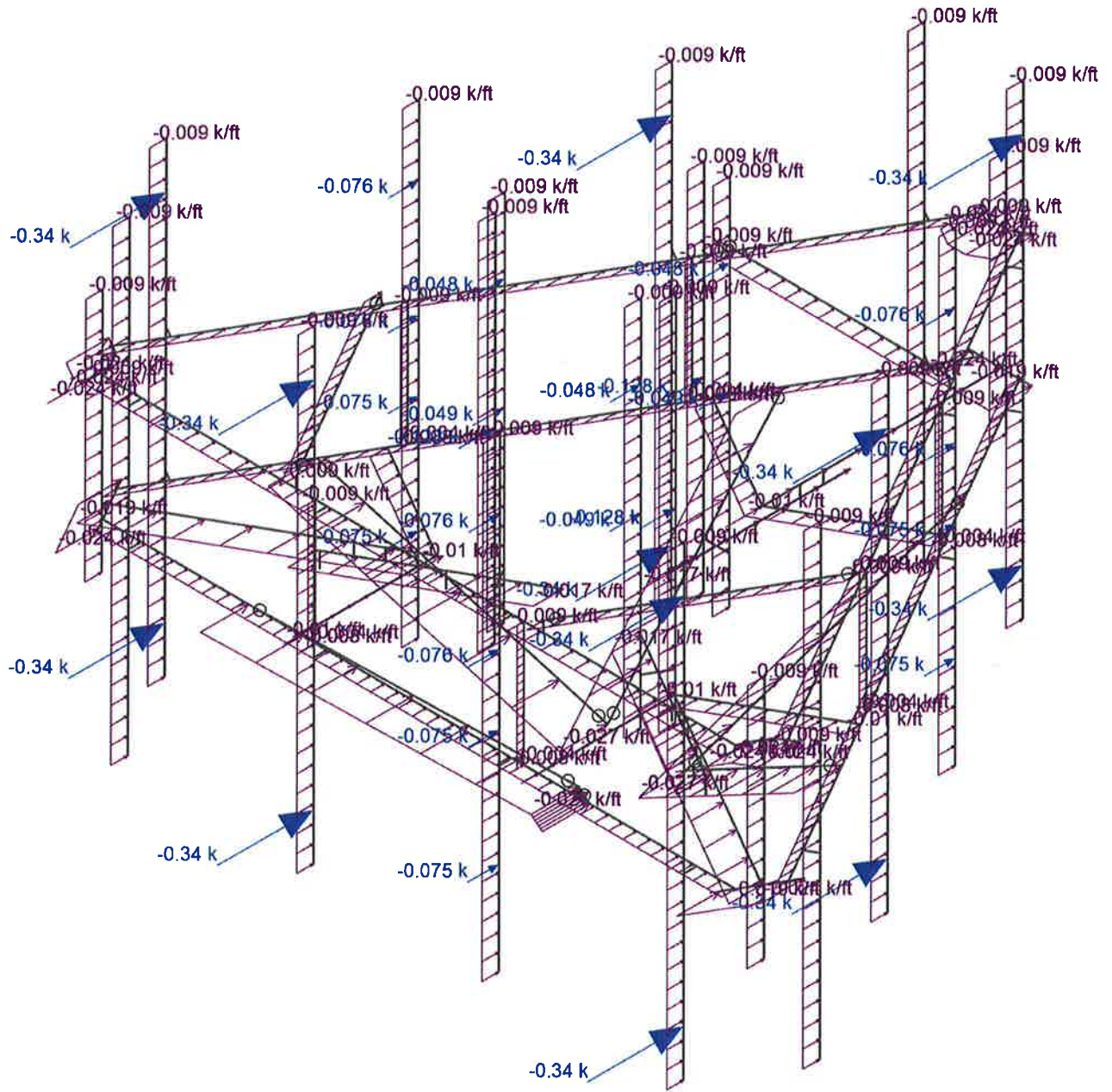
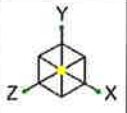
Loads: BLC 1, Dead  
Envelope Only Solution



B+T Group  
GRG  
170942.001.01.0003

10149418 - ZOD\_CTF\_ALLTEL\_CO04\_Deer ...  
ountain

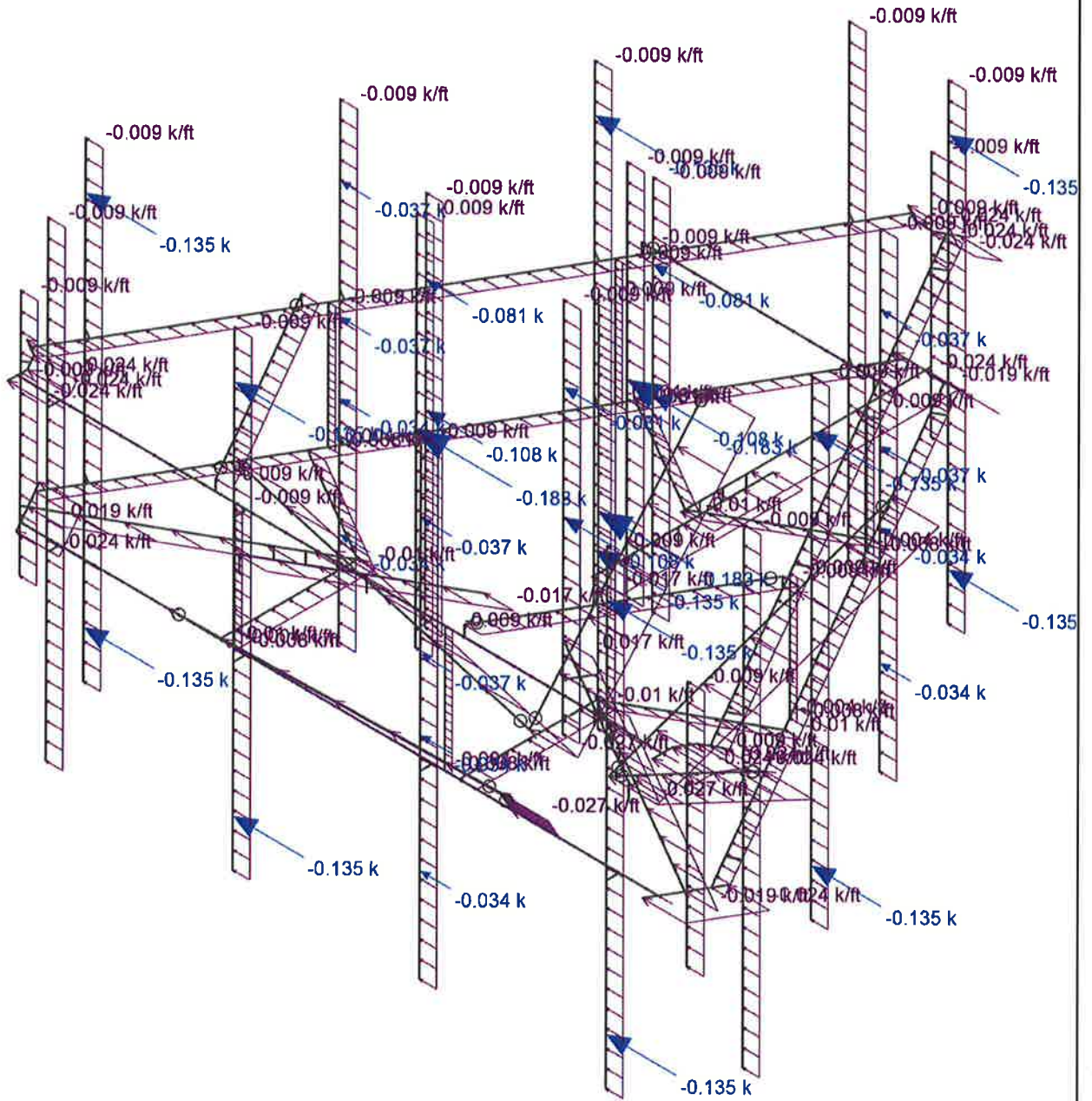
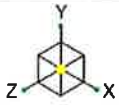
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Loads: BLC 2, 0 Wind - No Ice  
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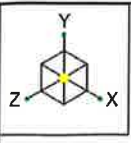
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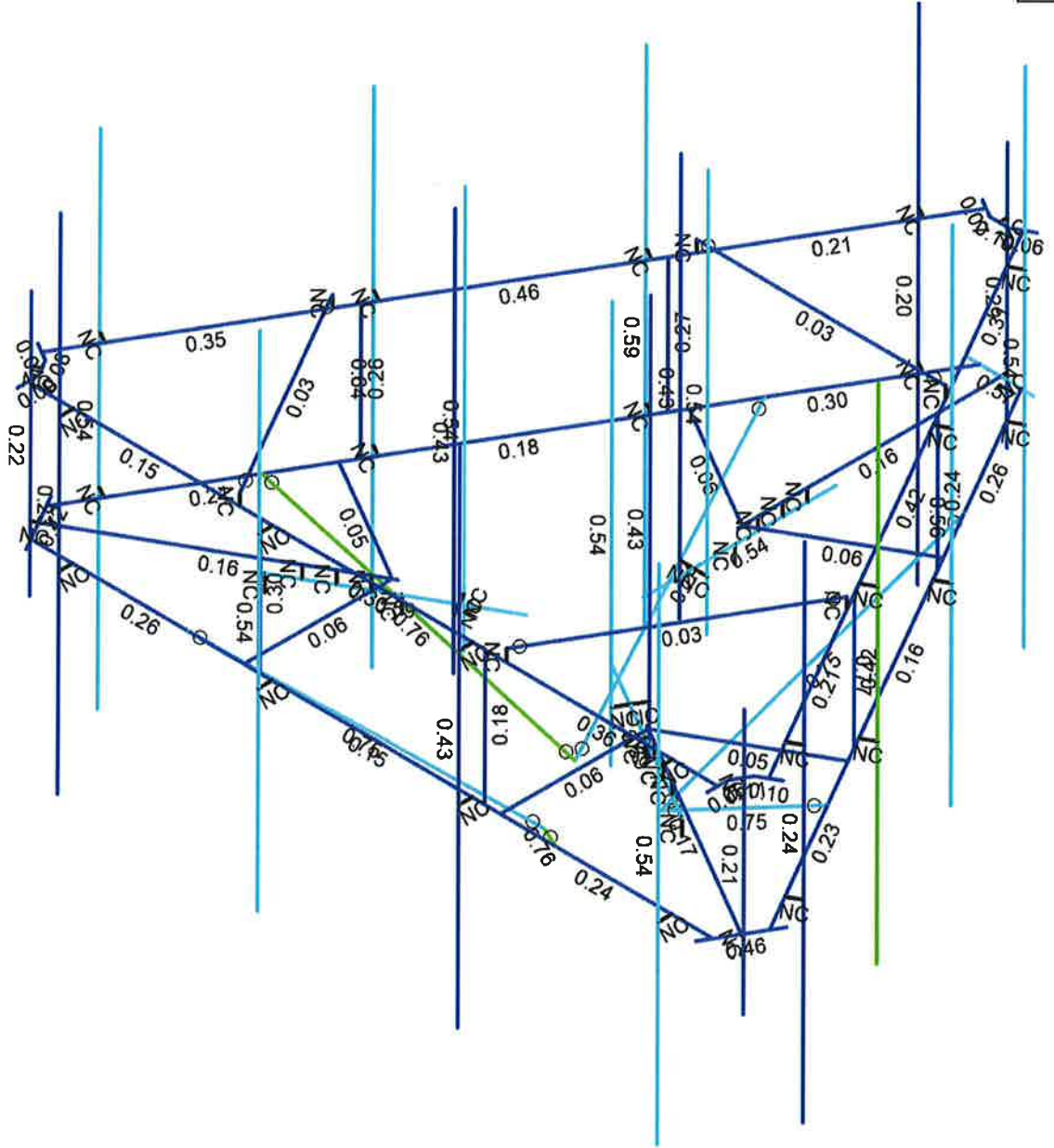
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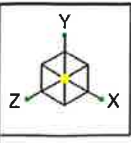


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Red	> 1.0
Purple	.90-1.0
Green	.75-.90
Light Blue	.50-.75
Dark Blue	0-.50



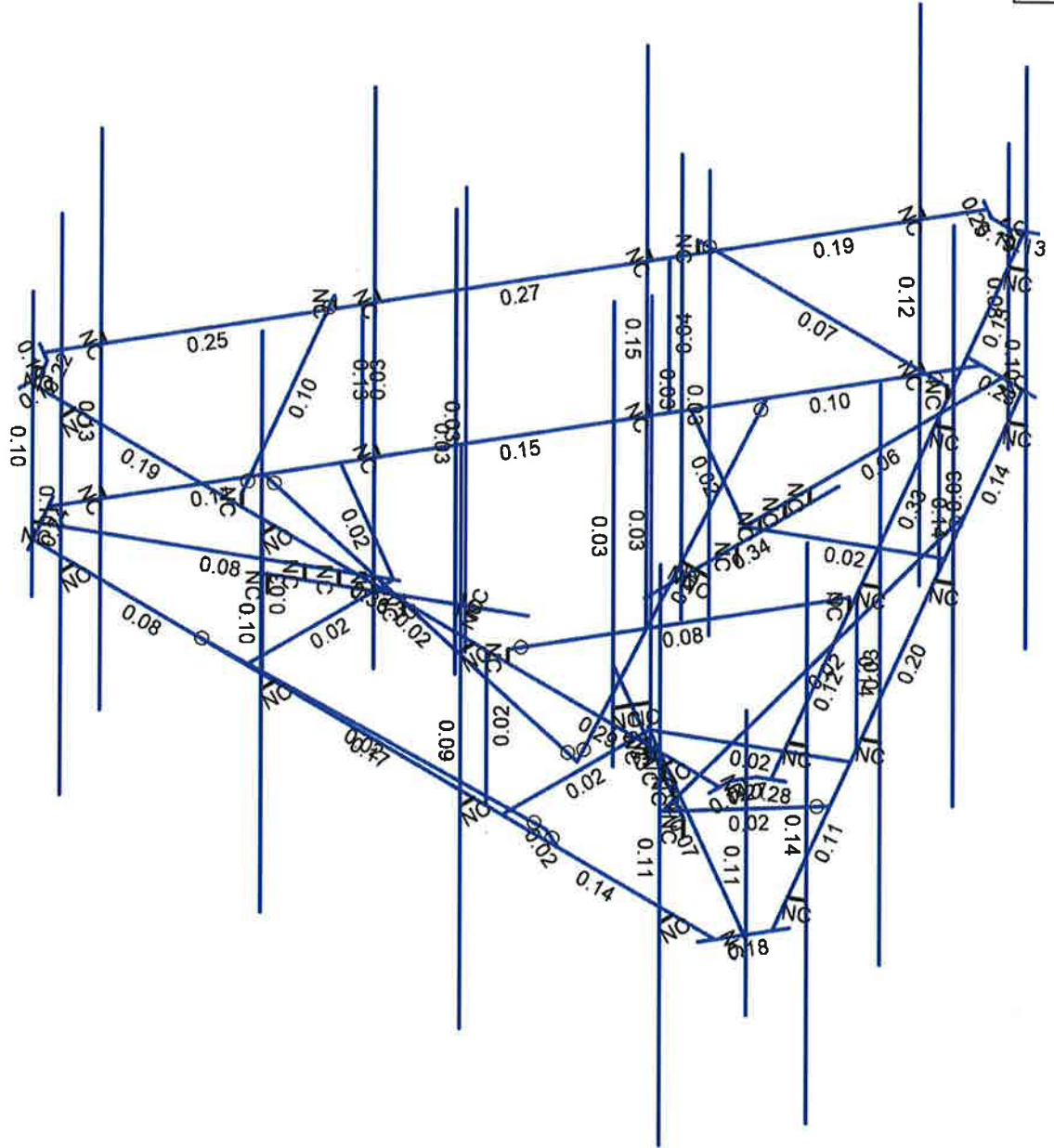
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**Shear Check (Env)**

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Shear Checks Displayed (Enveloped)  
Envelope Only Solution

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Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

6/20/2024  
 10:11:17 AM  
 Checked By : \_\_\_\_\_

**Node Coordinates**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0.25	-2.882975	
2	2	0	0	-0.985	
3	3	0	0	-4.86	
4	4	2.549732	0.25	-4.438397	
5	5	0	0.25	-2.966308	
6	6	-2.549732	0.25	-4.438397	
7	7	0	0.25	-8.132975	
8	8	0.416667	0.25	-8.132975	
9	9	2.708333	0.25	-4.163692	
10	10	-2.708333	0.25	-4.163692	
11	11	-0.416667	0.25	-8.132975	
12	12	-0.666667	0.25	-8.132975	
13	13	0.666667	0.25	-8.132975	
14	14	0	0.25	-3.278808	
15	15	0	0	-3.278808	
16	16	0	0.25	-3.778808	
17	17	0	0	-3.778808	
18	18	0	0.25	-4.278808	
19	19	0	0	-4.278808	
20	20	-2.496729	0.25	1.441487	
21	21	-5.118631	0.25	0.011065	
22	22	-2.568898	0.25	1.483154	
23	23	-2.568898	0.25	4.427331	
24	24	-7.043363	0.25	4.066487	
25	25	-7.251696	0.25	3.705644	
26	26	-4.960029	0.25	-0.26364	
27	27	-2.251696	0.25	4.427331	
28	28	-6.835029	0.25	4.427331	
29	29	-6.710029	0.25	4.643838	
30	30	-7.376696	0.25	3.489137	
31	31	-2.839531	0.25	1.639404	
32	32	-2.839531	0	1.639404	
33	33	-3.272544	0.25	1.889404	
34	34	-3.272544	0	1.889404	
35	35	-3.705557	0.25	2.139404	
36	36	-3.705557	0	2.139404	
37	37	2.496729	0.25	1.441487	
38	38	2.568898	0.25	4.427331	
39	39	2.568898	0.25	1.483154	
40	40	5.118631	0.25	0.011065	
41	41	7.043363	0.25	4.066487	
42	42	6.835029	0.25	4.427331	
43	43	2.251696	0.25	4.427331	
44	44	4.960029	0.25	-0.26364	
45	45	7.251696	0.25	3.705644	
46	46	7.376696	0.25	3.489137	
47	47	6.710029	0.25	4.643838	
48	48	2.839531	0.25	1.639404	
49	49	2.839531	0	1.639404	
50	50	3.272544	0.25	1.889404	
51	51	3.272544	0	1.889404	
52	52	3.705557	0.25	2.139404	
53	53	3.705557	0	2.139404	
54	54	-6.9167	2.917	4.427331	
55	55	6.9167	2.917	4.427331	



Company : B+T Group  
 Designer : GRG  
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 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-2.251696	2.917	4.427331	
57	57	2.251696	2.917	4.427331	
58	58	4.960029	2.917	-0.26364	
59	59	2.708333	2.917	-4.163692	
60	60	-2.708333	2.917	-4.163692	
61	61	-4.960029	2.917	-0.26364	
62	62	7.292531	2.917	3.776372	
63	63	0.375831	2.917	-8.203703	
64	64	-0.375831	2.917	-8.203703	
65	65	-7.292531	2.917	3.776372	
66	66	6.9167	2.917	4.219001	
67	67	6.9167	2.917	4.635661	
68	68	-6.9167	2.917	4.219001	
69	69	-6.9167	2.917	4.635661	
70	70	0.195412	2.917	-8.099538	
71	71	0.55625	2.917	-8.307868	
72	72	7.112112	2.917	3.880537	
73	73	7.47295	2.917	3.672207	
74	74	-7.112112	2.917	3.880537	
75	75	-7.47295	2.917	3.672207	
76	76	-0.195412	2.917	-8.099538	
77	77	-0.55625	2.917	-8.307868	
78	78	0	0	0	
79	79	2.66837	3.146583	4.42733	
80	80	2.66837	2.917	4.427331	
81	81	5.16836	3.146583	0.097207	
82	82	5.168364	2.917	0.097207	
83	83	2.5	3.146583	-4.52454	
84	84	2.499997	2.917	-4.52454	
85	85	-2.5	3.146583	-4.52454	
86	86	-2.499997	2.917	-4.52454	
87	87	-5.16836	3.146583	0.097207	
88	88	-5.168364	2.917	0.097207	
89	89	-2.66837	3.146583	4.42733	
90	90	-2.66837	2.917	4.427331	
91	91	0	0.25	-8.258178	
92	92	0	2.917	-8.099538	
93	93	0	2.917	-8.258178	
94	94	0	4.2085	-8.258178	
95	95	0	-1.0415	-8.258178	
96	96	-7.151792	0.25	4.129089	
97	97	-7.014406	2.917	4.049769	
98	98	-7.151792	2.917	4.129089	
99	99	-7.151792	4.2085	4.129089	
100	100	-7.151792	-1.0415	4.129089	
101	101	7.151792	0.25	4.129089	
102	102	7.014406	2.917	4.049769	
103	103	7.151792	2.917	4.129089	
104	104	7.151792	4.2085	4.129089	
105	105	7.151792	-1.0415	4.129089	
106	106	-6	0.25	4.427331	
107	107	-6	0.25	4.70358	
108	108	-6	2.917	4.427331	
109	109	-6	2.917	4.70358	
110	110	-2	0.25	4.427331	



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**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	-2	0.25	4.70358	
112	112	-2	2.917	4.427331	
113	113	-2	2.917	4.70358	
114	114	2	0.25	4.427331	
115	115	2	0.25	4.70358	
116	116	2	2.917	4.427331	
117	117	2	2.917	4.70358	
118	118	6	0.25	4.427331	
119	119	6	0.25	4.70358	
120	120	6	2.917	4.427331	
121	121	6	2.917	4.70358	
122	122	-6	6.417	4.70358	
123	123	-6	-3.583	4.70358	
124	124	-2	6.417	4.70358	
125	125	-2	-3.583	4.70358	
126	126	2	6.417	4.70358	
127	127	2	-3.583	4.70358	
128	128	6	6.417	4.70358	
129	129	6	-3.583	4.70358	
130	130	6.834181	0.25	2.982487	
131	131	7.07342	0.25	2.844362	
132	132	6.834181	2.917	2.982487	
133	133	7.07342	2.917	2.844362	
134	134	4.834181	0.25	-0.481615	
135	135	5.07342	0.25	-0.619739	
136	136	4.834181	2.917	-0.481615	
137	137	5.07342	2.917	-0.619739	
138	138	2.834181	0.25	-3.945716	
139	139	3.07342	0.25	-4.083841	
140	140	2.834181	2.917	-3.945716	
141	141	3.07342	2.917	-4.083841	
142	142	0.834181	0.25	-7.409818	
143	143	1.07342	0.25	-7.547942	
144	144	0.834181	2.917	-7.409818	
145	145	1.07342	2.917	-7.547942	
146	146	7.07342	6.417	2.844362	
147	147	7.07342	-3.583	2.844362	
148	148	5.07342	6.417	-0.619739	
149	149	5.07342	-3.583	-0.619739	
150	150	3.07342	6.417	-4.083841	
151	151	3.07342	-3.583	-4.083841	
152	152	1.07342	6.417	-7.547942	
153	153	1.07342	-3.583	-7.547942	
154	154	-0.834181	0.25	-7.409818	
155	155	-1.07342	0.25	-7.547942	
156	156	-0.834181	2.917	-7.409818	
157	157	-1.07342	2.917	-7.547942	
158	158	-2.834181	0.25	-3.945716	
159	159	-3.07342	0.25	-4.083841	
160	160	-2.834181	2.917	-3.945716	
161	161	-3.07342	2.917	-4.083841	
162	162	-4.834181	0.25	-0.481615	
163	163	-5.07342	0.25	-0.619739	
164	164	-4.834181	2.917	-0.481615	
165	165	-5.07342	2.917	-0.619739	



Company : B+T Group  
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**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
166	166	-6.834181	0.25	2.982487	
167	167	-7.07342	0.25	2.844362	
168	168	-6.834181	2.917	2.982487	
169	169	-7.07342	2.917	2.844362	
170	170	-1.07342	6.417	-7.547942	
171	171	-1.07342	-3.583	-7.547942	
172	172	-3.07342	6.417	-4.083841	
173	173	-3.07342	-3.583	-4.083841	
174	174	-5.07342	6.417	-0.619739	
175	175	-5.07342	-3.583	-0.619739	
176	176	-7.07342	6.417	2.844362	
177	177	-7.07342	-3.583	2.844362	
178	178	0.27625	0	-1.985055	
179	179	0.27625	7	-1.985055	
180	180	0.27625	-1	-1.985055	
181	181	0	0	-1.985055	
182	182	-0.27625	0	-1.985055	
183	183	-0.27625	7	-1.985055	
184	184	-0.27625	-1	-1.985055	
185	185	-1.857233	0	0.753288	
186	186	-1.857233	7	0.753288	
187	187	-1.857233	-1	0.753288	
188	188	-1.719108	0	0.992527	
189	189	-1.580983	0	1.231767	
190	190	-1.580983	7	1.231767	
191	191	-1.580983	-1	1.231767	
192	192	1.580983	0	1.231767	
193	193	1.580983	7	1.231767	
194	194	1.580983	-1	1.231767	
195	195	1.719108	0	0.992527	
196	196	1.857233	0	0.753288	
197	197	1.857233	7	0.753288	
198	198	1.857233	-1	0.753288	
199	199	-0.853035	0	0.4925	
200	200	-4.208883	0	2.43	
201	201	0.853035	0	0.4925	
202	202	4.208883	0	2.43	
203	203	0	0.25	-7.882975	
204	204	0	0.25	-5.208305	
205	205	-6.826856	0.25	3.941487	
206	206	-4.510524	0.25	2.604152	
207	207	6.826856	0.25	3.941487	
208	208	4.510524	0.25	2.604152	
209	216	0.664878	2.917	-8.255557	
210	218	-7.481961	2.917	3.551977	
211	219	2	3.5835	4.70358	
212	213	0	0	-2.8183	
213	214	0	-0.333	-2.8183	
214	216A	-4.17277	0	2.40915	
215	217	-4.17277	-0.333	2.40915	
216	219A	4.17277	0	2.40915	
217	220	4.17277	-0.333	2.40915	
218	N219	-2.440719	-0.333	1.40915	
219	N220	-2.440719	0	1.40915	
220	N222	2.440719	-0.333	1.40915	



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**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
221	N223	2.440719	0	1.40915	
222	N224	0	-3	0.985	
223	N225	-3.6875	0.25	4.427331	
224	N226	3.6875	0.25	4.427331	
225	N227	1.990431	0.25	-5.407134	
226	N228	0.853035	-3	-0.4925	
227	N229	5.677931	0.25	0.979803	
228	N230	-5.677931	0.25	0.979803	
229	N231	-0.853035	-3	-0.4925	
230	N232	-1.990431	0.25	-5.407134	

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	199	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	201	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	213						
5	214						
6	216A						
7	217						
8	219A						
9	220						
10	N219						
11	N220						
12	N222						
13	N223						
14	N224	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N228	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
16	N231	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>-6</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
9	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

**Cold Formed Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>-6</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65





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**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	MF-H1	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	MF-H2	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	MF-P1	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
4	F1-S1	HSS3X3X5	Beam	Tube	A53 Gr.B	Typical	2.94	3.45	3.45	5.94
5	F1-SA1	L2.5X1.5X4	Beam	Single Angle	A36 Gr.36	Typical	0.947	0.16	0.594	0.021
6	F1-V1	1"SR	Column	BAR	A36 Gr.36	Typical	0.785	0.049	0.049	0.098
7	F1-CP1	PL5/8X6	Beam	RECT	A36 Gr.36	Typical	3.75	0.122	11.25	0.456
8	F1-CP2	PL1/2"X6	Beam	RECT	A36 Gr.36	Typical	3	0.062	9	0.237
9	F-V2	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
10	Stabilizer	L2.5X2.5X3	VBrace	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011

**Cold Formed Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	CF1	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	0.581	0.057	4.41	0.00063

**Member Primary Data**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	7	1		F1-S1	Beam	Tube	A53 Gr.B	Typical
2	2	2	3		F1-S1	Beam	Tube	A53 Gr.B	Typical
3	3	5	4	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
4	4	6	5	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
5	5	9	8		MF-H1	Beam	Pipe	A53 Gr.B	Typical
6	6	10	11		MF-H1	Beam	Pipe	A53 Gr.B	Typical
7	7	12	13		F1-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	14	15		RIGID	None	None	RIGID	Typical
9	9	16	17		RIGID	None	None	RIGID	Typical
10	10	18	19		RIGID	None	None	RIGID	Typical
11	11	24	20		F1-S1	Beam	Tube	A53 Gr.B	Typical
12	12	22	21	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
13	13	23	22	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
14	14	26	25		MF-H1	Beam	Pipe	A53 Gr.B	Typical
15	15	27	28		MF-H1	Beam	Pipe	A53 Gr.B	Typical
16	16	29	30		F1-CP1	Beam	RECT	A36 Gr.36	Typical
17	17	31	32		RIGID	None	None	RIGID	Typical
18	18	33	34		RIGID	None	None	RIGID	Typical
19	19	35	36		RIGID	None	None	RIGID	Typical
20	20	41	37		F1-S1	Beam	Tube	A53 Gr.B	Typical
21	21	39	38	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
22	22	40	39	270	F1-SA1	Beam	Single Angle	A36 Gr.36	Typical
23	23	43	42		MF-H1	Beam	Pipe	A53 Gr.B	Typical
24	24	44	45		MF-H1	Beam	Pipe	A53 Gr.B	Typical
25	25	46	47		F1-CP1	Beam	RECT	A36 Gr.36	Typical
26	26	48	49		RIGID	None	None	RIGID	Typical
27	27	50	51		RIGID	None	None	RIGID	Typical
28	28	52	53		RIGID	None	None	RIGID	Typical
29	29	27	43		MF-H1	Beam	Pipe	A53 Gr.B	Typical
30	30	44	9		MF-H1	Beam	Pipe	A53 Gr.B	Typical
31	31	10	26		MF-H1	Beam	Pipe	A53 Gr.B	Typical
32	32	54	56		MF-H2	Beam	Pipe	A53 Gr.B	Typical
33	33	43	57		F1-V1	Column	BAR	A36 Gr.36	Typical
34	34	27	56		F1-V1	Column	BAR	A36 Gr.36	Typical
35	35	9	59		F1-V1	Column	BAR	A36 Gr.36	Typical



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**Member Primary Data (Continued)**

Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
36	36	44	58	F1-V1	Column	BAR	A36 Gr.36	Typical
37	37	26	61	F1-V1	Column	BAR	A36 Gr.36	Typical
38	38	10	60	F1-V1	Column	BAR	A36 Gr.36	Typical
39	39	62	58	MF-H2	Beam	Pipe	A53 Gr.B	Typical
40	40	64	60	MF-H2	Beam	Pipe	A53 Gr.B	Typical
41	41	77	76	F1-CP2	Beam	RECT	A36 Gr.36	Typical
42	42	76	70	F1-CP2	Beam	RECT	A36 Gr.36	Typical
43	43	70	71	F1-CP2	Beam	RECT	A36 Gr.36	Typical
44	44	69	68	F1-CP2	Beam	RECT	A36 Gr.36	Typical
45	45	68	74	F1-CP2	Beam	RECT	A36 Gr.36	Typical
46	46	74	75	F1-CP2	Beam	RECT	A36 Gr.36	Typical
47	47	73	72	F1-CP2	Beam	RECT	A36 Gr.36	Typical
48	48	72	66	F1-CP2	Beam	RECT	A36 Gr.36	Typical
49	49	66	67	F1-CP2	Beam	RECT	A36 Gr.36	Typical
50	50	56	57	MF-H2	Beam	Pipe	A53 Gr.B	Typical
51	51	58	59	MF-H2	Beam	Pipe	A53 Gr.B	Typical
52	52	60	61	MF-H2	Beam	Pipe	A53 Gr.B	Typical
53	53	57	55	MF-H2	Beam	Pipe	A53 Gr.B	Typical
54	54	59	63	MF-H2	Beam	Pipe	A53 Gr.B	Typical
55	55	61	65	MF-H2	Beam	Pipe	A53 Gr.B	Typical
56	56	89	87	MF-H2	Beam	Pipe	A53 Gr.B	Typical
57	57	85	83	MF-H2	Beam	Pipe	A53 Gr.B	Typical
58	58	81	79	MF-H2	Beam	Pipe	A53 Gr.B	Typical
59	59	79	80	RIGID	None	None	RIGID	Typical
60	60	81	82	RIGID	None	None	RIGID	Typical
61	61	83	84	RIGID	None	None	RIGID	Typical
62	62	85	86	RIGID	None	None	RIGID	Typical
63	63	87	88	RIGID	None	None	RIGID	Typical
64	64	89	90	RIGID	None	None	RIGID	Typical
65	65	7	91	RIGID	None	None	RIGID	Typical
66	66	92	93	RIGID	None	None	RIGID	Typical
67	67	94	95	F-V2	Column	Pipe	A53 Gr.B	Typical
68	68	24	96	RIGID	None	None	RIGID	Typical
69	69	97	98	RIGID	None	None	RIGID	Typical
70	70	99	100	F-V2	Column	Pipe	A53 Gr.B	Typical
71	71	41	101	RIGID	None	None	RIGID	Typical
72	72	102	103	RIGID	None	None	RIGID	Typical
73	73	104	105	F-V2	Column	Pipe	A53 Gr.B	Typical
74	74	106	107	RIGID	None	None	RIGID	Typical
75	75	108	109	RIGID	None	None	RIGID	Typical
76	76	110	111	RIGID	None	None	RIGID	Typical
77	77	112	113	RIGID	None	None	RIGID	Typical
78	78	114	115	RIGID	None	None	RIGID	Typical
79	79	116	117	RIGID	None	None	RIGID	Typical
80	80	118	119	RIGID	None	None	RIGID	Typical
81	81	120	121	RIGID	None	None	RIGID	Typical
82	82	122	123	MF-P1	Column	Pipe	A53 Gr.B	Typical
83	83	124	125	MF-P1	Column	Pipe	A53 Gr.B	Typical
84	84	126	127	MF-P1	Column	Pipe	A53 Gr.B	Typical
85	85	128	129	MF-P1	Column	Pipe	A53 Gr.B	Typical
86	86	130	131	RIGID	None	None	RIGID	Typical
87	87	132	133	RIGID	None	None	RIGID	Typical
88	88	134	135	RIGID	None	None	RIGID	Typical
89	89	136	137	RIGID	None	None	RIGID	Typical
90	90	138	139	RIGID	None	None	RIGID	Typical



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**Member Primary Data (Continued)**

Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule	
91	91	140	141		RIGID	None	None	RIGID	Typical
92	92	142	143		RIGID	None	None	RIGID	Typical
93	93	144	145		RIGID	None	None	RIGID	Typical
94	94	146	147		MF-P1	Column	Pipe	A53 Gr.B	Typical
95	95	148	149		MF-P1	Column	Pipe	A53 Gr.B	Typical
96	96	150	151		MF-P1	Column	Pipe	A53 Gr.B	Typical
97	97	152	153		MF-P1	Column	Pipe	A53 Gr.B	Typical
98	98	154	155		RIGID	None	None	RIGID	Typical
99	99	156	157		RIGID	None	None	RIGID	Typical
100	100	158	159		RIGID	None	None	RIGID	Typical
101	101	160	161		RIGID	None	None	RIGID	Typical
102	102	162	163		RIGID	None	None	RIGID	Typical
103	103	164	165		RIGID	None	None	RIGID	Typical
104	104	166	167		RIGID	None	None	RIGID	Typical
105	105	168	169		RIGID	None	None	RIGID	Typical
106	106	170	171		MF-P1	Column	Pipe	A53 Gr.B	Typical
107	107	172	173		MF-P1	Column	Pipe	A53 Gr.B	Typical
108	108	174	175		MF-P1	Column	Pipe	A53 Gr.B	Typical
109	109	176	177		MF-P1	Column	Pipe	A53 Gr.B	Typical
110	110	181	178		RIGID	None	None	RIGID	Typical
111	111	179	180		MF-P1	Column	Pipe	A53 Gr.B	Typical
112	112	181	182		RIGID	None	None	RIGID	Typical
113	113	183	184		MF-P1	Column	Pipe	A53 Gr.B	Typical
114	114	188	185		RIGID	None	None	RIGID	Typical
115	115	186	187		MF-P1	Column	Pipe	A53 Gr.B	Typical
116	116	188	189		RIGID	None	None	RIGID	Typical
117	117	190	191		MF-P1	Column	Pipe	A53 Gr.B	Typical
118	118	195	192		RIGID	None	None	RIGID	Typical
119	119	193	194		MF-P1	Column	Pipe	A53 Gr.B	Typical
120	120	195	196		RIGID	None	None	RIGID	Typical
121	121	197	198		MF-P1	Column	Pipe	A53 Gr.B	Typical
122	122	199	200		F1-S1	Beam	Tube	A53 Gr.B	Typical
123	123	201	202		F1-S1	Beam	Tube	A53 Gr.B	Typical
124	124	213	214		RIGID	None	None	RIGID	Typical
125	126	216A	217		RIGID	None	None	RIGID	Typical
126	128	219A	220		RIGID	None	None	RIGID	Typical
127	M128	N220	N219		RIGID	None	None	RIGID	Typical
128	M130	N223	N222		RIGID	None	None	RIGID	Typical
129	129	N224	N225	180	Stabilizer	VBrace	Single Angle	A36 Gr.36	Typical
130	131	N224	N226	90	Stabilizer	VBrace	Single Angle	A36 Gr.36	Typical
131	132	N228	N229	180	Stabilizer	VBrace	Single Angle	A36 Gr.36	Typical
132	133	N228	N227	90	Stabilizer	VBrace	Single Angle	A36 Gr.36	Typical
133	134	N231	N232	180	Stabilizer	VBrace	Single Angle	A36 Gr.36	Typical
134	135	N231	N230	90	Stabilizer	VBrace	Single Angle	A36 Gr.36	Typical

**Member Advanced Data**

Label	I Release	J Release	Col-Wall	Vert Release	T/C Only	Physical	Deflection Ratio Options	Seismic DR
1	1					Yes	N/A	None
2	2					Yes	N/A	None
3	3				Tension Only	Yes	Default	None
4	4				Tension Only	Yes	Default	None
5	5					Yes	N/A	None
6	6					Yes	N/A	None
7	7					Yes	N/A	None
8	8					Yes	** NA **	None



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**Member Advanced Data (Continued)**

	Label	I Release	J Release	Col-Wall Vert Release	T/C Only	Physical	Deflection Ratio Options	Seismic DR
9	9					Yes	** NA **	None
10	10					Yes	** NA **	None
11	11					Yes	N/A	None
12	12				Tension Only	Yes	Default	None
13	13				Tension Only	Yes	Default	None
14	14					Yes	N/A	None
15	15					Yes	N/A	None
16	16					Yes	N/A	None
17	17					Yes	** NA **	None
18	18					Yes	** NA **	None
19	19					Yes	** NA **	None
20	20					Yes	N/A	None
21	21				Tension Only	Yes	Default	None
22	22				Tension Only	Yes	Default	None
23	23					Yes	N/A	None
24	24					Yes	N/A	None
25	25					Yes	N/A	None
26	26					Yes	** NA **	None
27	27					Yes	** NA **	None
28	28					Yes	** NA **	None
29	29					Yes	N/A	None
30	30					Yes	N/A	None
31	31					Yes	N/A	None
32	32					Yes	N/A	None
33	33					Yes	** NA **	None
34	34					Yes	** NA **	None
35	35					Yes	** NA **	None
36	36					Yes	** NA **	None
37	37					Yes	** NA **	None
38	38					Yes	** NA **	None
39	39					Yes	N/A	None
40	40					Yes	N/A	None
41	41					Yes	N/A	None
42	42					Yes	N/A	None
43	43					Yes	N/A	None
44	44					Yes	N/A	None
45	45					Yes	N/A	None
46	46					Yes	N/A	None
47	47					Yes	N/A	None
48	48					Yes	N/A	None
49	49					Yes	N/A	None
50	50					Yes	N/A	None
51	51					Yes	N/A	None
52	52					Yes	N/A	None
53	53					Yes	N/A	None
54	54					Yes	N/A	None
55	55					Yes	N/A	None
56	56	BenPIN	BenPIN			Yes	N/A	None
57	57	BenPIN	BenPIN			Yes	N/A	None
58	58	BenPIN	BenPIN			Yes	N/A	None
59	59					Yes	** NA **	None
60	60					Yes	** NA **	None
61	61					Yes	** NA **	None
62	62					Yes	** NA **	None
63	63					Yes	** NA **	None



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**Member Advanced Data (Continued)**

Label	I Release	J Release	Col-Wall Vert Release	T/C Only	Physical	Deflection Ratio Options	Seismic DR
64	64				Yes	** NA **	None
65	65				Yes	** NA **	None
66	66				Yes	** NA **	None
67	67				Yes	** NA **	None
68	68				Yes	** NA **	None
69	69				Yes	** NA **	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes	** NA **	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	** NA **	None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes	** NA **	None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None
91	91				Yes	** NA **	None
92	92				Yes	** NA **	None
93	93				Yes	** NA **	None
94	94				Yes	** NA **	None
95	95				Yes	** NA **	None
96	96				Yes	** NA **	None
97	97				Yes	** NA **	None
98	98				Yes	** NA **	None
99	99				Yes	** NA **	None
100	100				Yes	** NA **	None
101	101				Yes	** NA **	None
102	102				Yes	** NA **	None
103	103				Yes	** NA **	None
104	104				Yes	** NA **	None
105	105				Yes	** NA **	None
106	106				Yes	** NA **	None
107	107				Yes	** NA **	None
108	108				Yes	** NA **	None
109	109				Yes	** NA **	None
110	110				Yes	** NA **	None
111	111				Yes	** NA **	None
112	112				Yes	** NA **	None
113	113				Yes	** NA **	None
114	114				Yes	** NA **	None
115	115				Yes	** NA **	None
116	116				Yes	** NA **	None
117	117				Yes	** NA **	None
118	118				Yes	** NA **	None



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**Member Advanced Data (Continued)**

	Label	I Release	J Release	Col-Wall	Vert Release	T/C Only	Physical	Deflection Ratio	Options	Seismic DR
119	119						Yes	** NA **		None
120	120						Yes	** NA **		None
121	121						Yes	** NA **		None
122	122						Yes	N/A		None
123	123						Yes	N/A		None
124	124						Yes	** NA **		None
125	126						Yes	** NA **		None
126	128						Yes	** NA **		None
127	M128						Yes	** NA **		None
128	M130						Yes	** NA **		None
129	129	BenPIN	BenPIN				Yes	** NA **		None
130	131	BenPIN	BenPIN				Yes	** NA **		None
131	132	BenPIN	BenPIN				Yes	** NA **		None
132	133	BenPIN	BenPIN				Yes	** NA **		None
133	134	BenPIN	BenPIN				Yes	** NA **		None
134	135	BenPIN	BenPIN				Yes	** NA **		None

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	1	F1-S1	5.25	Lbyy	N/A	N/A	Lateral
2	2	F1-S1	3.875	Lbyy	N/A	N/A	Lateral
3	3	F1-SA1	2.944	Lbyy	N/A	N/A	Lateral
4	4	F1-SA1	2.944	Lbyy	N/A	N/A	Lateral
5	5	MF-H1	4.583	Lbyy	N/A	N/A	Lateral
6	6	MF-H1	4.583	Lbyy	N/A	N/A	Lateral
7	7	F1-CP1	1.333	Lbyy	N/A	N/A	Lateral
8	11	F1-S1	5.25	Lbyy	N/A	N/A	Lateral
9	12	F1-SA1	2.944	Lbyy	N/A	N/A	Lateral
10	13	F1-SA1	2.944	Lbyy	N/A	N/A	Lateral
11	14	MF-H1	4.583	Lbyy	N/A	N/A	Lateral
12	15	MF-H1	4.583	Lbyy	N/A	N/A	Lateral
13	16	F1-CP1	1.333	Lbyy	N/A	N/A	Lateral
14	20	F1-S1	5.25	Lbyy	N/A	N/A	Lateral
15	21	F1-SA1	2.944	Lbyy	N/A	N/A	Lateral
16	22	F1-SA1	2.944	Lbyy	N/A	N/A	Lateral
17	23	MF-H1	4.583	Lbyy	N/A	N/A	Lateral
18	24	MF-H1	4.583	Lbyy	N/A	N/A	Lateral
19	25	F1-CP1	1.333	Lbyy	N/A	N/A	Lateral
20	29	MF-H1	4.503	Lbyy	N/A	N/A	Lateral
21	30	MF-H1	4.503	Lbyy	N/A	N/A	Lateral
22	31	MF-H1	4.503	Lbyy	N/A	N/A	Lateral
23	32	MF-H2	4.665	Lbyy	N/A	N/A	Lateral
24	33	F1-V1	2.667	Lbyy	N/A	N/A	Lateral
25	34	F1-V1	2.667	Lbyy	N/A	N/A	Lateral
26	35	F1-V1	2.667	Lbyy	N/A	N/A	Lateral
27	36	F1-V1	2.667	Lbyy	N/A	N/A	Lateral
28	37	F1-V1	2.667	Lbyy	N/A	N/A	Lateral
29	38	F1-V1	2.667	Lbyy	N/A	N/A	Lateral
30	39	MF-H2	4.665	Lbyy	N/A	N/A	Lateral
31	40	MF-H2	4.665	Lbyy	N/A	N/A	Lateral
32	41	F1-CP2	0.417	Lbyy	N/A	N/A	Lateral
33	42	F1-CP2	0.391	Lbyy	N/A	N/A	Lateral
34	43	F1-CP2	0.417	Lbyy	N/A	N/A	Lateral
35	44	F1-CP2	0.417	Lbyy	N/A	N/A	Lateral
36	45	F1-CP2	0.391	Lbyy	N/A	N/A	Lateral



**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
37	46	F1-CP2	0.417	Lbyy	N/A	N/A	Lateral
38	47	F1-CP2	0.417	Lbyy	N/A	N/A	Lateral
39	48	F1-CP2	0.391	Lbyy	N/A	N/A	Lateral
40	49	F1-CP2	0.417	Lbyy	N/A	N/A	Lateral
41	50	MF-H2	4.503	Lbyy	N/A	N/A	Lateral
42	51	MF-H2	4.503	Lbyy	N/A	N/A	Lateral
43	52	MF-H2	4.503	Lbyy	N/A	N/A	Lateral
44	53	MF-H2	4.665	Lbyy	N/A	N/A	Lateral
45	54	MF-H2	4.665	Lbyy	N/A	N/A	Lateral
46	55	MF-H2	4.665	Lbyy	N/A	N/A	Lateral
47	56	MF-H2	5	Lbyy	N/A	N/A	Lateral
48	57	MF-H2	5	Lbyy	N/A	N/A	Lateral
49	58	MF-H2	5	Lbyy	N/A	N/A	Lateral
50	67	F-V2	5.25	Lbyy	N/A	N/A	Lateral
51	70	F-V2	5.25	Lbyy	N/A	N/A	Lateral
52	73	F-V2	5.25	Lbyy	N/A	N/A	Lateral
53	82	MF-P1	10	Lbyy	N/A	N/A	Lateral
54	83	MF-P1	10	Lbyy	N/A	N/A	Lateral
55	84	MF-P1	10	Lbyy	N/A	N/A	Lateral
56	85	MF-P1	10	Lbyy	N/A	N/A	Lateral
57	94	MF-P1	10	Lbyy	N/A	N/A	Lateral
58	95	MF-P1	10	Lbyy	N/A	N/A	Lateral
59	96	MF-P1	10	Lbyy	N/A	N/A	Lateral
60	97	MF-P1	10	Lbyy	N/A	N/A	Lateral
61	106	MF-P1	10	Lbyy	N/A	N/A	Lateral
62	107	MF-P1	10	Lbyy	N/A	N/A	Lateral
63	108	MF-P1	10	Lbyy	N/A	N/A	Lateral
64	109	MF-P1	10	Lbyy	N/A	N/A	Lateral
65	111	MF-P1	8	Lbyy	N/A	N/A	Lateral
66	113	MF-P1	8	Lbyy	N/A	N/A	Lateral
67	115	MF-P1	8	Lbyy	N/A	N/A	Lateral
68	117	MF-P1	8	Lbyy	N/A	N/A	Lateral
69	119	MF-P1	8	Lbyy	N/A	N/A	Lateral
70	121	MF-P1	8	Lbyy	N/A	N/A	Lateral
71	122	F1-S1	3.875	Lbyy	N/A	N/A	Lateral
72	123	F1-S1	3.875	Lbyy	N/A	N/A	Lateral
73	129	Stabilizer	6.001	Lbyy	N/A	N/A	Lateral
74	131	Stabilizer	6.001	Lbyy	N/A	N/A	Lateral
75	132	Stabilizer	6.001	Lbyy	N/A	N/A	Lateral
76	133	Stabilizer	6.001	Lbyy	N/A	N/A	Lateral
77	134	Stabilizer	6.001	Lbyy	N/A	N/A	Lateral
78	135	Stabilizer	6.001	Lbyy	N/A	N/A	Lateral

**Cold Formed Steel Design Parameters**

No Data to Print...

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.047	%10
2	85	Y	-0.047	%90
3	85	Y	0	0
4	85	Y	0	0
5	85	Y	0	0
6	84	Y	-0.038	%15



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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	84	Y	-0.038	%40
8	84	Y	-0.037	%55
9	84	Y	-0.037	%80
10	84	Y	0	0
11	83	Y	-0.047	%10
12	83	Y	-0.047	%90
13	83	Y	0	0
14	83	Y	0	0
15	83	Y	0	0
16	109	Y	-0.047	%10
17	109	Y	-0.047	%90
18	109	Y	0	0
19	109	Y	0	0
20	109	Y	0	0
21	108	Y	-0.038	%15
22	108	Y	-0.038	%40
23	108	Y	-0.037	%55
24	108	Y	-0.037	%80
25	108	Y	0	0
26	107	Y	-0.047	%10
27	107	Y	-0.047	%90
28	107	Y	0	0
29	107	Y	0	0
30	107	Y	0	0
31	97	Y	-0.047	%10
32	97	Y	-0.047	%90
33	97	Y	0	0
34	97	Y	0	0
35	97	Y	0	0
36	96	Y	-0.038	%15
37	96	Y	-0.038	%40
38	96	Y	-0.037	%55
39	96	Y	-0.037	%80
40	96	Y	0	0
41	95	Y	-0.047	%10
42	95	Y	-0.047	%90
43	95	Y	0	0
44	95	Y	0	0
45	95	Y	0	0
46	119	Y	-0.065	%50
47	119	Y	-0.033	%20
48	119	Y	0	0
49	119	Y	0	0
50	119	Y	0	0
51	117	Y	-0.109	%50
52	117	Y	-0.059	%50
53	117	Y	0	0
54	117	Y	0	0
55	117	Y	0	0
56	115	Y	-0.065	%50
57	115	Y	-0.033	%20
58	115	Y	0	0
59	115	Y	0	0
60	115	Y	0	0
61	113	Y	-0.109	%50





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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
62	113	Y	-0.059	%50
63	113	Y	0	0
64	113	Y	0	0
65	113	Y	0	0
66	111	Y	-0.065	%50
67	111	Y	-0.033	%20
68	111	Y	0	0
69	111	Y	0	0
70	111	Y	0	0
71	121	Y	-0.109	%50
72	121	Y	-0.059	%50
73	121	Y	0	0
74	121	Y	0	0
75	121	Y	0	0

**Member Point Loads (BLC 2 : 0 Wind - No Ice)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Z	-0.34	%10
2	85	Z	-0.34	%90
3	85	Z	0	0
4	85	Z	0	0
5	85	Z	0	0
6	84	Z	-0.076	%15
7	84	Z	-0.076	%40
8	84	Z	-0.075	%55
9	84	Z	-0.075	%80
10	84	Z	0	0
11	83	Z	-0.34	%10
12	83	Z	-0.34	%90
13	83	Z	0	0
14	83	Z	0	0
15	83	Z	0	0
16	109	Z	-0.34	%10
17	109	Z	-0.34	%90
18	109	Z	0	0
19	109	Z	0	0
20	109	Z	0	0
21	108	Z	-0.076	%15
22	108	Z	-0.076	%40
23	108	Z	-0.075	%55
24	108	Z	-0.075	%80
25	108	Z	0	0
26	107	Z	-0.34	%10
27	107	Z	-0.34	%90
28	107	Z	0	0
29	107	Z	0	0
30	107	Z	0	0
31	97	Z	-0.34	%10
32	97	Z	-0.34	%90
33	97	Z	0	0
34	97	Z	0	0
35	97	Z	0	0
36	96	Z	-0.076	%15
37	96	Z	-0.076	%40
38	96	Z	-0.075	%55



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**Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
39	96	Z	-0.075	%80
40	96	Z	0	0
41	95	Z	-0.34	%10
42	95	Z	-0.34	%90
43	95	Z	0	0
44	95	Z	0	0
45	95	Z	0	0
46	119	Z	-0.049	%50
47	119	Z	-0.048	%20
48	119	Z	0	0
49	119	Z	0	0
50	119	Z	0	0
51	117	Z	-0.079	%50
52	117	Z	-0.05	%50
53	117	Z	0	0
54	117	Z	0	0
55	117	Z	0	0
56	115	Z	-0.049	%50
57	115	Z	-0.048	%20
58	115	Z	0	0
59	115	Z	0	0
60	115	Z	0	0
61	113	Z	-0.079	%50
62	113	Z	-0.05	%50
63	113	Z	0	0
64	113	Z	0	0
65	113	Z	0	0
66	111	Z	-0.049	%50
67	111	Z	-0.048	%20
68	111	Z	0	0
69	111	Z	0	0
70	111	Z	0	0
71	121	Z	-0.079	%50
72	121	Z	-0.05	%50
73	121	Z	0	0
74	121	Z	0	0
75	121	Z	0	0

**Member Point Loads (BLC 3 : 90 Wind - No Ice)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	X	-0.135	%10
2	85	X	-0.135	%90
3	85	X	0	0
4	85	X	0	0
5	85	X	0	0
6	84	X	-0.037	%15
7	84	X	-0.037	%40
8	84	X	-0.034	%55
9	84	X	-0.034	%80
10	84	X	0	0
11	83	X	-0.135	%10
12	83	X	-0.135	%90
13	83	X	0	0
14	83	X	0	0
15	83	X	0	0



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**Member Point Loads (BLC 3 : 90 Wind - No Ice) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
16	109	X	-0.135	%10
17	109	X	-0.135	%90
18	109	X	0	0
19	109	X	0	0
20	109	X	0	0
21	108	X	-0.037	%15
22	108	X	-0.037	%40
23	108	X	-0.034	%55
24	108	X	-0.034	%80
25	108	X	0	0
26	107	X	-0.135	%10
27	107	X	-0.135	%90
28	107	X	0	0
29	107	X	0	0
30	107	X	0	0
31	97	X	-0.135	%10
32	97	X	-0.135	%90
33	97	X	0	0
34	97	X	0	0
35	97	X	0	0
36	96	X	-0.037	%15
37	96	X	-0.037	%40
38	96	X	-0.034	%55
39	96	X	-0.034	%80
40	96	X	0	0
41	95	X	-0.135	%10
42	95	X	-0.135	%90
43	95	X	0	0
44	95	X	0	0
45	95	X	0	0
46	119	X	-0.108	%50
47	119	X	-0.081	%20
48	119	X	0	0
49	119	X	0	0
50	119	X	0	0
51	117	X	-0.103	%50
52	117	X	-0.081	%50
53	117	X	0	0
54	117	X	0	0
55	117	X	0	0
56	115	X	-0.108	%50
57	115	X	-0.081	%20
58	115	X	0	0
59	115	X	0	0
60	115	X	0	0
61	113	X	-0.103	%50
62	113	X	-0.081	%50
63	113	X	0	0
64	113	X	0	0
65	113	X	0	0
66	111	X	-0.108	%50
67	111	X	-0.081	%20
68	111	X	0	0
69	111	X	0	0
70	111	X	0	0



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**Member Point Loads (BLC 3 : 90 Wind - No Ice) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
71	121	X	-0.103	%50
72	121	X	-0.081	%50
73	121	X	0	0
74	121	X	0	0
75	121	X	0	0

**Member Point Loads (BLC 6 : 0 Wind - Service)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Z	-0.028	%10
2	85	Z	-0.028	%90
3	85	Z	0	0
4	85	Z	0	0
5	85	Z	0	0
6	84	Z	-0.006	%15
7	84	Z	-0.006	%40
8	84	Z	-0.006	%55
9	84	Z	-0.006	%80
10	84	Z	0	0
11	83	Z	-0.028	%10
12	83	Z	-0.028	%90
13	83	Z	0	0
14	83	Z	0	0
15	83	Z	0	0
16	109	Z	-0.028	%10
17	109	Z	-0.028	%90
18	109	Z	0	0
19	109	Z	0	0
20	109	Z	0	0
21	108	Z	-0.006	%15
22	108	Z	-0.006	%40
23	108	Z	-0.006	%55
24	108	Z	-0.006	%80
25	108	Z	0	0
26	107	Z	-0.028	%10
27	107	Z	-0.028	%90
28	107	Z	0	0
29	107	Z	0	0
30	107	Z	0	0
31	97	Z	-0.028	%10
32	97	Z	-0.028	%90
33	97	Z	0	0
34	97	Z	0	0
35	97	Z	0	0
36	96	Z	-0.006	%15
37	96	Z	-0.006	%40
38	96	Z	-0.006	%55
39	96	Z	-0.006	%80
40	96	Z	0	0
41	95	Z	-0.028	%10
42	95	Z	-0.028	%90
43	95	Z	0	0
44	95	Z	0	0
45	95	Z	0	0
46	119	Z	-0.004	%50
47	119	Z	-0.004	%20



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**Member Point Loads (BLC 6 : 0 Wind - Service) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
48	119	Z	0	0
49	119	Z	0	0
50	119	Z	0	0
51	117	Z	-0.006	%50
52	117	Z	-0.004	%50
53	117	Z	0	0
54	117	Z	0	0
55	117	Z	0	0
56	115	Z	-0.004	%50
57	115	Z	-0.004	%20
58	115	Z	0	0
59	115	Z	0	0
60	115	Z	0	0
61	113	Z	-0.006	%50
62	113	Z	-0.004	%50
63	113	Z	0	0
64	113	Z	0	0
65	113	Z	0	0
66	111	Z	-0.004	%50
67	111	Z	-0.004	%20
68	111	Z	0	0
69	111	Z	0	0
70	111	Z	0	0
71	121	Z	-0.006	%50
72	121	Z	-0.004	%50
73	121	Z	0	0
74	121	Z	0	0
75	121	Z	0	0

**Member Point Loads (BLC 7 : 90 Wind - Service)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	X	-0.011	%10
2	85	X	-0.011	%90
3	85	X	0	0
4	85	X	0	0
5	85	X	0	0
6	84	X	-0.003	%15
7	84	X	-0.003	%40
8	84	X	-0.003	%55
9	84	X	-0.003	%80
10	84	X	0	0
11	83	X	-0.011	%10
12	83	X	-0.011	%90
13	83	X	0	0
14	83	X	0	0
15	83	X	0	0
16	109	X	-0.011	%10
17	109	X	-0.011	%90
18	109	X	0	0
19	109	X	0	0
20	109	X	0	0
21	108	X	-0.003	%15
22	108	X	-0.003	%40
23	108	X	-0.003	%55
24	108	X	-0.003	%80



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**Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
25	108	X	0	0
26	107	X	-0.011	%10
27	107	X	-0.011	%90
28	107	X	0	0
29	107	X	0	0
30	107	X	0	0
31	97	X	-0.011	%10
32	97	X	-0.011	%90
33	97	X	0	0
34	97	X	0	0
35	97	X	0	0
36	96	X	-0.003	%15
37	96	X	-0.003	%40
38	96	X	-0.003	%55
39	96	X	-0.003	%80
40	96	X	0	0
41	95	X	-0.011	%10
42	95	X	-0.011	%90
43	95	X	0	0
44	95	X	0	0
45	95	X	0	0
46	119	X	-0.009	%50
47	119	X	-0.007	%20
48	119	X	0	0
49	119	X	0	0
50	119	X	0	0
51	117	X	-0.008	%50
52	117	X	-0.007	%50
53	117	X	0	0
54	117	X	0	0
55	117	X	0	0
56	115	X	-0.009	%50
57	115	X	-0.007	%20
58	115	X	0	0
59	115	X	0	0
60	115	X	0	0
61	113	X	-0.008	%50
62	113	X	-0.007	%50
63	113	X	0	0
64	113	X	0	0
65	113	X	0	0
66	111	X	-0.009	%50
67	111	X	-0.007	%20
68	111	X	0	0
69	111	X	0	0
70	111	X	0	0
71	121	X	-0.008	%50
72	121	X	-0.007	%50
73	121	X	0	0
74	121	X	0	0
75	121	X	0	0



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**Member Point Loads (BLC 9 : 0 Seismic)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Z	-0.042	%10
2	85	Z	-0.042	%90
3	85	Z	0	0
4	85	Z	0	0
5	85	Z	0	0
6	84	Z	-0.034	%15
7	84	Z	-0.034	%40
8	84	Z	-0.033	%55
9	84	Z	-0.033	%80
10	84	Z	0	0
11	83	Z	-0.042	%10
12	83	Z	-0.042	%90
13	83	Z	0	0
14	83	Z	0	0
15	83	Z	0	0
16	109	Z	-0.042	%10
17	109	Z	-0.042	%90
18	109	Z	0	0
19	109	Z	0	0
20	109	Z	0	0
21	108	Z	-0.034	%15
22	108	Z	-0.034	%40
23	108	Z	-0.033	%55
24	108	Z	-0.033	%80
25	108	Z	0	0
26	107	Z	-0.042	%10
27	107	Z	-0.042	%90
28	107	Z	0	0
29	107	Z	0	0
30	107	Z	0	0
31	97	Z	-0.042	%10
32	97	Z	-0.042	%90
33	97	Z	0	0
34	97	Z	0	0
35	97	Z	0	0
36	96	Z	-0.034	%15
37	96	Z	-0.034	%40
38	96	Z	-0.033	%55
39	96	Z	-0.033	%80
40	96	Z	0	0
41	95	Z	-0.042	%10
42	95	Z	-0.042	%90
43	95	Z	0	0
44	95	Z	0	0
45	95	Z	0	0
46	119	Z	-0.029	%50
47	119	Z	-0.015	%20
48	119	Z	0	0
49	119	Z	0	0
50	119	Z	0	0
51	117	Z	-0.048	%50
52	117	Z	-0.026	%50
53	117	Z	0	0
54	117	Z	0	0
55	117	Z	0	0



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**Member Point Loads (BLC 9 : 0 Seismic) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
56	115	Z	-0.029	%50
57	115	Z	-0.015	%20
58	115	Z	0	0
59	115	Z	0	0
60	115	Z	0	0
61	113	Z	-0.048	%50
62	113	Z	-0.026	%50
63	113	Z	0	0
64	113	Z	0	0
65	113	Z	0	0
66	111	Z	-0.029	%50
67	111	Z	-0.015	%20
68	111	Z	0	0
69	111	Z	0	0
70	111	Z	0	0
71	121	Z	-0.048	%50
72	121	Z	-0.026	%50
73	121	Z	0	0
74	121	Z	0	0
75	121	Z	0	0

**Member Point Loads (BLC 10 : 90 Seismic)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	X	-0.042	%10
2	85	X	-0.042	%90
3	85	X	0	0
4	85	X	0	0
5	85	X	0	0
6	84	X	-0.034	%15
7	84	X	-0.034	%40
8	84	X	-0.033	%55
9	84	X	-0.033	%80
10	84	X	0	0
11	83	X	-0.042	%10
12	83	X	-0.042	%90
13	83	X	0	0
14	83	X	0	0
15	83	X	0	0
16	109	X	-0.042	%10
17	109	X	-0.042	%90
18	109	X	0	0
19	109	X	0	0
20	109	X	0	0
21	108	X	-0.034	%15
22	108	X	-0.034	%40
23	108	X	-0.033	%55
24	108	X	-0.033	%80
25	108	X	0	0
26	107	X	-0.042	%10
27	107	X	-0.042	%90
28	107	X	0	0
29	107	X	0	0
30	107	X	0	0
31	97	X	-0.042	%10
32	97	X	-0.042	%90





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**Member Point Loads (BLC 10 : 90 Seismic) (Continued)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
33	97	X	0	0
34	97	X	0	0
35	97	X	0	0
36	96	X	-0.034	%15
37	96	X	-0.034	%40
38	96	X	-0.033	%55
39	96	X	-0.033	%80
40	96	X	0	0
41	95	X	-0.042	%10
42	95	X	-0.042	%90
43	95	X	0	0
44	95	X	0	0
45	95	X	0	0
46	119	X	-0.029	%50
47	119	X	-0.015	%20
48	119	X	0	0
49	119	X	0	0
50	119	X	0	0
51	117	X	-0.048	%50
52	117	X	-0.026	%50
53	117	X	0	0
54	117	X	0	0
55	117	X	0	0
56	115	X	-0.029	%50
57	115	X	-0.015	%20
58	115	X	0	0
59	115	X	0	0
60	115	X	0	0
61	113	X	-0.048	%50
62	113	X	-0.026	%50
63	113	X	0	0
64	113	X	0	0
65	113	X	0	0
66	111	X	-0.029	%50
67	111	X	-0.015	%20
68	111	X	0	0
69	111	X	0	0
70	111	X	0	0
71	121	X	-0.048	%50
72	121	X	-0.026	%50
73	121	X	0	0
74	121	X	0	0
75	121	X	0	0

**Member Point Loads (BLC 16 : Maint LL 1)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	32	Y	-0.25	%5

**Member Point Loads (BLC 17 : Maint LL 2)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	40	Y	-0.25	%5



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**Member Point Loads (BLC 18 : Maint LL 3)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	39	Y	-0.25	%5

**Member Point Loads (BLC 19 : Maint LL 4)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	53	Y	-0.25	%95

**Member Point Loads (BLC 20 : Maint LL 5)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Y	-0.25	%95

**Member Point Loads (BLC 21 : Maint LL 6)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	54	Y	-0.25	%95

**Member Point Loads (BLC 22 : Maint LL 7)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	15	Y	-0.25	%95

**Member Point Loads (BLC 23 : Maint LL 8)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

**Member Point Loads (BLC 24 : Maint LL 9)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	24	Y	-0.25	%95

**Member Point Loads (BLC 25 : Maint LL 10)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	23	Y	-0.25	%95

**Member Point Loads (BLC 26 : Maint LL 11)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	14	Y	-0.25	%95

**Member Point Loads (BLC 27 : Maint LL 12)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	5	Y	-0.25	%95



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**Member Point Loads (BLC 28 : Maint LL 13)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	11	Y	-0.25	%5

**Member Point Loads (BLC 29 : Maint LL 14)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%5

**Member Point Loads (BLC 30 : Maint LL 15)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.25	%5

**Member Point Loads (BLC 31 : Maint LL 16)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	129	Y	-0.25	%50

**Member Point Loads (BLC 32 : Maint LL 17)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	131	Y	-0.25	%50

**Member Point Loads (BLC 33 : Maint LL 18)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	135	Y	-0.25	%50

**Member Point Loads (BLC 34 : Maint LL 19)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	134	Y	-0.25	%50

**Member Point Loads (BLC 35 : Maint LL 20)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	133	Y	-0.25	%50

**Member Point Loads (BLC 36 : Maint LL 21)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	132	Y	-0.25	%50

**Member Distributed Loads (BLC 2 : 0 Wind - No Ice)**

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.018	-0.018	0	%100
2	2	Z	-0.017	-0.017	0	%100
3	3	Z	-0.01	-0.01	0	%100
4	4	Z	-0.01	-0.01	0	%100
5	5	Z	-0.008	-0.008	0	%100
6	6	Z	-0.008	-0.008	0	%100



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
7	7	Z	-0.024	-0.024	0	%100
8	11	Z	-0.018	-0.018	0	%100
9	12	Z	-0.01	-0.01	0	%100
10	13	Z	-0.01	-0.01	0	%100
11	14	Z	-0.008	-0.008	0	%100
12	15	Z	-0.008	-0.008	0	%100
13	16	Z	-0.024	-0.024	0	%100
14	20	Z	-0.018	-0.018	0	%100
15	21	Z	-0.01	-0.01	0	%100
16	22	Z	-0.01	-0.01	0	%100
17	23	Z	-0.008	-0.008	0	%100
18	24	Z	-0.008	-0.008	0	%100
19	25	Z	-0.024	-0.024	0	%100
20	29	Z	-0.008	-0.008	0	%100
21	30	Z	-0.008	-0.008	0	%100
22	31	Z	-0.008	-0.008	0	%100
23	32	Z	-0.009	-0.009	0	%100
24	33	Z	-0.004	-0.004	0	%100
25	34	Z	-0.004	-0.004	0	%100
26	35	Z	-0.004	-0.004	0	%100
27	36	Z	-0.004	-0.004	0	%100
28	37	Z	-0.004	-0.004	0	%100
29	38	Z	-0.004	-0.004	0	%100
30	39	Z	-0.009	-0.009	0	%100
31	40	Z	-0.009	-0.009	0	%100
32	41	Z	-0.024	-0.024	0	%100
33	42	Z	-0.024	-0.024	0	%100
34	43	Z	-0.024	-0.024	0	%100
35	44	Z	-0.024	-0.024	0	%100
36	45	Z	-0.024	-0.024	0	%100
37	46	Z	-0.024	-0.024	0	%100
38	47	Z	-0.024	-0.024	0	%100
39	48	Z	-0.024	-0.024	0	%100
40	49	Z	-0.024	-0.024	0	%100
41	50	Z	-0.009	-0.009	0	%100
42	51	Z	-0.009	-0.009	0	%100
43	52	Z	-0.009	-0.009	0	%100
44	53	Z	-0.009	-0.009	0	%100
45	54	Z	-0.009	-0.009	0	%100
46	55	Z	-0.009	-0.009	0	%100
47	56	Z	-0.009	-0.009	0	%100
48	57	Z	-0.009	-0.009	0	%100
49	58	Z	-0.009	-0.009	0	%100
50	67	Z	-0.009	-0.009	0	%100
51	70	Z	-0.009	-0.009	0	%100
52	73	Z	-0.009	-0.009	0	%100
53	82	Z	-0.009	-0.009	0	%100
54	83	Z	-0.009	-0.009	0	%100
55	84	Z	-0.009	-0.009	0	%100
56	85	Z	-0.009	-0.009	0	%100
57	94	Z	-0.009	-0.009	0	%100
58	95	Z	-0.009	-0.009	0	%100
59	96	Z	-0.009	-0.009	0	%100
60	97	Z	-0.009	-0.009	0	%100
61	106	Z	-0.009	-0.009	0	%100



Company : B+T Group  
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**Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
62	107	Z	-0.009	0	%100
63	108	Z	-0.009	0	%100
64	109	Z	-0.009	0	%100
65	111	Z	-0.009	0	%100
66	113	Z	-0.009	0	%100
67	115	Z	-0.009	0	%100
68	117	Z	-0.009	0	%100
69	119	Z	-0.009	0	%100
70	121	Z	-0.009	0	%100
71	122	Z	-0.017	0	%100
72	123	Z	-0.017	0	%100
73	129	Z	-0.027	0	%100
74	131	Z	-0.027	0	%100
75	132	Z	-0.027	0	%100
76	133	Z	-0.027	0	%100
77	134	Z	-0.027	0	%100
78	135	Z	-0.027	0	%100

**Member Distributed Loads (BLC 3 : 90 Wind - No Ice)**

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.018	0	%100
2	2	X	-0.017	0	%100
3	3	X	-0.01	0	%100
4	4	X	-0.01	0	%100
5	5	X	-0.008	0	%100
6	6	X	-0.008	0	%100
7	7	X	-0.024	0	%100
8	11	X	-0.018	0	%100
9	12	X	-0.01	0	%100
10	13	X	-0.01	0	%100
11	14	X	-0.008	0	%100
12	15	X	-0.008	0	%100
13	16	X	-0.024	0	%100
14	20	X	-0.018	0	%100
15	21	X	-0.01	0	%100
16	22	X	-0.01	0	%100
17	23	X	-0.008	0	%100
18	24	X	-0.008	0	%100
19	25	X	-0.024	0	%100
20	29	X	-0.008	0	%100
21	30	X	-0.008	0	%100
22	31	X	-0.008	0	%100
23	32	X	-0.009	0	%100
24	33	X	-0.004	0	%100
25	34	X	-0.004	0	%100
26	35	X	-0.004	0	%100
27	36	X	-0.004	0	%100
28	37	X	-0.004	0	%100
29	38	X	-0.004	0	%100
30	39	X	-0.009	0	%100
31	40	X	-0.009	0	%100
32	41	X	-0.024	0	%100
33	42	X	-0.024	0	%100
34	43	X	-0.024	0	%100
35	44	X	-0.024	0	%100



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Member Distributed Loads (BLC 3 : 90 Wind - No Ice) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
36	45	X	-0.024	-0.024	0	%100
37	46	X	-0.024	-0.024	0	%100
38	47	X	-0.024	-0.024	0	%100
39	48	X	-0.024	-0.024	0	%100
40	49	X	-0.024	-0.024	0	%100
41	50	X	-0.009	-0.009	0	%100
42	51	X	-0.009	-0.009	0	%100
43	52	X	-0.009	-0.009	0	%100
44	53	X	-0.009	-0.009	0	%100
45	54	X	-0.009	-0.009	0	%100
46	55	X	-0.009	-0.009	0	%100
47	56	X	-0.009	-0.009	0	%100
48	57	X	-0.009	-0.009	0	%100
49	58	X	-0.009	-0.009	0	%100
50	67	X	-0.009	-0.009	0	%100
51	70	X	-0.009	-0.009	0	%100
52	73	X	-0.009	-0.009	0	%100
53	82	X	-0.009	-0.009	0	%100
54	83	X	-0.009	-0.009	0	%100
55	84	X	-0.009	-0.009	0	%100
56	85	X	-0.009	-0.009	0	%100
57	94	X	-0.009	-0.009	0	%100
58	95	X	-0.009	-0.009	0	%100
59	96	X	-0.009	-0.009	0	%100
60	97	X	-0.009	-0.009	0	%100
61	106	X	-0.009	-0.009	0	%100
62	107	X	-0.009	-0.009	0	%100
63	108	X	-0.009	-0.009	0	%100
64	109	X	-0.009	-0.009	0	%100
65	111	X	-0.009	-0.009	0	%100
66	113	X	-0.009	-0.009	0	%100
67	115	X	-0.009	-0.009	0	%100
68	117	X	-0.009	-0.009	0	%100
69	119	X	-0.009	-0.009	0	%100
70	121	X	-0.009	-0.009	0	%100
71	122	X	-0.017	-0.017	0	%100
72	123	X	-0.017	-0.017	0	%100
73	129	X	-0.027	-0.027	0	%100
74	131	X	-0.027	-0.027	0	%100
75	132	X	-0.027	-0.027	0	%100
76	133	X	-0.027	-0.027	0	%100
77	134	X	-0.027	-0.027	0	%100
78	135	X	-0.027	-0.027	0	%100

**Member Distributed Loads (BLC 6 : 0 Wind - Service)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.0008	-0.0008	0	%100
4	4	Z	-0.0008	-0.0008	0	%100
5	5	Z	-0.0006	-0.0006	0	%100
6	6	Z	-0.0006	-0.0006	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	11	Z	-0.002	-0.002	0	%100
9	12	Z	-0.0008	-0.0008	0	%100



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
10	13	Z	-0.0008	-0.0008	0	%100
11	14	Z	-0.0006	-0.0006	0	%100
12	15	Z	-0.0006	-0.0006	0	%100
13	16	Z	-0.002	-0.002	0	%100
14	20	Z	-0.002	-0.002	0	%100
15	21	Z	-0.0008	-0.0008	0	%100
16	22	Z	-0.0008	-0.0008	0	%100
17	23	Z	-0.0006	-0.0006	0	%100
18	24	Z	-0.0006	-0.0006	0	%100
19	25	Z	-0.002	-0.002	0	%100
20	29	Z	-0.0006	-0.0006	0	%100
21	30	Z	-0.0006	-0.0006	0	%100
22	31	Z	-0.0006	-0.0006	0	%100
23	32	Z	-0.0004	-0.0004	0	%100
24	33	Z	-0.0002	-0.0002	0	%100
25	34	Z	-0.0002	-0.0002	0	%100
26	35	Z	-0.0002	-0.0002	0	%100
27	36	Z	-0.0002	-0.0002	0	%100
28	37	Z	-0.0002	-0.0002	0	%100
29	38	Z	-0.0002	-0.0002	0	%100
30	39	Z	-0.0004	-0.0004	0	%100
31	40	Z	-0.0004	-0.0004	0	%100
32	41	Z	-0.002	-0.002	0	%100
33	42	Z	-0.002	-0.002	0	%100
34	43	Z	-0.002	-0.002	0	%100
35	44	Z	-0.002	-0.002	0	%100
36	45	Z	-0.002	-0.002	0	%100
37	46	Z	-0.002	-0.002	0	%100
38	47	Z	-0.002	-0.002	0	%100
39	48	Z	-0.002	-0.002	0	%100
40	49	Z	-0.002	-0.002	0	%100
41	50	Z	-0.0004	-0.0004	0	%100
42	51	Z	-0.0004	-0.0004	0	%100
43	52	Z	-0.0004	-0.0004	0	%100
44	53	Z	-0.0004	-0.0004	0	%100
45	54	Z	-0.0004	-0.0004	0	%100
46	55	Z	-0.0004	-0.0004	0	%100
47	56	Z	-0.0004	-0.0004	0	%100
48	57	Z	-0.0004	-0.0004	0	%100
49	58	Z	-0.0004	-0.0004	0	%100
50	67	Z	-0.0004	-0.0004	0	%100
51	70	Z	-0.0004	-0.0004	0	%100
52	73	Z	-0.0004	-0.0004	0	%100
53	82	Z	-0.0004	-0.0004	0	%100
54	83	Z	-0.0004	-0.0004	0	%100
55	84	Z	-0.0004	-0.0004	0	%100
56	85	Z	-0.0004	-0.0004	0	%100
57	94	Z	-0.0004	-0.0004	0	%100
58	95	Z	-0.0004	-0.0004	0	%100
59	96	Z	-0.0004	-0.0004	0	%100
60	97	Z	-0.0004	-0.0004	0	%100
61	106	Z	-0.0004	-0.0004	0	%100
62	107	Z	-0.0004	-0.0004	0	%100
63	108	Z	-0.0004	-0.0004	0	%100
64	109	Z	-0.0004	-0.0004	0	%100



Company : B+T Group  
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**Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
65	111	Z	-0.0004	-0.0004	0	%100
66	113	Z	-0.0004	-0.0004	0	%100
67	115	Z	-0.0004	-0.0004	0	%100
68	117	Z	-0.0004	-0.0004	0	%100
69	119	Z	-0.0004	-0.0004	0	%100
70	121	Z	-0.0004	-0.0004	0	%100
71	122	Z	-0.001	-0.001	0	%100
72	123	Z	-0.001	-0.001	0	%100
73	129	Z	-0.002	-0.002	0	%100
74	131	Z	-0.002	-0.002	0	%100
75	132	Z	-0.002	-0.002	0	%100
76	133	Z	-0.002	-0.002	0	%100
77	134	Z	-0.002	-0.002	0	%100
78	135	Z	-0.002	-0.002	0	%100

**Member Distributed Loads (BLC 7 : 90 Wind - Service)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.0008	-0.0008	0	%100
4	4	X	-0.0008	-0.0008	0	%100
5	5	X	-0.0006	-0.0006	0	%100
6	6	X	-0.0006	-0.0006	0	%100
7	7	X	-0.002	-0.002	0	%100
8	11	X	-0.002	-0.002	0	%100
9	12	X	-0.0008	-0.0008	0	%100
10	13	X	-0.0008	-0.0008	0	%100
11	14	X	-0.0006	-0.0006	0	%100
12	15	X	-0.0006	-0.0006	0	%100
13	16	X	-0.002	-0.002	0	%100
14	20	X	-0.002	-0.002	0	%100
15	21	X	-0.0008	-0.0008	0	%100
16	22	X	-0.0008	-0.0008	0	%100
17	23	X	-0.0006	-0.0006	0	%100
18	24	X	-0.0006	-0.0006	0	%100
19	25	X	-0.002	-0.002	0	%100
20	29	X	-0.0006	-0.0006	0	%100
21	30	X	-0.0006	-0.0006	0	%100
22	31	X	-0.0006	-0.0006	0	%100
23	32	X	-0.0004	-0.0004	0	%100
24	33	X	-0.0002	-0.0002	0	%100
25	34	X	-0.0002	-0.0002	0	%100
26	35	X	-0.0002	-0.0002	0	%100
27	36	X	-0.0002	-0.0002	0	%100
28	37	X	-0.0002	-0.0002	0	%100
29	38	X	-0.0002	-0.0002	0	%100
30	39	X	-0.0004	-0.0004	0	%100
31	40	X	-0.0004	-0.0004	0	%100
32	41	X	-0.002	-0.002	0	%100
33	42	X	-0.002	-0.002	0	%100
34	43	X	-0.002	-0.002	0	%100
35	44	X	-0.002	-0.002	0	%100
36	45	X	-0.002	-0.002	0	%100
37	46	X	-0.002	-0.002	0	%100
38	47	X	-0.002	-0.002	0	%100





Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
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**Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
39	48	X	-0.002	-0.002	0	%100
40	49	X	-0.002	-0.002	0	%100
41	50	X	-0.0004	-0.0004	0	%100
42	51	X	-0.0004	-0.0004	0	%100
43	52	X	-0.0004	-0.0004	0	%100
44	53	X	-0.0004	-0.0004	0	%100
45	54	X	-0.0004	-0.0004	0	%100
46	55	X	-0.0004	-0.0004	0	%100
47	56	X	-0.0004	-0.0004	0	%100
48	57	X	-0.0004	-0.0004	0	%100
49	58	X	-0.0004	-0.0004	0	%100
50	67	X	-0.0004	-0.0004	0	%100
51	70	X	-0.0004	-0.0004	0	%100
52	73	X	-0.0004	-0.0004	0	%100
53	82	X	-0.0004	-0.0004	0	%100
54	83	X	-0.0004	-0.0004	0	%100
55	84	X	-0.0004	-0.0004	0	%100
56	85	X	-0.0004	-0.0004	0	%100
57	94	X	-0.0004	-0.0004	0	%100
58	95	X	-0.0004	-0.0004	0	%100
59	96	X	-0.0004	-0.0004	0	%100
60	97	X	-0.0004	-0.0004	0	%100
61	106	X	-0.0004	-0.0004	0	%100
62	107	X	-0.0004	-0.0004	0	%100
63	108	X	-0.0004	-0.0004	0	%100
64	109	X	-0.0004	-0.0004	0	%100
65	111	X	-0.0004	-0.0004	0	%100
66	113	X	-0.0004	-0.0004	0	%100
67	115	X	-0.0004	-0.0004	0	%100
68	117	X	-0.0004	-0.0004	0	%100
69	119	X	-0.0004	-0.0004	0	%100
70	121	X	-0.0004	-0.0004	0	%100
71	122	X	-0.001	-0.001	0	%100
72	123	X	-0.001	-0.001	0	%100
73	129	X	-0.002	-0.002	0	%100
74	131	X	-0.002	-0.002	0	%100
75	132	X	-0.002	-0.002	0	%100
76	133	X	-0.002	-0.002	0	%100
77	134	X	-0.002	-0.002	0	%100
78	135	X	-0.002	-0.002	0	%100

**Member Distributed Loads (BLC 9 : 0 Seismic)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.005	-0.005	0	%100
2	2	Z	-0.005	-0.005	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.003	-0.003	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.005	-0.005	0	%100
8	11	Z	-0.005	-0.005	0	%100
9	12	Z	-0.001	-0.001	0	%100
10	13	Z	-0.001	-0.001	0	%100
11	14	Z	-0.003	-0.003	0	%100
12	15	Z	-0.003	-0.003	0	%100



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
13	16	Z	-0.005	-0.005	0	%100
14	20	Z	-0.005	-0.005	0	%100
15	21	Z	-0.001	-0.001	0	%100
16	22	Z	-0.001	-0.001	0	%100
17	23	Z	-0.003	-0.003	0	%100
18	24	Z	-0.003	-0.003	0	%100
19	25	Z	-0.005	-0.005	0	%100
20	29	Z	-0.003	-0.003	0	%100
21	30	Z	-0.003	-0.003	0	%100
22	31	Z	-0.003	-0.003	0	%100
23	32	Z	-0.002	-0.002	0	%100
24	33	Z	-0.001	-0.001	0	%100
25	34	Z	-0.001	-0.001	0	%100
26	35	Z	-0.001	-0.001	0	%100
27	36	Z	-0.001	-0.001	0	%100
28	37	Z	-0.001	-0.001	0	%100
29	38	Z	-0.001	-0.001	0	%100
30	39	Z	-0.002	-0.002	0	%100
31	40	Z	-0.002	-0.002	0	%100
32	41	Z	-0.004	-0.004	0	%100
33	42	Z	-0.004	-0.004	0	%100
34	43	Z	-0.004	-0.004	0	%100
35	44	Z	-0.004	-0.004	0	%100
36	45	Z	-0.004	-0.004	0	%100
37	46	Z	-0.004	-0.004	0	%100
38	47	Z	-0.004	-0.004	0	%100
39	48	Z	-0.004	-0.004	0	%100
40	49	Z	-0.004	-0.004	0	%100
41	50	Z	-0.002	-0.002	0	%100
42	51	Z	-0.002	-0.002	0	%100
43	52	Z	-0.002	-0.002	0	%100
44	53	Z	-0.002	-0.002	0	%100
45	54	Z	-0.002	-0.002	0	%100
46	55	Z	-0.002	-0.002	0	%100
47	56	Z	-0.002	-0.002	0	%100
48	57	Z	-0.002	-0.002	0	%100
49	58	Z	-0.002	-0.002	0	%100
50	67	Z	-0.002	-0.002	0	%100
51	70	Z	-0.002	-0.002	0	%100
52	73	Z	-0.002	-0.002	0	%100
53	82	Z	-0.002	-0.002	0	%100
54	83	Z	-0.002	-0.002	0	%100
55	84	Z	-0.002	-0.002	0	%100
56	85	Z	-0.002	-0.002	0	%100
57	94	Z	-0.002	-0.002	0	%100
58	95	Z	-0.002	-0.002	0	%100
59	96	Z	-0.002	-0.002	0	%100
60	97	Z	-0.002	-0.002	0	%100
61	106	Z	-0.002	-0.002	0	%100
62	107	Z	-0.002	-0.002	0	%100
63	108	Z	-0.002	-0.002	0	%100
64	109	Z	-0.002	-0.002	0	%100
65	111	Z	-0.002	-0.002	0	%100
66	113	Z	-0.002	-0.002	0	%100
67	115	Z	-0.002	-0.002	0	%100



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
68	117	Z	-0.002	-0.002	0	%100
69	119	Z	-0.002	-0.002	0	%100
70	121	Z	-0.002	-0.002	0	%100
71	122	Z	-0.005	-0.005	0	%100
72	123	Z	-0.005	-0.005	0	%100
73	129	Z	-0.003	-0.003	0	%100
74	131	Z	-0.003	-0.003	0	%100
75	132	Z	-0.003	-0.003	0	%100
76	133	Z	-0.003	-0.003	0	%100
77	134	Z	-0.003	-0.003	0	%100
78	135	Z	-0.003	-0.003	0	%100

**Member Distributed Loads (BLC 10 : 90 Seismic)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.005	-0.005	0	%100
2	2	X	-0.005	-0.005	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.003	-0.003	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.005	-0.005	0	%100
8	11	X	-0.005	-0.005	0	%100
9	12	X	-0.001	-0.001	0	%100
10	13	X	-0.001	-0.001	0	%100
11	14	X	-0.003	-0.003	0	%100
12	15	X	-0.003	-0.003	0	%100
13	16	X	-0.005	-0.005	0	%100
14	20	X	-0.005	-0.005	0	%100
15	21	X	-0.001	-0.001	0	%100
16	22	X	-0.001	-0.001	0	%100
17	23	X	-0.003	-0.003	0	%100
18	24	X	-0.003	-0.003	0	%100
19	25	X	-0.005	-0.005	0	%100
20	29	X	-0.003	-0.003	0	%100
21	30	X	-0.003	-0.003	0	%100
22	31	X	-0.003	-0.003	0	%100
23	32	X	-0.002	-0.002	0	%100
24	33	X	-0.001	-0.001	0	%100
25	34	X	-0.001	-0.001	0	%100
26	35	X	-0.001	-0.001	0	%100
27	36	X	-0.001	-0.001	0	%100
28	37	X	-0.001	-0.001	0	%100
29	38	X	-0.001	-0.001	0	%100
30	39	X	-0.002	-0.002	0	%100
31	40	X	-0.002	-0.002	0	%100
32	41	X	-0.004	-0.004	0	%100
33	42	X	-0.004	-0.004	0	%100
34	43	X	-0.004	-0.004	0	%100
35	44	X	-0.004	-0.004	0	%100
36	45	X	-0.004	-0.004	0	%100
37	46	X	-0.004	-0.004	0	%100
38	47	X	-0.004	-0.004	0	%100
39	48	X	-0.004	-0.004	0	%100
40	49	X	-0.004	-0.004	0	%100
41	50	X	-0.002	-0.002	0	%100



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
42	51	X	-0.002	-0.002	0	%100
43	52	X	-0.002	-0.002	0	%100
44	53	X	-0.002	-0.002	0	%100
45	54	X	-0.002	-0.002	0	%100
46	55	X	-0.002	-0.002	0	%100
47	56	X	-0.002	-0.002	0	%100
48	57	X	-0.002	-0.002	0	%100
49	58	X	-0.002	-0.002	0	%100
50	67	X	-0.002	-0.002	0	%100
51	70	X	-0.002	-0.002	0	%100
52	73	X	-0.002	-0.002	0	%100
53	82	X	-0.002	-0.002	0	%100
54	83	X	-0.002	-0.002	0	%100
55	84	X	-0.002	-0.002	0	%100
56	85	X	-0.002	-0.002	0	%100
57	94	X	-0.002	-0.002	0	%100
58	95	X	-0.002	-0.002	0	%100
59	96	X	-0.002	-0.002	0	%100
60	97	X	-0.002	-0.002	0	%100
61	106	X	-0.002	-0.002	0	%100
62	107	X	-0.002	-0.002	0	%100
63	108	X	-0.002	-0.002	0	%100
64	109	X	-0.002	-0.002	0	%100
65	111	X	-0.002	-0.002	0	%100
66	113	X	-0.002	-0.002	0	%100
67	115	X	-0.002	-0.002	0	%100
68	117	X	-0.002	-0.002	0	%100
69	119	X	-0.002	-0.002	0	%100
70	121	X	-0.002	-0.002	0	%100
71	122	X	-0.005	-0.005	0	%100
72	123	X	-0.005	-0.005	0	%100
73	129	X	-0.003	-0.003	0	%100
74	131	X	-0.003	-0.003	0	%100
75	132	X	-0.003	-0.003	0	%100
76	133	X	-0.003	-0.003	0	%100
77	134	X	-0.003	-0.003	0	%100
78	135	X	-0.003	-0.003	0	%100

**Member Distributed Loads (BLC 40 : BLC 1 Transient Area Loads)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	11	Y	-0.005	-0.009	0	1.75
2	11	Y	-0.009	-0.013	1.75	3.5
3	11	Y	-0.013	-0.017	3.5	5.25
4	15	Y	-0.009	-0.003	0	3.667
5	20	Y	-0.005	-0.009	0	1.75
6	20	Y	-0.009	-0.013	1.75	3.5
7	20	Y	-0.013	-0.017	3.5	5.25
8	23	Y	-0.009	-0.003	0	3.667
9	29	Y	-0.013	-0.013	0.28	4.224
10	1	Y	-0.005	-0.009	0	1.75
11	1	Y	-0.009	-0.013	1.75	3.5
12	1	Y	-0.013	-0.017	3.5	5.25
13	6	Y	-0.009	-0.003	0	3.667
14	14	Y	-0.009	-0.003	0	3.667
15	31	Y	-0.013	-0.013	0.28	4.224



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Member Distributed Loads (BLC 40 : BLC 1 Transient Area Loads) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	5	Y	-0.009	-0.003	0	3.667
17	24	Y	-0.009	-0.003	0	3.667
18	30	Y	-0.013	-0.013	0.28	4.224

**Basic Load Cases**

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		75		3
2	0 Wind - No Ice	WLZ			75	78	
3	90 Wind - No Ice	WLX			75	78	
4	0 Wind - Ice	WLZ					
5	90 Wind - Ice	WLX					
6	0 Wind - Service	WLZ			75	78	
7	90 Wind - Service	WLX			75	78	
8	Ice	OL1					
9	0 Seismic	ELZ			75	78	
10	90 Seismic	ELX			75	78	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL		3			
15	Live Load e	LL					
16	Maint LL 1	LL			1		
17	Maint LL 2	LL			1		
18	Maint LL 3	LL			1		
19	Maint LL 4	LL			1		
20	Maint LL 5	LL			1		
21	Maint LL 6	LL			1		
22	Maint LL 7	LL			1		
23	Maint LL 8	LL			1		
24	Maint LL 9	LL			1		
25	Maint LL 10	LL			1		
26	Maint LL 11	LL			1		
27	Maint LL 12	LL			1		
28	Maint LL 13	LL			1		
29	Maint LL 14	LL			1		
30	Maint LL 15	LL			1		
31	Maint LL 16	LL			1		
32	Maint LL 17	LL			1		
33	Maint LL 18	LL			1		
34	Maint LL 19	LL			1		
35	Maint LL 20	LL			1		
36	Maint LL 21	LL			1		
37	Maint LL 22	LL					
38	Maint LL 23	LL					
39	Maint LL 24	LL					
40	BLC 1 Transient Area Loads	None				18	

**Load Combinations**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		



Company : B+T Group  
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**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5



Company : B+T Group  
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**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL e + Service - 0 W	Yes	Y	1	1.2	6	1			15	1.5
87	1.2 D + 1.5 LL e + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	15	1.5
88	1.2 D + 1.5 LL e + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	15	1.5
89	1.2 D + 1.5 LL e + Service - 90 W	Yes	Y	1	1.2	7	1			15	1.5
90	1.2 D + 1.5 LL e + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	15	1.5
91	1.2 D + 1.5 LL e + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	15	1.5
92	1.2 D + 1.5 LL e + Service - 180 W	Yes	Y	1	1.2	6	-1			15	1.5
93	1.2 D + 1.5 LL e + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	15	1.5
94	1.2 D + 1.5 LL e + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	15	1.5
95	1.2 D + 1.5 LL e + Service - 270 W	Yes	Y	1	1.2	7	-1			15	1.5
96	1.2 D + 1.5 LL e + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	15	1.5
97	1.2 D + 1.5 LL e + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	15	1.5
98	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					16	1.5
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					17	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					18	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					19	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					20	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					21	1.5
104	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					22	1.5
105	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					23	1.5
106	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					24	1.5
107	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					25	1.5
108	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					26	1.5
109	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					27	1.5
110	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					28	1.5
111	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					29	1.5
112	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					30	1.5
113	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					31	1.5
114	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					32	1.5



Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
 Model Name : 10149418 - ZOD\_CTF\_ALLTEL\_...

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**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
115	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					33	1.5
116	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					34	1.5
117	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					35	1.5
118	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					36	1.5
119	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					37	1.5
120	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					38	1.5
121	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					39	1.5

**Envelope Node Reactions**

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1 2 max	1.422	4	0.719	8	9.283	2	1.768	2	1.825	12	1.919	11
2 min	-1.488	12	0.057	2	-5.738	8	-1.069	8	-1.779	4	-1.931	5
3 199 max	5.893	6	0.736	12	2.309	12	1.514	2	1.756	4	1.169	10
4 min	-4.092	12	0.104	6	-4.248	7	-1.866	8	-2.299	8	-1.909	5
5 201 max	4.104	4	0.728	4	2.385	3	1.545	2	2.306	8	1.902	11
6 min	-5.819	10	0.116	10	-4.265	9	-1.84	8	-1.858	12	-1.14	5
7 N224 max	1.203	10	2.128	8	2.079	8	0.001	2	0	10	0	10
8 min	-1.118	6	0.788	12	0.89	12	-0.001	8	0	5	0	5
9 N228 max	1.676	11	1.876	12	0.622	9	0.001	2	0.001	2	0	11
10 min	0.092	3	0.711	8	-2.219	2	-0.001	7	-0.001	9	-0.001	6
11 N231 max	-0.1	13	1.834	4	0.684	7	0.001	2	0	7	0.001	10
12 min	-1.727	5	0.706	8	-2.075	2	-0.001	9	-0.001	13	0	5
13 Totals: max	7.627	5	5.881	55	10.133	2						
14 min	-7.627	11	4.756	3	-10.133	8						

**Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks**

Member	Shape	Code Check	Loc(ft)	LC	Shear	Check	Loc(ft)	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1 1	HSS3X3X5	0.165	0	2	0.061	4.867	z	4	77.889	92.61	7.613	7.613	2.553	H1-1b	
2 2	HSS3X3X5	0.544	0	12	0.342	0	z	5	84.275	92.61	7.613	7.613	2.112	H3-6	
3 3	L2.5X1.5X4	0.061	0	13	0.019	0	y	2	16.216	30.683	0.461	1.53	1.5	H2-1*	
4 4	L2.5X1.5X4	0.06	2.944	3	0.02	2.944	y	2	16.216	30.683	0.461	1.53	1.5	H2-1*	
5 5	PIPE 3.0	0.265	1.48	2	0.138	1.432	z	2	58.27	65.205	5.749	5.749	1	H1-1b	
6 6	PIPE 3.0	0.299	1.48	2	0.097	4.583	z	7	58.27	65.205	5.749	5.749	1	H1-1b	
7 7	PL5/8X6	0.571	0.667	2	0.229	0.25	y	3	80.311	121.5	1.582	15.188	1.196	H1-1b	
8 11	HSS3X3X5	0.163	3.828	7	0.077	4.867	z	8	77.889	92.61	7.613	7.613	2.593	H1-1b	
9 12	L2.5X1.5X4	0.048	0	5	0.017	2.944	z	3	16.216	30.683	0.461	1.53	1.5	H2-1*	
10 13	L2.5X1.5X4	0.06	2.944	7	0.017	0	z	7	16.216	30.683	0.461	1.53	1.5	H2-1*	
11 14	PIPE 3.0	0.208	1.48	6	0.107	0	z	3	58.27	65.205	5.749	5.749	1	H1-1b	
12 15	PIPE 3.0	0.259	1.48	7	0.08	0.286	z	9	58.27	65.205	5.749	5.749	1	H1-1b	
13 16	PL5/8X6	0.418	0.667	13	0.238	0.25	y	8	80.311	121.5	1.582	15.188	1.362	H1-1b	
14 20	HSS3X3X5	0.17	3.828	9	0.075	4.867	z	8	77.889	92.61	7.613	7.613	2.534	H1-1b	
15 21	L2.5X1.5X4	0.06	0	9	0.016	2.944	z	7	16.216	30.683	0.461	1.53	1.5	H2-1*	
16 22	L2.5X1.5X4	0.048	2.944	11	0.02	0	z	2	16.216	30.683	0.461	1.53	1.5	H2-1*	
17 23	PIPE 3.0	0.241	1.48	9	0.135	0.621	z	9	58.27	65.205	5.749	5.749	1	H1-1b	
18 24	PIPE 3.0	0.227	1.48	10	0.11	4.583	z	3	58.27	65.205	5.749	5.749	1	H1-1b	
19 25	PL5/8X6	0.464	0.667	3	0.184	0.25	y	11	80.311	121.5	1.582	15.188	1.111	H1-1b	
20 29	PIPE 3.0	0.149	0.281	2	0.173	0	z	9	58.497	65.205	5.749	5.749	1	H1-1b	
21 30	PIPE 3.0	0.161	4.222	9	0.204	0	z	2	58.497	65.205	5.749	5.749	1	H1-1b	
22 31	PIPE 3.0	0.184	4.222	2	0.149	4.503	z	3	58.497	65.205	5.749	5.749	1	H1-1b	
23 32	PIPE 2.0	0.146	4.665	13	0.191	4.276	z	7	24.751	32.13	1.872	1.872	1	H1-1b	
24 33	1"SR	0.181	0	12	0.024	0	z	10	10.739	25.447	0.424	0.424	1	H1-1b	
25 34	1"SR	0.297	0	3	0.031	0	z	7	10.739	25.447	0.424	0.424	1	H1-1a	
26 35	1"SR	0.236	0	3	0.032	0	z	2	10.739	25.447	0.424	0.424	1	H1-1b	





Company : B+T Group  
 Designer : GRG  
 Job Number : 170942.001.01.0003  
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**Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)**

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*	Pnc [k]	phi*	Pnt [k]	phi*	Mn y-y [k-ft]	phi*	Mn z-z [k-ft]	Cb	Eqn
27	36	1"SR	0.424	0	8	0.034	0	9	10.739	25.447	0.424	0.424	1	H1-1a						
28	37	1"SR	0.257	0	7	0.027	0	7	10.739	25.447	0.424	0.424	1	H1-1b						
29	38	1"SR	0.265	0	13	0.043	0	2	10.739	25.447	0.424	0.424	1	H1-1b						
30	39	PIPE 2.0	0.208	4.228	3	0.117	4.276	11	24.751	32.13	1.872	1.872	1	H1-1b						
31	40	PIPE 2.0	0.21	4.228	7	0.194	4.276	2	24.751	32.13	1.872	1.872	1	H1-1b						
32	41	PL1/2"X6	0.074	0.208	11	0.249	0.208	y	7	91.25	97.2	1.012	12.15	1.371	H1-1b					
33	42	PL1/2"X6	0.099	0.195	7	0.187	0.191	y	13	91.945	97.2	1.012	12.15	1.14	H1-1b					
34	43	PL1/2"X6	0.06	0.208	6	0.134	0	y	3	91.25	97.2	1.012	12.15	1.348	H1-1b					
35	44	PL1/2"X6	0.093	0.208	3	0.173	0.208	y	10	91.25	97.2	1.012	12.15	1.377	H1-1b					
36	45	PL1/2"X6	0.077	0.195	2	0.22	0.195	y	8	91.945	97.2	1.012	12.15	1.367	H1-1b					
37	46	PL1/2"X6	0.044	0.208	10	0.186	0	y	8	91.25	97.2	1.012	12.15	1.378	H1-1b					
38	47	PL1/2"X6	0.099	0.208	7	0.276	0.417	y	8	91.25	97.2	1.012	12.15	1.49	H1-1b					
39	48	PL1/2"X6	0.113	0.195	2	0.267	0.391	y	8	91.945	97.2	1.012	12.15	1.215	H1-1b					
40	49	PL1/2"X6	0.06	0.208	2	0.136	0.208	y	7	91.25	97.2	1.012	12.15	1.35	H1-1b					
41	50	PIPE 2.0	0.298	0.281	6	0.379	0.235	8	25.195	32.13	1.872	1.872	1	H1-1b						
42	51	PIPE 2.0	0.423	0.235	8	0.333	0.235	13	25.195	32.13	1.872	1.872	1	H1-1b						
43	52	PIPE 2.0	0.463	0.281	2	0.275	0	13	25.195	32.13	1.872	1.872	1	H1-1b						
44	53	PIPE 2.0	0.364	3.79	8	0.291	4.665	8	24.751	32.13	1.872	1.872	1	H3-6						
45	54	PIPE 2.0	0.312	3.742	2	0.149	4.665	12	24.751	32.13	1.872	1.872	1	H1-1b						
46	55	PIPE 2.0	0.347	3.79	2	0.251	3.79	3	24.751	32.13	1.872	1.872	1	H1-1b						
47	56	PIPE 2.0	0.027	2.5	12	0.102	5	8	23.809	32.13	1.872	1.872	1	H1-1b						
48	57	PIPE 2.0	0.032	2.5	8	0.065	5	4	23.809	32.13	1.872	1.872	1	H1-1b						
49	58	PIPE 2.0	0.027	2.5	4	0.076	5	7	23.809	32.13	1.872	1.872	1	H1-1b						
50	67	PIPE 2.0	0.289	3.938	2	0.079	3.938	6	23.088	32.13	1.872	1.872	1	H1-1b						
51	70	PIPE 2.0	0.222	3.938	7	0.095	3.938	2	23.088	32.13	1.872	1.872	1	H1-1b						
52	73	PIPE 2.0	0.207	3.938	10	0.108	3.938	2	23.088	32.13	1.872	1.872	1	H1-1b						
53	82	PIPE 2.0	0.227	6.146	8	0.096	6.146	10	9.837	32.13	1.872	1.872	1	H1-1b						
54	83	PIPE 2.0	0.539	6.146	9	0.102	6.146	6	9.837	32.13	1.872	1.872	1	H1-1a						
55	84	PIPE 2.0	0.429	6.146	6	0.093	6.146	10	9.837	32.13	1.872	1.872	1	H1-1b						
56	85	PIPE 2.0	0.536	6.25	8	0.107	6.146	7	9.837	32.13	1.872	1.872	1	H1-1b						
57	94	PIPE 2.0	0.238	3.542	8	0.14	6.146	2	9.837	32.13	1.872	1.872	1	H1-1b						
58	95	PIPE 2.0	0.774	6.146	2	0.139	6.146	9	9.837	32.13	1.872	1.872	1	H1-1a						
59	96	PIPE 2.0	0.557	6.146	3	0.139	6.146	2	9.837	32.13	1.872	1.872	1	H1-1b						
60	97	PIPE 2.0	0.536	6.25	2	0.097	6.146	9	9.837	32.13	1.872	1.872	1	H1-1b						
61	106	PIPE 2.0	0.2	3.542	7	0.12	6.146	7	9.837	32.13	1.872	1.872	1	H1-1b						
62	107	PIPE 2.0	0.588	6.146	13	0.152	6.146	2	9.837	32.13	1.872	1.872	1	H1-1b						
63	108	PIPE 2.0	0.639	6.146	2	0.133	6.146	7	9.837	32.13	1.872	1.872	1	H1-1b						
64	109	PIPE 2.0	0.536	6.25	2	0.128	6.146	2	9.837	32.13	1.872	1.872	1	H1-1b						
65	111	PIPE 2.0	0.543	7	5	0.027	7	5	14.916	32.13	1.872	1.872	1	H1-1b						
66	113	PIPE 2.0	0.433	7	5	0.026	7	5	14.916	32.13	1.872	1.872	1	H1-1b						
67	115	PIPE 2.0	0.543	7	5	0.027	7	5	14.916	32.13	1.872	1.872	1	H1-1b						
68	117	PIPE 2.0	0.432	7	5	0.026	7	5	14.916	32.13	1.872	1.872	1	H1-1b						
69	119	PIPE 2.0	0.543	7	11	0.027	7	11	14.916	32.13	1.872	1.872	1	H1-1b						
70	121	PIPE 2.0	0.432	7	11	0.026	7	11	14.916	32.13	1.872	1.872	1	H1-1b						
71	122	HSS3X3X5	0.588	0	8	0.332	0	z	9	84.275	92.61	7.613	7.613	1.974	H3-6					
72	123	HSS3X3X5	0.587	0	8	0.327	0	z	7	84.275	92.61	7.613	7.613	2.029	H3-6					
73	129	L2.5X2.5X3	0.753	3	113	0.018	6.001	y	113	9.12	29.192	0.873	1.599	1.31	H2-1					
74	131	L2.5X2.5X3	0.758	3	114	0.018	6.001	z	114	9.12	29.192	0.873	1.599	1.31	H2-1					
75	132	L2.5X2.5X3	0.753	3	118	0.018	6.001	y	118	9.12	29.192	0.873	1.599	1.31	H2-1					
76	133	L2.5X2.5X3	0.745	2.938	117	0.018	6.001	z	117	9.12	29.192	0.873	1.599	1.31	H2-1					
77	134	L2.5X2.5X3	0.74	2.938	116	0.018	6.001	y	116	9.12	29.192	0.873	1.599	1.31	H2-1					
78	135	L2.5X2.5X3	0.758	3	115	0.018	6.001	z	115	9.12	29.192	0.873	1.599	1.31	H2-1					



Company : B+T Group  
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***Envelope NONE Member Cold Formed Steel Code Checks***

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No Data to Print...

**APPENDIX B**  
**(Additional Calculations)**

# ASCE Hazards Report

**Address:**  
No Address at This Location

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

**Latitude:** 38.323622  
**Longitude:** -105.484733  
**Elevation:** 8140.127687793789 ft (NAVD 88)



## Wind

### Results:

Wind Speed	105 Vmph
10-year MRI	77 Vmph
25-year MRI	83 Vmph
50-year MRI	88 Vmph
100-year MRI	92 Vmph
Special	

Special Wind Region -- Mountainous terrain, gorges, and special wind regions shown in Fig. 26.5-1 shall be examined for unusual wind conditions. The Authority Having Jurisdiction shall, if necessary, adjust the values given in Fig. 26.5-1 to account for higher local wind speeds. Such adjustment shall be based on meteorological information and an estimate of the basic wind speed obtained in accordance with the provisions in Section 26.5.3.

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2  
Date Accessed: Thu May 16 2024



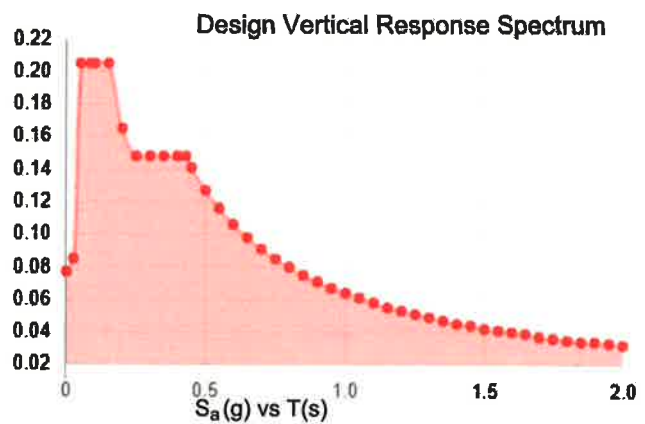
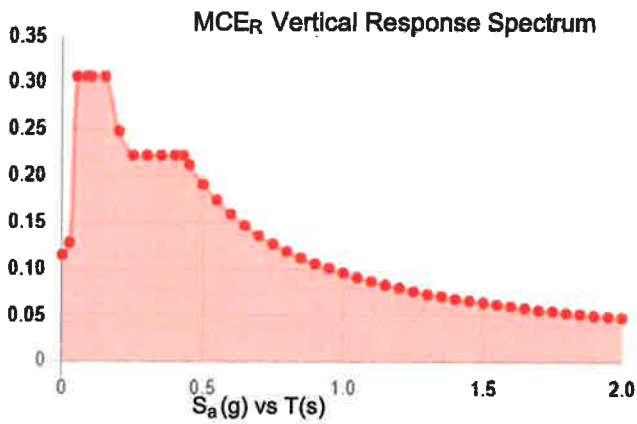
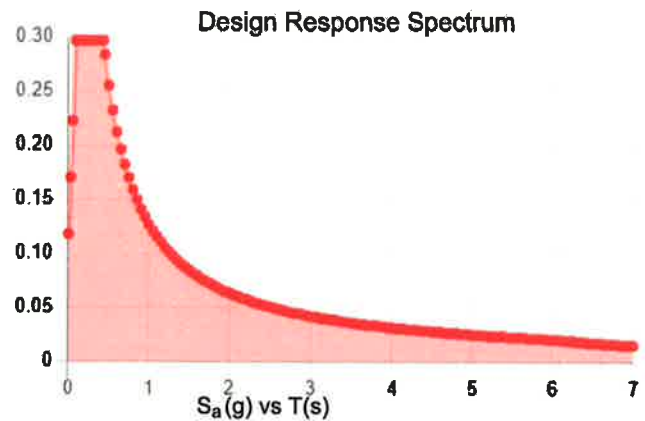
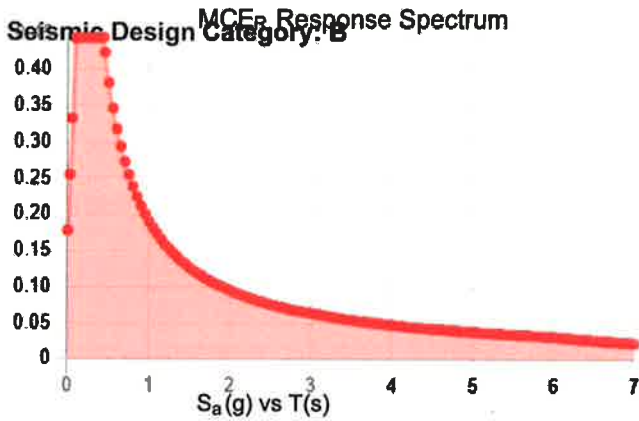
Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance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

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

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

**Results:**

$S_s$ :	0.282	$S_{D1}$ :	0.127
$S_1$ :	0.08	$T_L$ :	6
$F_a$ :	1.574	$PGA$ :	0.155
$F_v$ :	2.4	$PGA_M$ :	0.231
$S_{MS}$ :	0.444	$F_{PGA}$ :	1.49
$S_{M1}$ :	0.191	$I_e$ :	1
$S_{DS}$ :	0.296	$C_v$ :	0.864



**Data Accessed:** Thu May 16 2024

**Date Source:**

**USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.**



## Ice

---

**Results:**

Ice Thickness: 0.25 in.  
Concurrent Temperature: 5 F  
Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Thu May 16 2024

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

In the mountain west, ice thicknesses may exceed the mapped values in the foothills and passes. However, at elevations above 5,000 ft, freezing rain is unlikely.

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

---

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.

PROJECT	<b>170942.001.01.0003 - ZOD_CTF_ALLTEL KSC</b>		
SUBJECT	<b>Platform Mount Analysis</b>		
DATE	<b>06/20/24</b>		



**B+T Group**  
 1717 S. Boulder, Suite 300  
 Tulsa, OK 74119  
 (918) 587-4630

Tower Type	:	Monopole		
Ground Elevation	$z_s$	: 8140	ft	[ASCE7 Hazard Tool]
Tower Height	:	40.00	ft	
Mount Elevation	:	38.00	ft	
Antenna Elevation	:	40.00	ft	
Crest Height	:	293	ft	
Risk Category	:	II		[Table 2-1 ]
Exposure Category	:	C		[Sec. 2.6.5.1.2]
Topography Category	:	5.00		[Sec. 2.6.6.2]
Wind Velocity	$V$	: 105	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	$V_i$	: 50	mph	[ASCE7 Hazard Tool]
Service Velocity	$V_s$	: 30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	$t_i$	: 0.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B		[ASCE7 Hazard Tool]
	$S_s$	: 0.28		
	$S_1$	: 0.08		
	$S_{DS}$	: 0.30		
	$S_{D1}$	: 0.13		
Gust Factor	$G_h$	: 1.00		[Sec. 16.6]
Pressure Coefficient	$K_z$	: 1.05		[Sec. 2.6.5.2]
Topography Facto	$K_{zt}$	: 2.10		[Sec. 2.6.6]
Elevation Factor	$K_e$	: 0.74		[Sec. 2.6.8]
Directionality Factor	$K_d$	: 0.95		[Sec. 16.6]
Shielding Factor	$K_a$	: 0.90		[Sec. 16.6]
Design Ice Thickness	$t_{iz}$	: 0.00	in	[Sec. 2.6.10]
Importance Factor	$I_e$	: 1		[Table 2-3 ]
Response Coefficient	$C_s$	: 0.148		[Sec. 2.7.7.1]
Amplification	$A_s$	: 3		[Sec. 16.7]
	$q_z$	: 43.83	psf	



PROJECT	<b>170942.001.01.0003 - ZOD_CTF_ALLTEL KSC</b>
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**B+T Group**  
 1717 S. Boulder, Suite 300  
 Tulsa, OK 74119  
 (918) 587-4630

**B+T GRP**

Manufacturer	Model	Qty	Height (in <sup>2</sup> )	Width (in <sup>2</sup> )	Depth (in <sup>2</sup> )	Weight (lbs)	C <sub>a</sub> A <sub>a</sub> (N) (ft <sup>2</sup> )	C <sub>a</sub> A <sub>a</sub> (T) (ft <sup>2</sup> )	C <sub>a</sub> A <sub>a</sub> (N) Ice (ft <sup>2</sup> )	C <sub>a</sub> A <sub>a</sub> (T) Ice (ft <sup>2</sup> )	F <sub>A</sub> (N) (k)	F <sub>A</sub> (T) (k)	F <sub>A</sub> (N) Ice (k)	F <sub>A</sub> (T) Ice (k)
COMMSCOPE	NNH4-65C-R6-V4	0.5	96.0	19.6	7.8	93.7	8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5					8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
ERICSSON	AIR 6419 B77G	0.5	28.3	16.1	7.9	77.0	1.90	0.97	1.90	0.97	0.08	0.04	0.02	0.01
ERICSSON	AIR 6419 B77G	0.5					1.90	0.97	1.90	0.97	0.08	0.04	0.02	0.01
ERICSSON	AIR 6419 B77D	0.5	28.2	16.1	7.2	73.9	1.89	0.89	1.89	0.89	0.08	0.03	0.02	0.01
ERICSSON	AIR 6419 B77D	0.5	28.2	16.1	7.2	73.9	1.89	0.89	1.89	0.89	0.08	0.03	0.02	0.01
COMMSCOPE	NNH4-65C-R6-V4	0.5	96.0	19.6	7.8	93.7	8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5					8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5	96.0	19.6	7.8	93.7	8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5					8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
ERICSSON	AIR 6419 B77G	0.5	28.3	16.1	7.9	77.0	1.90	0.97	1.90	0.97	0.08	0.04	0.02	0.01
ERICSSON	AIR 6419 B77G	0.5					1.90	0.97	1.90	0.97	0.08	0.04	0.02	0.01
ERICSSON	AIR 6419 B77D	0.5	28.2	16.1	7.2	73.9	1.89	0.89	1.89	0.89	0.08	0.03	0.02	0.01
ERICSSON	AIR 6419 B77D	0.5	28.2	16.1	7.2	73.9	1.89	0.89	1.89	0.89	0.08	0.03	0.02	0.01
COMMSCOPE	NNH4-65C-R6-V4	0.5	96.0	19.6	7.8	93.7	8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5					8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5	96.0	19.6	7.8	93.7	8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5					8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
ERICSSON	AIR 6419 B77G	0.5	28.3	16.1	7.9	77.0	1.90	0.97	1.90	0.97	0.08	0.04	0.02	0.01
ERICSSON	AIR 6419 B77G	0.5					1.90	0.97	1.90	0.97	0.08	0.04	0.02	0.01
ERICSSON	AIR 6419 B77D	0.5	28.2	16.1	7.2	73.9	1.89	0.89	1.89	0.89	0.08	0.03	0.02	0.01
ERICSSON	AIR 6419 B77D	0.5	28.2	16.1	7.2	73.9	1.89	0.89	1.89	0.89	0.08	0.03	0.02	0.01

PROJECT	<b>170942.001.01.0003 - ZOD_CTF_ALLTEL KSC</b>
SUBJECT	<b>Platform Mount Analysis</b>
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 Tulsa, OK 74119  
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**B+T GRP**

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COMMSCOPE	NNH4-65C-R6-V4	0.5	96.0	19.6	7.8	93.7	8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
COMMSCOPE	NNH4-65C-R6-V4	0.5					8.54	4.08	8.54	4.08	0.34	0.13	0.08	0.03
ERICSSON	4490 B5/B12A	1	20.6	7.0	15.6	65.0	1.22	2.68	1.22	2.68	0.05	0.11	0.01	0.02
RAYCAP	TME-DC6-48-60-18-8F	1	31.3	11.0	18.5	32.8	1.21	2.01	1.21	2.01	0.05	0.08	0.01	0.02
ERICSSON	4890 B25/B66	1	19.6	12.1	15.8	109.1	1.98	2.58	1.98	2.58	0.08	0.10	0.02	0.02
ERICSSON	TME-RRUS 4478 B14	1	18.1	8.3	13.4	59.4	1.25	2.02	1.25	2.02	0.05	0.08	0.01	0.02
ERICSSON	4490 B5/B12A	1	20.6	7.0	15.6	65.0	1.22	2.68	1.22	2.68	0.05	0.11	0.01	0.02
RAYCAP	TME-DC6-48-60-18-8F	1	31.3	11.0	18.5	32.8	1.21	2.01	1.21	2.01	0.05	0.08	0.01	0.02
ERICSSON	4890 B25/B66	1	19.6	12.1	15.8	109.1	1.98	2.58	1.98	2.58	0.08	0.10	0.02	0.02
ERICSSON	TME-RRUS 4478 B14	1	18.1	8.3	13.4	59.4	1.25	2.02	1.25	2.02	0.05	0.08	0.01	0.02
ERICSSON	4490 B5/B12A	1		7.0	15.6	65.0	1.22	2.68	1.22	2.68	0.05	0.11	0.01	0.02
RAYCAP	TME-DC6-48-60-18-8F	1	31.3	11.0	18.5	32.8	1.21	2.01	1.21	2.01	0.05	0.08	0.01	0.02
ERICSSON	4890 B25/B66	1	19.6	12.1	15.8	109.1	1.98	2.58	1.98	2.58	0.08	0.10	0.02	0.02
ERICSSON	TME-RRUS 4478 B14	1	18.1	8.3	13.4	59.4	1.25	2.02	1.25	2.02	0.05	0.08	0.01	0.02

PROJECT	170942.001.01.0003 - ZOD_CTF_ALLT KSC		
SUBJECT	Platform Mount Analysis		
DATE	06/20/24	PAGE	1 OF 1



**B+T Group**  
 1717 S. Boulder, Suite 300  
 Tulsa, OK 74119  
 (918) 587-4630

**B+T GRP**

[REF: AISC 360-05]

**Reactions at Bolted Connection**

Tension	:	9.283	k
Vertical Shear	:	0.719	k
Horizontal Shear	:	1.488	k
Torsion	:	1.931	k.ft
Moment from Horizontal Forces	:	1.825	k.ft
Moment from Vertical Forces	:	1.768	k.ft

**Bolt Parameters**

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in <sup>2</sup>
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

**Summary of Forces**

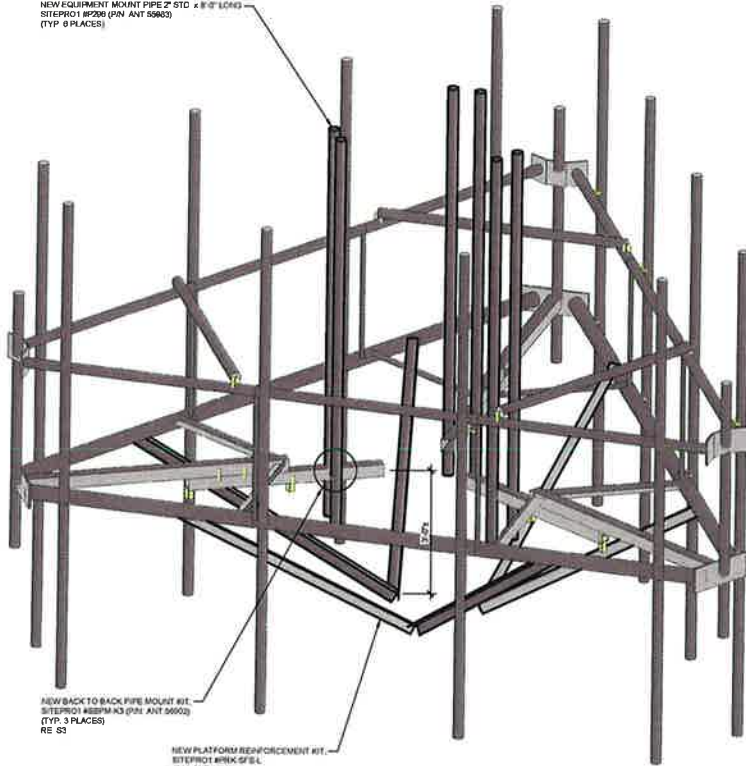
Shear Resultant Force	:	1.65	k
Force from Horz. Moment	:	3.31	k
Force from Vert. Moment	:	3.20	k
Shear Load / Bolt	:	0.41	k
Tension Load / Bolt	:	2.32	k
Resultant from Moments / Bolt	:	2.30	k

**Bolt Checks**

Nominal Tensile Stress, $F_{nt}$	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, $\Phi R_{nt}$	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	<b>22.30%</b>		<b>OKAY</b>
Nominal Shear Stress, $F_{nv}$	:	54.00	ksi	[AISC Table J3.2]
Available Shear Stress, $\Phi R_{nv}$	:	12.43	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	<b>21.99%</b>		<b>OKAY</b>
Unity Check, Combined	:	<b>44.29%</b>		<b>OKAY</b>
Available Bearing Strength, $\Phi R_n$	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	<b>1.19%</b>		<b>OKAY</b>

## APPENDIX C (MODIFICATION DRAWINGS)

NEW EQUIPMENT MOUNT PIPE 2" STD x 8'0" LONG  
STEP101 #P200 (PIN ANT 5983)  
(TYP. 9 PLACES)



NEW BACK TO BACK PIPE MOUNT KIT  
STEP101 #BPM K3 (PIN ANT 5602)  
(TYP. 3 PLACES)  
RE: S3

NEW PLATFORM REINFORCEMENT KIT  
STEP101 #PK SF 5L  
(PIN ANT 10818)  
RE: S2

1 MODIFIED PLATFORM  
SCALE: N.T.S.

MODIFICATIONS BASED ON THE FAILURE  
STRUCTURAL ANALYSIS FROM B+T GROUP  
DATED 06/05/24 AND ACCOMPANIED BY  
ANALYSIS FROM B+T GROUP DATED 06/20/24

GENERAL NOTES

- 11 CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO THE MOBILIZATION ON THE SITE FOR INSTALLATION OF THE MOUNT MODIFICATION AND SHALL NOTIFY THE ENGINEER OF RECORD IF THE FIELD CONDITIONS VARY FROM WHAT IS SHOWN ON THE DRAWINGS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD PRIOR TO MOBILIZATION AT THE SITE IF THE MOUNT REINFORCEMENT SHOWN WILL NEED TO BE REVISED TO SATISFY FIELD CONDITIONS.
- 12 CONTRACTOR SHALL RELOCATE NON-ANTENNA EQUIPMENT ALONG THE EXISTING PIPE MOUNT THAT IT IS REQUIRED TO, TO ALLOW FOR INSTALLATION OF MOUNT REINFORCEMENT. ENGINEER OF RECORD WILL BE NOTIFIED IF NON-ANTENNA EQUIPMENT NEEDS TO BE RELOCATED TO ANY OTHER EXISTING MEMBERS TO ALLOW FOR INSTALLATION OF MOUNT MODIFICATION.
- 13 MODIFICATION SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED APPURTENANCES.
- 14 ALL WORK SHALL COMPLY WITH THE TIA 222-H STANDARD, ANSI/TIA 322 AND ANSI/ASSE A10.48, AS WELL AS ANY OTHER GOVERNING BUILDING CODES.
- 15 FIELD WORK WILL BE DONE AROUND EXISTING COAXIAL CABLE AND EQUIPMENT. ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE.
- 16 A MINIMUM OF TWO COATS OF ZINC-RICH GALVANIZING COMPOUND (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO ANY FIELD CUTS OR FIELD DRILLED HOLES.
- 17 THE USE OF A GAS TORCH OR WELDER SHALL NOT BE PERMITTED ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.
- 18 ALL FIELD CONNECTIONS SHALL BE MADE WITH A307B (SA 191) UNDRILLED OR TEMPORARY BRACING. CONTRACTOR MAY HAVE A STABILITY ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE TOWER IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 MPH (D-50) PER ANSI/TIA 300 AND ANSI/ASSE A10.48.
- 19 ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH COLORADO POLICY "CUTTING AND WELDING PLAN" (DOC REG.# 19-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE LIFE OF THE PROJECT.
- 20 DIMENSIONS WITH "Y" MUST BE WITHIN 3" OF THE INDICATED DIMENSION.

FABRICATION

- 21 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
- 22 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:
 

STEEL PIPE, U.N.O	YIELD	ASTM SPECIFICATION
	55ksi	A513 GR. B
- 23 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A153.
- 24 WELDING SHALL MEET ANSI/AWS D11.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E60 SERIES.
- 25 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO B+T GROUP 5 DAYS PRIOR TO FABRICATION.



ZOD\_CTY\_ALLTEL\_C004  
DEER MOUNTAIN  
208 COUNTY ROAD 21A  
COTOPAC, CO 81203  
PUEBLO  
EXISTING PLATFORM  
AT 49' 00"

PROJECT NO. 17692.001.01.0003  
CHECKED BY: LA  
ISSUED FOR:

REV	DATE	BY	DESCRIPTION
1	06/20/24	PKB	CONSTRUCTION

BAT ENGINEERING, INC.



THIS IS A SEPARATE SET OF THE SET FOR RECORD. UNLESS THE CONTRACTOR HAS BEEN ADVISED BY A LICENSED PROFESSIONAL ENGINEER OF A CHANGE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION ON THIS SHEET.

SHEET NUMBER: S1 REVISION: 0



ZOD\_CITR\_ALLTEL\_C004  
 DEER MOUNTAIN  
 2084 COUNTY ROAD 27A  
 COTOPAZI, CO 81223  
 PREMONT  
 EXISTING PLATFORM  
 AT 48° 00'

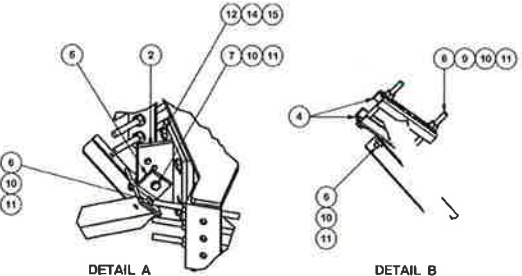
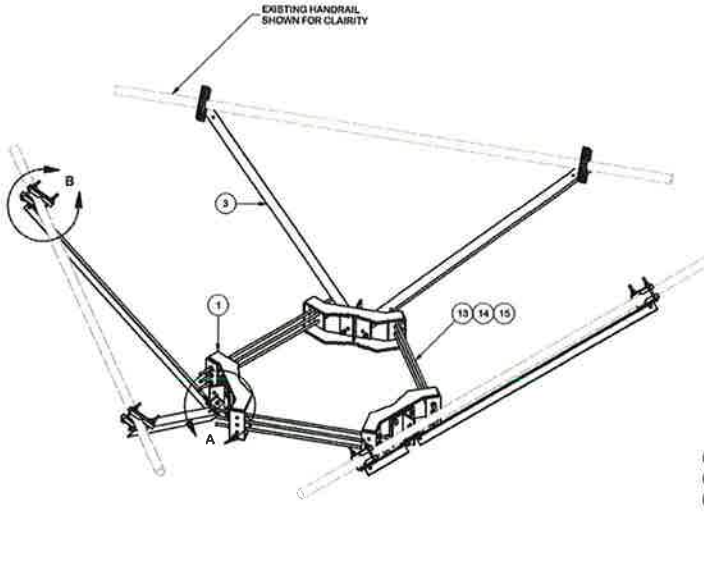
PROJECT NO: 17062 061 01 0001  
 CHECKED BY: LA  
 ISSUED FOR:  
 CONSTRUCTION



IT IS A MISDEAMOR TO USE THE SEAL OF A PROFESSIONAL ENGINEER FOR ANY OTHER PERSON OR FOR ANY OTHER PURPOSE THAN THAT FOR WHICH IT WAS ISSUED.

SHEET NUMBER: S2  
 REVISION: 0

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-TBW	T-BRACKET WELDMENT		13.60	40.80
3	6	X-254924	DIAGONAL ANGLE - SITE PRD 1	72 in	19.71	118.24
4	12	X-SFU	STIFF ASM CHANNEL BRACKET	8 1/2 in	1.37	16.46
5	6	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.88	11.15
6	12	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	1.77
7	3	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5	2 1/2 in	0.20	0.61
8	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
9	24	G12FW	1/2" USS FLATWASHER	3/32 in	0.03	0.82
10	27	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.36
11	27	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.93
12	12	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	3.76
13	6	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
14	6	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
15	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
16	30	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	3.90
					TOTAL WT. #	642.04



**TOLERANCE NOTES**  
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWS, SHEARS AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.066"$ )

DESCRIPTION HANDRAIL REINFORCEMENT KIT (LONG)				 A redmont company Engineering Support Team: 1-800-753-7448 Dallas, TX	
APP'D:	DESIGNED BY:	ENGR. APPROVAL:	PART NO.:	1	OF
SP1	CSL3 2/23/2017	3RD PARTY	PRK-SFS-L	2	OF
CLASS:	DRAWING USAGE:	CHECKED BY:	ENGR. NO.:	3	OF
B1 02	SHOP	BMC 9/8/2017	PRK-SFS-L		

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0 12 0



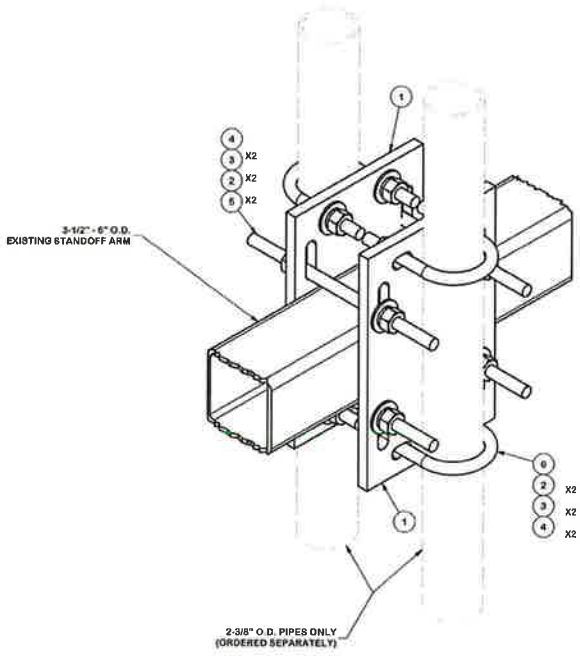
ZOD\_GIF\_ALLTEL\_COM4  
 DEER MOUNTAIN  
 2081 COUNTY ROAD 27A  
 COTOPAZI, CO 81233  
 PREMONT  
 EXISTING PLATFORM  
 AT 47.00'

PROJECT NO.	179942-001-01-0001		
CHECKED BY:	LA		
ISSUED FOR:			
REV	DATE	BY	DESCRIPTION
2	04/20/14	PS	CONSTRUCTION



SHEET NUMBER:	REVISION:
S3	0

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	SCK6	CROSSOVER PLATE	11 in	10.62	21.23
2	10	G12FW	1/2" HDG USS FLATWASHER		0.03	0.54
3	10	G12LW	1/2" HDG LOCKWASHER		0.01	0.22
4	10	G12HNUT	1/2" HDG HEAVY ZN HEX NUT		0.07	1.14
5	4	G12R-10	1/2" X 10" THREADING ROD (HDG.)		3.23	12.91
6	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.68	2.63
					TOTAL WT. #	28.67



**TOLERANCE NOTES**  
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWEED, SHEARED AND GAS CUT EDGES (# 0.005")  
 DRILLED AND GAS CUT HOLES (# 0.030") - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES (# 0.010") - NO CONING OF HOLES  
 BENDS ARE ± 1/2 DEGREE  
 ALL OTHER MACHINING (# 0.005")  
 ALL OTHER ASSEMBLY (# 0.005")

DESCRIPTION			
BACK TO BACK PIPE MOUNT 2-3/8" PIPES			
CDP NO.	DESIGNED BY	ENG. APPROVAL	PART NO.
81 03	CEK	4/28/2013	BBPM-K3
CLASS	DRAWING USAGE	CHECKED BY	DWG. NO.
03	CUSTOMER	BMC	4/28/2013

**SITE PRO**  
 A Valmont COMPASS

Engineering: New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Phoenix, AZ  
 Dallas, TX

Support Team: 1-888-753-7410

179942-001-01-0001-001.dwg (2013) - 1/24/2013 10:45:00 AM - 1/24/2013 10:45:00 AM

Date: May 29, 2024



B+T Group  
1717 S. Boulder, Suite 300  
Tulsa, OK 74119  
(918) 587-4630

**Subject:** Structural Analysis Report

**Carrier Designation:** AT&T Mobility Co-Locate  
**Site Number:** 122016  
**Site Name:** ZOD\_CTF\_ALLTEL\_CO04\_DEERMOUNTAIN  
**FA Number:** 10149418

**SMARTLINK Designation:** **Site Number:** COL06256  
**Site Name:** ZOD\_CTF\_ALLTEL\_CO04\_DEERMOUNTAIN

**Engineering Firm Designation:** B+T Group Project Number: 170942.001.01.0002

**Site Data:** 2084 COUNTY ROAD 27A, Cotopaxi, Fremont County, CO 81223  
Latitude 38° 19' 25.0399", Longitude -105° 29' 5.03988"  
40 Foot - Monopole Tower

B+T Group 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 tower stress level for the structure and foundation, under the following load case, to be:

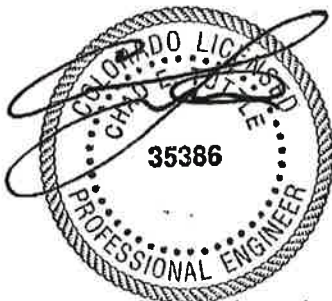
Proposed Equipment Configuration

Sufficient Capacity

The jurisdiction has adopted the 2021 International Building Code. This analysis has been performed in accordance with the TIA-222-H Standard.

Structural analysis prepared by: John Landon

Respectfully submitted by: B+T Engineering, Inc.



05/29/24

Chad E. Tuttle, P.E.

tnxTower Report - version 8.2.4.3



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tnxTower Output

### 6) APPENDIX B

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### 7) APPENDIX C

Additional Calculations

**1) INTRODUCTION**

This tower is a 40 ft Monopole tower designed by Valmont.

The tower has been modified per reinforcement drawings prepared by TEP, in August of 2013. Reinforcement consists of installing the proposed shaft reinforcement from 0.5' to 25.5' and installing proposed foundation reinforcement.

**2) ANALYSIS CRITERIA**

**TIA-222 Revision:** TIA-222-H  
**Risk Category:** II  
**Wind Speed:** 105 mph  
**Exposure Category:** C  
**Topographic Factor:** 5  
**Ice Thickness:** 0 in  
**Wind Speed with Ice:** 50 mph  
**Service Wind Speed:** 60 mph

**Table 1 - Proposed Equipment Configuration**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
38.0	40.0	3	Ericsson	AIR 6419 B77D	1 1 6 6 3	LDF4 GPS Elliptical AVA4 PWRT-608 RFFT-18SM-001-50M
	38.0	3	Ericsson	4490 B5/B12A		
		6	Commscope	NNH4-65C-R6-V4		
		3	Ericsson	4890 B25/B66		
		3	Ericsson	RRUS 4478 B14		
		3	Raycap	DC6-48-60-18-8F		
	1	--	Platform Mount			
36.0	3	Ericsson	AIR 6419 B77G			

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
25.0	25.0	1	Andrew	P4-57W-P7A	1	EW52
		1	--	Pipe Mount		
		1	--	Side Arm Mount		

**3) ANALYSIS PROCEDURE**

**Table 3 - Documents Provided**

Document	Remarks	Reference	Source
Tower Details	Tower Manufacturer Drawing By Valmont, Order No: 12927-10	Date: 02/18/2010	SMARTLINK
Tower Modification Detail	Modification Drawing By TEP, Job No: 46486.4734	Date: 08/06/2013	SMARTLINK
Inspection Detail	Post Modification Inspection By TEP, Job No: 090097	Date: 04/28/2011	SMARTLINK

Document	Remarks	Reference	Source
Foundation Data	Tower Foundation Drawing By Valmont, Eng File No: A-406391	Date: 10/21/2009	SMARTLINK
Soil Properties	Geotech Report By TEP, Project No: 090097.08	Date: 07/09/2009	SMARTLINK
Existing Loading	Previous SA by FDH, Project No: 1467RE4400	Date: 06/30/2014	SMARTLINK
	10149418_COL06256_DEERMOUNTAIN_D E130_Scoping Checklist COMPLETE	Date: 05/07/2024	SMARTLINK
Proposed Loading	10149418_COL06256_DEERMOUNTAIN_D E130_Scoping Checklist COMPLETE	Date: 05/07/2024	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.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

### 3.2) Assumptions

- 1) The tower and structures were maintained in accordance with the - TIA-222 standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

## 4) ANALYSIS RESULTS

**Table 4 - Section Capacity (Summary)**

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail	
L1	40 - 35	Pole	TP16.3x15.2x0.1875	1	-5.282	-	8.9%	Pass	
L2	35 - 30	Pole	TP17.4x16.3x0.1875	2	-5.535	-	19.3%	Pass	
L3	30 - 25.5	Pole	TP18.39x17.4x0.1875	3	-5.783	-	26.9%	Pass	
L4	25.5 - 25.25	Pole + Reinf.	TP18.445x18.39x0.5	4	-5.818	-	17.3%	Pass	
L5	25.25 - 20.25	Pole + Reinf.	TP19.545x18.445x0.475	5	-6.753	-	23.3%	Pass	
L6	20.25 - 15.25	Pole + Reinf.	TP20.645x19.545x0.4563	6	-7.406	-	28.6%	Pass	
L7	15.25 - 10.25	Pole + Reinf.	TP21.745x20.645x0.4375	7	-8.079	-	33.2%	Pass	
L8	10.25 - 5.25	Pole + Reinf.	TP22.845x21.745x0.425	8	-8.769	-	37.4%	Pass	
L9	5.25 - 0.25	Pole + Reinf.	TP23.945x22.845x0.4125	9	-9.476	-	41.1%	Pass	
L10	0.25 - 0	Pole + Reinf.	TP24x23.945x0.4125	10	-9.515	-	41.3%	Pass	
							Summary		
							Pole (L3)	29.2	Pass
							Reinforcement	41.3	Pass
							Rating =	41.3	Pass

**Table 5 - Tower Component Stresses vs. Capacity**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	Base	19.8	Pass
1,2	Base Plate	Base	17.1	Pass
1,2	Anchor Rod Bracket	Base	14.4	Pass
1,2	Base Foundation (Structure)	Base	10.8	Pass
1,2	Base Foundation (Soil Interaction)	Base	78.3	Pass

<b>Structure Rating (max from all components) =</b>	<b>78.3%</b>
---	--------------

Notes:

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

**4.1) Recommendations**

The tower and its foundations have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

**APPENDIX A**  
**TNXTOWER OUTPUT**

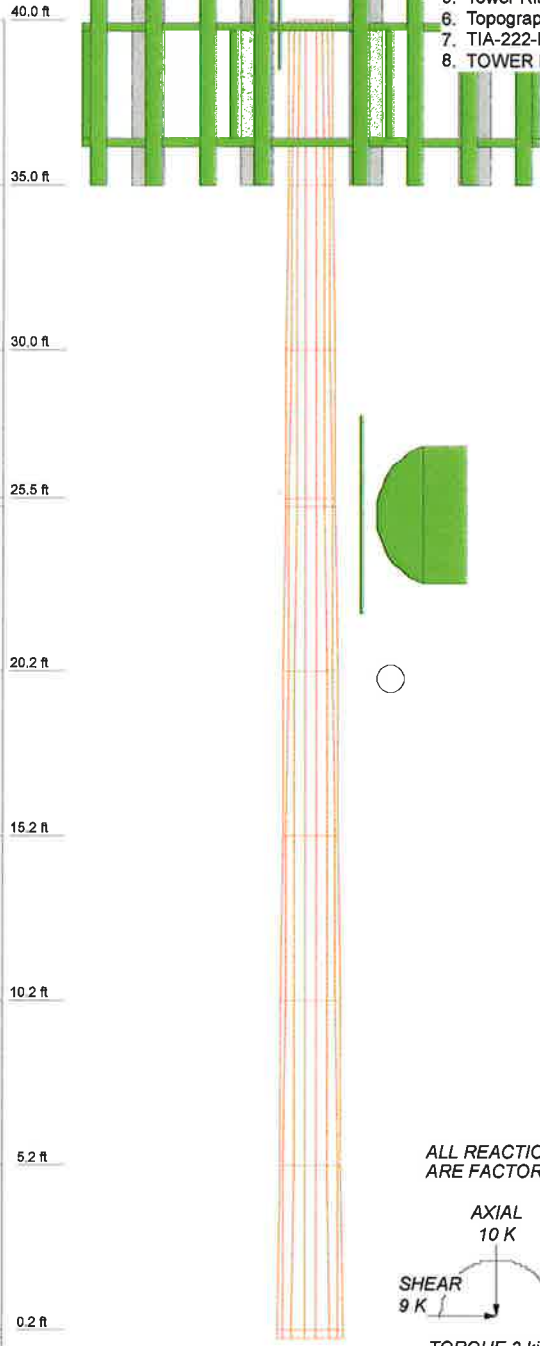
**MATERIAL STRENGTH**

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 105 mph basic wind in accordance with the TIA-222-H Standard.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 5 with Crest Height of 293.000 ft
7. TIA-222-H Annex S
8. TOWER RATING: 41.3%

Section	Length (ft)	Number of Sides	Thickness (in)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5,000	18	0.188	15,200	16,300	A572-65	0.2
2	5,000	19	0.188	16,300	17,400	A572-65	0.2
3	4,500	18	0.188	17,400	18,390	A572-65	0.2
4	0,250	18	0.500	18,390	18,445	A572-65	0.0
5	5,000	18	0.475	18,445	19,545	A572-65	0.5
6	5,000	18	0.456	19,545	20,645	A572-65	0.5
7	5,000	18	0.439	20,645	21,745	A572-65	0.5
8	5,000	18	0.425	21,745	22,845	A572-65	0.5
9	5,000	18	0.412	22,845	23,945	A572-65	0.5
10	0,250	18	0.412	23,945	24,000	A572-65	0.2



ALL REACTIONS ARE FACTORED


AXIAL 10 K

SHEAR 9 K

MOMENT 287 kip-ft

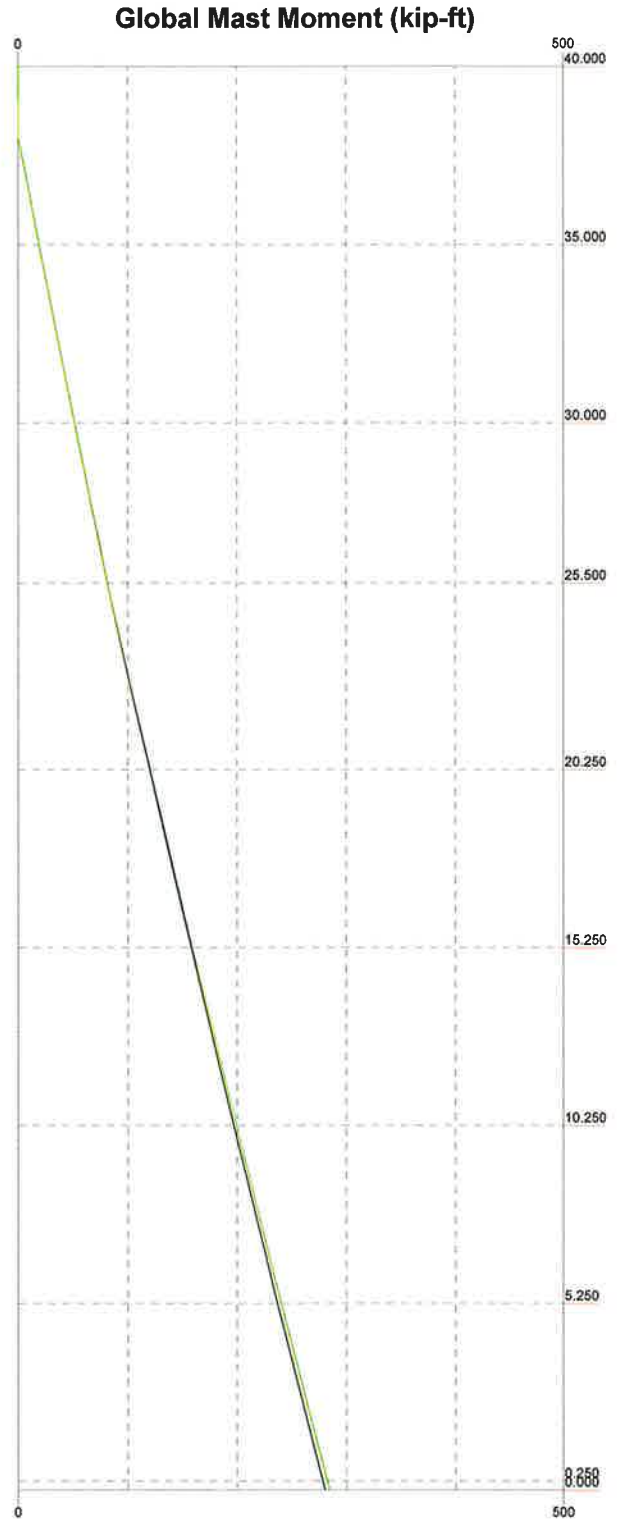
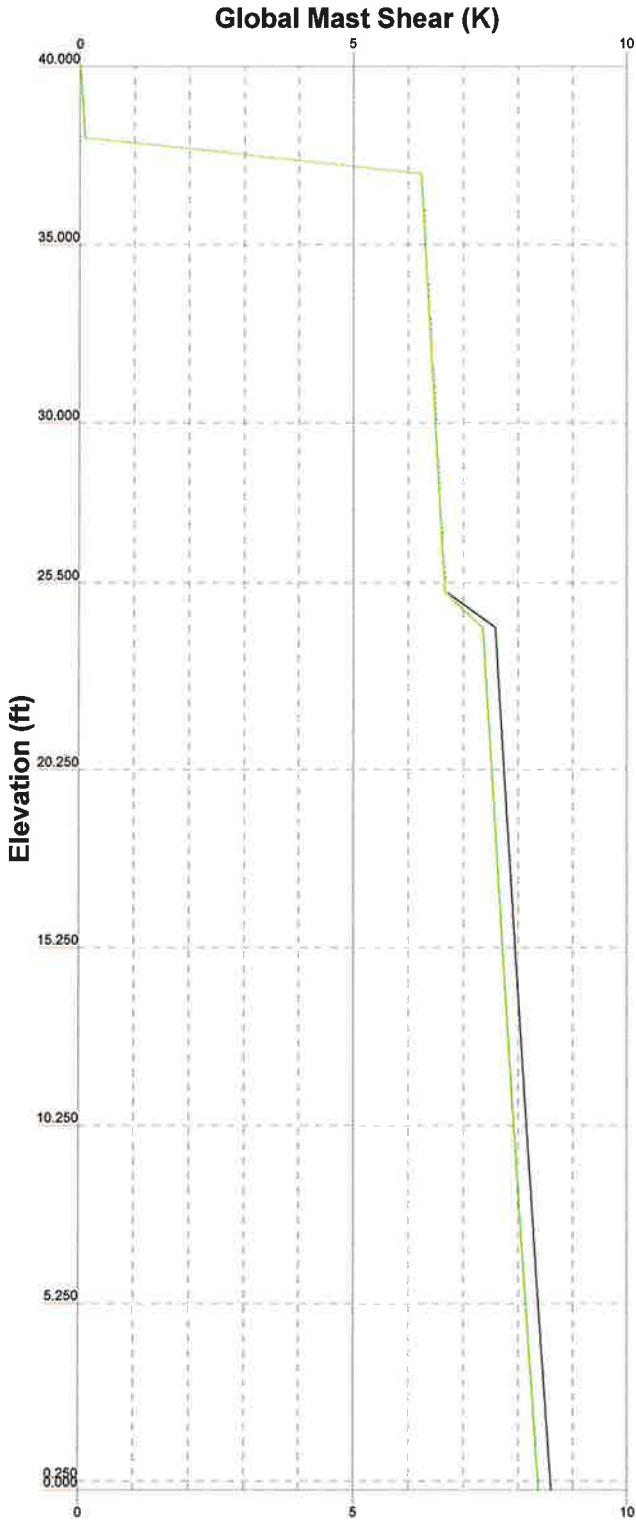
TORQUE 3 kip-ft


REACTIONS - 105 mph WIND

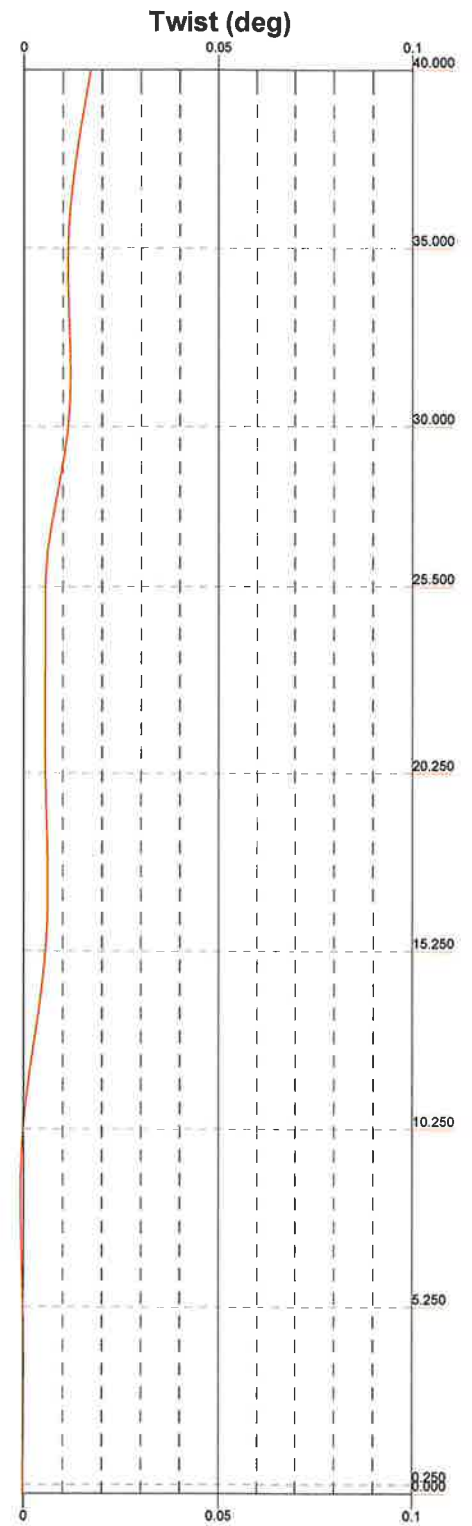
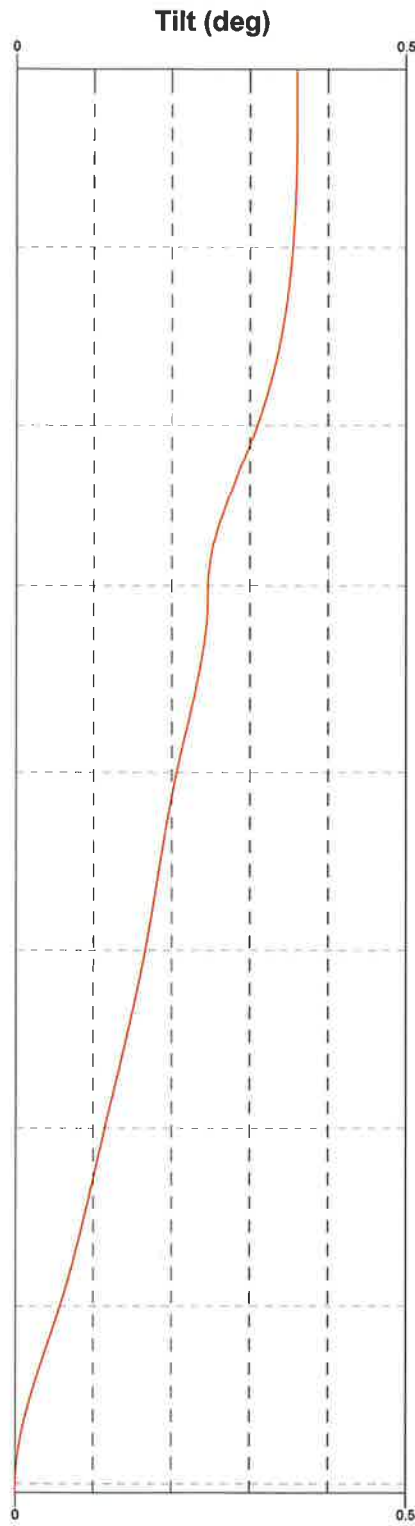
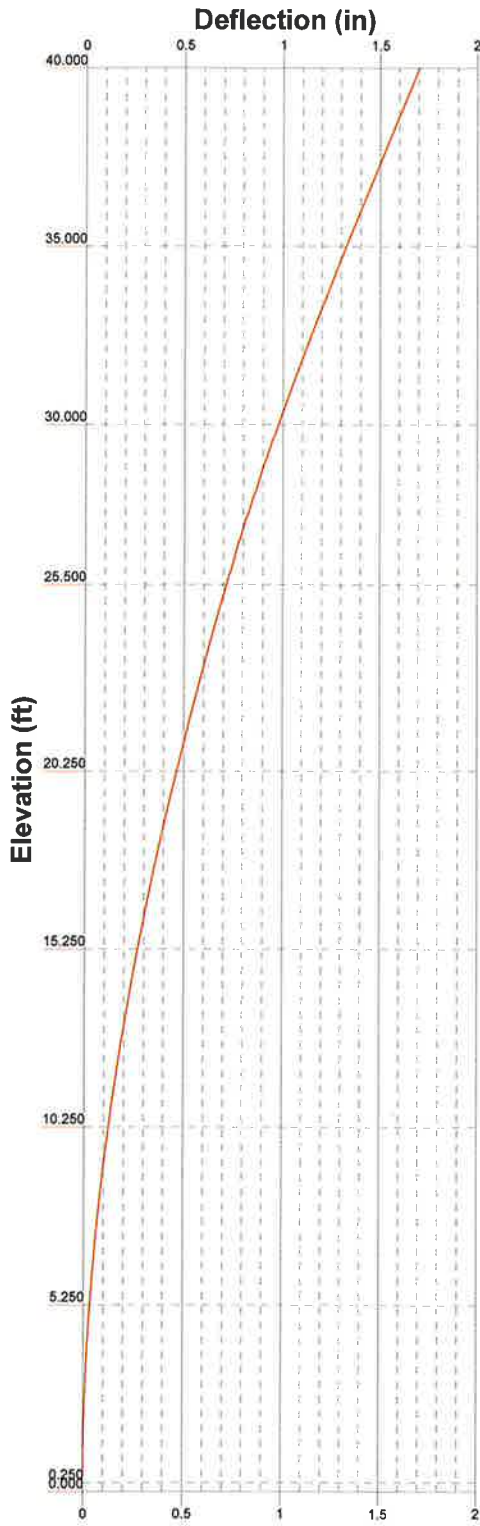
 <p><b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job: <b>170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL0624)</b></p>		
	<p>Project: SMARTLINK</p>	<p>Drawn by: Sinchana Upadhya</p>	<p>App'd:</p>
	<p>Code: TIA-222-H</p>	<p>Date: 05/24/24</p>	<p>Scale: NTS</p>
	<p>Path:</p>		<p>Dwg No. E-1</p>


Vx Vz

Mx Mz



 <p><b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<b>Job: 170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL0625)</b>		
	<b>Project: SMARTLINK</b>		
	Drawn by: Sinchana Upadhya		App'd:
	Code: TIA-222-H		Date: 05/24/24
	Path:		Scale: NTS Dwg No. E-4



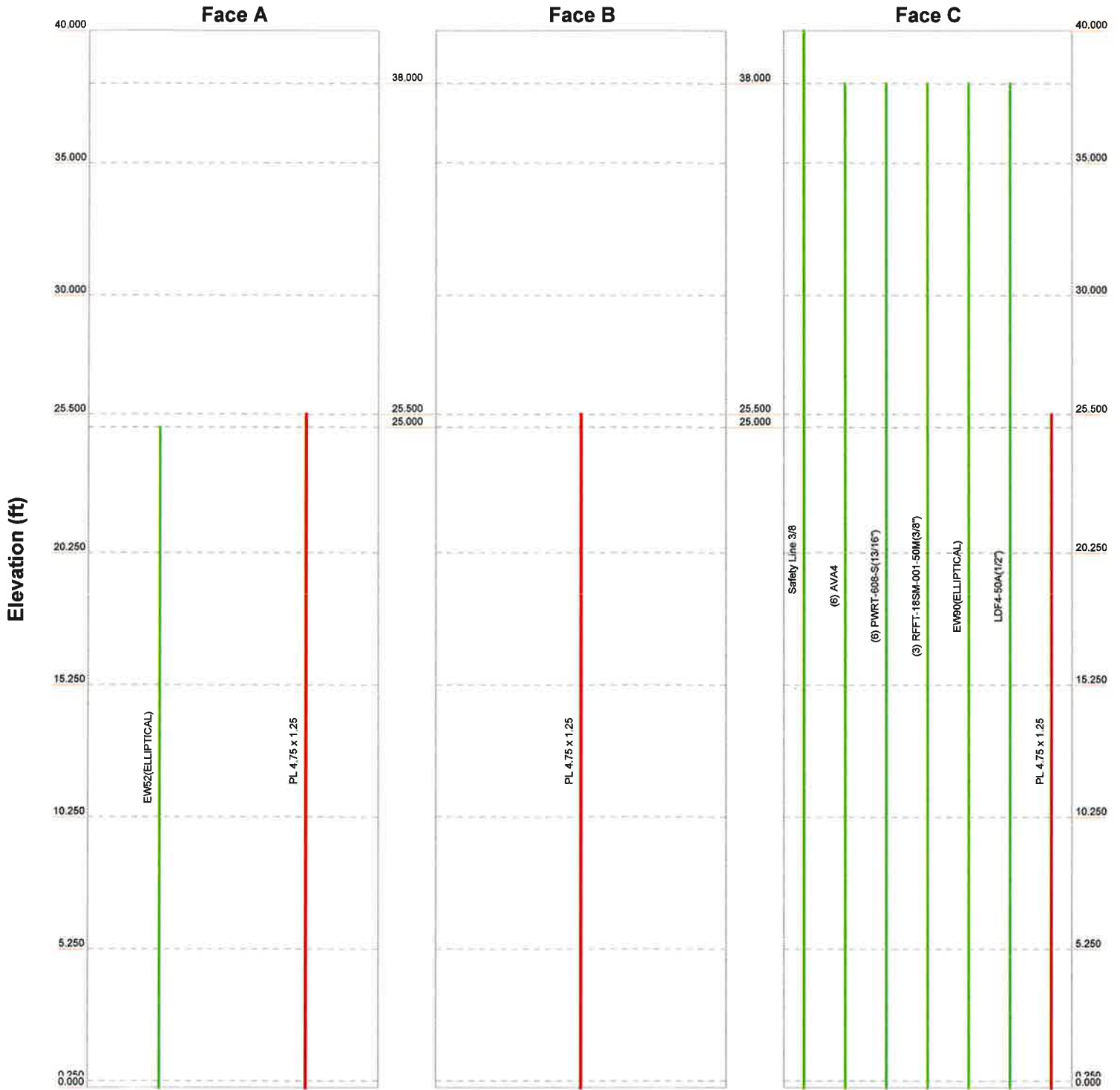
 <p><b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: <b>170942.001.01.0002 - ZOD CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL0624)</b>		
	Project:		
	Client: SMARTLINK	Drawn by: Sinchana Upadhya	App'd:
	Code: TIA-222-H	Date: 05/24/24	Scale: NTS
	Path:		Dwg No. E-5



# Feed Line Distribution Chart

## 0' - 40'

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



 <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	<b>Job: 170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN_CO (Site# COL0624)</b>		
	Project:		
	Client: SMARTLINK	Drawn by: Sinchana Upadhya	App'd:
	Code: TIA-222-H	Date: 05/24/24	Scale: NTS
	Path:		Dwg No: E-7

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	<b>Job</b> 170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL06256)	<b>Page</b> 1 of 16
	<b>Project</b>	<b>Date</b> 18:50:50 05/24/24
	<b>Client</b> SMARTLINK	<b>Designed by</b> Sinchana Upadhya

## Tower Input Data

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: 8140.000 ft.

Basic wind speed of 105 mph.

Risk Category II.

Exposure Category C.

Crest Height: 293.000 ft.

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

Topographic Feature: Hill.

Slope Distance L: 1250.000 ft.

Distance from Crest x: 0.000 ft.

Horizontal Distance Downwind: No.

Deflections calculated using a wind speed of 60 mph.

TIA-222-H Annex S.

TOWER RATING: 41.3%.

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 target reliabilities in accordance with Annex S.

Load Modification Factors used:  $K_{es}(F_w) = 0.95$ .

Maximum demand-capacity ratio is: 1.05.

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

## Options

<ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>Include Bolts In Member Capacity</li> <li>Leg Bolts Are At Top Of Section</li> <li>Secondary Horizontal Braces Leg</li> <li>Use Diamond Inner Bracing (4 Sided)</li> <li>SR Members Have Cut Ends</li> <li>SR Members Are Concentric</li> <li>Distribute Leg Loads As Uniform</li> </ul>	<ul style="list-style-type: none"> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>Use Clear Spans For KL/r</li> <li>Retension Guys To Initial Tension</li> <li>√ Bypass Mast Stability Checks</li> <li>√ Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurtenances</li> <li>Alternative Appurt. EPA Calculation</li> <li>Autocalc Torque Arm Areas</li> <li>Add IBC .6D+W Combination</li> <li>Sort Capacity Reports By Component</li> <li>Triangulate Diamond Inner Bracing</li> <li>Treat Feed Line Bundles As Cylinder</li> <li>Ignore KL/ry For 60 Deg. Angle Legs</li> <li>Use ASCE 10 X-Brace Ly Rules</li> </ul>	<ul style="list-style-type: none"> <li>Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>SR Leg Bolts Resist Compression</li> <li>All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feed Line Torque</li> <li>Include Angle Block Shear Check</li> <li>Use TIA-222-H Bracing Resist. Exemption</li> <li>Use TIA-222-H Tension Splice Exemption</li> <li style="text-align: center;">Poles</li> <li>√ Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> <li>√ Pole Without Linear Attachments</li> <li>Pole With Shroud Or No Appurtenances</li> <li>Outside and Inside Corner Radii Are Known</li> </ul>
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<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	<b>Job</b> 170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL06256)	<b>Page</b> 2 of 16
	<b>Project</b>	<b>Date</b> 18:50:50 05/24/24
	<b>Client</b> SMARTLINK	<b>Designed by</b> Sinchana Upadhyha

### 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	Bend Radius in	Pole Grade
L1	40.000-35.000	5.000	0.000	18	15.200	16.300	0.188	0.750	A572-65 (65 ksi)
L2	35.000-30.000	5.000	0.000	18	16.300	17.400	0.188	0.750	A572-65 (65 ksi)
L3	30.000-25.500	4.500	0.000	18	17.400	18.390	0.188	0.750	A572-65 (65 ksi)
L4	25.500-25.250	0.250	0.000	18	18.390	18.445	0.500	2.000	A572-65 (65 ksi)
L5	25.250-20.250	5.000	0.000	18	18.445	19.545	0.475	1.900	A572-65 (65 ksi)
L6	20.250-15.250	5.000	0.000	18	19.545	20.645	0.456	1.825	A572-65 (65 ksi)
L7	15.250-10.250	5.000	0.000	18	20.645	21.745	0.438	1.750	A572-65 (65 ksi)
L8	10.250-5.250	5.000	0.000	18	21.745	22.845	0.425	1.700	A572-65 (65 ksi)
L9	5.250-0.250	5.000	0.000	18	22.845	23.945	0.412	1.650	A572-65 (65 ksi)
L10	0.250-0.000	0.250		18	23.945	24.000	0.412	1.650	A572-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L1	15.406	8.934	254.393	5.329	7.722	32.946	509.120	4.468	2.345	12.508
	16.523	9.589	314.510	5.720	8.280	37.982	629.434	4.795	2.539	13.54
L2	16.523	9.589	314.510	5.720	8.280	37.982	629.434	4.795	2.539	13.54
	17.639	10.244	383.422	6.110	8.839	43.378	767.349	5.123	2.732	14.573
L3	17.639	10.244	383.422	6.110	8.839	43.378	767.349	5.123	2.732	14.573
	18.645	10.833	453.460	6.462	9.342	48.539	907.516	5.417	2.907	15.502
L4	18.597	28.391	1148.009	6.351	9.342	122.885	2297.529	14.198	2.357	4.713
	18.652	28.479	1158.630	6.370	9.370	123.652	2318.785	14.242	2.366	4.733
L5	18.656	27.092	1105.305	6.379	9.370	117.961	2212.065	13.549	2.410	5.074
	19.773	28.751	1320.961	6.770	9.929	133.043	2643.661	14.378	2.604	5.482
L6	19.776	27.643	1272.564	6.777	9.929	128.168	2546.803	13.824	2.637	5.78
	20.893	29.236	1505.482	7.167	10.488	143.548	3012.945	14.621	2.831	6.204
L7	20.896	28.061	1447.639	7.174	10.488	138.033	2897.182	14.033	2.864	6.545
	22.013	29.588	1697.149	7.564	11.046	153.637	3396.531	14.797	3.057	6.988
L8	22.015	28.760	1651.562	7.569	11.046	149.511	3305.297	14.383	3.079	7.245
	23.132	30.243	1920.614	7.959	11.605	165.495	3843.756	15.125	3.273	7.701
L9	23.134	29.370	1867.245	7.964	11.605	160.896	3736.947	14.688	3.295	7.987
	24.251	30.811	2155.622	8.354	12.164	177.212	4314.080	15.408	3.488	8.457
L10	24.251	30.811	2155.622	8.354	12.164	177.212	4314.080	15.408	3.488	8.457
	24.307	30.883	2170.771	8.374	12.192	178.049	4344.399	15.444	3.498	8.48

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L1 40.000-35.000				1	1	1			
L2				1	1	1			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor $A_f$	Adjust. Factor $A_r$	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft <sup>2</sup>	in							
35.000-30.000									
L3				1	1	1			
30.000-25.500									
L4				1	1	1.00702			
25.500-25.250									
L5				1	1	1.02026			
25.250-20.250									
L6				1	1	1.02572			
20.250-15.250									
L7				1	1	1.03564			
15.250-10.250									
L8				1	1	1.03484			
10.250-5.250									
L9				1	1	1.03704			
5.250-0.250									
L10				1	1	1.03568			
0.250-0.000									

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

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*										
PL 4.75 x 1.25	A	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.250 0.300	4.750	12.000	0.000
PL 4.75 x 1.25	B	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.250 0.300	4.750	12.000	0.000
PL 4.75 x 1.25	C	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.250 0.300	4.750	12.000	0.000
*										

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>AA</sub> ft <sup>2</sup> /ft	Weight klf
Safety Line 3/8	C	No	No	CaAa (Out Of Face)	40.000 - 0.000	1	No Ice	0.037	0.000
*									
AVA4	C	No	No	Inside Pole	38.000 - 0.000	6	No Ice	0.000	0.000
PWRT-608-S(13/16")	C	No	No	Inside Pole	38.000 - 0.000	6	No Ice	0.000	0.001
RFFT-18SM-001-50 M(3/8")	C	No	No	Inside Pole	38.000 - 0.000	3	No Ice	0.000	0.000
EW90(ELLIPTICAL)	C	No	No	Inside Pole	38.000 - 0.000	1	No Ice	0.000	0.000
LDF4-50A(1/2")	C	No	No	Inside Pole	38.000 - 0.000	1	No Ice	0.000	0.000
*									
EW52(ELLIPTICAL)	A	No	No	Inside Pole	25.000 - 0.000	1	No Ice	0.000	0.001

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C <sub>AA</sub> ft <sup>2</sup> /ft	Weight klf
*								

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
L1	40.000-35.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.188	0.020
L2	35.000-30.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.188	0.032
L3	30.000-25.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.169	0.029
L4	25.500-25.250	A	0.000	0.000	0.198	0.000	0.000
		B	0.000	0.000	0.198	0.000	0.000
		C	0.000	0.000	0.198	0.009	0.002
L5	25.250-20.250	A	0.000	0.000	3.958	0.000	0.003
		B	0.000	0.000	3.958	0.000	0.000
		C	0.000	0.000	3.958	0.188	0.032
L6	20.250-15.250	A	0.000	0.000	3.958	0.000	0.003
		B	0.000	0.000	3.958	0.000	0.000
		C	0.000	0.000	3.958	0.188	0.032
L7	15.250-10.250	A	0.000	0.000	3.958	0.000	0.003
		B	0.000	0.000	3.958	0.000	0.000
		C	0.000	0.000	3.958	0.188	0.032
L8	10.250-5.250	A	0.000	0.000	3.958	0.000	0.003
		B	0.000	0.000	3.958	0.000	0.000
		C	0.000	0.000	3.958	0.188	0.032
L9	5.250-0.250	A	0.000	0.000	3.958	0.000	0.003
		B	0.000	0.000	3.958	0.000	0.000
		C	0.000	0.000	3.958	0.188	0.032
L10	0.250-0.000	A	0.000	0.000	0.198	0.000	0.000
		B	0.000	0.000	0.198	0.000	0.000
		C	0.000	0.000	0.198	0.009	0.002

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>x</sub> in	CP <sub>z</sub> in	CP <sub>x</sub> Ice in	CP <sub>z</sub> Ice in
L1	40.000-35.000	-0.292	0.169	-0.170	0.098
L2	35.000-30.000	-0.293	0.169	-0.171	0.099
L3	30.000-25.500	-0.294	0.169	-0.171	0.099
L4	25.500-25.250	-0.088	0.051	-0.073	0.042
L5	25.250-20.250	-0.090	0.052	-0.074	0.043
L6	20.250-15.250	-0.094	0.054	-0.076	0.044
L7	15.250-10.250	-0.097	0.056	-0.079	0.045
L8	10.250-5.250	-0.101	0.058	-0.081	0.047
L9	5.250-0.250	-0.104	0.060	-0.083	0.048
L10	0.250-0.000	-0.106	0.061	-0.084	0.048

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

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### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L4	13	PL 4.75 x 1.25	25.25 - 25.50	1.0000	1.0000
L4	14	PL 4.75 x 1.25	25.25 - 25.50	1.0000	1.0000
L4	15	PL 4.75 x 1.25	25.25 - 25.50	1.0000	1.0000
L5	13	PL 4.75 x 1.25	20.25 - 25.25	1.0000	1.0000
L5	14	PL 4.75 x 1.25	20.25 - 25.25	1.0000	1.0000
L5	15	PL 4.75 x 1.25	20.25 - 25.25	1.0000	1.0000
L6	13	PL 4.75 x 1.25	15.25 - 20.25	1.0000	1.0000
L6	14	PL 4.75 x 1.25	15.25 - 20.25	1.0000	1.0000
L6	15	PL 4.75 x 1.25	15.25 - 20.25	1.0000	1.0000
L7	13	PL 4.75 x 1.25	10.25 - 15.25	1.0000	1.0000
L7	14	PL 4.75 x 1.25	10.25 - 15.25	1.0000	1.0000
L7	15	PL 4.75 x 1.25	10.25 - 15.25	1.0000	1.0000
L8	13	PL 4.75 x 1.25	5.25 - 10.25	1.0000	1.0000
L8	14	PL 4.75 x 1.25	5.25 - 10.25	1.0000	1.0000
L8	15	PL 4.75 x 1.25	5.25 - 10.25	1.0000	1.0000
L9	13	PL 4.75 x 1.25	0.25 - 5.25	1.0000	1.0000
L9	14	PL 4.75 x 1.25	0.25 - 5.25	1.0000	1.0000
L9	15	PL 4.75 x 1.25	0.25 - 5.25	1.0000	1.0000
L10	13	PL 4.75 x 1.25	0.00 - 0.25	1.0000	1.0000
L10	14	PL 4.75 x 1.25	0.00 - 0.25	1.0000	1.0000
L10	15	PL 4.75 x 1.25	0.00 - 0.25	1.0000	1.0000

### Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L4	13	PL 4.75 x 1.25	25.25 - 25.50	Auto	0.5028
L4	14	PL 4.75 x 1.25	25.25 - 25.50	Auto	0.5028
L4	15	PL 4.75 x 1.25	25.25 - 25.50	Auto	0.5028
L5	13	PL 4.75 x 1.25	20.25 - 25.25	Auto	0.4722
L5	14	PL 4.75 x 1.25	20.25 - 25.25	Auto	0.4722
L5	15	PL 4.75 x 1.25	20.25 - 25.25	Auto	0.4722
L6	13	PL 4.75 x 1.25	15.25 - 20.25	Auto	0.4245
L6	14	PL 4.75 x 1.25	15.25 - 20.25	Auto	0.4245
L6	15	PL 4.75 x 1.25	15.25 - 20.25	Auto	0.4245
L7	13	PL 4.75 x 1.25	10.25 - 15.25	Auto	0.3768
L7	14	PL 4.75 x 1.25	10.25 - 15.25	Auto	0.3768
L7	15	PL 4.75 x 1.25	10.25 - 15.25	Auto	0.3768
L8	13	PL 4.75 x 1.25	5.25 - 10.25	Auto	0.3314
L8	14	PL 4.75 x 1.25	5.25 - 10.25	Auto	0.3314
L8	15	PL 4.75 x 1.25	5.25 - 10.25	Auto	0.3314
L9	13	PL 4.75 x 1.25	0.25 - 5.25	Auto	0.2860
L9	14	PL 4.75 x 1.25	0.25 - 5.25	Auto	0.2860
L9	15	PL 4.75 x 1.25	0.25 - 5.25	Auto	0.2860
L10	13	PL 4.75 x 1.25	0.00 - 0.25	Auto	0.2646
L10	14	PL 4.75 x 1.25	0.00 - 0.25	Auto	0.2646
L10	15	PL 4.75 x 1.25	0.00 - 0.25	Auto	0.2646

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### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			Lateral		°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
			ft	ft						
Lightning Rod 5/8" x 6'	C	From Leg	0.500	0.000	0.000	45.000	No Ice	0.375	0.375	0.006
7' x 3.5" Mount Pipe	C	From Leg	0.500	0.000	0.000	38.000	No Ice	2.405	2.405	0.031
			0.000	0.000						
			3.500	0.000						
4890 B25/B66	A	From Leg	4.000	0.000	0.000	38.000	No Ice	2.695	1.221	0.067
4890 B25/B66	B	From Leg	4.000	0.000	0.000	38.000	No Ice	2.695	1.221	0.067
			0.000	0.000						
4890 B25/B66	C	From Leg	4.000	0.000	0.000	38.000	No Ice	2.695	1.221	0.067
			0.000	0.000						
DC6-48-60-18-8F	A	From Leg	1.000	0.000	0.000	38.000	No Ice	1.212	1.212	0.033
			0.000	0.000						
DC6-48-60-18-8F	B	From Leg	1.000	0.000	0.000	38.000	No Ice	1.212	1.212	0.033
			0.000	0.000						
DC6-48-60-18-8F	C	From Leg	1.000	0.000	0.000	38.000	No Ice	1.212	1.212	0.033
			0.000	0.000						
(2) NNH4-65C-R6-V4 w/ Mount Pipes	A	From Leg	4.000	0.000	0.000	38.000	No Ice	17.311	10.301	0.127
			0.000	0.000						
			0.000	0.000						
(2) NNH4-65C-R6-V4 w/ Mount Pipes	B	From Leg	4.000	0.000	0.000	38.000	No Ice	17.311	10.301	0.127
			0.000	0.000						
			0.000	0.000						
(2) NNH4-65C-R6-V4 w/ Mount Pipes	C	From Leg	4.000	0.000	0.000	38.000	No Ice	17.311	10.301	0.127
			0.000	0.000						
			0.000	0.000						
AIR 6419 B77D_TIA	A	From Leg	4.000	0.000	0.000	38.000	No Ice	3.784	1.802	0.066
AIR 6419 B77D_TIA	B	From Leg	4.000	0.000	0.000	38.000	No Ice	3.784	1.802	0.066
			0.000	2.000						
AIR 6419 B77D_TIA	C	From Leg	4.000	0.000	0.000	38.000	No Ice	3.784	1.802	0.066
			0.000	2.000						
AIR 6419 B77G_TIA	A	From Leg	4.000	0.000	0.000	38.000	No Ice	3.668	1.653	0.066
			0.000	-2.000						
AIR 6419 B77G_TIA	B	From Leg	4.000	0.000	0.000	38.000	No Ice	3.668	1.653	0.066
			0.000	-2.000						
AIR 6419 B77G_TIA	C	From Leg	4.000	0.000	0.000	38.000	No Ice	3.668	1.653	0.066
			0.000	-2.000						
Ericsson 4490 B5/B12A	A	From Leg	4.000	0.000	0.000	38.000	No Ice	2.202	0.853	0.021

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
Ericsson 4490 B5/B12A	B	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 2.202	0.853	0.021
Ericsson 4490 B5/B12A	C	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 2.202	0.853	0.021
RRUS 4478 B14	A	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 1.843	1.059	0.060
RRUS 4478 B14	B	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 1.843	1.059	0.060
RRUS 4478 B14	C	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 1.843	1.059	0.060
(3) 8' x 2.375" Mount Pipe	A	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 1.900	1.900	0.061
(3) 8' x 2.375" Mount Pipe	B	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 1.900	1.900	0.061
(3) 8' x 2.375" Mount Pipe	C	From Leg	0.000 4.000 0.000	0.000	38.000	No Ice 1.900	1.900	0.061
Platform Mount [LP 404-1] *	C	None		0.000	38.000	No Ice 24,600	24,600	2.043
Side Arm Mount [SO 102-3]	B	None		0.000	25.000	No Ice 3,600	3,600	0.075
Pipe Mount [PM 601-1]	B	From Leg	1.000 0.000 0.000	0.000	25.000	No Ice 1,320	1,320	0.065

### Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft <sup>2</sup>	Weight K
Andrew P4-57W-P7A	B	Paraboloid w/Shroud (HP)	From Leg	1.500 0.000 0.000	0.000		25.000	4.233	No Ice 14.075	0.119



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## 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 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	Dead+Wind 0 deg - Service
27	Dead+Wind 30 deg - Service
28	Dead+Wind 60 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 120 deg - Service
31	Dead+Wind 150 deg - Service
32	Dead+Wind 180 deg - Service
33	Dead+Wind 210 deg - Service
34	Dead+Wind 240 deg - Service
35	Dead+Wind 270 deg - Service
36	Dead+Wind 300 deg - Service
37	Dead+Wind 330 deg - Service

## Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	40 - 35	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-5.284	-9.709	16.780
			Max. Mx	20	-5.282	19.480	0.018
			Max. My	14	-5.284	0.038	-19.459
			Max. Vy	20	-6.330	19.480	0.018
			Max. Vx	14	6.329	0.038	-19.459
			Max. Torque	20			2.784
L2	35 - 30	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-5.537	-25.746	44.580
			Max. Mx	20	-5.535	51.583	0.004
			Max. My	14	-5.536	0.030	-51.557
			Max. Vy	20	-6.514	51.583	0.004
			Max. Vx	14	6.513	0.030	-51.557

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	<b>Job</b> 170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL06256)	<b>Page</b> 9 of 16
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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L3	30 - 25.5	Pole	Max. Torque	20			2.786
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-5.785	-40.575	70.272
			Max. Mx	20	-5.783	81.255	-0.001
			Max. My	14	-5.784	0.023	-81.224
			Max. Vy	20	-6.679	81.255	-0.001
			Max. Vx	14	6.678	0.023	-81.224
L4	25.5 - 25.25	Pole	Max. Torque	16			-2.789
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-5.819	-41.410	71.717
			Max. Mx	20	-5.818	82.925	-0.000
			Max. My	14	-5.819	0.022	-82.894
			Max. Vy	20	-6.686	82.925	-0.000
			Max. Vx	14	6.685	0.022	-82.894
L5	25.25 - 20.25	Pole	Max. Torque	16			-2.789
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-6.758	-60.321	102.998
			Max. Mx	8	-6.754	-120.558	-1.142
			Max. My	14	-6.756	-1.435	-119.966
			Max. Vy	20	-7.745	120.525	0.844
			Max. Vx	2	-7.533	1.376	119.598
L6	20.25 - 15.25	Pole	Max. Torque	8			-3.209
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-7.412	-79.430	135.483
			Max. Mx	20	-7.407	159.743	1.976
			Max. My	14	-7.411	-2.559	-157.965
			Max. Vy	20	-7.946	159.743	1.976
			Max. Vx	2	-7.734	3.172	157.754
L7	15.25 - 10.25	Pole	Max. Torque	8			-3.212
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-8.083	-99.045	168.840
			Max. Mx	20	-8.080	199.969	3.110
			Max. My	14	-8.082	-3.681	-196.971
			Max. Vy	20	-8.149	199.969	3.110
			Max. Vx	2	-7.937	4.967	196.917
L8	10.25 - 5.25	Pole	Max. Torque	8			-3.215
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-8.771	-119.179	203.098
			Max. Mx	20	-8.769	241.233	4.245
			Max. My	2	-8.771	6.760	237.121
			Max. Vy	20	-8.362	241.233	4.245
			Max. Vx	2	-8.151	6.760	237.121
L9	5.25 - 0.25	Pole	Max. Torque	8			-3.218
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-9.476	-139.861	238.302
			Max. Mx	20	-9.476	283.588	5.379
			Max. My	2	-9.476	8.550	278.416
			Max. Vy	20	-8.586	283.588	5.379
			Max. Vx	2	-8.375	8.550	278.416
L10	0.25 - 0	Pole	Max. Torque	8			-3.221
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-9.515	-140.910	240.087
			Max. Mx	20	-9.515	285.735	5.436
			Max. My	2	-9.515	8.640	280.510
			Max. Vy	20	-8.594	285.735	5.436
			Max. Vx	2	-8.383	8.640	280.510
			Max. Torque	8			-3.222

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### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	4	9.515	-4.198	7.149
	Max. H <sub>x</sub>	21	7.136	8.594	0.226
	Max. H <sub>z</sub>	2	9.515	0.357	8.383
	Max. M <sub>x</sub>	2	280.510	0.357	8.383
	Max. M <sub>z</sub>	8	282.912	-8.454	-0.184
	Max. Torsion	20	3.027	8.594	0.226
	Min. Vert	21	7.136	8.594	0.226
	Min. H <sub>x</sub>	8	9.515	-8.454	-0.184
	Min. H <sub>z</sub>	14	9.515	-0.223	-8.352
	Min. M <sub>x</sub>	14	-280.242	-0.223	-8.352
	Min. M <sub>z</sub>	20	-285.735	8.594	0.226
	Min. Torsion	8	-3.222	-8.454	-0.184

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	7.929	0.000	0.000	0.218	-0.291	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	9.515	-0.357	-8.383	-280.510	8.640	0.371
0.9 Dead+1.0 Wind 0 deg - No Ice	7.136	-0.357	-8.383	-279.910	8.713	0.371
1.2 Dead+1.0 Wind 30 deg - No Ice	9.515	4.198	-7.149	-240.087	-140.910	-1.680
0.9 Dead+1.0 Wind 30 deg - No Ice	7.136	4.198	-7.149	-239.581	-140.487	-1.680
1.2 Dead+1.0 Wind 60 deg - No Ice	9.515	7.344	-3.982	-134.857	-245.631	0.886
0.9 Dead+1.0 Wind 60 deg - No Ice	7.136	7.344	-3.982	-134.599	-244.960	0.886
1.2 Dead+1.0 Wind 90 deg - No Ice	9.515	8.454	0.184	4.883	-282.912	3.222
0.9 Dead+1.0 Wind 90 deg - No Ice	7.136	8.454	0.184	4.809	-282.153	3.222
1.2 Dead+1.0 Wind 120 deg - No Ice	9.515	7.370	4.255	142.244	-246.269	0.159
0.9 Dead+1.0 Wind 120 deg - No Ice	7.136	7.370	4.255	141.841	-245.598	0.158
1.2 Dead+1.0 Wind 150 deg - No Ice	9.515	4.386	7.230	242.658	-145.632	-2.947
0.9 Dead+1.0 Wind 150 deg - No Ice	7.136	4.386	7.230	242.015	-145.202	-2.947
1.2 Dead+1.0 Wind 180 deg - No Ice	9.515	0.223	8.352	280.242	-5.973	-0.727
0.9 Dead+1.0 Wind 180 deg - No Ice	7.136	0.223	8.352	279.509	-5.875	-0.728
1.2 Dead+1.0 Wind 210 deg - No Ice	9.515	-4.092	7.210	242.166	137.519	1.680
0.9 Dead+1.0 Wind 210 deg - No Ice	7.136	-4.092	7.210	241.524	137.280	1.680
1.2 Dead+1.0 Wind 240 deg - No Ice	9.515	-7.439	3.882	132.864	247.301	-0.529
0.9 Dead+1.0 Wind 240 deg - No Ice	7.136	-7.439	3.882	132.477	246.805	-0.529

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Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>y</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>y</sub> kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.0 Wind 270 deg - No Ice	9.515	-8.594	-0.226	-5.436	285.735	-3.027
0.9 Dead+1.0 Wind 270 deg - No Ice	7.136	-8.594	-0.226	-5.493	285.147	-3.027
1.2 Dead+1.0 Wind 300 deg - No Ice	9.515	-7.490	-4.324	-143.458	248.581	-0.159
0.9 Dead+1.0 Wind 300 deg - No Ice	7.136	-7.490	-4.324	-143.185	248.083	-0.158
1.2 Dead+1.0 Wind 330 deg - No Ice	9.515	-4.493	-7.330	-244.644	147.628	2.752
0.9 Dead+1.0 Wind 330 deg - No Ice	7.136	-4.493	-7.330	-244.131	147.370	2.752
Dead+Wind 0 deg - Service	7.929	-0.110	-2.581	-86.106	2.469	0.114
Dead+Wind 30 deg - Service	7.929	1.293	-2.201	-73.678	-43.508	-0.517
Dead+Wind 60 deg - Service	7.929	2.261	-1.226	-41.325	-75.705	0.273
Dead+Wind 90 deg - Service	7.929	2.603	0.056	1.639	-87.167	0.991
Dead+Wind 120 deg - Service	7.929	2.269	1.310	43.872	-75.901	0.049
Dead+Wind 150 deg - Service	7.929	1.350	2.226	74.745	-44.959	-0.907
Dead+Wind 180 deg - Service	7.929	0.069	2.571	86.300	-2.020	-0.224
Dead+Wind 210 deg - Service	7.929	-1.260	2.220	74.594	42.097	0.517
Dead+Wind 240 deg - Service	7.929	-2.290	1.195	40.990	75.848	-0.163
Dead+Wind 270 deg - Service	7.929	-2.646	-0.070	-1.531	87.664	-0.931
Dead+Wind 300 deg - Service	7.929	-2.306	-1.331	-43.967	76.241	-0.049
Dead+Wind 330 deg - Service	7.929	-1.383	-2.257	-75.078	45.202	0.847

### Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-7.929	0.000	0.000	7.929	0.000	0.000%
2	-0.357	-9.515	-8.383	0.357	9.515	8.383	0.000%
3	-0.357	-7.136	-8.383	0.357	7.136	8.383	0.000%
4	4.198	-9.515	-7.149	-4.198	9.515	7.149	0.000%
5	4.198	-7.136	-7.149	-4.198	7.136	7.149	0.000%
6	7.344	-9.515	-3.982	-7.344	9.515	3.982	0.000%
7	7.344	-7.136	-3.982	-7.344	7.136	3.982	0.000%
8	8.454	-9.515	0.184	-8.454	9.515	-0.184	0.000%
9	8.454	-7.136	0.184	-8.454	7.136	-0.184	0.000%
10	7.370	-9.515	4.255	-7.370	9.515	-4.255	0.000%
11	7.370	-7.136	4.255	-7.370	7.136	-4.255	0.000%
12	4.386	-9.515	7.230	-4.386	9.515	-7.230	0.000%
13	4.386	-7.136	7.230	-4.386	7.136	-7.230	0.000%
14	0.223	-9.515	8.352	-0.223	9.515	-8.352	0.000%
15	0.223	-7.136	8.352	-0.223	7.136	-8.352	0.000%
16	-4.092	-9.515	7.210	4.092	9.515	-7.210	0.000%
17	-4.092	-7.136	7.210	4.092	7.136	-7.210	0.000%
18	-7.439	-9.515	3.882	7.439	9.515	-3.882	0.000%
19	-7.439	-7.136	3.882	7.439	7.136	-3.882	0.000%
20	-8.594	-9.515	-0.226	8.594	9.515	0.226	0.000%
21	-8.594	-7.136	-0.226	8.594	7.136	0.226	0.000%
22	-7.490	-9.515	-4.324	7.490	9.515	4.324	0.000%
23	-7.490	-7.136	-4.324	7.490	7.136	4.324	0.000%
24	-4.493	-9.515	-7.330	4.493	9.515	7.330	0.000%
25	-4.493	-7.136	-7.330	4.493	7.136	7.330	0.000%
26	-0.110	-7.929	-2.581	0.110	7.929	2.581	0.000%
27	1.293	-7.929	-2.201	-1.293	7.929	2.201	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
28	2.261	-7.929	-1.226	-2.261	7.929	1.226	0.000%
29	2.603	-7.929	0.056	-2.603	7.929	-0.056	0.000%
30	2.269	-7.929	1.310	-2.269	7.929	-1.310	0.000%
31	1.350	-7.929	2.226	-1.350	7.929	-2.226	0.000%
32	0.069	-7.929	2.571	-0.069	7.929	-2.571	0.000%
33	-1.260	-7.929	2.220	1.260	7.929	-2.220	0.000%
34	-2.290	-7.929	1.195	2.290	7.929	-1.195	0.000%
35	-2.646	-7.929	-0.070	2.646	7.929	0.070	0.000%
36	-2.306	-7.929	-1.331	2.306	7.929	1.331	0.000%
37	-1.383	-7.929	-2.257	1.383	7.929	2.257	0.000%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00005026
3	Yes	4	0.00000001	0.00003152
4	Yes	4	0.00000001	0.00024072
5	Yes	4	0.00000001	0.00015291
6	Yes	4	0.00000001	0.00012942
7	Yes	4	0.00000001	0.00008064
8	Yes	4	0.00000001	0.00049345
9	Yes	4	0.00000001	0.00031201
10	Yes	4	0.00000001	0.00013946
11	Yes	4	0.00000001	0.00008604
12	Yes	4	0.00000001	0.00052935
13	Yes	4	0.00000001	0.00033524
14	Yes	4	0.00000001	0.00011432
15	Yes	4	0.00000001	0.00007218
16	Yes	4	0.00000001	0.00034345
17	Yes	4	0.00000001	0.00021752
18	Yes	4	0.00000001	0.00017322
19	Yes	4	0.00000001	0.00010825
20	Yes	4	0.00000001	0.00045544
21	Yes	4	0.00000001	0.00028766
22	Yes	4	0.00000001	0.00011983
23	Yes	4	0.00000001	0.00007355
24	Yes	4	0.00000001	0.00038925
25	Yes	4	0.00000001	0.00024715
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00002715
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00005303
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00005123
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00003085
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00004958
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00004414

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### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	40 - 35	1.706	30	0.362	0.017
L2	35 - 30	1.329	30	0.353	0.014
L3	30 - 25.5	0.980	30	0.309	0.009
L4	25.5 - 25.25	0.717	30	0.247	0.006
L5	25.25 - 20.25	0.704	30	0.245	0.006
L6	20.25 - 15.25	0.466	36	0.208	0.004
L7	15.25 - 10.25	0.270	36	0.164	0.003
L8	10.25 - 5.25	0.125	36	0.114	0.002
L9	5.25 - 0.25	0.033	36	0.060	0.001
L10	0.25 - 0	0.000	1	0.000	0.000

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

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
45.000	Lightning Rod 5/8" x 6'	30	1.706	0.362	0.017	10856
38.000	7' x 3.5" Mount Pipe	30	1.554	0.360	0.016	10856
25.000	Andrew P4-57W-P7A	30	0.691	0.244	0.006	5687

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	40 - 35	5.558	22	1.178	0.056
L2	35 - 30	4.332	22	1.149	0.045
L3	30 - 25.5	3.195	22	1.006	0.031
L4	25.5 - 25.25	2.338	22	0.803	0.020
L5	25.25 - 20.25	2.296	22	0.798	0.019
L6	20.25 - 15.25	1.520	22	0.679	0.014
L7	15.25 - 10.25	0.883	22	0.536	0.010
L8	10.25 - 5.25	0.406	22	0.372	0.006
L9	5.25 - 0.25	0.108	22	0.196	0.003
L10	0.25 - 0	0.000	22	0.009	0.000

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

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
45.000	Lightning Rod 5/8" x 6'	22	5.558	1.178	0.056	3352
38.000	7' x 3.5" Mount Pipe	22	5.063	1.173	0.052	3352
25.000	Andrew P4-57W-P7A	22	2.254	0.793	0.019	1752

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## Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	$L_u$ ft	$Kl/r$	A $in^2$	$P_u$ K	$\phi P_n$ K	Ratio $\frac{P_u}{\phi P_n}$
L1	40 - 35 (1)	TP16.3x15.2x0.188	5.000	0.000	0.0	9.589	-5.282	560.954	0.009
L2	35 - 30 (2)	TP17.4x16.3x0.188	5.000	0.000	0.0	10.244	-5.535	599.250	0.009
L3	30 - 25.5 (3)	TP18.39x17.4x0.188	4.500	0.000	0.0	10.833	-5.783	633.717	0.009
L4	25.5 - 25.25 (4)	TP18.445x18.39x0.5	0.250	0.000	0.0	28.479	-5.818	1666.000	0.003
L5	25.25 - 20.25 (5)	TP19.545x18.445x0.475	5.000	0.000	0.0	28.751	-6.753	1681.930	0.004
L6	20.25 - 15.25 (6)	TP20.645x19.545x0.456	5.000	0.000	0.0	29.236	-7.406	1710.310	0.004
L7	15.25 - 10.25 (7)	TP21.745x20.645x0.438	5.000	0.000	0.0	29.588	-8.079	1730.910	0.005
L8	10.25 - 5.25 (8)	TP22.845x21.745x0.425	5.000	0.000	0.0	30.243	-8.769	1769.240	0.005
L9	5.25 - 0.25 (9)	TP23.945x22.845x0.413	5.000	0.000	0.0	30.810	-9.476	1802.420	0.005
L10	0.25 - 0 (10)	TP24x23.945x0.413	0.250	0.000	0.0	30.882	-9.515	1806.630	0.005

### Pole Bending Design Data

Section No.	Elevation ft	Size	$M_{ux}$ kip-ft	$\phi M_{ux}$ kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	$M_{uy}$ kip-ft	$\phi M_{uy}$ kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	40 - 35 (1)	TP16.3x15.2x0.188	19.480	235.159	0.083	0.000	235.159	0.000
L2	35 - 30 (2)	TP17.4x16.3x0.188	51.583	268.561	0.192	0.000	268.561	0.000
L3	30 - 25.5 (3)	TP18.39x17.4x0.188	81.255	298.998	0.272	0.000	298.998	0.000
L4	25.5 - 25.25 (4)	TP18.445x18.39x0.5	82.925	765.562	0.108	0.000	765.562	0.000
L5	25.25 - 20.25 (5)	TP19.545x18.445x0.475	120.910	823.700	0.147	0.000	823.700	0.000
L6	20.25 - 15.25 (6)	TP20.645x19.545x0.456	160.192	888.742	0.180	0.000	888.742	0.000
L7	15.25 - 10.25 (7)	TP21.745x20.645x0.438	200.688	951.208	0.211	0.000	951.208	0.000
L8	10.25 - 5.25 (8)	TP22.845x21.745x0.425	242.222	1024.625	0.236	0.000	1024.625	0.000
L9	5.25 - 0.25 (9)	TP23.945x22.845x0.413	284.846	1097.167	0.260	0.000	1097.167	0.000
L10	0.25 - 0 (10)	TP24x23.945x0.413	287.007	1102.342	0.260	0.000	1102.342	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	40 - 35 (1)	TP16.3x15.2x0.188	6.330	168.286	0.038	2.784	237.460	0.012
L2	35 - 30 (2)	TP17.4x16.3x0.188	6.514	179.775	0.036	2.786	270.990	0.010
L3	30 - 25.5 (3)	TP18.39x17.4x0.188	6.679	190.115	0.035	2.789	303.059	0.009
L4	25.5 - 25.25 (4)	TP18.445x18.39x0.5	6.686	499.801	0.013	2.789	785.454	0.004
L5	25.25 - 20.25 (5)	TP19.545x18.445x0.475	7.661	504.578	0.015	0.136	842.675	0.000

<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	<b>Job</b> 170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL06256)	<b>Page</b> 15 of 16
	<b>Project</b>	<b>Date</b> 18:50:50 05/24/24
	<b>Client</b> SMARTLINK	<b>Designed by</b> Sinchana Upadhya

Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L6	20.25 - 15.25 (6)	TP20.645x19.545x0.456	8,000	513.093	0.016	0.141	907.167	0.000
L7	15.25 - 10.25 (7)	TP21.745x20.645x0.438	8,203	519.272	0.016	0.146	968.967	0.000
L8	10.25 - 5.25 (8)	TP22.845x21.745x0.425	8,416	530.773	0.016	0.152	1042.133	0.000
L9	5.25 - 0.25 (9)	TP23.945x22.845x0.413	8,640	540.724	0.016	0.158	1114.358	0.000
L10	0.25 - 0 (10)	TP24x23.945x0.413	8,648	541.988	0.016	0.159	1119.575	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $P_u$ $\phi P_n$	Ratio $M_{ux}$ $\phi M_{nx}$	Ratio $M_{uy}$ $\phi M_{ny}$	Ratio $V_u$ $\phi V_n$	Ratio $T_u$ $\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	40 - 35 (1)	0.009	0.083	0.000	0.038	0.012	0.095	1.050	✓
L2	35 - 30 (2)	0.009	0.192	0.000	0.036	0.010	0.203	1.050	✓
L3	30 - 25.5 (3)	0.009	0.272	0.000	0.035	0.009	0.283	1.050	✓
L4	25.5 - 25.25 (4)	0.003	0.108	0.000	0.013	0.004	0.112	1.050	✓
L5	25.25 - 20.25 (5)	0.004	0.147	0.000	0.015	0.000	0.151	1.050	✓
L6	20.25 - 15.25 (6)	0.004	0.180	0.000	0.016	0.000	0.185	1.050	✓
L7	15.25 - 10.25 (7)	0.005	0.211	0.000	0.016	0.000	0.216	1.050	✓
L8	10.25 - 5.25 (8)	0.005	0.236	0.000	0.016	0.000	0.242	1.050	✓
L9	5.25 - 0.25 (9)	0.005	0.260	0.000	0.016	0.000	0.265	1.050	✓
L10	0.25 - 0 (10)	0.005	0.260	0.000	0.016	0.000	0.266	1.050	✓



<b>tnxTower</b>  <b>B+T Group</b> 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	<b>Job</b> 170942.001.01.0002 - ZOD_CTF_ALLTEL_CO04_DEERMOUNTAIN, CO (Site# COL06256)	<b>Page</b> 16 of 16
	<b>Project</b>	<b>Date</b> 18:50:50 05/24/24
	<b>Client</b> SMARTLINK	<b>Designed by</b> Sinchana Upadhyia

**Section Capacity Table**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
L1	40 - 35	Pole	TP16.3x15.2x0.188	1	-5.282	589.002	**	**
L2	35 - 30	Pole	TP17.4x16.3x0.188	2	-5.535	629.212	**	**
L3	30 - 25.5	Pole	TP18.39x17.4x0.188	3	-5.783	665.403	**	**
L4	25.5 - 25.25	Pole	TP18.445x18.39x0.5	4	-5.818	1749.300	**	**
L5	25.25 - 20.25	Pole	TP19.545x18.445x0.475	5	-6.753	1766.026	**	**
L6	20.25 - 15.25	Pole	TP20.645x19.545x0.456	6	-7.406	1795.825	**	**
L7	15.25 - 10.25	Pole	TP21.745x20.645x0.438	7	-8.079	1817.455	**	**
L8	10.25 - 5.25	Pole	TP22.845x21.745x0.425	8	-8.769	1857.702	**	**
L9	5.25 - 0.25	Pole	TP23.945x22.845x0.413	9	-9.476	1892.541	**	**
L10	0.25 - 0	Pole	TP24x23.945x0.413	10	-9.515	1896.961	**	**
Summary								
Pole (L3)							**	**
RATING =							**	**

**\*\*NOTE:** Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.

**APPENDIX B**  
**BASE LEVEL DRAWING**



ALL FEEDLINES ROUTED  
INSIDE MONOPOLE

PROJECT NUMBER: 170942.001.01.0002

**APPENDIX C**  
**ADDITIONAL CALCULATIONS**



# TNX Geometry Input

Increment (ft):  [Export to TNX](#)

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (In)	Bottom Diameter (In)	Wall Thickness (In)	Tapered Pole Grade	Weight Multiplier
1	40 - 35	5		18	15.200	16.300	0.1875	A572-65	1.000
2	35 - 30	5		18	16.300	17.400	0.1875	A572-65	1.000
3	30 - 25.5	4.5		18	17.400	18.390	0.1875	A572-65	1.000
4	25.5 - 25.25	0.25		18	18.390	18.445	0.5	A572-65	1.007
5	25.25 - 20.25	5		18	18.445	19.545	0.475	A572-65	1.020
6	20.25 - 15.25	5		18	19.545	20.645	0.45625	A572-65	1.026
7	15.25 - 10.25	5		18	20.645	21.745	0.4375	A572-65	1.036
8	10.25 - 5.25	5		18	21.745	22.845	0.425	A572-65	1.035
9	5.25 - 0.25	5		18	22.845	23.945	0.4125	A572-65	1.037
10	0.25 - 0	0.25		18	23.945	24.000	0.4125	A572-65	1.036

## TNX Section Forces

Increment (ft):		TNX Output				
	5	Section Height (ft)		$P_u$ (K)	$M_{ux}$ (kip-ft)	$V_u$ (K)
1		40	- 35	5.28	19.45	6.33
2		35	- 30	5.54	51.55	6.51
3		30	- 25.5	5.78	81.23	6.68
4		25.5	- 25.25	5.82	82.90	6.69
5		25.25	- 20.25	6.75	120.88	7.66
6		20.25	- 15.25	7.41	160.16	8.00
7		15.25	- 10.25	8.08	200.66	8.20
8		10.25	- 5.25	8.77	242.19	8.42
9		5.25	- 0.25	9.48	284.82	8.64
10		0.25	- 0	9.51	286.98	8.65

## Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
40 - 35	Pole	TP16.3x15.2x0.1875	Pole	8.9%	Pass
35 - 30	Pole	TP17.4x16.3x0.1875	Pole	19.3%	Pass
30 - 25.5	Pole	TP18.39x17.4x0.1875	Pole	26.9%	Pass
25.5 - 25.25	Pole + Reinf.	TP18.445x18.39x0.5	Reinf. 1 Tension Rupture	17.3%	Pass
25.25 - 20.25	Pole + Reinf.	TP19.545x18.445x0.475	Reinf. 1 Tension Rupture	23.3%	Pass
20.25 - 15.25	Pole + Reinf.	TP20.645x19.545x0.4563	Reinf. 1 Tension Rupture	28.5%	Pass
15.25 - 10.25	Pole + Reinf.	TP21.745x20.645x0.4375	Reinf. 1 Tension Rupture	33.2%	Pass
10.25 - 5.25	Pole + Reinf.	TP22.845x21.745x0.425	Reinf. 1 Tension Rupture	37.4%	Pass
5.25 - 0.25	Pole + Reinf.	TP23.945x22.845x0.4125	Reinf. 1 Tension Rupture	41.1%	Pass
0.25 - 0	Pole + Reinf.	TP24x23.945x0.4125	Reinf. 1 Tension Rupture	41.2%	Pass
				Summary	
			Pole	29.2%	Pass
			Reinforcement	41.2%	Pass
			Overall	41.2%	Pass



## Additional Calculations

Section Elevation (ft)	Moment of Inertia (in <sup>4</sup> )			Area (in <sup>2</sup> )			% Capacity*	
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1
40 - 35	314	n/a	314	9.59	n/a	9.59	8.9%	
35 - 30	383	n/a	383	10.24	n/a	10.24	19.3%	
30 - 25.5	453	n/a	453	10.83	n/a	10.83	26.9%	
25.5 - 25.25	462	699	1161	10.87	17.81	28.68	11.4%	17.3%
25.25 - 20.25	550	777	1327	11.52	17.81	29.33	15.6%	23.3%
20.25 - 15.25	649	860	1508	12.17	17.81	29.99	19.3%	28.5%
15.25 - 10.25	759	946	1705	12.83	17.81	30.64	22.8%	33.2%
10.25 - 5.25	881	1037	1918	13.48	17.81	31.30	26.1%	37.4%
5.25 - 0.25	1015	1132	2147	14.14	17.81	31.95	29.1%	41.1%
0.25 - 0	1022	1137	2159	14.17	17.81	31.98	29.2%	41.2%

Note: Section capacity checked using 5 degree increments.  
Rating per TIA-222-H Section 15.5.

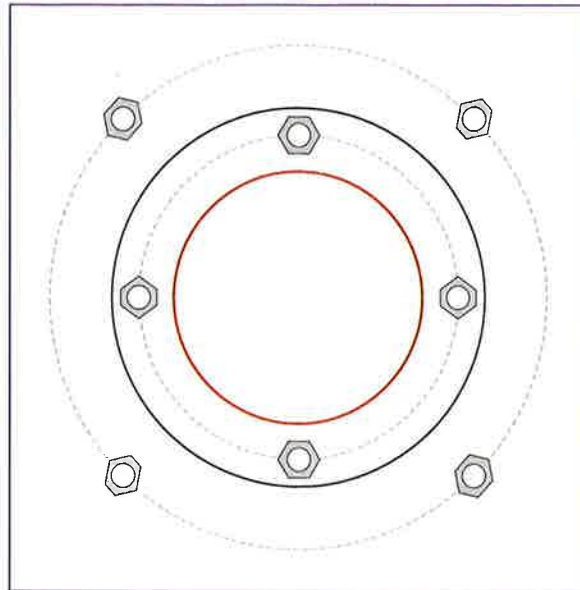
# Monopole Base Plate Connection

Site Info	
Site #	COL06256
Site Name	LLTEL_CO04_DEERMO
Project #	170942.001.01.0002

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
$l_{gr}$ (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	287.01
Axial Force (kips)	9.51
Shear Force (kips)	8.65

\*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
GROUP 1: (4) 2-1/4" $\phi$ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 30.87" BC
GROUP 2: (4) 2-1/4" $\phi$ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 48" BC
Base Plate Data
36.06" OD x 1.75" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi)
Stiffener Data
N/A
Pole Data
24" x 0.1875" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
GROUP 1:		
$P_{u_c} = 34.98$	$\phi P_{n_c} = 268.39$	<b>Stress Rating</b>
$V_u = 2.16$	$\phi V_n = 120.77$	<b>12.4%</b>
$M_u = n/a$	$\phi M_n = n/a$	<b>Pass</b>
GROUP 2:		
$P_{u_t} = 50.69$	$\phi P_{n_t} = 243.75$	<b>Stress Rating</b>
$V_u = 0$	$\phi V_n = 149.1$	<b>19.8%</b>
$M_u = n/a$	$\phi M_n = n/a$	<b>Pass</b>
Base Plate Summary		
Max Stress (ksi):	8.08	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	<b>17.1%</b>	<b>Pass</b>

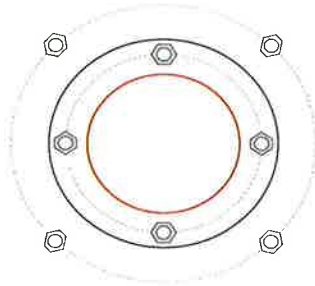
Elevation (ft) 0 (Base)

note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	Yes	No	
2	No	No	No	No	No	

Custom Bolt Connection										
Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, $\eta$	$L_e$ (in)	Thread Type	Area Override, $\text{in}^2$	Tension Only
1	1	0	2.25	A615-75	30.87	0.55	0	N-Included		No
2	1	90	2.25	A615-75	30.87	0.55	0	N-Included		No
3	1	180	2.25	A615-75	30.87	0.55	0	N-Included		No
4	1	270	2.25	A615-75	30.87	0.55	0	N-Included		No
5	2	45	2.25	A615-75	48	0.55	0	N-Included		No
6	2	135	2.25	A615-75	48	0.55	0	N-Included		No
7	2	225	2.25	A615-75	48	0.55	0	N-Included		No
8	2	315	2.25	A615-75	48	0.55	0	N-Included		No

### Plot Graphic



PROJECT **170942.001.01.0002 - ZOD\_CTF\_ALLTEL\_CO04\_DEERMOUNTAIN, CO**

SUBJECT **Anchor Rod Bracket Analysis**

DATE **05/24/24**

TIA-222 Rev.

H

v4.6.1

Apply TIA-222-H Section 15.5?

Yes



**B+T GRP**  
1717 S. Boulder, Suite 300  
Tulsa, OK 74119  
(918) 587-4630

Analysis Criteria	Post-Installed Adhesive AR Mod.	Anchor Rod Bracket Analysis Checks
Design/Analysis Analysis	ARB Type Welded	Tube Bearing 9.6% -
Load Type Current Load	Size 2.25 in	Tube Compression 14.4% -
Current load 50.69 kips		Gusset Shear 6.7% -
AR Capacity 268.4 kips		Gusset Flexure N/A -
		Welds Gusset to Tower and BP 12.0% -
Tower Type Monopole	Grade 615-75 (William)	Gusset to Tube 6.8% -
	Fy 75 ksi	Geometry N/A -
	Fu 100 ksi	Tower Punching 7.7% -
		Tube Punching 6.8% -
<b>Manufacturers Tower Prop.</b>		
Pole Thickness 0.1875 in		
Pole Grade A572-65		
Fy 65 ksi		
Fu 80 ksi		
Base Plate Gr. A572-50		
Fy 50 ksi		
Fu 65 ksi		
		<b>Utilization 14.4%</b>

Bracket Properties		
Gusset	Pipe/Tube	Weld - Gusset to Pipe/Tube
Thickness 1.25 in	Size 4 XXS Pipe	FEXX 70 ksi
Width at Tube 12 in	Total Length 16 in	Weld Type CJP - Double Bevel
Height at Pole 63 in	Length above Gusset 0 in	Fillet Size 5/8 in
Height at Tube 16 in	Length below Gusset 0 in	Bevel Depth 5/8 in
Grade A572-65	Grade A500 Grade C (Round)	
Fy 65 ksi	Fy 46 ksi	
Fu 80 ksi	Fu 62 ksi	
Weld - Gusset to Tower	Weld - Gusset to Base Plate	
FEXX 70 ksi	FEXX 70 ksi	
Weld Type Double Fillet	Weld Type CJP - Double Bevel	
Fillet Size 5/16 in	Fillet Size 5/8 in	
	Bevel Depth 5/16 in	
	Gap 2.25 in	
	Notch (horiz) 0.75 in	
	Notch (vert) 0.75 in	
	Pipe/Tube Welded to Base/Footpad? No	

# Pier and Pad Foundation

**Site # :** COL06256  
**Site Name:** ZOD\_CTF\_ALLTE  
**Proj. Number:** 170942.001.01.000

**TIA-222 Revision:** H  
**Tower Type:** Monopole

**Top & Bot. Pad Rein. Different?:**   
**Block Foundation?:**   
**Rectangular Pad?:**

Superstructure Analysis Reactions		
Compression, $P_{comp}$ :	10	kips
Base Shear, $V_{u\_comp}$ :	9	kips
Moment, $M_u$ :	287	ft-kips
Tower Height, $H$ :	40	ft
BP Dist. Above Fdn, $bp_{dist}$ :	3	in
Bolt Circle / Bearing Plate Width, $BC$ :	30.87	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	40.47	9.00	21.2%	Pass
<i>Bearing Pressure (ksf)</i>	15.00	4.36	29.0%	Pass
<i>Overtuming (kip*ft)</i>	421.22	329.75	78.3%	Pass
<i>Pad Flexure (kip*ft)</i>	1463.82	166.23	10.8%	Pass
<i>Pad Shear - 1-way (kips)</i>	540.89	1.77	0.3%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.000	0.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	2927.63	0.00	0.0%	Pass

\*Rating per TIA-222-H Section 15.5

<b>Structural Rating*:</b>	<b>10.8%</b>
<b>Soil Rating*:</b>	<b>78.3%</b>

Pad Properties		
Depth, $D$ :	4	ft
Pad Width, $W_1$ :	11	ft
Pad Thickness, $T$ :	4.5	ft
Pad Rebar Size (Bottom dir. 2), $Sp_2$ :	6	
Pad Rebar Quantity (Bottom dir. 2), $mp_2$ :	15	
Pad Clear Cover, $cc_{pad}$ :	3	in

Material Properties		
Rebar Grade, $F_y$ :	60	ksi
Concrete Compressive Strength, $F'_c$ :	3	ksi
Dry Concrete Density, $\delta_c$ :	150	pcf

Soil Properties		
Total Soil Unit Weight, $\gamma$ :	135	pcf
Ultimate Gross Bearing, $Q_{ult}$ :	20.000	ksf
Cohesion, $C_u$ :	0.000	ksf
Friction Angle, $\phi$ :	35	degrees
SPT Blow Count, $N_{blows}$ :		
Base Friction, $\mu$ :	0.5	
Neglected Depth, $N$ :	3.33	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, $gw$ :	N/A	ft

<--Toggle between Gross and Net

# ASCE Hazards Report

**Address:**  
No Address at This Location

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

**Latitude:** 38.323622  
**Longitude:** -105.484733  
**Elevation:** 8140.127687793789 ft (NAVD 88)



## Wind

### Results:

Wind Speed	105 Vmph
10-year MRI	77 Vmph
25-year MRI	83 Vmph
50-year MRI	88 Vmph
100-year MRI	92 Vmph
Special	

Special Wind Region -- Mountainous terrain, gorges, and special wind regions shown in Fig. 26.5-1 shall be examined for unusual wind conditions. The Authority Having Jurisdiction shall, if necessary, adjust the values given in Fig. 26.5-1 to account for higher local wind speeds. Such adjustment shall be based on meteorological information and an estimate of the basic wind speed obtained in accordance with the provisions in Section 26.5.3.

**Data Source:** ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2  
**Date Accessed:** Wed May 15 2024



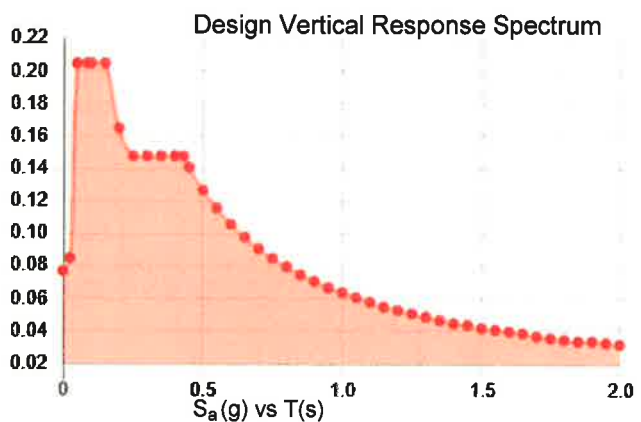
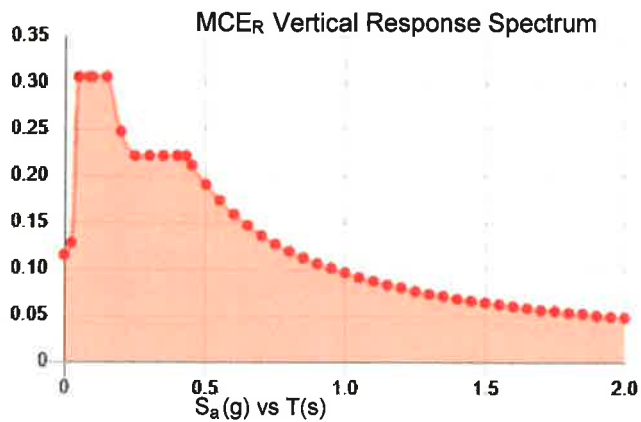
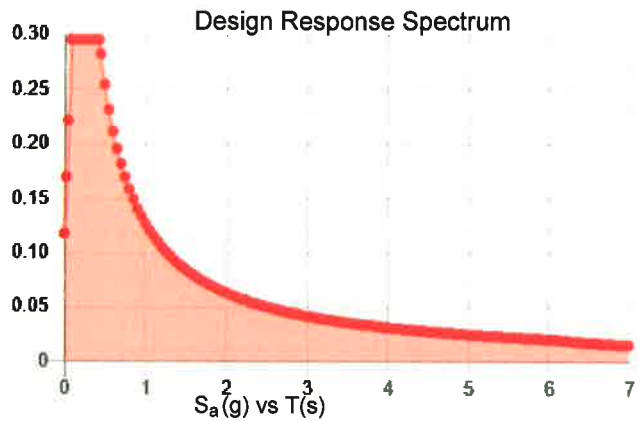
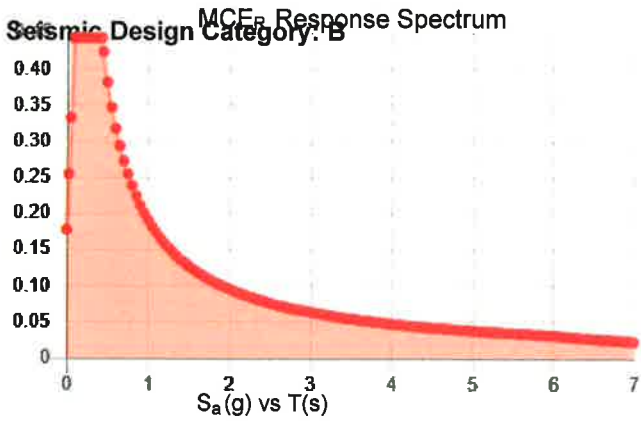
Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance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

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

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

**Results:**

$S_S$ :	0.282	$S_{D1}$ :	0.127
$S_1$ :	0.08	$T_L$ :	6
$F_a$ :	1.574	$PGA$ :	0.155
$F_v$ :	2.4	$PGA_M$ :	0.231
$S_{MS}$ :	0.444	$F_{PGA}$ :	1.49
$S_{M1}$ :	0.191	$I_e$ :	1
$S_{DS}$ :	0.296	$C_v$ :	0.864



**Data Accessed:** Wed May 15 2024

**Date Source:**

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.



**Results:**

Ice Thickness: 0.25 in.  
Concurrent Temperature: 5 F  
Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Wed May 15 2024

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

In the mountain west, ice thicknesses may exceed the mapped values in the foothills and passes. However, at elevations above 5,000 ft, freezing rain is unlikely.

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

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The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE standard.

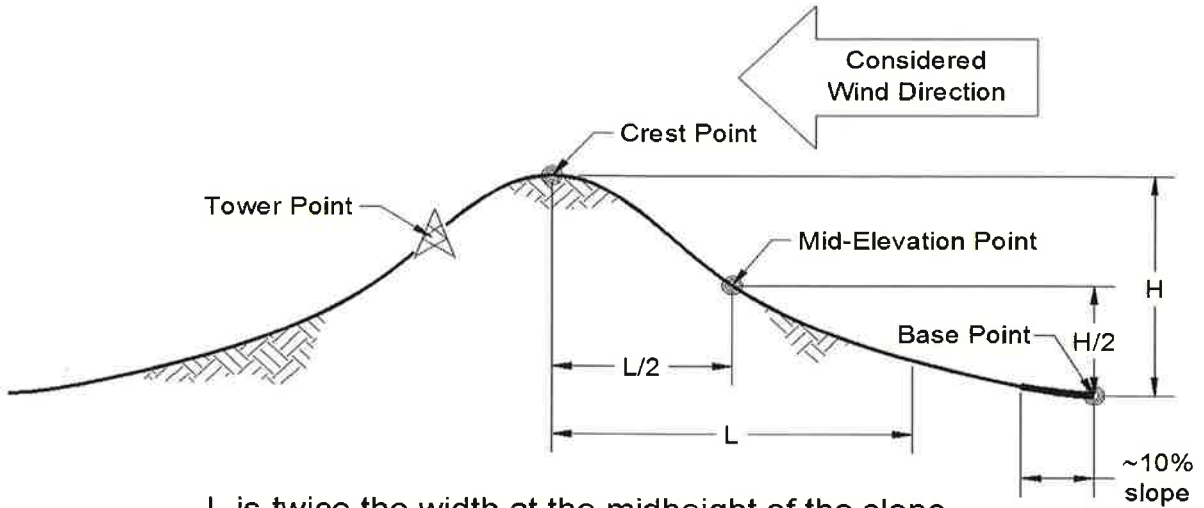
In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.

## Topographic Factors for use in tnxTower

(V. 3.2.0, Effective 09-06-2018)

per SEAW RSM-03 Figure 3-3 & ANSI/TIA-222-H Section 2.6.6.2.2

BU:	
Site Name:	
Order:	



Topographic Feature

- Continuous Ridge
- Flat Topped Ridge
- Hill
- Flat Topped Hill
- Continuous Escarpment

Exposure Category

- Exposure B
- Exposure C
- Exposure D

**Notes:**  
 1) Feature is assumed to be isolated per section 1.8 of the Crown Castle standard for the Determination of Topographic Factors (ENG-PRC-10040).  
 2) Base  $K_{zt}$  may differ slightly from TNX value due to differences in where the base line is established. This does not effect the results in anyway.

Topographic Input	
Crest Point Elevation (ft. AMSL)	8142
Base Point Elevation (ft. AMSL)	7849
Mid-Height Elevation (ft. AMSL)	7995.5
Crest to Mid-Height Distance (L/2) (ft.)	625
Tower Point Elevation (ft. AMSL)	8142
Structure Upwind/Downwind Distance (x)(ft.)	0
tnxTower Input	K <sub>ZT</sub> (RSM-03)
Topographic Category	Rigorous Procedure / Category 5
Crest Height, H (ft.)	293
Slope Distance, L (ft.)	1250
Distance from Crest, x (ft.)	0
At Base: 2.241 <sup>2</sup>	

Cell Site No.: COL06256  
Cell Site Name: Deer Mountain  
Fixed Asset No.: 10149418  
Market: CO / UT / WY / MT / S. ID  
Address: 2084 County Road 27A

Upgrades permitted by lease at  
anytime, highlighted below.

## **FIRST AMENDMENT TO COMMUNICATIONS SITE LEASE AGREEMENT**

**THIS FIRST AMENDMENT TO COMMUNICATIONS SITE LEASE AGREEMENT** ("First Amendment") dated as of the later date below is by and between Christy Lyn Brooks, successor in interest to Michelle R. Fisher, a married woman, and Christy L. Brooks, a married woman, as tenants-in-common, having a mailing address at 1073 Greenland Forest Drive, Monument, CO 80132 (hereinafter referred to as "Owner") and New Cingular Wireless PCS, LLC, a Delaware limited liability company, successor by merger to Alltel Communications, LLC, a Delaware limited liability company, having a mailing address at 575 Morosgo Drive NE, Atlanta, GA 30324 (hereinafter referred to as "Tenant").

WHEREAS, Owner and Tenant (or their predecessors in interest) entered into a Communications Site Lease Agreement dated August 21, 2009 (hereinafter, the "Lease"), whereby Owner leased to Tenant certain Premises, therein described, that are a portion of the property ("Property") located at 2084 County Road 27A, Cotopaxi, CO 81223; and

WHEREAS, Owner and Tenant desire to extend the Term of the Lease; and

WHEREAS, Owner and Tenant desire to modify, as set forth herein, the Rent payable under the Lease; and

WHEREAS, Owner and Tenant desire to amend the Lease to clarify the scope of Tenant's permitted use of the Premises; and

WHEREAS, Owner and Tenant desire to amend the Lease to provide Tenant the right to enlarge the Premises; and

WHEREAS, Owner and Tenant, in their mutual interest, further wish to amend the Lease as set forth below.

NOW THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Owner and Tenant agree as follows:

1. **Term.** The Term of the Lease shall be amended to provide that the Lease has a new initial term of five (5) years ("New Initial Term"), commencing on March 1, 2020 ("New Term Commencement Date"). As of such New Term Commencement Date, all remaining renewal terms in the Lease except as set forth herein shall be void and of no further force and consequence. The Lease will be automatically renewed for up to five (5) additional sixty (60) month terms (each an "Extension Term") upon the same terms and conditions of the Lease, as amended herein, without further action by Tenant, unless Tenant notifies Owner in writing of Tenant's intention not to renew the Lease at least sixty (60) days prior to the expiration of the New Initial Term or then current Extension Term. Hereafter, the defined term "Term" shall include the New Initial Term and any applicable Extension Term. Owner agrees and acknowledges that except that as such

Cell Site No.: COL06256  
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permitted use or other rights may be amended herein, Tenant may continue to use and exercise its rights under the Lease as permitted prior to the New Initial Term.

2. **Modification of Rent.** Commencing on March 1, 2020, the Rent payable under the Lease shall be Three Thousand Six Hundred and No/100 Dollars (\$3,600.00) per year, and shall continue during the Term, subject to adjustment, if any, as provided below.

3. **Future Rent Increase / Extension Term Increase.** The Lease is amended to provide that commencing on March 1, 2025, Rent shall increase by five percent (5%) and at the beginning of each Extension Term, as applicable.

4. **Expansion of Permitted Use.** Tenant, its personnel, invitees, contractors, agents, subtenants, or its authorized subtenants, or assigns may use the Premises, at no additional cost or expense, for the transmission and reception of any and all communications signals and to modify, supplement, replace, upgrade, expand, including but not limited to the number and type(s) of antennas, or refurbish the equipment and/or improvements thereon (collectively, "Communications Facility"), or relocate the same within the Premises at any time during the term of the Lease for any reason, or in order to be in compliance with any current or future federal, state or local mandated application, including but not limited to emergency 911 communication services, or for any other reason. Owner shall reasonably cooperate in obtaining governmental and other use permits or approvals necessary or desirable for the foregoing permitted use. If Owner does not comply with the terms of this Section, in addition to any other rights it may have at law, Tenant may terminate the Lease and shall have no further liability to Owner. If Owner does not comply with the terms of this Section, Tenant will have the right to exercise any and all rights available to it under law and equity, including the right to cure Owner's default and to deduct the costs of such cure from any monies due to Owner from Tenant.

5. **Expansion of the Premises.** Owner grants, to the extent practicable and on a space available basis, the Tenant the right to enlarge the Premises or the Owner shall make space available on the Property for Tenant so that Tenant or its authorized subtenants may implement any necessary modifications, supplements, replacements, refurbishments, or expansions to the Communications Facility or to any equipment related thereto, or for any other reasons, as determined by Tenant in its sole discretion. Should Tenant exercise the right to expand the Premises, Tenant will pay and Owner will accept as additional Rent under the Lease an amount equal to the then current Rent calculated on a per square foot basis as multiplied by each additional square foot added to the Premises. Upon written notice to Owner, a description and/or depiction of the modified Premises ground will become part of the Lease without any additional action on the part of Tenant and Owner; however, at the request of Tenant, the parties will execute a Memorandum of Lease in recordable form memorializing the modification of the ground space of Owner's Property, which either party may record at its option.

6. **Removal/Restoration.** In addition to the terms set forth in the Lease, Owner agrees that the Communications Facility and any related equipment brought to the Premises by Tenant, its agents, contractors, predecessors-in-interest or subtenants, shall be and remain Tenant's personal property or the personal property of its subtenant(s), as the case may be. Owner waives any and

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all rights it may have, including any rights it may have in its capacity as Owner under the Lease to assert any liens, encumbrances or adverse claims, statutory or otherwise, related to or in connection with the Communications Facility or any portion thereof. Tenant, in its sole discretion, may remove the Communications Facility or any portion of the Communications Facility at any time during the Term of the Lease, without notice to Owner and without Owner's consent. Notwithstanding any terms to the contrary, Tenant will not be responsible for the replacement of any trees, shrubs or other vegetation, nor will Tenant be required to remove from the Premises or the Property any foundations or underground utilities. Tenant, may, in its sole discretion, transfer any improvements or alterations to the Premises to Owner at any time during the Term of the Lease without notice to the Owner and without the Owner's consent.

7. **Acknowledgement.** Owner acknowledges that: 1) this First Amendment is entered into of the Owner's free will and volition; 2) Owner has read and understands this First Amendment and the underlying Lease and, prior to execution of this First Amendment, was free to consult with counsel of its choosing regarding Owner's decision to enter into this First Amendment and to have counsel review the terms and conditions of this First Amendment; 3) Owner has been advised and is informed that should Owner not enter into this First Amendment, the underlying Lease between Owner and Tenant, including any termination or non-renewal provision therein, would remain in full force and effect.

8. **Notices.** Section 17 of the Lease is hereby deleted in its entirety and replaced with the following:

**"NOTICES.** All notices, requests, demands and communications hereunder will be given by first class certified or registered mail, return receipt requested, or by a nationally recognized overnight courier, postage prepaid, to be effective when properly sent and received, refused or returned undelivered. Notices will be addressed to the parties as follows:

If to Tenant:

New Cingular Wireless PCS, LLC  
Attn: Network Real Estate Administration  
Re: Cell Site # COL06256  
Cell Site Name Deer Mountain (CO); Fixed Asset No.: 10149418  
575 Morosgo Drive NE  
Atlanta, GA 30324

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

New Cingular Wireless PCS, LLC  
Attn: AT&T Legal Department  
Re: Cell Site # COL06256  
Cell Site Name Deer Mountain (CO); Fixed Asset No: 10149418  
208 S. Akard Street  
Dallas, Texas, 75202-4206

Cell Site No.: COL06256  
Cell Site Name: Deer Mountain  
Fixed Asset No.: 10149418  
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A copy sent to the Legal Department is an administrative step which alone does not constitute legal notice.

And as to Owner:

Christy Lyn Brooks  
1073 Greenland Forest Drive  
Monument, CO 80132

Either party hereto may change the place for the giving of notice to it by thirty (30) days prior written notice to the other as provided herein."

9. **Rental Stream Offer.** If at any time after the date of this First Amendment, Owner receives a bona fide written offer from a third party seeking an assignment or transfer of the Rent payments associated with the Lease ("**Rental Stream Offer**"), Owner shall immediately furnish Tenant with a copy of the Rental Stream Offer. Tenant shall have the right within ninety (90) days after it receives such copy to match the Rental Stream Offer and agree in writing to match the terms of the Rental Stream Offer. Such writing shall be in the form of a contract substantially similar to the Rental Stream Offer. If Tenant chooses not to exercise this right or fails to provide written notice to Owner within the ninety (90) day period, Owner may assign the right to receive Rent payments pursuant to the Rental Stream Offer, subject to the terms of the Lease. If Owner attempts to assign or transfer Rent payments without complying with this Section, the assignment or transfer shall be void. Tenant shall not be responsible for any failure to make payments under the Lease and reserves the right to hold payments due under the Lease until Owner complies with this Section.

10. **Charges.** All charges payable under the Lease such as utilities and taxes shall be billed by Owner within one (1) year from the end of the calendar year in which the charges were incurred; any charges beyond such period shall not be billed by Owner, and shall not be payable by Tenant. The foregoing shall not apply to annual Rent which is due and payable without a requirement that it be billed by Owner. The provisions of this subsection shall survive the termination or expiration of the Lease.

11. **Memorandum of Lease.** Either party will, at any time upon fifteen (15) days prior written notice from the other, execute, acknowledge and deliver to the other a recordable Memorandum of Lease substantially in the form of the Attachment 1. Either party may record this memorandum at any time, in its absolute discretion.

12. **Other Terms and Conditions Remain.** In the event of any inconsistencies between the Lease and this First Amendment, the terms of this First Amendment shall control. Except as expressly set forth in this First Amendment, the Lease otherwise is unmodified and remains in full force and effect. Each reference in the Lease to itself shall be deemed also to refer to this First Amendment.

Cell Site No.: COL06256  
Cell Site Name: Deer Mountain  
Fixed Asset No.: 10149418  
Market: CO / UT / WY / MT / S. ID  
Address: 2084 County Road 27A

**13. Capitalized Terms.** All capitalized terms used but not defined herein shall have the same meanings as defined in the Lease.

[NO MORE TEXT ON THIS PAGE - SIGNATURES TO FOLLOW ON NEXT PAGE]

Cell Site No.: COL06256  
Cell Site Name: Deer Mountain  
Fixed Asset No.: 10149418  
Market: CO / UT / WY / MT / S. ID  
Address: 2084 County Road 27A

IN WITNESS WHEREOF, the parties have caused their properly authorized representatives to execute and seal this First Amendment on the date and year below.

OWNER:  
Christy Lyn Brooks

TENANT:  
New Cingular Wireless PCS, LLC,  
a Delaware limited liability company

By: AT&T Mobility Corporation  
Its: Manager

By: \_\_\_\_\_  
Christy Lyn Brooks

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

Print Name: Becky John-Haney

Date: 6/6/17

Title: Area Manager

Date: \_\_\_\_\_



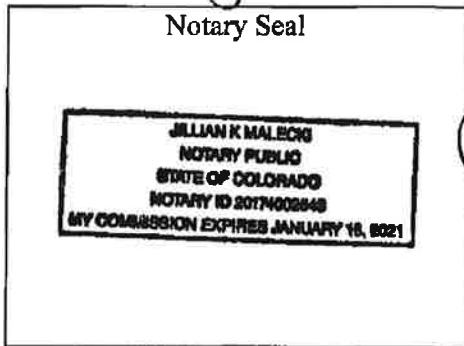
Cell Site No.: COL06256  
Cell Site Name: Deer Mountain  
Fixed Asset No.: 10149418  
Market: CO / UT / WY / MT / S. ID  
Address: 2084 County Road 27A

**OWNER ACKNOWLEDGMENT**

STATE OF Colorado )  
 ) SS.  
COUNTY OF El Paso )

I certify that I know or have satisfactory evidence that **Christy Lyn Brooks** is the person who appeared before me, and said person acknowledged that said person signed this instrument and acknowledged it to be their free and voluntary act for the uses and purposes mentioned in the instrument.

DATED: June 6, 2017



Jillian K Malecki  
(Signature of Notary)  
Jillian K. Malecki  
(Legibly Print or Stamp Name of Notary)  
Notary Public in and for the State of  
Colorado  
My appointment expires: January 18, 2021

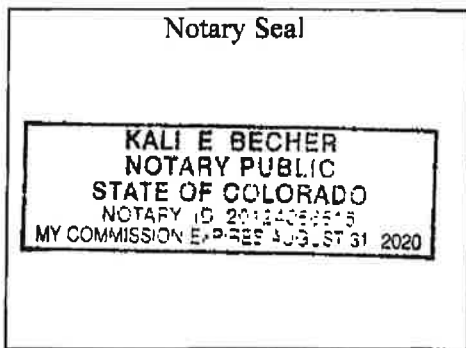
Cell Site No.: COL06256  
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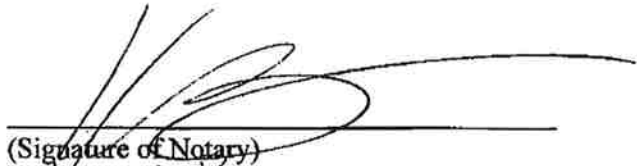
TENANT ACKNOWLEDGMENT

STATE OF Colorado )  
  ) SS.  
COUNTY OF Arapahoe )

I certify that I know or have satisfactory evidence that Becky John Haney  
is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the Area manager of AT&T Mobility Corporation, the Manager of **New Cingular Wireless PCS, LLC**, a Delaware limited liability company, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: 6/1/17



  
\_\_\_\_\_  
(Signature of Notary)  
Kali Becher  
\_\_\_\_\_  
(Legibly Print or Stamp Name of Notary)  
Notary Public in and for the State of  
CO  
My appointment expires: 8/31/2020

**Cell Site No.:** COL06256  
**Cell Site Name:** Deer Mountain  
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**Attachment 1**

**Memorandum of Lease**

# Property Record Card

Fremont Assessor

**WHITFIELD CHRISTY L  
LIVING TRUST**

**Account: R038520**

**Parcel: 99924006**

19010 DEERFIELD RD  
MONUMENT, CO 80132-8710

Tax Area: 39H - 39H

Situs Address:

Acres: 2.470

## Value Summary

Value By:	Market	Override
Land (1)	\$17,290	N/A
<b>Total</b>	<b>\$17,290</b>	<b>\$17,290</b>

## Legal Description

SE4NW4SE4SE4 SEC 12-20-73 FLA-COLO ACRES  
REF FROM 760-09-410



## Sale Data

Doc. #	Sale Date	Deed Type	Validity	Verified	Sale Price	Ratio	Adj. Price	Ratio	Time Adj. Price	Ratio
1033127	12/20/2023	319	U	N	\$0	N/A	\$0	N/A	\$0	N/A
887228	07/07/2011	Deeds	U	Y	\$0	N/A	\$0	N/A	\$0	N/A
855414	09/08/2008	Deeds	U	Y	\$0	N/A	\$0	N/A	\$0	N/A
824571	07/21/2006	Deeds	Q	Y	\$7,000	247.00	\$7,000	247.00	\$7,000	247.00
773171	08/08/2003	Deeds	Q	Y	\$6,900	250.58	\$6,900	250.58	\$6,900	250.58

## Land Occurrence 1

Property Code	0100 - VACANT RESIDNTL LOTS	Property Code Percent	100
Adjustment1	1	Adjustment2	1
Adjustment3	1	Adjustment4	1
Land Use Code	31100 - FCA UP TO 3 AC		

## Abstract Summary

Code	Classification	Actual Value	Value	Taxable Value	Actual Value Override	Taxable Override
0100	VACANT RESIDNTL LOTS		\$17,290	\$4,824	NA	NA
<b>Total</b>			<b>\$17,290</b>	<b>\$4,824</b>	<b>NA</b>	<b>NA</b>