



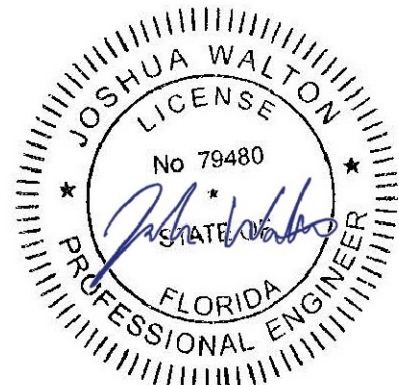
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 250 ft Self Supported Tower
ATC Site Name : Columbia - Nextel BTS, FL
ATC Asset Number : 21806
Engineering Number : 13692328_C3_02
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : ATC COLUMBIA
Carrier Site Number : 131312
Site Location : 3969 SW Tustenuggee Ave
Lake City, FL 32024-4356
30.086100,-82.640200
County : Columbia
Date : July 1, 2021
Max Usage : 36%
Result : Pass

Prepared By:
Thomas Pham
Structural Engineer I

Reviewed By:



This item has been electronically signed and sealed by
Joshua Walton, PE, CWI on the date shown using a digital signature.
Printed copies of this are not considered signed and sealed and the
signature must be verified on any electronic copies.

COA: 9053



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 250 ft self supported tower to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower Drawings	Rohn Drawing #A981927, dated July 14, 1998
Foundation Drawing	Rohn Drawing #A981884-1, dated July 9, 1998
Geotechnical Report	UES Report #20585, dated May 5, 1998

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	120 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	No Ice Considered
Code:	ANSI/TIA-222-H / 2018 IBC / 7th Ed. (2020) Florida Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.08$, $S_1 = 0.05$
Site Class:	D - Stiff Soil

Conclusion

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

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



Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
252.4	9	Antel RWA-80015 ____ 3° 25%	Sector Frame	-	SPRINT NEXTEL
233.0	6	Commscope NHH-65C-R2B	Sector Frame	(16) 1 5/8" Coax (1) 1.58" (40.1mm) Hybrid	VERIZON WIRELESS
	1	Raycap RCMD-3315-PF-48			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
233.0	2	JMA Wireless DBC-67-C-1SF	-	(1) 1 5/8" Coax	VERIZON WIRELESS
	6	CSS X7CAP-665			
	6	Ericsson RRUS 32 (50.8 lbs)			

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
233.0	3	Ericsson Radio 4449 - B13&B5	Sector Frame	(1) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Ericsson 8843 Rev 2			
	3	Commscope TD-850B-LTE78-43			
	3	Ericsson AIR 6449 B77D/ C-Band			
	1	Raycap RCMD-6627-PF-48			

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

Install proposed coax alongside existing VERIZON WIRELESS coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	33%	Pass
Diagonals	36%	Pass
Horizontals	22%	Pass
Anchor Bolts	13%	Pass
Leg Bolts	25%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Uplift (Kips)	565.4	763.3	179.1	23%
Axial (Kips)	639.8	863.7	226.2	26%
Shear (Kips)	126.5	170.8	40.5	24%

* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
233.0	Commscope TD-850B-LTE78-43	VERIZON WIRELESS	0.194	0.004	0.134
	Ericsson 8843 Rev 2				
	Ericsson AIR 6449 B77D/ C-Band				
	Ericsson Radio 4449 - B13&B5				
	Raycap RCMDC-6627-PF-48				

*Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H



Standard Conditions

All engineering services performed by ATC Tower Services LLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of ATC Tower Services LLC

It is the responsibility of the client to ensure that the information provided to ATC Tower Services LLC and used in the performance of our engineering services is correct and complete.

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

Unless explicitly agreed by both the client and ATC Tower Services LLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Quadrant 1

250.00

Sect 13
240.00

Sect 12
220.00

Sect 11
200.00

Sect 10
180.00

Sect 9
160.00

Sect 8
140.00

Sect 7
120.00

Sect 6
100.00

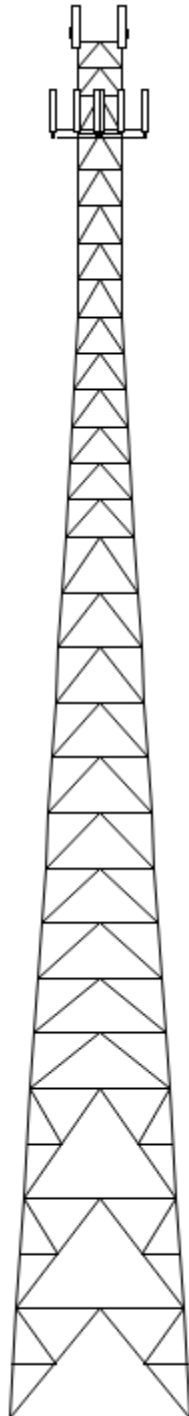
Sect 5
80.00

Sect 4
60.00

Sect 3
40.00

Sect 2
20.00

Sect 1



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Loads: 120 mph no ice
0 mph w/ 0'0" radial ice
Site Class: D Ss: 0.08 S1: 0.05
60 mph Serviceability

Job Information

Client : VERIZON WIRELESS

Tower : 21806

Location : Columbia -

Base Width : 33.14 ft

Code : ANSI/TIA-222-H

Topo Method: Method 1

Top Width : 8.54 ft

Risk Cat : II

Topo: 1

Tower Ht : 250.00 ft

Exposure : C

Shape : Triangle

Sections Properties

Section	Leg Members		Diagonal Members	Horizontal Members
1	PX	50 ksi 12" DIA PIPE	PX 50 ksi 3" DIA PIPE	PX 50 ksi 3" DIA PIPE
2	PX	50 ksi 12" DIA PIPE	PX 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
3 - 4	PX	50 ksi 10" DIA PIPE	PX 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
5	PX	50 ksi 10" DIA PIPE	PX 50 ksi 3" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
6	PSP	50 ksi 8.75" OD x 0.5"	PST 50 ksi 3" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
7	PSP	50 ksi 8.75" OD x 0.5"	PST 50 ksi 3" DIA PIPE	PST 50 ksi 2" DIA PIPE
8	PSP	50 ksi ROHN 8 EHS	PST 50 ksi 3" DIA PIPE	PST 50 ksi 2" DIA PIPE
9	PSP	50 ksi ROHN 6 EHS	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2" DIA PIPE
10	PSP	50 ksi ROHN 5 EH	PX 50 ksi 2" DIA PIPE	PST 50 ksi 1-1/2" DIA PIPE
11	PX	50 ksi 4" DIA PIPE	PX 50 ksi 2" DIA PIPE	PST 50 ksi 1-1/2" DIA PIPE
12	PST	50 ksi 3" DIA PIPE	PST 50 ksi 2" DIA PIPE	PST 50 ksi 1-1/2" DIA PIPE
13	PST	50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2" DIA PIPE	PST 50 ksi 1-1/2" DIA PIPE

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
252.40	Panel	9	Antel RWA-80015 ____ 3" 25%
249.00	Mounting Frame	3	Round Sector Frame
233.00	Mounting Frame	3	Site Pro 1 VFA12-HD
233.00	Panel	6	Commscope NHH-65C-R2B
233.00		1	Raycap RCMDC-6627-PF-48
233.00	Panel	3	Ericsson AIR 6449 B77D/ C-Band
233.00		1	Raycap RCMDC-3315-PF-48
233.00		3	Commscope TD-850B-LTE78-43
233.00		3	Ericsson 8843 Rev 2
233.00		3	Ericsson Radio 4449 - B13&B5

Linear Appurtenance

Elev (ft)		Qty	Description
From	To		
0.00	250.00	1	Waveguide
0.00	233.00	1	Waveguide
0.00	233.00	1	1.58" (40.1mm) Hybri
0.00	233.00	1	1 5/8" Hybriflex
0.00	233.00	16	1 5/8" Coax

Global Base Foundation Design Loads

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	5,722.32	80.38	40.48
DL + WL + IL	0.00	80.32	0.00

Individual Base Foundation Design Loads

Vertical (kip)	Uplift (kip)	Horizontal (kip)
226.17	179.15	26.19

Site Number: 21806	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: Columbia - Nextel BTS, FL	Engineering Number: 13692328_C3_02	7/2/2021 12:02:52 AM
Customer: VERIZON WIRELESS		

Analysis Parameters

Location:	Columbia County, FL	Height (ft):	250
Code:	ANSI/TIA-222-H	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	33.14
Tower Manufacturer:	Rohn	Top Face Width (ft):	8.54
Tower Type:	Self Support	Anchor Bolt Detail Type	c
Kd:	0.85		
Ke:	1.00		

Ice & Wind Parameters

Exposure Category:	C	Design Windspeed Without Ice:	120 mph
Risk Category:	II	Design Windspeed With Ice:	0 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	1	Design Ice Thickness:	0.00 in
Crest Height:	0 ft	HMSL:	95.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.75		
T _L (sec):	8	p:	1.3
S _S :	0.083	S ₁ :	0.050
F _a :	1.600	F _v :	2.400
S _{ds} :	0.089	S _{d1} :	0.080
		C _S :	0.030
		C _S , Max:	0.035
		C _S , Min:	0.030

Load Cases

1.2D + 1.0W Normal	120 mph Normal with No Ice
1.2D + 1.0W 60 deg	120 mph 60 degree with No Ice
1.2D + 1.0W 90 deg	120 mph 90 degree with No Ice
1.2D + 1.0W 120 deg	120 mph 120 degree with No Ice
1.2D + 1.0W 180 deg	120 mph 180 degree with No Ice
1.2D + 1.0W 210 deg	120 mph 210 degree with No Ice
1.2D + 1.0W 240 deg	120 mph 240 degree with No Ice
1.2D + 1.0W 300 deg	120 mph 300 degree with No Ice
1.2D + 1.0W 330 deg	120 mph 330 degree with No Ice
0.9D + 1.0W Normal	120 mph Normal with No Ice (Reduced DL)
0.9D + 1.0W 60 deg	120 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.0W 90 deg	120 mph 90 deg with No Ice (Reduced DL)
0.9D + 1.0W 120 deg	120 mph 120 deg with No Ice (Reduced DL)
0.9D + 1.0W 180 deg	120 mph 180 deg with No Ice (Reduced DL)
0.9D + 1.0W 210 deg	120 mph 210 deg with No Ice (Reduced DL)
0.9D + 1.0W 240 deg	120 mph 240 deg with No Ice (Reduced DL)
0.9D + 1.0W 300 deg	120 mph 300 deg with No Ice (Reduced DL)
0.9D + 1.0W 330 deg	120 mph 330 deg with No Ice (Reduced DL)

Site Number: 21806

Code:

ANSI/TIA-222-H

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

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Customer: VERIZON WIRELESS

Analysis Parameters

1.2D + 1.0Di + 1.0Wi Normal	0 mph Normal with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	0 mph 60 deg with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	0 mph 90 deg with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 120 deg	0 mph 120 deg with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 180 deg	0 mph 180 deg with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 210 deg	0 mph 210 deg with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 240 deg	0 mph 240 deg with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 300 deg	0 mph 300 deg with 0.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 330 deg	0 mph 330 deg with 0.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic Normal
1.2D + 1.0Ev + 1.0Eh 60 deg	Seismic 60 deg
1.2D + 1.0Ev + 1.0Eh 90 deg	Seismic 90 deg
1.2D + 1.0Ev + 1.0Eh 120 deg	Seismic 120 deg
1.2D + 1.0Ev + 1.0Eh 180 deg	Seismic 180 deg
1.2D + 1.0Ev + 1.0Eh 210 deg	Seismic 210 deg
1.2D + 1.0Ev + 1.0Eh 240 deg	Seismic 240 deg
1.2D + 1.0Ev + 1.0Eh 300 deg	Seismic 300 deg
1.2D + 1.0Ev + 1.0Eh 330 deg	Seismic 330 deg
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL) Normal
0.9D - 1.0Ev + 1.0Eh 60 deg	Seismic (Reduced DL) 60 deg
0.9D - 1.0Ev + 1.0Eh 90 deg	Seismic (Reduced DL) 90 deg
0.9D - 1.0Ev + 1.0Eh 120 deg	Seismic (Reduced DL) 120 deg
0.9D - 1.0Ev + 1.0Eh 180 deg	Seismic (Reduced DL) 180 deg
0.9D - 1.0Ev + 1.0Eh 210 deg	Seismic (Reduced DL) 210 deg
0.9D - 1.0Ev + 1.0Eh 240 deg	Seismic (Reduced DL) 240 deg
0.9D - 1.0Ev + 1.0Eh 300 deg	Seismic (Reduced DL) 300 deg
0.9D - 1.0Ev + 1.0Eh 330 deg	Seismic (Reduced DL) 330 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg
1.0D + 1.0W Service 120 deg	Serviceability - 60 mph Wind 120 deg
1.0D + 1.0W Service 180 deg	Serviceability - 60 mph Wind 180 deg
1.0D + 1.0W Service 210 deg	Serviceability - 60 mph Wind 210 deg
1.0D + 1.0W Service 240 deg	Serviceability - 60 mph Wind 240 deg
1.0D + 1.0W Service 300 deg	Serviceability - 60 mph Wind 300 deg
1.0D + 1.0W Service 330 deg	Serviceability - 60 mph Wind 330 deg

Site Number: 21806

Code:

ANSI/TIA-222-H

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:52 AM

Customer: VERIZON WIRELESS

Tower LoadingDiscrete Appurtenance Properties 1.2D + 1.0W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
252.4	Antel RWA-80015	9	31	11.2	8.0	11.6	6.3	0.80	0.69	0.0	0.0	48.03	2275	335
249.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	47.89	989	1080
233.0	Commscope NHH-	6	52	11.4	8.0	11.9	7.1	0.80	0.70	1.0	1537.5	47.27	1537	372
233.0	Commscope TD-	3	53	2.0	1.3	15.3	6.4	0.80	0.50	0.0	0.0	47.22	95	191
233.0	Ericsson 8843 Rev 2	3	75	1.6	1.3	13.2	11.1	0.80	0.50	0.0	0.0	47.22	79	270
233.0	Ericsson AIR 6449	3	82	4.0	2.5	15.9	10.6	0.80	0.70	0.0	0.0	47.22	272	294
233.0	Ericsson Radio 4449	3	70	1.6	1.3	13.2	9.3	0.80	0.50	0.0	0.0	47.22	79	252
233.0	Raycap RCMD-	1	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.0	47.22	54	26
233.0	Raycap RCMD-	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.0	47.22	130	38
233.0	Site Pro 1 VFA12-HD	3	631	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	47.22	1213	2272
Totals		35	4274	300.7									6724	5129

Discrete Appurtenance Properties 0.9D + 1.0W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
252.4	Antel RWA-80015	9	31	11.2	8.0	11.6	6.3	0.80	0.69	0.0	0.0	48.03	2275	251
249.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	47.89	989	810
233.0	Commscope NHH-	6	52	11.4	8.0	11.9	7.1	0.80	0.70	1.0	1537.5	47.27	1537	279
233.0	Commscope TD-	3	53	2.0	1.3	15.3	6.4	0.80	0.50	0.0	0.0	47.22	95	143
233.0	Ericsson 8843 Rev 2	3	75	1.6	1.3	13.2	11.1	0.80	0.50	0.0	0.0	47.22	79	203
233.0	Ericsson AIR 6449	3	82	4.0	2.5	15.9	10.6	0.80	0.70	0.0	0.0	47.22	272	220
233.0	Ericsson Radio 4449	3	70	1.6	1.3	13.2	9.3	0.80	0.50	0.0	0.0	47.22	79	189
233.0	Raycap RCMD-	1	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.0	47.22	54	19
233.0	Raycap RCMD-	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.0	47.22	130	29
233.0	Site Pro 1 VFA12-HD	3	631	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	47.22	1213	1704
Totals		35	4274	300.7									6724	3846

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
252.4	Antel RWA-80015	9	31	11.2	8.0	11.6	6.3	0.80	0.69	0.0	0.0	0.00	0	335
249.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	0.00	0	1080
233.0	Commscope NHH-	6	52	11.4	8.0	11.9	7.1	0.80	0.70	1.0	0.0	0.00	0	372
233.0	Commscope TD-	3	53	2.0	1.3	15.3	6.4	0.80	0.50	0.0	0.0	0.00	0	191
233.0	Ericsson 8843 Rev 2	3	75	1.6	1.3	13.2	11.1	0.80	0.50	0.0	0.0	0.00	0	270
233.0	Ericsson AIR 6449	3	82	4.0	2.5	15.9	10.6	0.80	0.70	0.0	0.0	0.00	0	294
233.0	Ericsson Radio 4449	3	70	1.6	1.3	13.2	9.3	0.80	0.50	0.0	0.0	0.00	0	252
233.0	Raycap RCMD-	1	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.0	0.00	0	26
233.0	Raycap RCMD-	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.0	0.00	0	38
233.0	Site Pro 1 VFA12-HD	3	631	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	0.00	0	2272
Totals		35	4274	300.7									0	5129

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
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Site Number: 21806

Code: ANSI/TIA-222-H

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:52 AM

Customer: VERIZON WIRELESS

Tower Loading

252.4	Antel RWA-80015	9	31	11.2	8.0	11.6	6.3	0.80	0.69	0.0	0.0	12.01	569	279
249.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	11.97	247	900
233.0	Commscope NHH-	6	52	11.4	8.0	11.9	7.1	0.80	0.70	1.0	384.4	11.82	384	310
233.0	Commscope TD-	3	53	2.0	1.3	15.3	6.4	0.80	0.50	0.0	0.0	11.81	24	159
233.0	Ericsson 8843 Rev 2	3	75	1.6	1.3	13.2	11.1	0.80	0.50	0.0	0.0	11.81	20	225
233.0	Ericsson AIR 6449	3	82	4.0	2.5	15.9	10.6	0.80	0.70	0.0	0.0	11.81	68	245
233.0	Ericsson Radio 4449	3	70	1.6	1.3	13.2	9.3	0.80	0.50	0.0	0.0	11.81	20	210
233.0	Raycap RCMD-	1	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.0	11.81	14	21
233.0	Raycap RCMD-	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.0	11.81	33	32
233.0	Site Pro 1 VFA12-HD	3	631	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	11.81	303	1893
Totals		35	4274	300.7									1681	4274

Site Number: 21806

Code:

ANSI/TIA-222-H

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:52 AM

Customer: VERIZON WIRELESS

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	250.0	Waveguide	1	2.00	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	233.0	1 5/8" Coax	16	1.98	0.82	100	1	Individual	0.00	N	1.00	1.00	0.01
0.00	233.0	1 5/8" Hybriflex	1	1.98	1.30	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	233.0	1.58" (40.1mm)	1	1.58	1.61	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	233.0	Waveguide	1	2.00	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00

Site Number: 21806

Code:

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:53 AM

Customer: VERIZON WIRELESS

Equivalent Lateral Force Method

Spectral Response Acceleration for Short Period (S_s):	0.08
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L - Seconds):	8
Importance Factor (I_e):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.09
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.08
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s :	0.04
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	0.75
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.13
Total Unfactored Dead Load:	66.98 k
Seismic Base Shear (E):	2.61 k

LoadCase 1.2D + 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
13	245.00	732	361,440	0.028	73	891
12	230.00	1,698	781,040	0.061	158	2,067
11	210.00	2,494	1,035,61	0.080	210	3,037
10	190.00	2,909	1,078,96	0.084	219	3,542
9	170.00	3,439	1,125,38	0.087	228	4,188
8	150.00	4,153	1,179,91	0.092	239	5,057
7	130.00	4,935	1,193,24	0.093	242	6,009
6	110.00	5,443	1,090,22	0.085	221	6,628
5	90.00	6,787	1,084,13	0.084	220	8,265
4	70.00	7,420	892,768	0.069	181	9,035
3	50.00	6,842	563,321	0.044	114	8,332
2	30.00	7,656	354,352	0.027	72	9,323
1	10.00	8,198	109,955	0.009	22	9,983
Antel RWA-80015 ____ 3° 25%	250.00	279	141,014	0.011	29	340
Round Sector Frame	249.00	900	452,833	0.035	92	1,096
Commscope NHH-65C-R2B	233.00	310	144,536	0.011	29	377
Commscope TD-850B-LTE78-43	233.00	159	74,229	0.006	15	194
Ericsson 8843 Rev 2	233.00	225	105,041	0.008	21	274
Ericsson AIR 6449 B77D/ C-Band	233.00	245	114,284	0.009	23	298
Ericsson Radio 4449 - B13&B5	233.00	210	98,038	0.008	20	256
Raycap RCMDC-3315-PF-48	233.00	21	9,991	0.001	2	26
Raycap RCMDC-6627-PF-48	233.00	32	14,939	0.001	3	39
Site Pro 1 VFA12-HD	233.00	1,893	883,742	0.069	179	2,305

Site Number: 21806

Code:

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:53 AM

Customer: VERIZON WIRELESS

Equivalent Lateral Force Method

		66,980	12,889,006	1.000	2,612	81,562
<u>LoadCase 0.9D - 1.0Ev + 1.0Eh</u>						
		Seismic (Reduced DL)				
Section	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{VX}	Horizontal Force (lb)	Vertical Force (lb)
13	245.00	732	361,440	0.028	73	645
12	230.00	1,698	781,040	0.061	158	1,498
11	210.00	2,494	1,035,61	0.080	210	2,201
10	190.00	2,909	1,078,96	0.084	219	2,567
9	170.00	3,439	1,125,38	0.087	228	3,035
8	150.00	4,153	1,179,91	0.092	239	3,664
7	130.00	4,935	1,193,24	0.093	242	4,354
6	110.00	5,443	1,090,22	0.085	221	4,803
5	90.00	6,787	1,084,13	0.084	220	5,988
4	70.00	7,420	892,768	0.069	181	6,547
3	50.00	6,842	563,321	0.044	114	6,037
2	30.00	7,656	354,352	0.027	72	6,755
1	10.00	8,198	109,955	0.009	22	7,233
Antel RWA-80015 ____ 3° 25%	250.00	279	141,014	0.011	29	246
Round Sector Frame	249.00	900	452,833	0.035	92	794
Commscope NHH-65C-R2B	233.00	310	144,536	0.011	29	273
Commscope TD-850B-LTE78-43	233.00	159	74,229	0.006	15	140
Ericsson 8843 Rev 2	233.00	225	105,041	0.008	21	199
Ericsson AIR 6449 B77D/ C-Band	233.00	245	114,284	0.009	23	216
Ericsson Radio 4449 - B13&B5	233.00	210	98,038	0.008	20	185
Raycap RCMDC-3315-PF-48	233.00	21	9,991	0.001	2	19
Raycap RCMDC-6627-PF-48	233.00	32	14,939	0.001	3	28
Site Pro 1 VFA12-HD	233.00	1,893	883,742	0.069	179	1,670
		66,980	12,889,006	1.000	2,612	59,096

Site Number: 21806

Code:

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:54 AM

Customer: VERIZON WIRELESS

Force/Stress Summary

Section: 1		M	Bot Elev (ft): 0.00					Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PX - 12" DIA PIPE	-211.08	1.2D + 1.0W Normal	20.05	50	50	50	27.8	50.0	816.58	0	0	0.00	0.00	25 Member X
HORIZ	PX - 3" DIA PIPE	-5.79	0.9D + 1.0W 90 deg	15.32	100	100	100	161.3	50.0	26.23	2	0	0.00	56.16	22 Member X
DIAG	PX - 3" DIA PIPE	-10.81	1.2D + 1.0W 90 deg	25.98	50	50	50	136.7	50.0	36.48	3	0	0.00	84.24	29 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num	Shear	Bear	Blk Shear			Use	Controls
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phiRn		%		
LEG	PX - 12" DIA PIPE	167.68	0.9D + 1.0W 60 deg	50	65	864.00	0	0	0.00	0.00			19	Member	
HORIZ	PX - 3" DIA PIPE	6.64	1.2D + 1.0W 90 deg	50	65	135.90	2	0	0.00	45.05	0.00		14	Bolt Bear	
DIAG	PX - 3" DIA PIPE	9.57	0.9D + 1.0W 90 deg	50	65	135.90	3	0	0.00	73.13	0.00		13	Bolt Bear	
		Pu		phiRnt		Use	Num								
Max Splice Forces		(kip)	Load Case	(kip)		%	Bolts	Bolt Type							
Top Tension		167.14	0.9D + 1.0W 180 deg	0.00		0	0								
Top Compression		210.34	1.2D + 1.0W Normal	0.00		0									
Bot Tension		181.05	0.9D + 1.0W 180 deg	1362.92		2	24	1" A354-BC							
Bot Compression		226.36	1.2D + 1.0W Normal	1584.63		15									

Section: 2		L	Bot Elev (ft): 20.00					Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PX - 12" DIA PIPE	-194.98	1.2D + 1.0W Normal	20.06	50	50	50	27.8	50.0	816.54	0	0	0.00	0.00	23 Member X
HORIZ	PST - 3" DIA PIPE	-5.19	1.2D + 1.0W 90 deg	13.98	100	100	100	144.7	50.0	24.07	2	0	0.00	40.44	21 Member X
DIAG	PX - 3" DIA PIPE	-10.79	1.2D + 1.0W 90 deg	25.20	50	50	50	132.7	50.0	38.77	3	0	0.00	84.24	27 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num	Shear	Bear	Blk Shear			Use	Controls
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phiRn		%		
LEG	PX - 12" DIA PIPE	156.17	0.9D + 1.0W 60 deg	50	65	864.00	0	0	0.00	0.00			18	Member	
HORIZ	PST - 3" DIA PIPE	5.76	1.2D + 1.0W 90 deg	50	65	100.35	2	0	0.00	32.43	0.00		17	Bolt Bear	
DIAG	PX - 3" DIA PIPE	8.86	1.2D + 1.0W 90 deg	50	65	135.90	3	0	0.00	73.13	0.00		12	Bolt Bear	
		Pu		phiRnt		Use	Num								
Max Splice Forces		(kip)	Load Case	(kip)		%	Bolts	Bolt Type							
Top Tension		155.68	0.9D + 1.0W 180 deg	0.00		0	0								
Top Compression		194.34	1.2D + 1.0W Normal	0.00		0									
Bot Tension		167.14	0.9D + 1.0W 180 deg	872.27		19	16	1 A325							
Bot Compression		0.00		0.00		0									

Site Number: 21806

Code:

ANSI/TIA-222-H

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:54 AM

Customer: VERIZON WIRELESS

Force/Stress Summary

Section: 3		K		Bot Elev (ft): 40.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv (kip)	phiRn (kip)	% Controls
LEG	PX - 10" DIA PIPE	-177.76	1.2D + 1.0W Normal	20.06	50	50	50	33.2	50.0	668.56	0	0	0.00	0.00	26 Member X
HORIZ	PST - 3" DIA PIPE	-5.05	0.9D + 1.0W 90 deg	12.69	100	100	100	131.3	50.0	29.23	2	0	0.00	40.44	17 Member X
DIAG	PX - 3" DIA PIPE	-10.88	1.2D + 1.0W 90 deg	24.41	50	50	50	128.5	50.0	41.31	3	0	0.00	84.24	26 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv (kip)		phiRn (kip)	phit Pn (kip)	Use %	Controls
LEG	PX - 10" DIA PIPE	139.41	1.2D + 1.0W 60 deg	50	65	724.50	0	0		0.00		0.00		19	Member
HORIZ	PST - 3" DIA PIPE	5.53	1.2D + 1.0W 90 deg	50	65	100.35	2	0		0.00		32.43	0.00	17	Bolt Bear
DIAG	PX - 3" DIA PIPE	9.21	1.2D + 1.0W 90 deg	50	65	135.90	3	0		0.00		73.13	0.00	12	Bolt Bear
		Pu		phiRnt			Use	Num							
Max Splice Forces		(kip)	Load Case	(kip)			%	Bolts	Bolt Type						
Top Tension		143.62	0.9D + 1.0W 180 deg				0.00	0	0						
Top Compression		177.17	1.2D + 1.0W Normal				0.00	0							
Bot Tension		155.68	0.9D + 1.0W 180 deg				872.27	18	16		1 A325				
Bot Compression		0.00					0.00	0							

Section: 4		J		Bot Elev (ft): 60.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv (kip)	phiRn (kip)	% Controls
LEG	PX - 10" DIA PIPE	-168.27	1.2D + 1.0W Normal	10.02	100	100	100	33.1	50.0	668.60	0	0	0.00	0.00	25 Member X
HORIZ	PST - 3" DIA PIPE	-4.70	1.2D + 1.0W 90 deg	12.08	100	100	100	125.0	50.0	32.22	2	0	0.00	40.44	14 Member X
DIAG	PX - 3" DIA PIPE	-7.41	1.2D + 1.0W 90 deg	16.16	100	100	100	170.1	50.0	23.58	3	0	0.00	84.24	31 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv (kip)		phiRn (kip)	phit Pn (kip)	Use %	Controls
LEG	PX - 10" DIA PIPE	138.26	0.9D + 1.0W 60 deg	50	65	724.50	0	0		0.00		0.00		19	Member
HORIZ	PST - 3" DIA PIPE	5.44	1.2D + 1.0W 90 deg	50	65	100.35	2	0		0.00		32.43	0.00	16	Bolt Bear
DIAG	PX - 3" DIA PIPE	6.21	1.2D + 1.0W 90 deg	50	65	135.90	3	0		0.00		73.13	0.00	8	Bolt Bear
		Pu		phiRnt			Use	Num							
Max Splice Forces		(kip)	Load Case	(kip)			%	Bolts	Bolt Type						
Top Tension		131.69	0.9D + 1.0W 180 deg				0.00	0	0						
Top Compression		158.90	1.2D + 1.0W Normal				0.00	0							
Bot Tension		143.62	0.9D + 1.0W 180 deg				654.20	22	12		1 A325				
Bot Compression		0.00					0.00	0							

Site Number: 21806

Code:

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

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Customer: VERIZON WIRELESS

Force/Stress Summary

Section: 5		H	Bot Elev (ft): 80.00				Height (ft): 20.000									
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 10" DIA PIPE	-151.97	1.2D + 1.0W Normal	10.03	100	100	100	33.2	50.0	668.53	0	0	0.00	0.00	22	Member X
HORIZ	PST - 2-1/2" DIA PIP	-3.53	1.2D + 1.0W 90 deg	10.79	100	100	100	136.8	50.0	20.56	2	0	0.00	31.67	17	Member X
DIAG	PX - 3" DIA PIPE	-5.94	1.2D + 1.0W 90 deg	15.23	100	100	100	160.4	50.0	26.53	3	0	0.00	70.20	22	Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear			
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn		Use	Controls
LEG	PX - 10" DIA PIPE	123.66	1.2D + 1.0W 60 deg	50	65	724.50	0	0		0.00		0.00			17	Member
HORIZ	PST - 2-1/2" DIA PIP	4.10	1.2D + 1.0W 90 deg	50	65	76.68	2	0		0.00		25.33	0.00		16	Bolt Bear
DIAG	PX - 3" DIA PIPE	4.90	1.2D + 1.0W 90 deg	50	65	135.90	3	0		0.00		60.84	0.00		8	Bolt Bear
Max Splice Forces		Pu				phiRnt	Use	Num								
		(kip)	Load Case			(kip)	%	Bolts		Bolt Type						
Top Tension		121.74	0.9D + 1.0W 180 deg			0.00	0	0								
Top Compression		144.13	1.2D + 1.0W Normal			0.00	0									
Bot Tension		131.69	0.9D + 1.0W 180 deg			654.20	20	12	1	A325						
Bot Compression		0.00				0.00	0									

Section: 6		G	Bot Elev (ft): 100.0				Height (ft): 20.000									
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PSP - 8.75" OD x 0.5	-136.50	1.2D + 1.0W Normal	10.03	100	100	100	41.2	50.0	515.17	0	0	0.00	0.00	26	Member X
HORIZ	PST - 2-1/2" DIA PIP	-3.49	1.2D + 1.0W 90 deg	9.485	100	100	100	120.2	50.0	26.65	2	0	0.00	31.67	13	Member X
DIAG	PST - 3" DIA PIPE	-5.91	1.2D + 1.0W 90 deg	14.22	100	100	100	147.2	50.0	23.26	3	0	0.00	50.54	25	Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear			
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn		Use	Controls
LEG	PSP - 8.75" OD x 0.5	113.36	1.2D + 1.0W 60 deg	50	65	583.15	0	0		0.00		0.00			19	Member
HORIZ	PST - 2-1/2" DIA PIP	3.86	1.2D + 1.0W 90 deg	50	65	76.68	2	0		0.00		25.33	0.00		15	Bolt Bear
DIAG	PST - 3" DIA PIPE	5.14	1.2D + 1.0W 90 deg	50	65	100.35	3	0		0.00		43.80	0.00		11	Bolt Bear
Max Splice Forces		Pu				phiRnt	Use	Num								
		(kip)	Load Case			(kip)	%	Bolts		Bolt Type						
Top Tension		109.88	0.9D + 1.0W 180 deg			0.00	0	0								
Top Compression		128.20	1.2D + 1.0W Normal			0.00	0									
Bot Tension		121.74	0.9D + 1.0W 180 deg			654.20	19	12	1	A325						
Bot Compression		0.00				0.00	0									

Site Number: 21806

Code:

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

7/2/2021 12:02:54 AM

Customer: VERIZON WIRELESS

Force/Stress Summary

Section: 7		F	Bot Elev (ft): 120.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PSP - 8.75" OD x 0.5	-120.48	1.2D + 1.0W Normal	10.02	100	100	100	41.2	50.0	515.20	0	0	0.00	0.00	23 Member X
HORIZ	PST - 2" DIA PIPE	-3.21	1.2D + 1.0W 90 deg	8.258	100	100	100	125.9	50.0	15.25	2	0	0.00	24.02	21 Member X
DIAG	PST - 3" DIA PIPE	-5.75	1.2D + 1.0W 90 deg	13.36	100	100	100	138.3	50.0	26.35	3	0	0.00	50.54	21 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn	Use	Controls
LEG	PSP - 8.75" OD x 0.5	101.60	1.2D + 1.0W 60 deg	50	65	583.15	0	0		0.00		0.00		17	Member
HORIZ	PST - 2" DIA PIPE	3.50	1.2D + 1.0W 90 deg	50	65	48.15	2	0		0.00		19.22	0.00	18	Bolt Bear
DIAG	PST - 3" DIA PIPE	5.09	1.2D + 1.0W 90 deg	50	65	100.35	3	0		0.00		43.80	0.00	11	Bolt Bear
		Pu		phiRnt			Use	Num							
Max Splice Forces		(kip)	Load Case	(kip)			%	Bolts	Bolt Type						
Top Tension		97.35	0.9D + 1.0W 180 deg				0.00	0	0						
Top Compression		112.10	1.2D + 1.0W Normal				0.00	0							
Bot Tension		109.88	0.9D + 1.0W 180 deg	436.14			25	8	1 A325						
Bot Compression		0.00		0.00			0								

Section: 8		E	Bot Elev (ft): 140.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PSP - ROHN 8 EHS (8.	-104.56	1.2D + 1.0W Normal	10.03	100	100	100	40.6	50.0	393.62	0	0	0.00	0.00	26 Member X
HORIZ	PST - 2" DIA PIPE	-2.76	1.2D + 1.0W 90 deg	7.038	100	100	100	107.3	50.0	20.74	2	0	0.00	24.02	13 Member X
DIAG	PST - 3" DIA PIPE	-5.34	1.2D + 1.0W 90 deg	12.59	100	100	100	130.3	50.0	29.66	3	0	0.00	50.54	17 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn	Use	Controls
LEG	PSP - ROHN 8 EHS (8.	89.45	1.2D + 1.0W 60 deg	50	65	444.15	0	0		0.00		0.00		20	Member
HORIZ	PST - 2" DIA PIPE	2.93	1.2D + 1.0W 90 deg	50	65	48.15	2	0		0.00		19.22	0.00	15	Bolt Bear
DIAG	PST - 3" DIA PIPE	4.88	0.9D + 1.0W 90 deg	50	65	100.35	3	0		0.00		43.80	0.00	11	Bolt Bear
		Pu		phiRnt			Use	Num							
Max Splice Forces		(kip)	Load Case	(kip)			%	Bolts	Bolt Type						
Top Tension		84.83	0.9D + 1.0W 180 deg				0.00	0	0						
Top Compression		96.55	1.2D + 1.0W Normal				0.00	0							
Bot Tension		97.35	0.9D + 1.0W 180 deg	436.14			22	8	1 A325						
Bot Compression		0.00		0.00			0								

Site Number: 21806

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

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Customer: VERIZON WIRELESS

Force/Stress Summary

Section: 9		D	Bot Elev (ft): 160.0					Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PSP - ROHN 6 EHS	-90.74	1.2D + 1.0W Normal	6.68	100	100	100	36.0	50.0	274.62	0	0	0.00	0.00	33 Member X
HORIZ	PST - 2" DIA PIPE	-2.77	1.2D + 1.0W 90 deg	6.072	100	100	100	92.6	50.0	25.73	2	0	0.00	24.02	10 Member X
DIAG	PST - 2-1/2" DIA PIP	-4.46	1.2D + 1.0W 90 deg	9.258	100	100	100	117.3	50.0	27.97	3	0	0.00	47.50	15 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn	Use	Controls
LEG	PSP - ROHN 6 EHS	78.57	1.2D + 1.0W 60 deg	50	65	301.95	0	0		0.00		0.00		26	Member
HORIZ	PST - 2" DIA PIPE	2.90	1.2D + 1.0W 90 deg	50	65	48.15	2	0		0.00		19.22	0.00	15	Bolt Bear
DIAG	PST - 2-1/2" DIA PIP	4.14	1.2D + 1.0W 90 deg	50	65	76.68	3	0		0.00		41.17	0.00	10	Bolt Bear
		Pu				phiRnt	Use	Num							
Max Splice Forces		(kip)	Load Case			(kip)	%	Bolts		Bolt Type					
Top Tension		69.56	0.9D + 1.0W 180 deg			0.00	0	0							
Top Compression		78.51	1.2D + 1.0W Normal			0.00	0								
Bot Tension		84.83	0.9D + 1.0W 180 deg			436.14	19	8	1	A325					
Bot Compression		0.00				0.00	0								

Section: 10		C	Bot Elev (ft): 180.0					Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PSP - ROHN 5 EH	-72.61	1.2D + 1.0W Normal	6.68	100	100	100	43.6	50.0	239.34	0	0	0.00	0.00	30 Member X
HORIZ	PST - 1-1/2" DIA PIP	-2.50	1.2D + 1.0W 90 deg	5.031	100	100	100	96.9	50.0	18.10	2	0	0.00	22.62	13 Member X
DIAG	PX - 2" DIA PIPE	-4.37	1.2D + 1.0W 90 deg	8.566	100	100	100	134.2	50.0	18.57	3	0	0.00	51.01	23 Member X
		Pu		Fy	Fu	Phit	Pn Num	Num		Shear		Bear	Blk Shear		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn	Use	Controls
LEG	PSP - ROHN 5 EH	63.35	1.2D + 1.0W 180 deg	50	65	274.95	0	0		0.00		0.00		23	Member
HORIZ	PST - 1-1/2" DIA PIP	2.57	1.2D + 1.0W 90 deg	50	65	35.96	2	0		0.00		18.10	0.00	14	Bolt Bear
DIAG	PX - 2" DIA PIPE	4.12	1.2D + 1.0W 90 deg	50	65	66.60	3	0		0.00		44.21	0.00	9	Bolt Bear
		Pu				phiRnt	Use	Num							
Max Splice Forces		(kip)	Load Case			(kip)	%	Bolts		Bolt Type					
Top Tension		52.63	0.9D + 1.0W 180 deg			0.00	0	0							
Top Compression		59.48	1.2D + 1.0W Normal			0.00	0								
Bot Tension		69.56	0.9D + 1.0W 180 deg			327.10	21	6	1	A325					
Bot Compression		0.00				0.00	0								

Site Number: 21806

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

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Customer: VERIZON WIRELESS

Force/Stress Summary

Section: 11		B3		Bot Elev (ft): 200.0				Height (ft): 20.000												
				Pu				Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member				(kip)	Load Case			(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 4" DIA PIPE			-48.90	1.2D + 1.0W Normal			6.67	100	100	100	54.1	50.0	160.28	0	0	0.00	0.00	30	Member X
HORIZ	PST - 1-1/2" DIA PIP			-3.70	1.2D + 1.0W 90 deg			4.326	100	100	100	83.3	50.0	21.64	2	0	0.00	22.62	17	Member X
DIAG	PX - 2" DIA PIPE			-7.17	1.2D + 1.0W 90 deg			7.955	100	100	100	124.6	50.0	21.53	3	0	0.00	51.01	33	Member X
				Pu				Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member				(kip)	Load Case			(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)		(kip)	(kip)	(kip)	%	Controls
LEG	PX - 4" DIA PIPE			41.93	1.2D + 1.0W 180 deg			50	65	198.45	0	0		0.00		0.00			21	Member
HORIZ	PST - 1-1/2" DIA PIP			3.77	1.2D + 1.0W 90 deg			50	65	35.96	2	0		0.00		18.10		0.00	20	Bolt Bear
DIAG	PX - 2" DIA PIPE			6.97	1.2D + 1.0W 90 deg			50	65	66.60	3	0		0.00		44.21		0.00	15	Bolt Bear
				Pu				phiRnt			Use	Num								
Max Splice Forces				(kip)	Load Case			(kip)			%	Bolts	Bolt Type							
Top Tension				24.35	0.9D + 1.0W 180 deg			0.00			0	0								
Top Compression				29.32	1.2D + 1.0W Normal			0.00			0									
Bot Tension				52.63	0.9D + 1.0W 180 deg			218.07			24	4	1 A325							
Bot Compression				0.00				0.00			0									

Section: 12		B2		Bot Elev (ft): 220.0				Height (ft): 20.000												
				Pu				Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member				(kip)	Load Case			(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PST - 3" DIA PIPE			-20.49	1.2D + 1.0W Normal			6.67	100	100	100	69.0	50.0	70.87	0	0	0.00	0.00	28	Member X
HORIZ	PST - 1-1/2" DIA PIP			-3.07	1.2D + 1.0W 90 deg			4.287	100	100	100	82.6	50.0	21.84	2	0	0.00	22.62	14	Member X
DIAG	PST - 2" DIA PIPE			-6.00	1.2D + 1.0W 90 deg			7.931	100	100	100	120.9	50.0	16.53	3	0	0.00	36.04	36	Member X
				Pu				Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member				(kip)	Load Case			(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)		(kip)	(kip)	(kip)	%	Controls
LEG	PST - 3" DIA PIPE			15.41	1.2D + 1.0W 180 deg			50	65	100.35	0	0		0.00		0.00			15	Member
HORIZ	PST - 1-1/2" DIA PIP			3.14	1.2D + 1.0W 90 deg			50	65	35.96	2	0		0.00		18.10		0.00	17	Bolt Bear
DIAG	PST - 2" DIA PIPE			5.87	1.2D + 1.0W 90 deg			50	65	48.15	3	0		0.00		31.23		0.00	18	Bolt Bear
				Pu				phiRnt			Use	Num								
Max Splice Forces				(kip)	Load Case			(kip)			%	Bolts	Bolt Type							
Top Tension				4.69	0.9D + 1.0W 60 deg			0.00			0	0								
Top Compression				6.21	1.2D + 1.0W 120 deg			0.00			0									
Bot Tension				24.35	0.9D + 1.0W 180 deg			166.22			15	4	0.875" A325							
Bot Compression				0.00				0.00			0									

Site Number: 21806

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

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Customer: VERIZON WIRELESS

Force/Stress Summary

Section: 13		B1		Bot Elev (ft): 240.0				Height (ft): 10.000												
				Pu				Len	Bracing %			F'y	Phic Pn	Num	Num	Shear phiRnv	Bear phiRn	Use		
Max Compression Member				(kip)	Load Case		(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls	
LEG	PST - 2-1/2" DIA PIP			-3.20	1.2D + 1.0W Normal		5.00	100	100	100	63.4	50.0	57.18	0	0	0.00	0.00	5	Member X	
HORIZ	PST - 1-1/2" DIA PIP			-1.35	1.2D + 1.0W Normal		4.271	100	100	100	82.3	50.0	21.92	2	0	0.00	22.62	6	Member X	
DIAG	PST - 2" DIA PIPE			-2.21	1.2D + 1.0W 90 deg		6.576	100	100	100	100.3	50.0	23.09	3	0	0.00	36.04	9	Member X	
				Pu				Fy	Fu	Phit Pn	Num	Num	Shear phiRnv	Bear phiRn	Blk Shear phiRn	Use				
Max Tension Member				(kip)	Load Case		(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	%	Controls				
LEG	PST - 2-1/2" DIA PIP			1.83	1.2D + 1.0W 60 deg		50	65	76.68	0	0	0.00	0.00			2	Member			
HORIZ	PST - 1-1/2" DIA PIP			1.35	1.2D + 1.0W 60 deg		50	65	35.96	2	0	0.00	18.10		0.00	7	Bolt Bear			
DIAG	PST - 2" DIA PIPE			2.11	1.2D + 1.0W 90 deg		50	65	48.15	3	0	0.00	31.23		0.00	6	Bolt Bear			
Max Splice Forces				Pu				phiRnt		Use	Num									
				(kip)	Load Case		(kip)		%	Bolts	Bolt Type									
Top Tension				0.00			0.00		0	0										
Top Compression				0.54	1.2D + 1.0Di + 1.0Wi		0.00		0											
Bot Tension				4.69	0.9D + 1.0W 60 deg		120.41		4	4	0.75" A325									
Bot Compression				0.00			0.00		0											

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

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Customer: VERIZON WIRELESS

Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal	19.13	00.00	0	1	0.00	226.17	-26.19	
	19.13	00.00	120	1a	6.56	-72.90	-7.14	
	19.13	00.00	240	1b	-6.56	-72.90	-7.14	
1.2D + 1.0W 60 deg	19.13	00.00	0	1	-2.86	126.48	-14.40	
	19.13	00.00	120	1a	-13.90	126.40	4.72	
	19.13	00.00	240	1b	-18.29	-172.51	-10.56	
1.2D + 1.0W 90 deg	19.13	00.00	0	1	-3.33	26.79	-2.59	
	19.13	00.00	120	1a	-20.77	199.37	10.09	
	19.13	00.00	240	1b	-16.38	-145.79	-7.51	
1.2D + 1.0W 120 deg	19.13	00.00	0	1	-2.91	-72.90	9.25	
	19.13	00.00	120	1a	-22.68	226.09	13.09	
	19.13	00.00	240	1b	-9.47	-72.82	-2.11	
1.2D + 1.0W 180 deg	19.13	00.00	0	1	0.00	-172.59	21.12	
	19.13	00.00	120	1a	-11.04	126.48	9.68	
	19.13	00.00	240	1b	11.04	126.48	9.68	
1.2D + 1.0W 210 deg	19.13	00.00	0	1	1.69	-145.88	17.94	
	19.13	00.00	120	1a	-0.58	26.84	4.18	
	19.13	00.00	240	1b	19.13	199.42	12.94	
1.2D + 1.0W 240 deg	19.13	00.00	0	1	2.91	-72.90	9.25	
	19.13	00.00	120	1a	9.47	-72.82	-2.11	
	19.13	00.00	240	1b	22.68	226.09	13.09	
1.2D + 1.0W 300 deg	19.13	00.00	0	1	2.86	126.48	-14.40	
	19.13	00.00	120	1a	18.29	-172.51	-10.56	
	19.13	00.00	240	1b	13.90	126.40	4.72	
1.2D + 1.0W 330 deg	19.13	00.00	0	1	1.64	199.46	-23.03	
	19.13	00.00	120	1a	14.69	-145.83	-10.43	
	19.13	00.00	240	1b	3.90	26.75	-1.59	
0.9D + 1.0W Normal	19.13	00.00	0	1	0.00	219.34	-25.54	
	19.13	00.00	120	1a	7.12	-79.53	-7.47	
	19.13	00.00	240	1b	-7.12	-79.53	-7.47	
0.9D + 1.0W 60 deg	19.13	00.00	0	1	-2.86	119.72	-13.75	
	19.13	00.00	120	1a	-13.34	119.63	4.40	
	19.13	00.00	240	1b	-18.85	-179.07	-10.88	
0.9D + 1.0W 90 deg	19.13	00.00	0	1	-3.33	20.09	-1.94	
	19.13	00.00	120	1a	-20.21	192.55	9.77	
	19.13	00.00	240	1b	-16.94	-152.36	-7.83	
0.9D + 1.0W 120 deg	19.13	00.00	0	1	-2.91	-79.53	9.90	
	19.13	00.00	120	1a	-22.12	219.26	12.77	
	19.13	00.00	240	1b	-10.03	-79.45	-2.43	
0.9D + 1.0W 180 deg	19.13	00.00	0	1	0.00	-179.15	21.77	
	19.13	00.00	120	1a	-10.48	119.72	9.35	
	19.13	00.00	240	1b	10.48	119.72	9.35	
0.9D + 1.0W 210 deg	19.13	00.00	0	1	1.69	-152.46	18.58	
	19.13	00.00	120	1a	-0.02	20.14	3.86	

Site Number: 21806

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Customer: VERIZON WIRELESS

	19.13	00.00	240	1b	18.56	192.60	12.61
0.9D + 1.0W 240 deg	19.13	00.00	0	1	2.91	-79.53	9.90
	19.13	00.00	120	1a	10.03	-79.45	-2.43
	19.13	00.00	240	1b	22.12	219.26	12.77
0.9D + 1.0W 300 deg	19.13	00.00	0	1	2.86	119.72	-13.75
	19.13	00.00	120	1a	18.85	-179.07	-10.88
	19.13	00.00	240	1b	13.34	119.63	4.40
0.9D + 1.0W 330 deg	19.13	00.00	0	1	1.64	192.64	-22.38
	19.13	00.00	120	1a	15.25	-152.41	-10.75
	19.13	00.00	240	1b	3.35	20.05	-1.92
1.2D + 1.0Di + 1.0Wi Normal	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 60 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 90 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 120 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 180 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 210 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 240 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 300 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Di + 1.0Wi 330 deg	19.13	00.00	0	1	0.00	26.77	-2.37
	19.13	00.00	120	1a	-2.05	26.77	1.18
	19.13	00.00	240	1b	2.05	26.77	1.18
1.2D + 1.0Ev + 1.0Eh Normal M1	19.13	00.00	0	1	0.00	40.34	-4.16
	19.13	00.00	120	1a	-1.68	18.95	0.80
	19.13	00.00	240	1b	1.68	18.95	0.80
1.2D + 1.0Ev + 1.0Eh 60 deg M1	19.13	00.00	0	1	-0.15	33.21	-3.39
	19.13	00.00	120	1a	-3.01	33.21	1.57
	19.13	00.00	240	1b	0.94	11.82	0.54
1.2D + 1.0Ev + 1.0Eh 90 deg M1	19.13	00.00	0	1	-0.17	26.08	-2.62
	19.13	00.00	120	1a	-3.46	38.43	1.90
	19.13	00.00	240	1b	1.08	13.73	0.72
1.2D + 1.0Ev + 1.0Eh 120 deg M1	19.13	00.00	0	1	-0.15	18.95	-1.86
	19.13	00.00	120	1a	-3.60	40.34	2.08
	19.13	00.00	240	1b	1.53	18.95	1.05

Site Number: 21806

Code:

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Customer: VERIZON WIRELESS

1.2D + 1.0Ev + 1.0Eh 180 deg M1	19.13	00.00	0	1	0.00	11.82	-1.09
	19.13	00.00	120	1a	-2.86	33.21	1.82
	19.13	00.00	240	1b	2.86	33.21	1.82
1.2D + 1.0Ev + 1.0Eh 210 deg M1	19.13	00.00	0	1	0.08	13.73	-1.30
	19.13	00.00	120	1a	-2.19	26.08	1.46
	19.13	00.00	240	1b	3.38	38.43	2.05
1.2D + 1.0Ev + 1.0Eh 240 deg M1	19.13	00.00	0	1	0.15	18.95	-1.86
	19.13	00.00	120	1a	-1.53	18.95	1.05
	19.13	00.00	240	1b	3.60	40.34	2.08
1.2D + 1.0Ev + 1.0Eh 300 deg M1	19.13	00.00	0	1	0.15	33.21	-3.39
	19.13	00.00	120	1a	-0.94	11.82	0.54
	19.13	00.00	240	1b	3.01	33.21	1.57
1.2D + 1.0Ev + 1.0Eh 330 deg M1	19.13	00.00	0	1	0.08	38.43	-3.95
	19.13	00.00	120	1a	-1.16	13.73	0.57
	19.13	00.00	240	1b	2.36	26.08	1.17
0.9D - 1.0Ev + 1.0Eh Normal M1	19.13	00.00	0	1	0.00	33.14	-3.43
	19.13	00.00	120	1a	-1.06	11.77	0.44
	19.13	00.00	240	1b	1.06	11.77	0.44
0.9D - 1.0Ev + 1.0Eh 60 deg M1	19.13	00.00	0	1	-0.15	26.02	-2.67
	19.13	00.00	120	1a	-2.38	26.02	1.21
	19.13	00.00	240	1b	0.32	4.65	0.18
0.9D - 1.0Ev + 1.0Eh 90 deg M1	19.13	00.00	0	1	-0.17	18.89	-1.90
	19.13	00.00	120	1a	-2.84	31.24	1.54
	19.13	00.00	240	1b	0.45	6.55	0.36
0.9D - 1.0Ev + 1.0Eh 120 deg M1	19.13	00.00	0	1	-0.15	11.77	-1.13
	19.13	00.00	120	1a	-2.97	33.14	1.72
	19.13	00.00	240	1b	0.91	11.77	0.69
0.9D - 1.0Ev + 1.0Eh 180 deg M1	19.13	00.00	0	1	0.00	4.65	-0.37
	19.13	00.00	120	1a	-2.24	26.02	1.46
	19.13	00.00	240	1b	2.24	26.02	1.46
0.9D - 1.0Ev + 1.0Eh 210 deg M1	19.13	00.00	0	1	0.08	6.55	-0.57
	19.13	00.00	120	1a	-1.56	18.89	1.10
	19.13	00.00	240	1b	2.75	31.24	1.69
0.9D - 1.0Ev + 1.0Eh 240 deg M1	19.13	00.00	0	1	0.15	11.77	-1.13
	19.13	00.00	120	1a	-0.91	11.77	0.69
	19.13	00.00	240	1b	2.97	33.14	1.72
0.9D - 1.0Ev + 1.0Eh 300 deg M1	19.13	00.00	0	1	0.15	26.02	-2.67
	19.13	00.00	120	1a	-0.32	4.65	0.18
	19.13	00.00	240	1b	2.38	26.02	1.21
0.9D - 1.0Ev + 1.0Eh 330 deg M1	19.13	00.00	0	1	0.08	31.24	-3.23
	19.13	00.00	120	1a	-0.54	6.55	0.21
	19.13	00.00	240	1b	1.73	18.89	0.80
1.0D + 1.0W Service Normal	19.13	00.00	0	1	0.00	74.63	-8.42
	19.13	00.00	120	1a	0.46	-3.82	-1.16
	19.13	00.00	240	1b	-0.46	-3.82	-1.16
1.0D + 1.0W Service 60 deg	19.13	00.00	0	1	-0.77	48.48	-5.29
	19.13	00.00	120	1a	-4.97	48.46	1.97
	19.13	00.00	240	1b	-3.57	-29.96	-2.06

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Customer: VERIZON WIRELESS

1.0D + 1.0W Service 90 deg	19.13	00.00	0	1	-0.90	22.33	-2.15
	19.13	00.00	120	1a	-6.79	67.60	3.41
	19.13	00.00	240	1b	-3.07	-22.95	-1.25
1.0D + 1.0W Service 120 deg	19.13	00.00	0	1	-0.78	-3.82	0.98
	19.13	00.00	120	1a	-7.30	74.61	4.21
	19.13	00.00	240	1b	-1.24	-3.80	0.18
1.0D + 1.0W Service 180 deg	19.13	00.00	0	1	0.00	-29.98	4.12
	19.13	00.00	120	1a	-4.19	48.48	3.31
	19.13	00.00	240	1b	4.19	48.48	3.31
1.0D + 1.0W Service 210 deg	19.13	00.00	0	1	0.45	-22.97	3.28
	19.13	00.00	120	1a	-1.42	22.34	1.85
	19.13	00.00	240	1b	6.35	67.61	4.18
1.0D + 1.0W Service 240 deg	19.13	00.00	0	1	0.78	-3.82	0.98
	19.13	00.00	120	1a	1.24	-3.80	0.18
	19.13	00.00	240	1b	7.30	74.61	4.21
1.0D + 1.0W Service 300 deg	19.13	00.00	0	1	0.77	48.48	-5.29
	19.13	00.00	120	1a	3.57	-29.96	-2.06
	19.13	00.00	240	1b	4.97	48.46	1.97
1.0D + 1.0W Service 330 deg	19.13	00.00	0	1	0.45	67.62	-7.58
	19.13	00.00	120	1a	2.62	-22.96	-2.03
	19.13	00.00	240	1b	2.31	22.32	0.30

Max Uplift:	179.15(kip)	Moment Ice:	0.00 (kip-ft)	Moment:	5,722.32 (kip-ft)	1.2D + 1.0W 180 deg
Max Down:	226.17(kip)	Total Down Ice:	80.32 (kip)	Total Down:	80.38 (kip)	
Max Shear:	26.19 (kip)	Total Shear Ice:	0.00 (kip)	Total Shear:	40.48 (kip)	

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Site Name: Columbia - Nextel BTS, FL

Engineering Number: 13692328_C3_02

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Customer: VERIZON WIRELESS

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
120 mph Normal with No Ice	233.33	0.758	0.0077	0.5315	0.5316
120 mph Normal with No Ice	250.00	0.899	0.0074	0.4859	0.4859
120 mph 60 degree with No Ice	233.33	0.756	0.0215	0.4594	0.4599
120 mph 60 degree with No Ice	250.00	0.896	0.0216	0.4867	0.4872
120 mph 90 degree with No Ice	233.33	0.756	-0.0141	0.4326	0.4328
120 mph 90 degree with No Ice	250.00	0.896	-0.0142	0.4879	0.4881
120 mph 120 degree with No Ice	233.33	0.757	-0.0239	0.4595	0.4599
120 mph 120 degree with No Ice	250.00	0.897	-0.0241	0.4868	0.4873
120 mph 180 degree with No Ice	233.33	0.758	0.0076	0.5315	0.5316
120 mph 180 degree with No Ice	250.00	0.898	0.0073	0.4858	0.4858
120 mph 210 degree with No Ice	233.33	0.757	0.0187	0.5087	0.5088
120 mph 210 degree with No Ice	250.00	0.898	0.0189	0.4871	0.4871
120 mph 240 degree with No Ice	233.33	0.757	0.0239	0.4595	0.4599
120 mph 240 degree with No Ice	250.00	0.897	0.0241	0.4868	0.4873
120 mph 300 degree with No Ice	233.33	0.756	0.0007	0.4594	0.4599
120 mph 300 degree with No Ice	250.00	0.896	0.0004	0.4867	0.4872
120 mph 330 degree with No Ice	233.33	0.757	-0.0045	0.5087	0.5091
120 mph 330 degree with No Ice	250.00	0.898	-0.0047	0.4870	0.4875
120 mph Normal with No Ice (Reduced DL)	233.33	0.757	0.0077	0.5309	0.5309
120 mph Normal with No Ice (Reduced DL)	250.00	0.897	0.0074	0.4852	0.4853
120 mph 60 deg with No Ice (Reduced DL)	233.33	0.756	0.0215	0.4588	0.4593
120 mph 60 deg with No Ice (Reduced DL)	250.00	0.895	0.0215	0.4861	0.4865
120 mph 90 deg with No Ice (Reduced DL)	233.33	0.755	-0.0141	0.4320	0.4322
120 mph 90 deg with No Ice (Reduced DL)	250.00	0.895	-0.0141	0.4872	0.4874
120 mph 120 deg with No Ice (Reduced DL)	233.33	0.756	-0.0239	0.4588	0.4592
120 mph 120 deg with No Ice (Reduced DL)	250.00	0.895	-0.0241	0.4862	0.4867
120 mph 180 deg with No Ice (Reduced DL)	233.33	0.757	0.0076	0.5309	0.5309
120 mph 180 deg with No Ice (Reduced DL)	250.00	0.897	0.0073	0.4851	0.4852
120 mph 210 deg with No Ice (Reduced DL)	233.33	0.757	0.0187	0.5080	0.5081
120 mph 210 deg with No Ice (Reduced DL)	250.00	0.897	0.0189	0.4864	0.4864
120 mph 240 deg with No Ice (Reduced DL)	233.33	0.756	0.0239	0.4588	0.4592
120 mph 240 deg with No Ice (Reduced DL)	250.00	0.895	0.0241	0.4862	0.4867
120 mph 300 deg with No Ice (Reduced DL)	233.33	0.756	0.0007	0.4588	0.4593
120 mph 300 deg with No Ice (Reduced DL)	250.00	0.895	0.0004	0.4861	0.4865
120 mph 330 deg with No Ice (Reduced DL)	233.33	0.757	-0.0045	0.5080	0.5085
120 mph 330 deg with No Ice (Reduced DL)	250.00	0.897	-0.0047	0.4864	0.4869
0 mph Normal with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph Normal with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 60 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 60 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 90 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 90 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 120 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 120 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 180 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 180 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 210 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 210 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 240 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 240 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 300 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 300 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
0 mph 330 deg with 0.00 in Radial Ice	233.33	0.001	0.0000	0.0000	0.0000
0 mph 330 deg with 0.00 in Radial Ice	250.00	0.001	0.0000	0.0001	0.0001
Seismic Normal M1	233.33	0.054	0.0007	0.0321	0.0321

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Seismic Normal M1	250.00	0.063	0.0007	0.0317	0.0318
Seismic 60 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic 60 deg M1	250.00	0.063	0.0007	0.0319	0.0319
Seismic 90 deg M1	233.33	0.054	-0.0008	0.0321	0.0321
Seismic 90 deg M1	250.00	0.063	-0.0008	0.0318	0.0318
Seismic 120 deg M1	233.33	0.054	-0.0007	0.0321	0.0321
Seismic 120 deg M1	250.00	0.063	-0.0007	0.0317	0.0318
Seismic 180 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic 180 deg M1	250.00	0.063	0.0007	0.0319	0.0319
Seismic 210 deg M1	233.33	0.054	0.0004	0.0321	0.0321
Seismic 210 deg M1	250.00	0.063	0.0004	0.0318	0.0318
Seismic 240 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic 240 deg M1	250.00	0.063	0.0007	0.0317	0.0318
Seismic 300 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic 300 deg M1	250.00	0.063	0.0007	0.0319	0.0319
Seismic 330 deg M1	233.33	0.054	0.0004	0.0321	0.0321
Seismic 330 deg M1	250.00	0.063	0.0004	0.0318	0.0318
Seismic (Reduced DL) Normal M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic (Reduced DL) Normal M1	250.00	0.063	0.0007	0.0317	0.0317
Seismic (Reduced DL) 60 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic (Reduced DL) 60 deg M1	250.00	0.063	0.0007	0.0318	0.0318
Seismic (Reduced DL) 90 deg M1	233.33	0.054	-0.0008	0.0321	0.0321
Seismic (Reduced DL) 90 deg M1	250.00	0.063	-0.0008	0.0317	0.0317
Seismic (Reduced DL) 120 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic (Reduced DL) 120 deg M1	250.00	0.063	-0.0007	0.0317	0.0317
Seismic (Reduced DL) 180 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic (Reduced DL) 180 deg M1	250.00	0.063	0.0007	0.0318	0.0318
Seismic (Reduced DL) 210 deg M1	233.33	0.054	0.0004	0.0321	0.0321
Seismic (Reduced DL) 210 deg M1	250.00	0.063	0.0004	0.0317	0.0317
Seismic (Reduced DL) 240 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic (Reduced DL) 240 deg M1	250.00	0.063	0.0007	0.0317	0.0317
Seismic (Reduced DL) 300 deg M1	233.33	0.054	0.0007	0.0321	0.0321
Seismic (Reduced DL) 300 deg M1	250.00	0.063	0.0007	0.0318	0.0318
Seismic (Reduced DL) 330 deg M1	233.33	0.054	0.0004	0.0321	0.0321
Seismic (Reduced DL) 330 deg M1	250.00	0.063	0.0004	0.0317	0.0317
Serviceability - 60 mph Wind Normal	233.33	0.194	0.0019	0.1341	0.1341
Serviceability - 60 mph Wind Normal	250.00	0.230	0.0018	0.1227	0.1227
Serviceability - 60 mph Wind 60 deg	233.33	0.194	0.0032	0.1160	0.1161
Serviceability - 60 mph Wind 60 deg	250.00	0.229	0.0031	0.1228	0.1229
Serviceability - 60 mph Wind 90 deg	233.33	0.194	-0.0035	0.1094	0.1094
Serviceability - 60 mph Wind 90 deg	250.00	0.229	-0.0035	0.1232	0.1232
Serviceability - 60 mph Wind 120 deg	233.33	0.194	-0.0037	0.1160	0.1161
Serviceability - 60 mph Wind 120 deg	250.00	0.229	-0.0037	0.1229	0.1229
Serviceability - 60 mph Wind 180 deg	233.33	0.194	0.0019	0.1341	0.1341
Serviceability - 60 mph Wind 180 deg	250.00	0.230	0.0018	0.1226	0.1226
Serviceability - 60 mph Wind 210 deg	233.33	0.194	0.0024	0.1284	0.1284
Serviceability - 60 mph Wind 210 deg	250.00	0.230	0.0024	0.1229	0.1230
Serviceability - 60 mph Wind 240 deg	233.33	0.194	0.0037	0.1160	0.1161
Serviceability - 60 mph Wind 240 deg	250.00	0.229	0.0037	0.1229	0.1229
Serviceability - 60 mph Wind 300 deg	233.33	0.194	0.0024	0.1160	0.1161
Serviceability - 60 mph Wind 300 deg	250.00	0.229	0.0023	0.1228	0.1229
Serviceability - 60 mph Wind 330 deg	233.33	0.194	0.0011	0.1284	0.1284
Serviceability - 60 mph Wind 330 deg	250.00	0.230	0.0010	0.1229	0.1230

Maximum Reactions Summary

Anchor Group	Vertical (kip)				Horizontal (kip)		Moment (kip-ft)	
	DL+WL	DL+WL+IL	UpLift	Shear	DL+WL	DL+WL+IL	DL+WL	DL+WL+IL
Base	80.38	80.32	226.17	26.19	40.48	0.00	5722.32	0.00