



## Structural Analysis Report

### Client: AT&T

Client Site ID / Name: 368-355 / Coats  
Application #: 140234, v1

SBA Site ID / Name: NC02083-B / Coats

225 ft Monopole

1275 NC 55 East  
Coats, North Carolina  
Lat: 35.396714, Long: -78.668260

Project number: NC02083-ATT-092220

### Analysis Results

Tower	94.9%	Pass
Foundation	87.0%	Pass

Change in tower stress due to mount modification / replacement	N/A
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Exp. 12/31/2020



09/23/2020

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September 22, 2020

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## Introduction

The purpose of this report is to summarize the analysis results on the 225 ft Monopole to support the proposed antennas and transmissions lines in addition to those currently installed.

*Table 1 List of Documents Used*

Item	Document
<b>Tower design/drawings</b>	Valmont Microflect, Order # 19093-99, dated August 25, 1999.
<b>Foundation drawings</b>	Arcadis Geraghty & Miller, Project # NCSBASPEN 0048, dated September 7, 1999.
<b>Geotechnical report</b>	Arcadis Geraghty & Miller, Project # NCSBASPEN 0048 CT0GT, dated July 21, 1999.
<b>Modification drawings</b>	N/A
<b>Latest SA</b>	TES, Project # 74778, dated April 29, 2019

## Analysis Criteria

*Table 2 Code Related Data*

<b>Jurisdiction (State/County/City)</b>	North Carolina/Harnett/Coats
<b>Governing Codes</b>	ANSI/TIA/EIA 222-G, 2015 IBC, 2018 North Carolina Building
<b>Basic Wind Speed (3-Sec gust)</b>	91.0 mph (Ultimate Wind Speed: 118 mph)
<b>Wind Speed with Ice (3-Sec gust)</b>	30 mph
<b>Service Wind Speed (3-Sec gust)</b>	60 mph
<b>Ice Thickness</b>	0.75"
<b>Structural Class*</b>	II
<b>Exposure Category</b>	C
<b>Topographic Category</b>	1
<b>Crest Height</b>	0 ft
<b>Ground Elevation</b>	279.32 ft.
<b>Seismic Parameter <math>S_s</math>**</b>	0.177
<b>Seismic Parameter <math>S_1</math></b>	0.084

\*This structural analysis is based upon the tower being classified as a structural class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

\*\*Earthquake effects were ignored as per section 2.7.3 of the TIA-222-G code provisions for  $S_s < 1.0$ .

## Appurtenance Loading

### Existing Loading:

Table 3 Existing Appurtenances

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	225.0	3	RFS - APXVSP18-C-A20 - Panel	(3) T-Arm	(1) 1-1/4" Hybrid (3) 1.5" Hybrid	Sprint Nextel
2		3	RFS - APXVTM14-ALU-20 - Panel			
3		3	RRUS-1900 MHz			
4		3	RRUS- 800 MHz			
5		3	2500 MHz RRH - TD-RRH 8x20-25			
6	215.0	3	Commscope SBNHH-1D65C - Panel	Low Profile Platform + Site Pro HRK 14 (Handrail)	(2) 3/4" DC (1) 1 1/4" Fiber (1) 2" Conduit Housing (2) 0.92" DC (12) 1 5/8" (1) 3/8" RET	AT&T
8		3	KMW EPBQ-652L8H8 - Panel			
9		3	Kathrein 741-989 - Panel			
10		6	RFS ATM192012-0 - TMA/TTA			
11		3	Ericsson RRUS 8843 B2 B66A -			
12		3	Ericsson RRUS 11 -			
14		2	Raycap DC6-48-60-18-8F			
15	195.0	3	Ericsson 4449 B71+B12	Platform w/ Handrail L.I.F.E. Mount Low Profile Platform PVLPP12M-HR-B	(1) 1 1/4" HCS (6) 1 5/8"	T-Mobile
16		3	RFS APXV18-206517S-C-A20 (Dual)			
17		3	RFS APXVAARR24_43-U-NA20 (Octo)			
18		3	Ericsson KRY 112 489/2			
19		4	CCI KRY112891			

### Proposed Loading:

Information pertaining to proposed antennas and transmission lines were based upon the Application #:140234, v1 from AT&T and is listed in Table 4.

Table 4 Proposed Appurtenances

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
7	215.0	3	Cellmax - XXQLH-654L8H8-iVT - Panel	Low Profile Platform + Site Pro HRK 14 (Handrail)	(2) 3/4" DC (1) 1 1/4" Fiber (1) 2" Conduit Housing (2) 0.92" DC (6) 1 5/8" (1) 3/8" RET (1) 3/8" Fiber	AT&T
8		3	KMW EPBQ-652L8H8 - Panel			
9		3	Kathrein 741-989 - Panel			
10		6	RFS ATM192012-0 - TMA			
11		3	Ericsson RRUS 8843 B2 B66A			
12		3	Ericsson RRUS 11			
13		3	Ericsson RRUS 4478 B14			
14		2	Raycap DC6-48-60-18-8F			

*Note: AT&T loading includes FirstNET equipment*

## Analysis Results

### Tower

The results of the structural analysis are shown below in table 5. Additional information for the tower analysis is provided within the Appendix.

*Table 5 Tower Analysis Summary*

	<b>Pole shafts</b>	<b>Anchor Bolts</b>	<b>Base Plate</b>
<b>Max. Usage:</b>	94.9%	87.5%	68.3%
<b>Pass/Fail</b>	Pass	Pass	Pass

### Foundation

The results of the foundation analysis are shown below in table 6. Additional information for the foundation analysis is provided within the Appendix.

*Table 6 Foundation Analysis Summary*

<b>Structural Component</b>	<b>Max Usage (%)</b>	<b>Analysis Result</b>
<b>Foundation</b>	87.0%	Pass

## Conclusions

Based on the analysis results, the existing tower and foundation were found to be **sufficient** to safely support the equipment listed in this analysis. No modification to the tower and foundation is needed at this time.

## Installation Requirements

This analysis was performed under the assumption that the carrier will place the proposed equipment and feed lines at the installation height listed in Table 4 and in accordance with the coax layout shown. TMAs and RRUs are to be installed on existing mounts behind tenant's antennas unless otherwise noted. No equipment is to be installed directly in the climbing path. All equipment is to be installed per mount manufacturer specifications. In case site conditions do not allow for the required installation parameters to be met the carrier must notify SBA Communications Corporation engineers for approval of an alternative placement.

## Assumptions and Limitations

### Assumptions

This analysis was completed based on the following assumptions:

- Tower and foundation were built in accordance to manufacturer specifications.
- Tower and foundation has been properly maintained in accordance with the manufacturer's specifications
- All existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion
- Welds and bolts are assumed able to carry their intended original design loads.
- The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Table 3 and 4.
- This analysis may be affected if any assumptions are not valid or have been made in error. SBA should be notified to determine the effect on the structural integrity of the tower.

### Limitations

The computer generated analysis performed by the tower software is limited to theoretical capacities of the towers structural members and does not account for any missing or damaged members or connections. The tower and foundation are assumed to have been properly designed, fabricated, installed and maintained, barring any conflicting findings from the most recent inspection.

SBA Communications Corporation has used its due diligence to verify the information provided to perform this analysis. It is unreasonable to perform a more detailed inspection of a tower and its components. This report is not a condition assessment of the tower or foundation.

## Appendix



# Usage Diagram - Max Ratio 94.89% at 0.0ft

**Structure:** NC02083-B  
**Site Name:** Coats  
**Height:** 225.00 (ft)  
**Base Elev:** 0.000 (ft)

**Code:** EIA/TIA-222-G  
**Exposure:** C  
**Gh:** 1.1

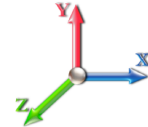
9/22/2020



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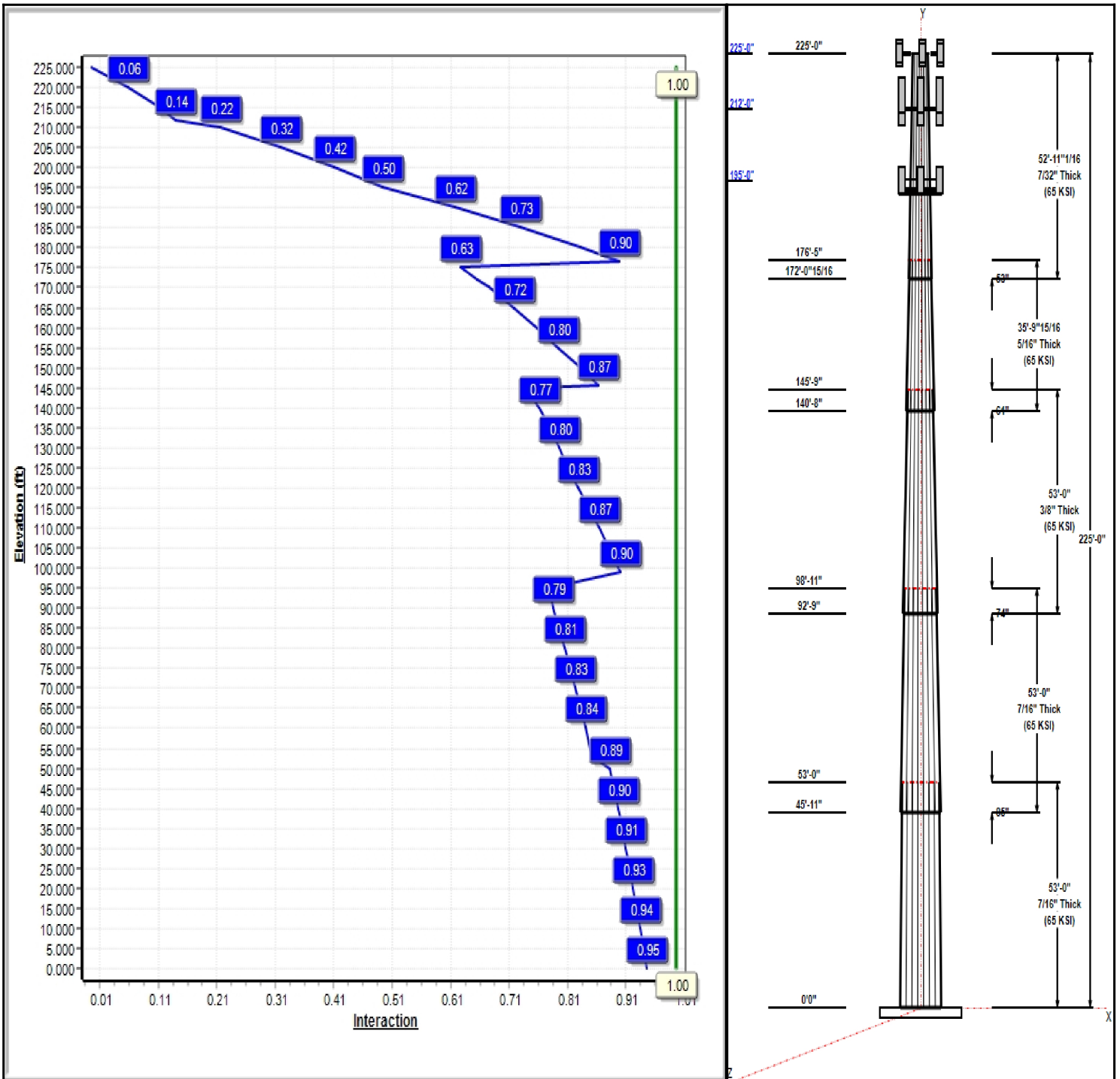
**Dead Load Factor:** 1.20  
**Wind Load Factor:** 1.60

**Load Case : 1.2D + 1.6W 91 mph Wind**



**Iterations:** 32

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## Structure: NC02083-B

**Type:** Tapered  
**Site Name:** Coats  
**Height:** 225.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 16 Sided  
**Taper:** 0.20000

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### Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	48.80	59.40	0.438		0.20000	65
2	53.00	40.49	51.09	0.438	Slip	0.20000	65
3	53.00	31.87	42.47	0.375	Slip	0.20000	65
4	35.83	26.35	33.52	0.313	Slip	0.20000	65
5	52.92	17.09	27.67	0.219	Slip	0.20000	65

### Discrete Appurtenances

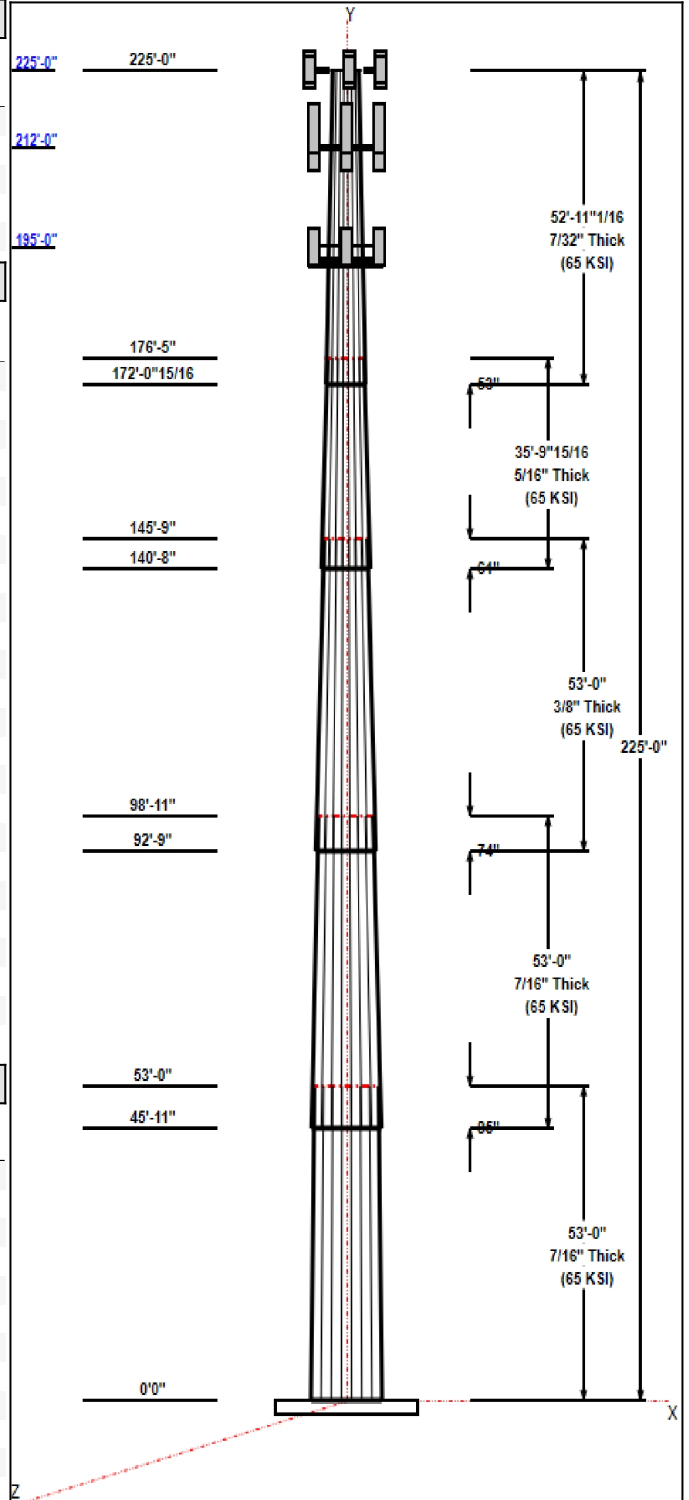
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
225.00	225.00	3	T-Arm (Round)	Sprint Nextel
225.00	225.00	3	APXVSP18-C-A20	Sprint Nextel
225.00	225.00	1	Beacon	Pole
225.00	225.00	3	RRUS-1900 MHz	Sprint Nextel
225.00	225.00	3	RRUS- 800 MHz	Sprint Nextel
225.00	225.00	3	APXVTM14-ALU-20	Sprint Nextel
225.00	225.00	3	2500 MHz RRH - TD-RRH	Sprint Nextel
212.00	215.00	3	Kathrein 741-989	AT&T
212.00	215.00	3	KMW EPBQ-652L8H8	AT&T
212.00	215.00	1	Low Profile	AT&T
212.00	215.00	1	Handrail Kit (Site Pro HRK	AT&T
212.00	215.00	6	RFS ATM192012-0	AT&T
212.00	215.00	3	Ericsson RRUS 11	AT&T
212.00	215.00	3	Ericsson RRUS 8843 B2	AT&T
212.00	215.00	2	Raycap DC6-48-60-18-8F	AT&T
212.00	212.00	3	Cellmax -	AT&T
212.00	212.00	3	Ericsson RRUS 4478 B14	AT&T
195.00	195.00	3	RFS	T-Mobile
195.00	195.00	3	RFS	T-Mobile
195.00	195.00	1	PV-LPP12M-HR-B	T-Mobile
195.00	195.00	3	Ericsson KRY 112 489/2	T-Mobile
195.00	195.00	3	Ericsson 4449 B71+B12	T-Mobile
195.00	195.00	4	CCI KRY112891	T-Mobile
120.00	120.00	3	Single light	Pole

### Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	225.00	Outside	1-1/4" Hybrid	Sprint Nextel
0.00	225.00	Outside	1.5" Hybrid	Sprint Nextel
0.00	225.00	Inside	Safety Cable	
0.00	225.00	Inside	Step bolts (ladder)	
0.00	215.00	Inside	0.92" DC	AT&T
0.00	215.00	Inside	1 1/4" Fiber	AT&T
0.00	215.00	Inside	1 5/8" Coax	AT&T
0.00	215.00	Inside	2" Conduit	AT&T
0.00	215.00	Inside	3/4" DC	AT&T
0.00	215.00	Inside	3/8" Fiber	AT&T
0.00	215.00	Inside	3/8" RET	AT&T
0.00	195.00	Inside	1 1/4"6x12 6AWG 80m	T-Mobile
0.00	195.00	Outside	1 5/8" Coax	T-Mobile

### Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement



## Structure: NC02083-B

<b>Type:</b> Tapered	<b>Base Shape:</b> 16 Sided	9/22/2020
<b>Site Name:</b> Coats	<b>Taper:</b> 0.20000	
<b>Height:</b> 225.00 (ft)		
<b>Base Elev:</b> 0.00 (ft)		Page: 3



20	2.25" 18J	75.0	Radial
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### Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	74.0	60.0	Round

### Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 91 mph Wind	6193.6	40.1	61.9
0.9D + 1.6W 91 mph Wind	6063.0	40.0	46.4
1.2D + 1.0Di + 1.0Wi 30 mph Wind	752.4	4.5	98.0
1.2D + 1.0E	367.9	2.2	62.0
0.9D + 1.0E	359.0	2.2	46.5
1.0D + 1.0W 60 mph Wind	1671.7	10.9	51.6

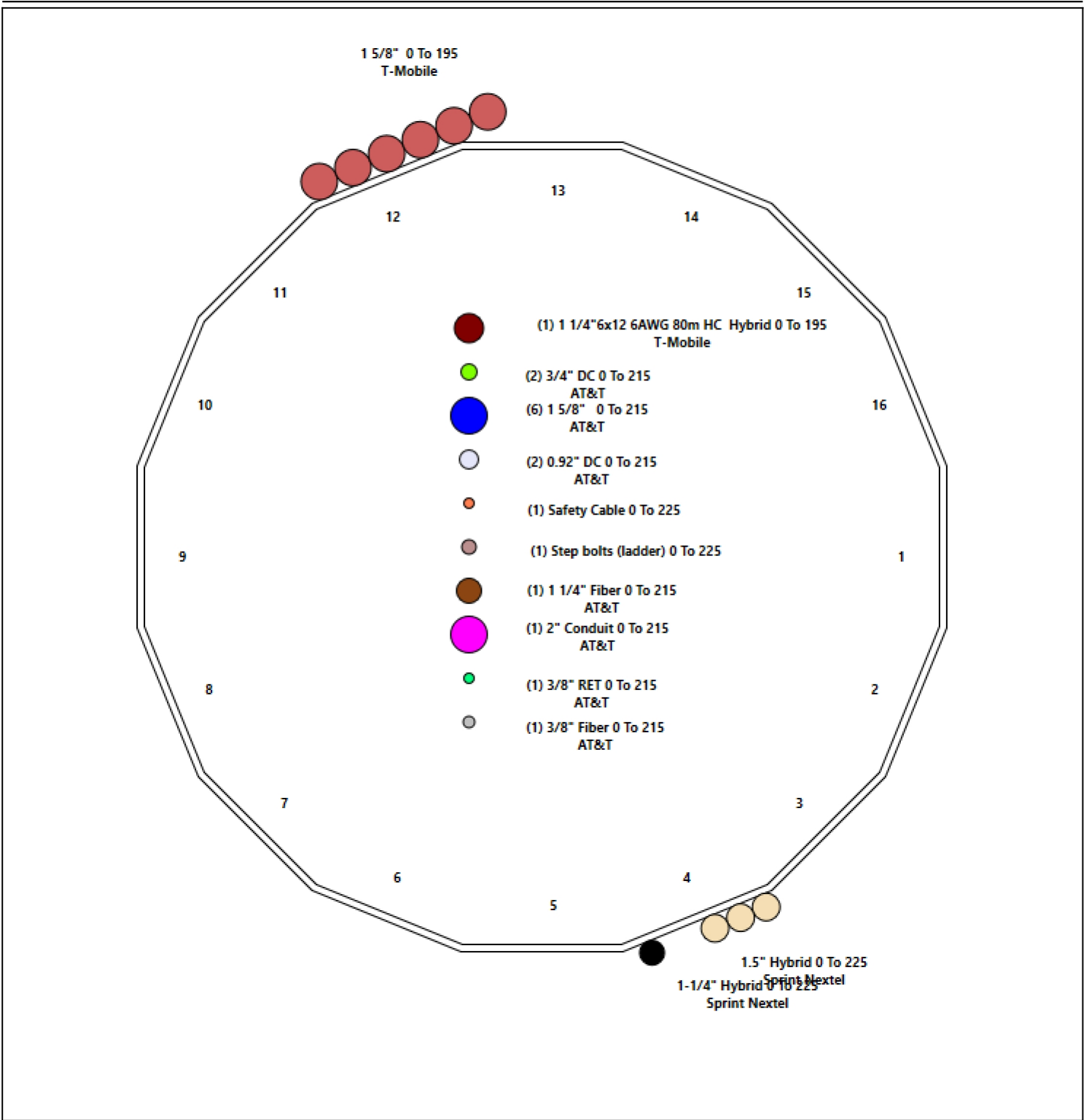
# Structure: NC02083-B - Coax Line Placement

Type: Monopole  
Site Name: Coats  
Height: 225.00 (ft)

9/22/2020



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## Shaft Properties

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	53.000	0.4375	65		0.00	13,507
2	16	53.000	0.4375	65	Slip	85.00	11,415
3	16	53.000	0.3750	65	Slip	74.00	7,939
4	16	35.830	0.3125	65	Slip	61.00	3,600
5	16	52.920	0.2188	65	Slip	53.00	2,785
<b>Total Shaft Weight:</b>							<b>39,247</b>

### Bottom

### Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	59.40	0.00	82.29	36141.88	25.42	135.77	48.80	53.00	67.50	19943.6	20.60	111.5	0.200003
2	51.09	45.92	70.69	22915.30	21.64	116.78	40.49	98.92	55.90	11329.6	16.82	92.55	0.200003
3	42.47	92.75	50.36	11276.52	20.94	113.27	31.87	145.75	37.68	4723.37	15.32	85.00	0.200003
4	33.52	140.6	33.10	4610.18	19.74	107.25	26.35	176.50	25.96	2223.12	15.18	84.32	0.200003
5	27.67	172.0	19.16	1824.28	23.56	126.47	17.09	225.00	11.77	423.21	13.94	78.09	0.200003

## Load Summary

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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### Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	225.00	T-Arm (Round)	3	350.00	8.00	0.75	604.44	15.270	0.75	0.00	0.00
2	225.00	APXVSP18-C-A20	3	57.00	8.02	0.83	237.00	10.929	0.83	0.00	0.00
3	225.00	Beacon	1	36.00	2.72	1.00	174.71	3.709	1.00	0.00	0.00
4	225.00	RRUS-1900 MHz	3	44.00	2.52	0.50	108.93	3.179	0.50	0.00	0.00
5	225.00	RRUS- 800 MHz	3	54.00	2.52	0.50	121.91	3.179	0.50	0.00	0.00
6	225.00	APXVTM14-ALU-20	3	56.00	6.34	0.78	221.69	7.502	0.81	0.00	0.00
7	225.00	2500 MHz RRH - TD-RRH 8x20-25	3	70.00	4.05	0.69	171.78	5.522	0.71	0.00	0.00
8	212.00	Kathrein 741-989	3	16.50	3.15	0.72	98.25	4.091	0.74	0.00	3.00
9	212.00	KMW EPBQ-652L8H8	3	62.40	11.98	0.82	336.10	13.764	0.84	0.00	3.00
10	212.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2854.99	40.283	1.00	0.00	3.00
11	212.00	Handrail Kit (Site Pro HRK 14)	1	302.36	8.13	1.00	673.82	16.355	1.00	0.00	3.00
12	212.00	RFS ATM192012-0	6	11.00	1.12	0.76	42.91	1.912	0.78	0.00	3.00
13	212.00	Ericsson RRUS 11	3	51.00	2.52	0.71	125.82	3.176	0.73	0.00	3.00
14	212.00	Ericsson RRUS 8843 B2 B66A	3	70.00	1.64	0.85	117.60	2.175	0.87	0.00	3.00
15	212.00	Raycap DC6-48-60-18-8F	2	31.80	0.92	1.00	95.80	1.373	1.00	0.00	3.00
16	212.00	Cellmax - XXQLH-654L8H8-iVT	3	104.90	17.15	0.73	485.98	18.947	0.74	0.00	0.00
17	212.00	Ericsson RRUS 4478 B14	3	59.40	1.65	0.70	102.33	2.187	0.71	0.00	0.00
18	195.00	RFS APXV18-206517S-C-A20 (Dual	3	24.20	5.15	0.74	118.56	7.612	0.74	0.00	0.00
19	195.00	RFS APXVAARR24_43-U-NA20	3	128.00	20.24	0.74	627.11	29.915	0.74	0.00	0.00
20	195.00	PV-LPP12M-HR-B	1	1870.00	44.00	1.00	3746.17	00.758	1.00	0.00	0.00
21	195.00	Ericsson KRY 112 489/2	3	13.20	0.56	0.83	31.75	1.107	0.83	0.00	0.00
22	195.00	Ericsson 4449 B71+B12	3	70.00	1.65	0.67	140.54	2.204	0.67	0.00	0.00
23	195.00	CCI KRY112891	4	16.10	0.70	0.50	39.03	1.362	0.50	0.00	0.00
24	120.00	Single light	3	3.00	0.20	0.75	12.42	0.364	0.75	0.00	0.00
<b>Totals:</b>			<b>67</b>	<b>7,603.16</b>			<b>19,041.47</b>				

### Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	225.00	(1) 1-1/4" Hybrid	0.00	Outside
0.00	225.00	(3) 1.5" Hybrid	1.50	Outside
0.00	225.00	(1) Safety Cable	0.38	Inside
0.00	225.00	(1) Step bolts (ladder)	0.63	Inside
0.00	215.00	(2) 0.92" DC	0.00	Inside
0.00	215.00	(1) 1 1/4" Fiber	0.00	Inside
0.00	215.00	(6) 1 5/8" Coax	0.00	Inside
0.00	215.00	(1) 2" Conduit	0.00	Inside
0.00	215.00	(2) 3/4" DC	0.00	Inside
0.00	215.00	(1) 3/8" Fiber	0.00	Inside
0.00	215.00	(1) 3/8" RET	0.00	Inside
0.00	195.00	(1) 1 1/4"6x12 6AWG 80m HC Hybrid	0.00	Inside
0.00	195.00	(6) 1 5/8" Coax	3.96	Outside

## Shaft Section Properties

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Increment Length:** 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in <sup>3</sup> )	Weight (lb)
0.00		0.4375	59.400	82.290	36141.9	25.42	135.77	73.8	1193.	0.0
5.00		0.4375	58.400	80.894	34334.0	24.96	133.49	74.3	1153.	1388.2
10.00		0.4375	57.400	79.498	32587.4	24.51	131.20	74.8	1113.	1364.4
15.00		0.4375	56.400	78.103	30901.1	24.05	128.91	75.4	1074.	1340.7
20.00		0.4375	55.400	76.707	29273.9	23.60	126.63	75.9	1036.	1317.0
25.00		0.4375	54.400	75.311	27705.0	23.14	124.34	76.4	999.0	1293.2
30.00		0.4375	53.400	73.916	26193.1	22.69	122.06	76.9	962.2	1269.5
35.00		0.4375	52.400	72.520	24737.2	22.23	119.77	77.4	926.0	1245.7
40.00		0.4375	51.400	71.124	23336.3	21.78	117.49	77.9	890.6	1222.0
45.00		0.4375	50.400	69.729	21989.4	21.32	115.20	78.4	855.8	1198.2
45.92	Bot - Section 2	0.4375	50.217	69.473	21748.2	21.24	114.78	78.5	849.5	217.1
50.00		0.4375	49.400	68.333	20695.2	20.87	112.91	79.0	821.8	1931.7
53.00	Top - Section 1	0.4375	49.675	68.717	21045.9	20.99	113.54	0.0	0.0	1399.1
55.00		0.4375	49.275	68.159	20537.1	20.81	112.63	79.0	817.6	465.8
60.00		0.4375	48.275	66.763	19301.2	20.36	110.34	79.5	784.3	1147.8
65.00		0.4375	47.275	65.367	18115.9	19.90	108.06	80.1	751.7	1124.0
70.00		0.4375	46.275	63.972	16980.1	19.45	105.77	80.6	719.8	1100.3
75.00		0.4375	45.275	62.576	15892.8	18.99	103.49	81.1	688.6	1076.5
80.00		0.4375	44.275	61.180	14853.0	18.54	101.20	81.6	658.1	1052.8
85.00		0.4375	43.275	59.785	13859.5	18.08	98.91	82.1	628.2	1029.0
90.00		0.4375	42.275	58.389	12911.4	17.63	96.63	82.5	599.1	1005.3
92.75	Bot - Section 3	0.4375	41.725	57.622	12408.8	17.38	95.37	82.5	583.4	542.8
95.00		0.4375	41.275	56.993	12007.5	17.17	94.34	82.5	570.7	822.3
98.92	Top - Section 2	0.3750	41.241	48.886	10314.2	20.28	109.98	0.0	0.0	1410.1
100.00		0.3750	41.025	48.627	10151.0	20.17	109.40	79.7	485.4	179.7
105.00		0.3750	40.025	47.431	9420.1	19.64	106.73	80.3	461.7	817.2
110.00		0.3750	39.025	46.235	8725.2	19.11	104.07	80.9	438.6	796.8
115.00		0.3750	38.025	45.038	8065.3	18.58	101.40	81.5	416.1	776.5
120.00		0.3750	37.025	43.842	7439.6	18.05	98.73	82.1	394.1	756.1
125.00		0.3750	36.025	42.646	6847.0	17.52	96.07	82.5	372.8	735.7
130.00		0.3750	35.025	41.450	6286.8	16.99	93.40	82.5	352.1	715.4
135.00		0.3750	34.025	40.253	5758.1	16.46	90.73	82.5	332.0	695.0
140.00		0.3750	33.025	39.057	5259.8	15.93	88.07	82.5	312.4	674.7
140.67	Bot - Section 4	0.3750	32.891	38.898	5195.6	15.86	87.71	82.5	309.9	88.4
145.00		0.3750	32.025	37.861	4791.2	15.40	85.40	82.5	293.5	1047.6
145.75	Top - Section 3	0.3125	32.500	32.087	4199.5	19.10	104.00	0.0	0.0	178.5
150.00		0.3125	31.650	31.239	3875.5	18.55	101.28	81.6	240.2	457.9
155.00		0.3125	30.650	30.242	3516.2	17.92	98.08	82.3	225.0	523.0
160.00		0.3125	29.650	29.245	3179.8	17.28	94.88	82.5	210.4	506.1
165.00		0.3125	28.650	28.249	2865.6	16.64	91.68	82.5	196.2	489.1
170.00		0.3125	27.650	27.252	2572.8	16.01	88.48	82.5	182.5	472.1
172.08	Bot - Section 5	0.3125	27.234	26.837	2457.1	15.74	87.15	82.5	177.0	191.4
175.00		0.3125	26.650	26.255	2300.7	15.37	85.28	82.5	169.3	452.1
176.50	Top - Section 4	0.2188	26.788	18.544	1653.8	22.76	122.43	0.0	0.0	227.9
180.00		0.2188	26.087	18.055	1526.4	22.12	119.23	77.5	114.8	218.2
185.00		0.2188	25.087	17.357	1356.1	21.22	114.66	78.6	106.0	301.3
190.00		0.2188	24.087	16.659	1199.0	20.31	110.09	79.6	97.6	289.4
195.00		0.2188	23.087	15.961	1054.5	19.40	105.52	80.6	89.6	277.5
200.00		0.2188	22.087	15.263	922.1	18.49	100.95	81.7	81.9	265.6
205.00		0.2188	21.087	14.565	801.3	17.58	96.38	82.5	74.5	253.8

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in <sup>3</sup> )	Weight (lb)
210.00		0.2188	20.087	13.867	691.6	16.67	91.81	82.5	67.5	241.9
212.00		0.2188	19.687	13.588	650.6	16.31	89.98	82.5	64.8	93.4
215.00		0.2188	19.087	13.169	592.3	15.76	87.24	82.5	60.9	136.6
220.00		0.2188	18.087	12.472	503.0	14.85	82.66	82.5	54.6	218.1
225.00		0.2188	17.087	11.774	423.2	13.94	78.09	82.5	48.6	206.3
										<b>39246.7</b>



## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 5



**Load Case:** 1.2D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.118	18.83	423.43	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.118	18.83	416.30	0.750	0.000	5.00	25.022	18.77	565.4	0.0	1665.8
10.00		1.00	0.85	17.118	18.83	409.17	0.750	0.000	5.00	24.598	18.45	555.8	0.0	1637.3
15.00		1.00	0.85	17.118	18.83	402.04	0.750	0.000	5.00	24.173	18.13	546.2	0.0	1608.8
20.00		1.00	0.90	18.163	19.98	406.79	0.750	0.000	5.00	23.748	17.81	569.4	0.0	1580.3
25.00		1.00	0.95	19.037	20.94	408.94	0.750	0.000	5.00	23.323	17.49	586.1	0.0	1551.9
30.00		1.00	0.98	19.782	21.76	409.20	0.750	0.000	5.00	22.898	17.17	597.9	0.0	1523.4
35.00		1.00	1.01	20.434	22.48	408.11	0.753 *	0.000	5.00	22.473	16.92	608.4	0.0	1494.9
40.00		1.00	1.04	21.017	23.12	405.99	0.757 *	0.000	5.00	22.049	16.69	617.5	0.0	1466.4
45.00		1.00	1.07	21.545	23.70	403.05	0.762 *	0.000	5.00	21.624	16.47	624.6	0.0	1437.9
45.92 Bot - Section 2		1.00	1.07	21.636	23.80	402.44	0.765 *	0.000	0.92	3.918	3.00	114.1	0.0	260.5
50.00		1.00	1.09	22.028	24.23	399.46	0.767 *	0.000	4.08	17.584	13.49	522.8	0.0	2318.1
53.00 Top - Section 1		1.00	1.11	22.300	24.53	397.04	0.770 *	0.000	3.00	12.738	9.81	385.2	0.0	1678.9
55.00		1.00	1.12	22.474	24.72	402.47	0.769 *	0.000	2.00	8.407	6.46	255.6	0.0	558.9
60.00		1.00	1.14	22.890	25.18	397.93	0.772 *	0.000	5.00	20.721	16.00	644.5	0.0	1377.3
65.00		1.00	1.16	23.279	25.61	392.98	0.777 *	0.000	5.00	20.296	15.77	646.3	0.0	1348.8
70.00		1.00	1.17	23.645	26.01	387.68	0.783 *	0.000	5.00	19.871	15.55	647.2	0.0	1320.3
75.00		1.00	1.19	23.991	26.39	382.07	0.788 *	0.000	5.00	19.446	15.33	647.2	0.0	1291.8
80.00		1.00	1.21	24.319	26.75	376.18	0.794 *	0.000	5.00	19.022	15.11	646.5	0.0	1263.3
85.00		1.00	1.22	24.631	27.09	370.04	0.800 *	0.000	5.00	18.597	14.88	645.2	0.0	1234.9
90.00		1.00	1.24	24.930	27.42	363.67	0.807 *	0.000	5.00	18.172	14.66	643.2	0.0	1206.4
92.75 Bot - Section 3		1.00	1.25	25.088	27.60	360.07	0.812 *	0.000	2.75	9.814	7.97	351.8	0.0	651.4
95.00		1.00	1.25	25.215	27.74	357.09	0.815 *	0.000	2.25	8.077	6.59	292.3	0.0	986.7
98.92 Top - Section 2		1.00	1.26	25.430	27.97	351.81	0.820 *	0.000	3.92	13.855	11.36	508.3	0.0	1692.1
100.00		1.00	1.27	25.489	28.04	356.85	0.818 *	0.000	1.08	3.786	3.10	138.9	0.0	215.7
105.00		1.00	1.28	25.752	28.33	349.94	0.822 *	0.000	5.00	17.216	14.16	641.7	0.0	980.6
110.00		1.00	1.29	26.005	28.61	342.87	0.830 *	0.000	5.00	16.791	13.93	637.8	0.0	956.2
115.00		1.00	1.30	26.250	28.87	335.65	0.838 *	0.000	5.00	16.366	13.71	633.5	0.0	931.7
120.00 Appurtenance(s)		1.00	1.32	26.486	29.13	328.29	0.846 *	0.000	5.00	15.942	13.49	628.8	0.0	907.3
125.00		1.00	1.33	26.715	29.39	320.80	0.855 *	0.000	5.00	15.517	13.27	623.7	0.0	882.9
130.00		1.00	1.34	26.936	29.63	313.19	0.864 *	0.000	5.00	15.092	13.04	618.3	0.0	858.5
135.00		1.00	1.35	27.151	29.87	305.46	0.874 *	0.000	5.00	14.667	12.82	612.6	0.0	834.1
140.00		1.00	1.36	27.360	30.10	297.62	0.884 *	0.000	5.00	14.242	12.60	606.5	0.0	809.6
140.67 Bot - Section 4		1.00	1.36	27.387	30.13	296.56	0.891 *	0.000	0.67	1.867	1.66	80.1	0.0	106.1
145.00		1.00	1.37	27.563	30.32	289.67	0.896 *	0.000	4.33	12.181	10.92	529.6	0.0	1257.1
145.75 Top - Section 3		1.00	1.37	27.593	30.35	288.47	0.902 *	0.000	0.75	2.076	1.87	90.9	0.0	214.2
150.00		1.00	1.38	27.760	30.54	287.30	0.901 *	0.000	4.25	11.582	10.43	509.7	0.0	549.5
155.00		1.00	1.39	27.952	30.75	279.19	0.912 *	0.000	5.00	13.233	12.07	593.6	0.0	627.6
160.00		1.00	1.40	28.140	30.95	270.98	0.925 *	0.000	5.00	12.808	11.84	586.5	0.0	607.3
165.00		1.00	1.41	28.323	31.16	262.69	0.938 *	0.000	5.00	12.384	11.62	579.2	0.0	586.9
170.00		1.00	1.42	28.501	31.35	254.32	0.953 *	0.000	5.00	11.959	11.40	571.7	0.0	566.6
172.08 Bot - Section 5		1.00	1.42	28.574	31.43	250.82	0.964 *	0.000	2.08	4.850	4.68	235.1	0.0	229.7
175.00		1.00	1.42	28.676	31.54	245.87	0.972 *	0.000	2.92	6.793	6.60	333.3	0.0	542.5
176.50 Top - Section 4		1.00	1.43	28.727	31.60	243.33	1.200 *	0.000	1.50	3.426	4.11	207.8	0.0	273.5
180.00		1.00	1.43	28.846	31.73	241.40	1.200 *	0.000	3.50	7.869	9.44	479.4	0.0	261.8
185.00		1.00	1.44	29.013	31.91	232.82	1.200 *	0.000	5.00	10.870	13.04	666.1	0.0	361.5
190.00		1.00	1.45	29.177	32.09	224.16	1.200 *	0.000	5.00	10.445	12.53	643.7	0.0	347.3

## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	Page: 6
	<b>Struct Class:</b> II	



195.00 Appurtenance(s)	1.00	1.46	29.337	32.27	215.45	1.200 *	0.000	5.00	10.020	12.02	620.9	0.0	333.0
200.00	1.00	1.46	29.493	32.44	206.66	0.750	0.000	5.00	9.596	7.20	373.6	0.0	318.8
205.00	1.00	1.47	29.647	32.61	197.82	0.750	0.000	5.00	9.171	6.88	358.9	0.0	304.5
210.00	1.00	1.48	29.798	32.78	188.92	0.750	0.000	5.00	8.746	6.56	344.0	0.0	290.3
212.00 Appurtenance(s)	1.00	1.48	29.857	32.84	185.34	0.750	0.000	2.00	3.379	2.53	133.2	0.0	112.1
215.00	1.00	1.49	29.946	32.94	179.96	0.750	0.000	3.00	4.942	3.71	195.3	0.0	163.9
220.00	1.00	1.49	30.091	33.10	170.94	0.750	0.000	5.00	7.896	5.92	313.6	0.0	261.8
225.00 Appurtenance(s)	1.00	1.50	30.234	33.26	161.87	0.750	0.000	5.00	7.471	5.60	298.2	0.0	247.5
<b>Totals:</b>								<b>225.00</b>			<b>26,107.5</b>		<b>47,096.0</b>

\* Cf Adjusted by Linear Load Ra Effect

## Discrete Appurtenance Forces

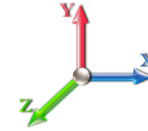
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 91 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 32

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	225.00	Beacon	1	30.234	33.257	1.00	1.00	2.72	43.20	0.000	0.000	144.74	0.00	0.00
2	225.00	T-Arm (Round)	3	30.234	33.257	0.56	0.75	13.50	1260.00	0.000	0.000	718.36	0.00	0.00
3	225.00	APXVSP18-C-A20	3	30.234	33.257	0.75	0.90	17.97	205.20	0.000	0.000	956.36	0.00	0.00
4	225.00	2500 MHz RRH - TD-RRH	3	30.234	33.257	0.62	0.90	7.55	252.00	0.000	0.000	401.49	0.00	0.00
5	225.00	RRUS-1900 MHz	3	30.234	33.257	0.45	0.90	3.40	158.40	0.000	0.000	181.03	0.00	0.00
6	225.00	RRUS- 800 MHz	3	30.234	33.257	0.45	0.90	3.40	194.40	0.000	0.000	181.03	0.00	0.00
7	225.00	APXVTM14-ALU-20	3	30.234	33.257	0.71	0.90	13.42	201.60	0.000	0.000	714.13	0.00	0.00
8	212.00	Ericsson RRUS 4478 B14	3	29.857	32.843	0.52	0.75	2.60	213.84	0.000	0.000	136.56	0.00	0.00
9	212.00	Cellmax -	3	29.857	32.843	0.55	0.75	28.17	377.64	0.000	0.000	1480.25	0.00	0.00
10	212.00	Raycap DC6-48-60-18-8F	2	29.946	32.940	1.00	1.00	1.84	76.32	0.000	3.000	96.98	0.00	290.93
11	212.00	Ericsson RRUS 8843 B2	3	29.946	32.940	0.64	0.75	3.14	252.00	0.000	3.000	165.31	0.00	495.92
12	212.00	Ericsson RRUS 11	3	29.946	32.940	0.53	0.75	4.03	183.60	0.000	3.000	212.17	0.00	636.52
13	212.00	RFS ATM192012-0	6	29.946	32.940	0.57	0.75	3.83	79.20	0.000	3.000	201.88	0.00	605.64
14	212.00	Low Profile	1	29.946	32.940	1.00	1.00	22.00	1800.00	0.000	3.000	1159.50	0.00	3478.51
15	212.00	KMW EPBQ-652L8H8	3	29.946	32.940	0.61	0.75	22.10	224.64	0.000	3.000	1164.94	0.00	3494.81
16	212.00	Kathrein 741-989	3	29.946	32.940	0.54	0.75	5.10	59.40	0.000	3.000	268.95	0.00	806.86
17	212.00	Handrail Kit (Site Pro HRK	1	29.946	32.940	1.00	1.00	8.13	362.83	0.000	3.000	428.49	0.00	1285.47
18	195.00	PV-LPP12M-HR-B	1	29.337	32.270	1.00	1.00	44.00	2244.00	0.000	0.000	2271.82	0.00	0.00
19	195.00	RFS	3	29.337	32.270	0.55	0.75	8.57	87.12	0.000	0.000	442.73	0.00	0.00
20	195.00	RFS	3	29.337	32.270	0.55	0.75	33.70	460.80	0.000	0.000	1739.99	0.00	0.00
21	195.00	Ericsson 4449 B71+B12	3	29.337	32.270	0.50	0.75	2.49	252.00	0.000	0.000	128.43	0.00	0.00
22	195.00	Ericsson KRY 112 489/2	3	29.337	32.270	0.62	0.75	1.05	47.52	0.000	0.000	54.00	0.00	0.00
23	195.00	CCI KRY112891	4	29.337	32.270	0.40	0.80	1.12	77.28	0.000	0.000	57.83	0.00	0.00
24	120.00	Single light	3	26.486	29.135	0.56	0.75	0.34	10.80	0.000	0.000	15.73	0.00	0.00
<b>Totals:</b>									<b>9,123.79</b>			<b>13,322.68</b>		

## Total Applied Force Summary

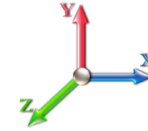
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 91 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 32

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		565.42	1801.95	0.00	0.00
10.00		555.82	1773.46	0.00	0.00
15.00		546.22	1744.96	0.00	0.00
20.00		569.37	1716.47	0.00	0.00
25.00		586.08	1687.98	0.00	0.00
30.00		597.92	1659.48	0.00	0.00
35.00		608.43	1630.99	0.00	0.00
40.00		617.52	1602.49	0.00	0.00
45.00		624.57	1574.00	0.00	0.00
45.92		114.07	285.48	0.00	0.00
50.00		522.82	2429.25	0.00	0.00
53.00		385.17	1760.54	0.00	0.00
55.00		255.58	613.36	0.00	0.00
60.00		644.47	1513.45	0.00	0.00
65.00		646.28	1484.95	0.00	0.00
70.00		647.16	1456.46	0.00	0.00
75.00		647.22	1427.96	0.00	0.00
80.00		646.52	1399.47	0.00	0.00
85.00		645.16	1370.97	0.00	0.00
90.00		643.18	1342.48	0.00	0.00
92.75		351.80	726.22	0.00	0.00
95.00		292.25	1047.99	0.00	0.00
98.92		508.31	1798.72	0.00	0.00
100.00		138.92	245.17	0.00	0.00
105.00		641.65	1116.72	0.00	0.00
110.00		637.76	1092.29	0.00	0.00
115.00		633.45	1067.87	0.00	0.00
120.00	(3) attachments	644.49	1054.25	0.00	0.00
125.00		623.70	1019.02	0.00	0.00
130.00		618.29	994.60	0.00	0.00
135.00		612.57	970.17	0.00	0.00
140.00		606.54	945.75	0.00	0.00
140.67		80.14	124.25	0.00	0.00
145.00		529.56	1375.11	0.00	0.00
145.75		90.94	234.59	0.00	0.00
150.00		509.67	665.19	0.00	0.00
155.00		593.61	763.75	0.00	0.00
160.00		586.55	743.39	0.00	0.00
165.00		579.24	723.04	0.00	0.00
170.00		571.70	702.69	0.00	0.00
172.08		235.14	286.32	0.00	0.00
175.00		333.31	622.04	0.00	0.00
176.50		245.92	314.26	0.00	0.00
180.00		568.83	357.16	0.00	0.00
185.00		794.14	497.63	0.00	0.00
190.00		772.18	483.38	0.00	0.00

## Total Applied Force Summary

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	Page: 9
<b>Struct Class:</b> II		



195.00	(17) attachments	5444.64	3637.85	0.00	0.00
200.00		373.57	413.48	0.00	0.00
205.00		358.89	399.23	0.00	0.00
210.00		344.01	384.97	0.00	0.00
212.00	(28) attachments	5448.21	3779.47	0.00	11094.65
215.00		195.34	220.72	0.00	0.00
220.00		313.64	296.05	0.00	0.00
225.00	(19) attachments	3595.29	2596.60	0.00	0.00
<b>Totals:</b>		<b>39,943.25</b>	<b>61,976.09</b>	<b>0.00</b>	<b>11,094.65</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



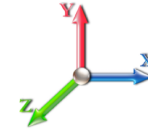
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**Load Case:** 1.2D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	17.118	0.00	5.72
5.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.091	0.000	17.118	0.00	20.70
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	17.118	0.00	37.44
10.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	17.118	0.00	5.72
10.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.092	0.000	17.118	0.00	20.70
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.092	0.000	17.118	0.00	37.44
15.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	17.118	0.00	5.72
15.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.094	0.000	17.118	0.00	20.70
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.094	0.000	17.118	0.00	37.44
20.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	18.163	0.00	5.72
20.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.096	0.000	18.163	0.00	20.70
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.096	0.000	18.163	0.00	37.44
25.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.098	0.000	19.037	0.00	5.72
25.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.098	0.000	19.037	0.00	20.70
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.098	0.000	19.037	0.00	37.44
30.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.099	0.000	19.782	0.00	5.72
30.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.099	0.000	19.782	0.00	20.70
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.099	0.000	19.782	0.00	37.44
35.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	20.434	0.00	5.72
35.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.101	1.004	20.434	0.00	20.70
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.101	1.004	20.434	0.00	37.44
40.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.103	1.010	21.017	0.00	5.72
40.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.103	1.010	21.017	0.00	20.70
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.103	1.010	21.017	0.00	37.44
45.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.105	1.016	21.545	0.00	5.72
45.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.105	1.016	21.545	0.00	20.70
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.105	1.016	21.545	0.00	37.44
45.92	1-1/4" Hybrid	Yes	0.92	0.000	0.00	0.00	0.00	0.106	1.019	21.636	0.00	1.05
45.92	1.5" Hybrid	Yes	0.92	0.000	1.50	0.11	0.00	0.106	1.019	21.636	0.00	3.80
45.92	1 5/8" Coax	Yes	0.92	0.000	3.96	0.30	0.00	0.106	1.019	21.636	0.00	6.86
50.00	1-1/4" Hybrid	Yes	4.08	0.000	0.00	0.00	0.00	0.108	1.023	22.028	0.00	4.67
50.00	1.5" Hybrid	Yes	4.08	0.000	1.50	0.51	0.00	0.108	1.023	22.028	0.00	16.90
50.00	1 5/8" Coax	Yes	4.08	0.000	3.96	1.35	0.00	0.108	1.023	22.028	0.00	30.58
53.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.109	1.027	22.300	0.00	3.43
53.00	1.5" Hybrid	Yes	3.00	0.000	1.50	0.38	0.00	0.109	1.027	22.300	0.00	12.42
53.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.109	1.027	22.300	0.00	22.46
55.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.108	1.025	22.474	0.00	2.29
55.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.25	0.00	0.108	1.025	22.474	0.00	8.28
55.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.108	1.025	22.474	0.00	14.98
60.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	22.890	0.00	5.72
60.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.110	1.029	22.890	0.00	20.70
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.110	1.029	22.890	0.00	37.44
65.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	23.279	0.00	5.72
65.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.112	1.036	23.279	0.00	20.70
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.112	1.036	23.279	0.00	37.44
70.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.114	1.043	23.645	0.00	5.72
70.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.114	1.043	23.645	0.00	20.70

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



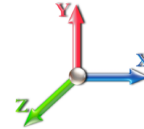
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**Load Case:** 1.2D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.114	1.043	23.645	0.00	37.44
75.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.051	23.991	0.00	5.72
75.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.117	1.051	23.991	0.00	20.70
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.117	1.051	23.991	0.00	37.44
80.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.059	24.319	0.00	5.72
80.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.120	1.059	24.319	0.00	20.70
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.120	1.059	24.319	0.00	37.44
85.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.122	1.067	24.631	0.00	5.72
85.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.122	1.067	24.631	0.00	20.70
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.122	1.067	24.631	0.00	37.44
90.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.125	1.076	24.930	0.00	5.72
90.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.125	1.076	24.930	0.00	20.70
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.125	1.076	24.930	0.00	37.44
92.75	1-1/4" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.128	1.083	25.088	0.00	3.15
92.75	1.5" Hybrid	Yes	2.75	0.000	1.50	0.34	0.00	0.128	1.083	25.088	0.00	11.38
92.75	1 5/8" Coax	Yes	2.75	0.000	3.96	0.91	0.00	0.128	1.083	25.088	0.00	20.59
95.00	1-1/4" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.129	1.087	25.215	0.00	2.58
95.00	1.5" Hybrid	Yes	2.25	0.000	1.50	0.28	0.00	0.129	1.087	25.215	0.00	9.31
95.00	1 5/8" Coax	Yes	2.25	0.000	3.96	0.74	0.00	0.129	1.087	25.215	0.00	16.85
98.92	1-1/4" Hybrid	Yes	3.92	0.000	0.00	0.00	0.00	0.131	1.093	25.430	0.00	4.48
98.92	1.5" Hybrid	Yes	3.92	0.000	1.50	0.49	0.00	0.131	1.093	25.430	0.00	16.22
98.92	1 5/8" Coax	Yes	3.92	0.000	3.96	1.29	0.00	0.131	1.093	25.430	0.00	29.33
100.00	1-1/4" Hybrid	Yes	1.08	0.000	0.00	0.00	0.00	0.130	1.091	25.489	0.00	1.24
100.00	1.5" Hybrid	Yes	1.08	0.000	1.50	0.14	0.00	0.130	1.091	25.489	0.00	4.48
100.00	1 5/8" Coax	Yes	1.08	0.000	3.96	0.36	0.00	0.130	1.091	25.489	0.00	8.11
105.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.132	1.096	25.752	0.00	5.72
105.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.132	1.096	25.752	0.00	20.70
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.132	1.096	25.752	0.00	37.44
110.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.135	1.106	26.005	0.00	5.72
110.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.135	1.106	26.005	0.00	20.70
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.135	1.106	26.005	0.00	37.44
115.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.139	1.117	26.250	0.00	5.72
115.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.139	1.117	26.250	0.00	20.70
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.139	1.117	26.250	0.00	37.44
120.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	26.486	0.00	5.72
120.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.143	1.128	26.486	0.00	20.70
120.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.143	1.128	26.486	0.00	37.44
125.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.147	1.140	26.715	0.00	5.72
125.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.147	1.140	26.715	0.00	20.70
125.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.147	1.140	26.715	0.00	37.44
130.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.151	1.152	26.936	0.00	5.72
130.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.151	1.152	26.936	0.00	20.70
130.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.151	1.152	26.936	0.00	37.44
135.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.165	27.151	0.00	5.72
135.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.155	1.165	27.151	0.00	20.70
135.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.155	1.165	27.151	0.00	37.44
140.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.160	1.179	27.360	0.00	5.72

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

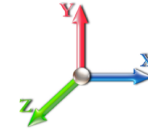


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**Load Case:** 1.2D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
140.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.160	1.179	27.360	0.00	20.70
140.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.160	1.179	27.360	0.00	37.44
140.67	1-1/4" Hybrid	Yes	0.67	0.000	0.00	0.00	0.00	0.162	1.187	27.387	0.00	0.76
140.67	1.5" Hybrid	Yes	0.67	0.000	1.50	0.08	0.00	0.162	1.187	27.387	0.00	2.76
140.67	1 5/8" Coax	Yes	0.67	0.000	3.96	0.22	0.00	0.162	1.187	27.387	0.00	4.99
145.00	1-1/4" Hybrid	Yes	4.33	0.000	0.00	0.00	0.00	0.165	1.195	27.563	0.00	4.96
145.00	1.5" Hybrid	Yes	4.33	0.000	1.50	0.54	0.00	0.165	1.195	27.563	0.00	17.94
145.00	1 5/8" Coax	Yes	4.33	0.000	3.96	1.43	0.00	0.165	1.195	27.563	0.00	32.45
145.75	1-1/4" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.168	1.203	27.593	0.00	0.86
145.75	1.5" Hybrid	Yes	0.75	0.000	1.50	0.09	0.00	0.168	1.203	27.593	0.00	3.10
145.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.25	0.00	0.168	1.203	27.593	0.00	5.62
150.00	1-1/4" Hybrid	Yes	4.25	0.000	0.00	0.00	0.00	0.167	1.201	27.760	0.00	4.87
150.00	1.5" Hybrid	Yes	4.25	0.000	1.50	0.53	0.00	0.167	1.201	27.760	0.00	17.59
150.00	1 5/8" Coax	Yes	4.25	0.000	3.96	1.40	0.00	0.167	1.201	27.760	0.00	31.82
155.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.172	1.216	27.952	0.00	5.72
155.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.172	1.216	27.952	0.00	20.70
155.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.172	1.216	27.952	0.00	37.44
160.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.233	28.140	0.00	5.72
160.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.178	1.233	28.140	0.00	20.70
160.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.178	1.233	28.140	0.00	37.44
165.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.184	1.251	28.323	0.00	5.72
165.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.184	1.251	28.323	0.00	20.70
165.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.184	1.251	28.323	0.00	37.44
170.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.190	1.271	28.501	0.00	5.72
170.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.190	1.271	28.501	0.00	20.70
170.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.190	1.271	28.501	0.00	37.44
172.08	1-1/4" Hybrid	Yes	2.08	0.000	0.00	0.00	0.00	0.195	1.285	28.574	0.00	2.38
172.08	1.5" Hybrid	Yes	2.08	0.000	1.50	0.26	0.00	0.195	1.285	28.574	0.00	8.61
172.08	1 5/8" Coax	Yes	2.08	0.000	3.96	0.69	0.00	0.195	1.285	28.574	0.00	15.58
175.00	1-1/4" Hybrid	Yes	2.92	0.000	0.00	0.00	0.00	0.199	1.296	28.676	0.00	3.34
175.00	1.5" Hybrid	Yes	2.92	0.000	1.50	0.37	0.00	0.199	1.296	28.676	0.00	12.09
175.00	1 5/8" Coax	Yes	2.92	0.000	3.96	0.96	0.00	0.199	1.296	28.676	0.00	21.86
176.50	1-1/4" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.202	0.000	28.727	0.00	1.71
176.50	1.5" Hybrid	Yes	1.50	1.200	1.50	0.19	0.22	0.202	0.000	28.727	11.35	6.20
176.50	1 5/8" Coax	Yes	1.50	1.071	3.96	0.49	0.53	0.202	0.000	28.727	26.74	11.21
180.00	1-1/4" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.203	0.000	28.846	0.00	4.01
180.00	1.5" Hybrid	Yes	3.50	1.200	1.50	0.44	0.53	0.203	0.000	28.846	26.68	14.50
180.00	1 5/8" Coax	Yes	3.50	1.068	3.96	1.16	1.24	0.203	0.000	28.846	62.71	26.23
185.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.209	0.000	29.013	0.00	5.72
185.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.209	0.000	29.013	38.30	20.70
185.00	1 5/8" Coax	Yes	5.00	1.065	3.96	1.65	1.76	0.209	0.000	29.013	89.76	37.44
190.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.218	0.000	29.177	0.00	5.72
190.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.218	0.000	29.177	38.51	20.70
190.00	1 5/8" Coax	Yes	5.00	1.062	3.96	1.65	1.75	0.218	0.000	29.177	90.01	37.44
195.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.227	0.000	29.337	0.00	5.72
195.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.227	0.000	29.337	38.72	20.70
195.00	1 5/8" Coax	Yes	5.00	1.059	3.96	1.65	1.75	0.227	0.000	29.337	90.26	37.44



## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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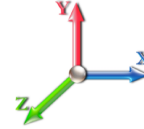


**Load Case:** 1.2D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
200.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	29.493	0.00	5.72
200.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.065	0.000	29.493	0.00	20.70
205.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	29.647	0.00	5.72
205.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.068	0.000	29.647	0.00	20.70
210.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.071	0.000	29.798	0.00	5.72
210.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.071	0.000	29.798	0.00	20.70
212.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	29.857	0.00	2.29
212.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.25	0.00	0.074	0.000	29.857	0.00	8.28
215.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.076	0.000	29.946	0.00	3.43
215.00	1.5" Hybrid	Yes	3.00	0.000	1.50	0.38	0.00	0.076	0.000	29.946	0.00	12.42
220.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.079	0.000	30.091	0.00	5.72
220.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.079	0.000	30.091	0.00	20.70
225.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	30.234	0.00	5.72
225.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.084	0.000	30.234	0.00	20.70
<b>Totals:</b>											<b>513.1</b>	<b>2,649.2</b>

## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	<b>9/22/2020</b>
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

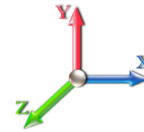


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**Load Case:** 1.2D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-61.89	-40.07	0.00	-6193.5	0.00	6193.58	5466.70	2733.35	13309.4	6607.36	0.00	0.000	0.000	0.949
5.00	-59.92	-39.76	0.00	-5993.2	0.00	5993.22	5411.44	2705.72	12949.7	6428.82	0.13	-0.240	0.000	0.944
10.00	-57.98	-39.44	0.00	-5794.4	0.00	5794.42	5354.88	2677.44	12591.7	6251.05	0.51	-0.484	0.000	0.938
15.00	-56.07	-39.12	0.00	-5597.2	0.00	5597.22	5297.04	2648.52	12235.3	6074.14	1.15	-0.733	0.000	0.932
20.00	-54.19	-38.77	0.00	-5401.6	0.00	5401.61	5237.89	2618.95	11880.8	5898.16	2.05	-0.986	0.000	0.926
25.00	-52.34	-38.39	0.00	-5207.7	0.00	5207.76	5177.46	2588.73	11528.4	5723.20	3.22	-1.244	0.000	0.920
30.00	-50.52	-37.99	0.00	-5015.8	0.00	5015.82	5115.74	2557.87	11178.1	5549.33	4.67	-1.506	0.000	0.914
35.00	-48.73	-37.56	0.00	-4825.9	0.00	4825.90	5052.72	2526.36	10830.3	5376.63	6.38	-1.773	0.000	0.907
40.00	-46.98	-37.12	0.00	-4638.1	0.00	4638.10	4988.41	2494.20	10484.9	5205.19	8.39	-2.045	0.000	0.901
45.00	-45.32	-36.56	0.00	-4452.5	0.00	4452.53	4922.81	2461.40	10142.3	5035.08	10.68	-2.322	0.000	0.894
45.92	-44.95	-36.55	0.00	-4419.0	0.00	4419.02	4910.64	2455.32	10079.8	5004.05	11.13	-2.375	0.000	0.892
50.00	-42.42	-36.07	0.00	-4269.7	0.00	4269.78	4855.91	2427.96	9802.53	4866.39	13.26	-2.607	0.000	0.886
53.00	-40.59	-35.71	0.00	-4161.5	0.00	4161.58	4874.44	2437.22	9895.68	4912.63	14.95	-2.781	0.000	0.856
55.00	-39.87	-35.56	0.00	-4090.1	0.00	4090.17	4847.46	2423.73	9760.26	4845.41	16.14	-2.899	0.000	0.853
60.00	-38.22	-35.02	0.00	-3912.3	0.00	3912.38	4779.11	2389.56	9423.86	4678.40	19.33	-3.176	0.000	0.844
65.00	-36.60	-34.47	0.00	-3737.2	0.00	3737.28	4709.47	2354.74	9090.65	4512.98	22.80	-3.458	0.000	0.836
70.00	-35.02	-33.91	0.00	-3564.9	0.00	3564.92	4638.54	2319.27	8760.79	4349.22	26.57	-3.744	0.000	0.827
75.00	-33.47	-33.34	0.00	-3395.3	0.00	3395.37	4566.31	2283.16	8434.44	4187.21	30.65	-4.036	0.000	0.818
80.00	-31.95	-32.76	0.00	-3228.6	0.00	3228.66	4492.79	2246.40	8111.77	4027.03	35.03	-4.332	0.000	0.809
85.00	-30.46	-32.17	0.00	-3064.8	0.00	3064.86	4417.98	2208.99	7792.94	3868.74	39.72	-4.634	0.000	0.799
90.00	-29.05	-31.54	0.00	-2904.0	0.00	2904.00	4338.02	2169.01	7471.46	3709.15	44.73	-4.940	0.000	0.790
92.75	-28.27	-31.21	0.00	-2817.2	0.00	2817.26	4280.99	2140.50	7275.30	3611.77	47.62	-5.114	0.000	0.787
95.00	-27.14	-30.91	0.00	-2747.0	0.00	2747.05	4234.33	2117.17	7116.75	3533.05	50.07	-5.257	0.000	0.784
98.92	-25.32	-30.31	0.00	-2625.9	0.00	2625.97	3503.07	1751.53	5900.87	2929.44	54.48	-5.506	0.000	0.904
100.00	-24.97	-30.24	0.00	-2593.1	0.00	2593.14	3490.19	1745.09	5847.72	2903.05	55.73	-5.577	0.000	0.901
105.00	-23.74	-29.64	0.00	-2441.9	0.00	2441.94	3429.94	1714.97	5604.12	2782.12	61.75	-5.930	0.000	0.885
110.00	-22.54	-29.03	0.00	-2293.7	0.00	2293.75	3368.41	1684.21	5363.47	2662.65	68.14	-6.288	0.000	0.868
115.00	-21.37	-28.42	0.00	-2148.6	0.00	2148.61	3305.58	1652.79	5125.94	2544.73	74.91	-6.650	0.000	0.851
120.00	-20.23	-27.78	0.00	-2006.5	0.00	2006.53	3241.47	1620.73	4891.69	2428.44	82.05	-7.016	0.000	0.833
125.00	-19.12	-27.16	0.00	-1867.6	0.00	1867.62	3168.38	1584.19	4649.61	2308.26	89.58	-7.387	0.000	0.815
130.00	-18.04	-26.53	0.00	-1731.8	0.00	1731.83	3079.50	1539.75	4391.09	2179.92	97.49	-7.761	0.000	0.801
135.00	-16.99	-25.91	0.00	-1599.1	0.00	1599.15	2990.62	1495.31	4139.97	2055.26	105.79	-8.137	0.000	0.784
140.00	-16.05	-25.23	0.00	-1469.6	0.00	1469.63	2901.75	1450.87	3896.25	1934.26	114.49	-8.516	0.000	0.766
140.67	-15.85	-25.19	0.00	-1452.8	0.00	1452.81	2889.90	1444.95	3864.31	1918.41	115.67	-8.569	0.000	0.763
145.00	-14.49	-24.50	0.00	-1343.6	0.00	1343.67	2812.87	1406.44	3659.92	1816.94	123.58	-8.901	0.000	0.745
145.75	-14.19	-24.42	0.00	-1325.3	0.00	1325.30	2338.09	1169.04	3100.38	1539.16	124.97	-8.960	0.000	0.868
150.00	-13.46	-23.90	0.00	-1221.4	0.00	1221.49	2293.55	1146.78	2960.24	1469.59	133.06	-9.286	0.000	0.837
155.00	-12.63	-23.29	0.00	-1101.9	0.00	1101.97	2239.96	1119.98	2797.90	1389.00	142.97	-9.713	0.000	0.799
160.00	-11.83	-22.67	0.00	-985.54	0.00	985.54	2172.79	1086.39	2623.62	1302.47	153.32	-10.135	0.000	0.763
165.00	-11.07	-22.05	0.00	-872.20	0.00	872.20	2098.72	1049.36	2446.89	1214.74	164.10	-10.551	0.000	0.724
170.00	-10.38	-21.41	0.00	-761.95	0.00	761.95	2024.66	1012.33	2276.33	1130.07	175.30	-10.956	0.000	0.680
172.08	-10.07	-21.16	0.00	-717.42	0.00	717.42	1993.85	996.92	2207.19	1095.74	180.08	-11.126	0.000	0.660
175.00	-9.46	-20.74	0.00	-655.64	0.00	655.64	1950.60	975.30	2111.93	1048.45	186.92	-11.358	0.000	0.631
176.50	-9.13	-20.47	0.00	-624.61	0.00	624.61	1282.06	641.03	1405.37	697.69	190.47	-11.477	0.000	0.903
180.00	-8.77	-19.89	0.00	-552.91	0.00	552.91	1259.97	629.98	1344.43	667.43	198.94	-11.741	0.000	0.836
185.00	-8.30	-19.08	0.00	-453.44	0.00	453.44	1227.33	613.66	1258.55	624.80	211.40	-12.210	0.000	0.733
190.00	-7.87	-18.28	0.00	-358.04	0.00	358.04	1193.40	596.70	1174.12	582.88	224.32	-12.635	0.000	0.622
195.00	-5.46	-12.19	0.00	-266.65	0.00	266.65	1158.17	579.09	1091.29	541.76	237.65	-13.006	0.000	0.497

## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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200.00	-5.08	-11.76	0.00	-205.69	0.00	205.69	1121.66	560.83	1010.23	501.52	251.32	-13.325	0.000	0.415
205.00	-4.72	-11.34	0.00	-146.88	0.00	146.88	1082.14	541.07	929.63	461.51	265.30	-13.596	0.000	0.323
210.00	-4.41	-10.92	0.00	-90.19	0.00	90.19	1030.28	515.14	842.23	418.12	279.52	-13.807	0.000	0.220
212.00	-2.04	-4.73	0.00	-57.24	0.00	57.24	1009.54	504.77	808.47	401.36	285.27	-13.872	0.000	0.145
215.00	-1.86	-4.49	0.00	-43.05	0.00	43.05	978.43	489.21	759.14	376.87	293.92	-13.938	0.000	0.116
220.00	-1.65	-4.12	0.00	-20.59	0.00	20.59	926.57	463.29	680.37	337.76	308.42	-14.014	0.000	0.063
225.00	0.00	-3.60	0.00	0.00	0.00	0.00	874.71	437.36	605.91	300.80	322.97	-14.043	0.000	0.000

## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



**Load Case:** 0.9D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.118	18.83	423.43	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.118	18.83	416.30	0.750	0.000	5.00	25.022	18.77	565.4	0.0	1249.4
10.00		1.00	0.85	17.118	18.83	409.17	0.750	0.000	5.00	24.598	18.45	555.8	0.0	1228.0
15.00		1.00	0.85	17.118	18.83	402.04	0.750	0.000	5.00	24.173	18.13	546.2	0.0	1206.6
20.00		1.00	0.90	18.163	19.98	406.79	0.750	0.000	5.00	23.748	17.81	569.4	0.0	1185.3
25.00		1.00	0.95	19.037	20.94	408.94	0.750	0.000	5.00	23.323	17.49	586.1	0.0	1163.9
30.00		1.00	0.98	19.782	21.76	409.20	0.750	0.000	5.00	22.898	17.17	597.9	0.0	1142.5
35.00		1.00	1.01	20.434	22.48	408.11	0.753 *	0.000	5.00	22.473	16.92	608.4	0.0	1121.1
40.00		1.00	1.04	21.017	23.12	405.99	0.757 *	0.000	5.00	22.049	16.69	617.5	0.0	1099.8
45.00		1.00	1.07	21.545	23.70	403.05	0.762 *	0.000	5.00	21.624	16.47	624.6	0.0	1078.4
45.92 Bot - Section 2		1.00	1.07	21.636	23.80	402.44	0.765 *	0.000	0.92	3.918	3.00	114.1	0.0	195.4
50.00		1.00	1.09	22.028	24.23	399.46	0.767 *	0.000	4.08	17.584	13.49	522.8	0.0	1738.6
53.00 Top - Section 1		1.00	1.11	22.300	24.53	397.04	0.770 *	0.000	3.00	12.738	9.81	385.2	0.0	1259.1
55.00		1.00	1.12	22.474	24.72	402.47	0.769 *	0.000	2.00	8.407	6.46	255.6	0.0	419.2
60.00		1.00	1.14	22.890	25.18	397.93	0.772 *	0.000	5.00	20.721	16.00	644.5	0.0	1033.0
65.00		1.00	1.16	23.279	25.61	392.98	0.777 *	0.000	5.00	20.296	15.77	646.3	0.0	1011.6
70.00		1.00	1.17	23.645	26.01	387.68	0.783 *	0.000	5.00	19.871	15.55	647.2	0.0	990.3
75.00		1.00	1.19	23.991	26.39	382.07	0.788 *	0.000	5.00	19.446	15.33	647.2	0.0	968.9
80.00		1.00	1.21	24.319	26.75	376.18	0.794 *	0.000	5.00	19.022	15.11	646.5	0.0	947.5
85.00		1.00	1.22	24.631	27.09	370.04	0.800 *	0.000	5.00	18.597	14.88	645.2	0.0	926.1
90.00		1.00	1.24	24.930	27.42	363.67	0.807 *	0.000	5.00	18.172	14.66	643.2	0.0	904.8
92.75 Bot - Section 3		1.00	1.25	25.088	27.60	360.07	0.812 *	0.000	2.75	9.814	7.97	351.8	0.0	488.5
95.00		1.00	1.25	25.215	27.74	357.09	0.815 *	0.000	2.25	8.077	6.59	292.3	0.0	740.1
98.92 Top - Section 2		1.00	1.26	25.430	27.97	351.81	0.820 *	0.000	3.92	13.855	11.36	508.3	0.0	1269.1
100.00		1.00	1.27	25.489	28.04	356.85	0.818 *	0.000	1.08	3.786	3.10	138.9	0.0	161.8
105.00		1.00	1.28	25.752	28.33	349.94	0.822 *	0.000	5.00	17.216	14.16	641.7	0.0	735.4
110.00		1.00	1.29	26.005	28.61	342.87	0.830 *	0.000	5.00	16.791	13.93	637.8	0.0	717.1
115.00		1.00	1.30	26.250	28.87	335.65	0.838 *	0.000	5.00	16.366	13.71	633.5	0.0	698.8
120.00 Appurtenance(s)		1.00	1.32	26.486	29.13	328.29	0.846 *	0.000	5.00	15.942	13.49	628.8	0.0	680.5
125.00		1.00	1.33	26.715	29.39	320.80	0.855 *	0.000	5.00	15.517	13.27	623.7	0.0	662.2
130.00		1.00	1.34	26.936	29.63	313.19	0.864 *	0.000	5.00	15.092	13.04	618.3	0.0	643.9
135.00		1.00	1.35	27.151	29.87	305.46	0.874 *	0.000	5.00	14.667	12.82	612.6	0.0	625.5
140.00		1.00	1.36	27.360	30.10	297.62	0.884 *	0.000	5.00	14.242	12.60	606.5	0.0	607.2
140.67 Bot - Section 4		1.00	1.36	27.387	30.13	296.56	0.891 *	0.000	0.67	1.867	1.66	80.1	0.0	79.6
145.00		1.00	1.37	27.563	30.32	289.67	0.896 *	0.000	4.33	12.181	10.92	529.6	0.0	942.9
145.75 Top - Section 3		1.00	1.37	27.593	30.35	288.47	0.902 *	0.000	0.75	2.076	1.87	90.9	0.0	160.6
150.00		1.00	1.38	27.760	30.54	287.30	0.901 *	0.000	4.25	11.582	10.43	509.7	0.0	412.1
155.00		1.00	1.39	27.952	30.75	279.19	0.912 *	0.000	5.00	13.233	12.07	593.6	0.0	470.7
160.00		1.00	1.40	28.140	30.95	270.98	0.925 *	0.000	5.00	12.808	11.84	586.5	0.0	455.5
165.00		1.00	1.41	28.323	31.16	262.69	0.938 *	0.000	5.00	12.384	11.62	579.2	0.0	440.2
170.00		1.00	1.42	28.501	31.35	254.32	0.953 *	0.000	5.00	11.959	11.40	571.7	0.0	424.9
172.08 Bot - Section 5		1.00	1.42	28.574	31.43	250.82	0.964 *	0.000	2.08	4.850	4.68	235.1	0.0	172.3
175.00		1.00	1.42	28.676	31.54	245.87	0.972 *	0.000	2.92	6.793	6.60	333.3	0.0	406.9
176.50 Top - Section 4		1.00	1.43	28.727	31.60	243.33	1.200 *	0.000	1.50	3.426	4.11	207.8	0.0	205.1
180.00		1.00	1.43	28.846	31.73	241.40	1.200 *	0.000	3.50	7.869	9.44	479.4	0.0	196.3
185.00		1.00	1.44	29.013	31.91	232.82	1.200 *	0.000	5.00	10.870	13.04	666.1	0.0	271.1
190.00		1.00	1.45	29.177	32.09	224.16	1.200 *	0.000	5.00	10.445	12.53	643.7	0.0	260.4

## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 17



195.00 Appurtenance(s)	1.00	1.46	29.337	32.27	215.45	1.200 *	0.000	5.00	10.020	12.02	620.9	0.0	249.8
200.00	1.00	1.46	29.493	32.44	206.66	0.750	0.000	5.00	9.596	7.20	373.6	0.0	239.1
205.00	1.00	1.47	29.647	32.61	197.82	0.750	0.000	5.00	9.171	6.88	358.9	0.0	228.4
210.00	1.00	1.48	29.798	32.78	188.92	0.750	0.000	5.00	8.746	6.56	344.0	0.0	217.7
212.00 Appurtenance(s)	1.00	1.48	29.857	32.84	185.34	0.750	0.000	2.00	3.379	2.53	133.2	0.0	84.1
215.00	1.00	1.49	29.946	32.94	179.96	0.750	0.000	3.00	4.942	3.71	195.3	0.0	122.9
220.00	1.00	1.49	30.091	33.10	170.94	0.750	0.000	5.00	7.896	5.92	313.6	0.0	196.3
225.00 Appurtenance(s)	1.00	1.50	30.234	33.26	161.87	0.750	0.000	5.00	7.471	5.60	298.2	0.0	185.6
<b>Totals:</b>								<b>225.00</b>			<b>26,107.5</b>		<b>35,322.0</b>

\* Cf Adjusted by Linear Load Ra Effect

## Discrete Appurtenance Forces

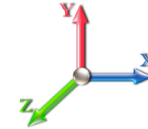
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 91 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 32

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	225.00	Beacon	1	30.234	33.257	1.00	1.00	2.72	32.40	0.000	0.000	144.74	0.00	0.00
2	225.00	T-Arm (Round)	3	30.234	33.257	0.56	0.75	13.50	945.00	0.000	0.000	718.36	0.00	0.00
3	225.00	APXVSP18-C-A20	3	30.234	33.257	0.75	0.90	17.97	153.90	0.000	0.000	956.36	0.00	0.00
4	225.00	2500 MHz RRH - TD-RRH	3	30.234	33.257	0.62	0.90	7.55	189.00	0.000	0.000	401.49	0.00	0.00
5	225.00	RRUS-1900 MHz	3	30.234	33.257	0.45	0.90	3.40	118.80	0.000	0.000	181.03	0.00	0.00
6	225.00	RRUS- 800 MHz	3	30.234	33.257	0.45	0.90	3.40	145.80	0.000	0.000	181.03	0.00	0.00
7	225.00	APXVTM14-ALU-20	3	30.234	33.257	0.71	0.90	13.42	151.20	0.000	0.000	714.13	0.00	0.00
8	212.00	Ericsson RRUS 4478 B14	3	29.857	32.843	0.52	0.75	2.60	160.38	0.000	0.000	136.56	0.00	0.00
9	212.00	Cellmax -	3	29.857	32.843	0.55	0.75	28.17	283.23	0.000	0.000	1480.25	0.00	0.00
10	212.00	Raycap DC6-48-60-18-8F	2	29.946	32.940	1.00	1.00	1.84	57.24	0.000	3.000	96.98	0.00	290.93
11	212.00	Ericsson RRUS 8843 B2	3	29.946	32.940	0.64	0.75	3.14	189.00	0.000	3.000	165.31	0.00	495.92
12	212.00	Ericsson RRUS 11	3	29.946	32.940	0.53	0.75	4.03	137.70	0.000	3.000	212.17	0.00	636.52
13	212.00	RFS ATM192012-0	6	29.946	32.940	0.57	0.75	3.83	59.40	0.000	3.000	201.88	0.00	605.64
14	212.00	Low Profile	1	29.946	32.940	1.00	1.00	22.00	1350.00	0.000	3.000	1159.50	0.00	3478.51
15	212.00	KMW EPBQ-652L8H8	3	29.946	32.940	0.61	0.75	22.10	168.48	0.000	3.000	1164.94	0.00	3494.81
16	212.00	Kathrein 741-989	3	29.946	32.940	0.54	0.75	5.10	44.55	0.000	3.000	268.95	0.00	806.86
17	212.00	Handrail Kit (Site Pro HRK	1	29.946	32.940	1.00	1.00	8.13	272.12	0.000	3.000	428.49	0.00	1285.47
18	195.00	PV-LPP12M-HR-B	1	29.337	32.270	1.00	1.00	44.00	1683.00	0.000	0.000	2271.82	0.00	0.00
19	195.00	RFS	3	29.337	32.270	0.55	0.75	8.57	65.34	0.000	0.000	442.73	0.00	0.00
20	195.00	RFS	3	29.337	32.270	0.55	0.75	33.70	345.60	0.000	0.000	1739.99	0.00	0.00
21	195.00	Ericsson 4449 B71+B12	3	29.337	32.270	0.50	0.75	2.49	189.00	0.000	0.000	128.43	0.00	0.00
22	195.00	Ericsson KRY 112 489/2	3	29.337	32.270	0.62	0.75	1.05	35.64	0.000	0.000	54.00	0.00	0.00
23	195.00	CCI KRY112891	4	29.337	32.270	0.40	0.80	1.12	57.96	0.000	0.000	57.83	0.00	0.00
24	120.00	Single light	3	26.486	29.135	0.56	0.75	0.34	8.10	0.000	0.000	15.73	0.00	0.00
<b>Totals:</b>									<b>6,842.84</b>			<b>13,322.68</b>		

## Total Applied Force Summary

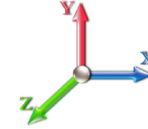
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 91 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 32

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		565.42	1351.46	0.00	0.00
10.00		555.82	1330.09	0.00	0.00
15.00		546.22	1308.72	0.00	0.00
20.00		569.37	1287.35	0.00	0.00
25.00		586.08	1265.98	0.00	0.00
30.00		597.92	1244.61	0.00	0.00
35.00		608.43	1223.24	0.00	0.00
40.00		617.52	1201.87	0.00	0.00
45.00		624.57	1180.50	0.00	0.00
45.92		114.07	214.11	0.00	0.00
50.00		522.82	1821.94	0.00	0.00
53.00		385.17	1320.40	0.00	0.00
55.00		255.58	460.02	0.00	0.00
60.00		644.47	1135.09	0.00	0.00
65.00		646.28	1113.71	0.00	0.00
70.00		647.16	1092.34	0.00	0.00
75.00		647.22	1070.97	0.00	0.00
80.00		646.52	1049.60	0.00	0.00
85.00		645.16	1028.23	0.00	0.00
90.00		643.18	1006.86	0.00	0.00
92.75		351.80	544.66	0.00	0.00
95.00		292.25	786.00	0.00	0.00
98.92		508.31	1349.04	0.00	0.00
100.00		138.92	183.88	0.00	0.00
105.00		641.65	837.54	0.00	0.00
110.00		637.76	819.22	0.00	0.00
115.00		633.45	800.90	0.00	0.00
120.00	(3) attachments	644.49	790.68	0.00	0.00
125.00		623.70	764.27	0.00	0.00
130.00		618.29	745.95	0.00	0.00
135.00		612.57	727.63	0.00	0.00
140.00		606.54	709.31	0.00	0.00
140.67		80.14	93.19	0.00	0.00
145.00		529.56	1031.34	0.00	0.00
145.75		90.94	175.94	0.00	0.00
150.00		509.67	498.89	0.00	0.00
155.00		593.61	572.81	0.00	0.00
160.00		586.55	557.54	0.00	0.00
165.00		579.24	542.28	0.00	0.00
170.00		571.70	527.01	0.00	0.00
172.08		235.14	214.74	0.00	0.00
175.00		333.31	466.53	0.00	0.00
176.50		245.92	235.69	0.00	0.00
180.00		568.83	267.87	0.00	0.00
185.00		794.14	373.22	0.00	0.00
190.00		772.18	362.53	0.00	0.00

## Total Applied Force Summary

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	Page: 20
<b>Struct Class:</b> II		



195.00	(17) attachments	5444.64	2728.38	0.00	0.00
200.00		373.57	310.11	0.00	0.00
205.00		358.89	299.42	0.00	0.00
210.00		344.01	288.73	0.00	0.00
212.00	(28) attachments	5448.21	2834.60	0.00	11094.65
215.00		195.34	165.54	0.00	0.00
220.00		313.64	222.04	0.00	0.00
225.00	(19) attachments	3595.29	1947.45	0.00	0.00
<b>Totals:</b>		<b>39,943.25</b>	<b>46,482.06</b>	<b>0.00</b>	<b>11,094.65</b>



## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



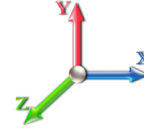
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**Load Case:** 0.9D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	17.118	0.00	4.29
5.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.091	0.000	17.118	0.00	15.53
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	17.118	0.00	28.08
10.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	17.118	0.00	4.29
10.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.092	0.000	17.118	0.00	15.53
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.092	0.000	17.118	0.00	28.08
15.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	17.118	0.00	4.29
15.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.094	0.000	17.118	0.00	15.53
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.094	0.000	17.118	0.00	28.08
20.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	18.163	0.00	4.29
20.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.096	0.000	18.163	0.00	15.53
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.096	0.000	18.163	0.00	28.08
25.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.098	0.000	19.037	0.00	4.29
25.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.098	0.000	19.037	0.00	15.53
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.098	0.000	19.037	0.00	28.08
30.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.099	0.000	19.782	0.00	4.29
30.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.099	0.000	19.782	0.00	15.53
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.099	0.000	19.782	0.00	28.08
35.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	20.434	0.00	4.29
35.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.101	1.004	20.434	0.00	15.53
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.101	1.004	20.434	0.00	28.08
40.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.103	1.010	21.017	0.00	4.29
40.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.103	1.010	21.017	0.00	15.53
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.103	1.010	21.017	0.00	28.08
45.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.105	1.016	21.545	0.00	4.29
45.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.105	1.016	21.545	0.00	15.53
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.105	1.016	21.545	0.00	28.08
45.92	1-1/4" Hybrid	Yes	0.92	0.000	0.00	0.00	0.00	0.106	1.019	21.636	0.00	0.79
45.92	1.5" Hybrid	Yes	0.92	0.000	1.50	0.11	0.00	0.106	1.019	21.636	0.00	2.85
45.92	1 5/8" Coax	Yes	0.92	0.000	3.96	0.30	0.00	0.106	1.019	21.636	0.00	5.15
50.00	1-1/4" Hybrid	Yes	4.08	0.000	0.00	0.00	0.00	0.108	1.023	22.028	0.00	3.51
50.00	1.5" Hybrid	Yes	4.08	0.000	1.50	0.51	0.00	0.108	1.023	22.028	0.00	12.68
50.00	1 5/8" Coax	Yes	4.08	0.000	3.96	1.35	0.00	0.108	1.023	22.028	0.00	22.93
53.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.109	1.027	22.300	0.00	2.58
53.00	1.5" Hybrid	Yes	3.00	0.000	1.50	0.38	0.00	0.109	1.027	22.300	0.00	9.31
53.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.109	1.027	22.300	0.00	16.85
55.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.108	1.025	22.474	0.00	1.72
55.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.25	0.00	0.108	1.025	22.474	0.00	6.21
55.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.108	1.025	22.474	0.00	11.23
60.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	22.890	0.00	4.29
60.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.110	1.029	22.890	0.00	15.53
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.110	1.029	22.890	0.00	28.08
65.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	23.279	0.00	4.29
65.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.112	1.036	23.279	0.00	15.53
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.112	1.036	23.279	0.00	28.08
70.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.114	1.043	23.645	0.00	4.29
70.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.114	1.043	23.645	0.00	15.53

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

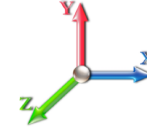


**Load Case:** 0.9D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.114	1.043	23.645	0.00	28.08
75.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.051	23.991	0.00	4.29
75.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.117	1.051	23.991	0.00	15.53
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.117	1.051	23.991	0.00	28.08
80.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.059	24.319	0.00	4.29
80.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.120	1.059	24.319	0.00	15.53
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.120	1.059	24.319	0.00	28.08
85.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.122	1.067	24.631	0.00	4.29
85.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.122	1.067	24.631	0.00	15.53
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.122	1.067	24.631	0.00	28.08
90.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.125	1.076	24.930	0.00	4.29
90.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.125	1.076	24.930	0.00	15.53
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.125	1.076	24.930	0.00	28.08
92.75	1-1/4" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.128	1.083	25.088	0.00	2.36
92.75	1.5" Hybrid	Yes	2.75	0.000	1.50	0.34	0.00	0.128	1.083	25.088	0.00	8.54
92.75	1 5/8" Coax	Yes	2.75	0.000	3.96	0.91	0.00	0.128	1.083	25.088	0.00	15.44
95.00	1-1/4" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.129	1.087	25.215	0.00	1.93
95.00	1.5" Hybrid	Yes	2.25	0.000	1.50	0.28	0.00	0.129	1.087	25.215	0.00	6.99
95.00	1 5/8" Coax	Yes	2.25	0.000	3.96	0.74	0.00	0.129	1.087	25.215	0.00	12.64
98.92	1-1/4" Hybrid	Yes	3.92	0.000	0.00	0.00	0.00	0.131	1.093	25.430	0.00	3.36
98.92	1.5" Hybrid	Yes	3.92	0.000	1.50	0.49	0.00	0.131	1.093	25.430	0.00	12.16
98.92	1 5/8" Coax	Yes	3.92	0.000	3.96	1.29	0.00	0.131	1.093	25.430	0.00	22.00
100.00	1-1/4" Hybrid	Yes	1.08	0.000	0.00	0.00	0.00	0.130	1.091	25.489	0.00	0.93
100.00	1.5" Hybrid	Yes	1.08	0.000	1.50	0.14	0.00	0.130	1.091	25.489	0.00	3.36
100.00	1 5/8" Coax	Yes	1.08	0.000	3.96	0.36	0.00	0.130	1.091	25.489	0.00	6.08
105.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.132	1.096	25.752	0.00	4.29
105.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.132	1.096	25.752	0.00	15.53
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.132	1.096	25.752	0.00	28.08
110.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.135	1.106	26.005	0.00	4.29
110.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.135	1.106	26.005	0.00	15.53
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.135	1.106	26.005	0.00	28.08
115.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.139	1.117	26.250	0.00	4.29
115.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.139	1.117	26.250	0.00	15.53
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.139	1.117	26.250	0.00	28.08
120.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	26.486	0.00	4.29
120.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.143	1.128	26.486	0.00	15.53
120.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.143	1.128	26.486	0.00	28.08
125.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.147	1.140	26.715	0.00	4.29
125.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.147	1.140	26.715	0.00	15.53
125.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.147	1.140	26.715	0.00	28.08
130.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.151	1.152	26.936	0.00	4.29
130.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.151	1.152	26.936	0.00	15.53
130.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.151	1.152	26.936	0.00	28.08
135.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.165	27.151	0.00	4.29
135.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.155	1.165	27.151	0.00	15.53
135.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.155	1.165	27.151	0.00	28.08
140.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.160	1.179	27.360	0.00	4.29

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



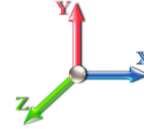
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**Load Case:** 0.9D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
140.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.160	1.179	27.360	0.00	15.53
140.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.160	1.179	27.360	0.00	28.08
140.67	1-1/4" Hybrid	Yes	0.67	0.000	0.00	0.00	0.00	0.162	1.187	27.387	0.00	0.57
140.67	1.5" Hybrid	Yes	0.67	0.000	1.50	0.08	0.00	0.162	1.187	27.387	0.00	2.07
140.67	1 5/8" Coax	Yes	0.67	0.000	3.96	0.22	0.00	0.162	1.187	27.387	0.00	3.74
145.00	1-1/4" Hybrid	Yes	4.33	0.000	0.00	0.00	0.00	0.165	1.195	27.563	0.00	3.72
145.00	1.5" Hybrid	Yes	4.33	0.000	1.50	0.54	0.00	0.165	1.195	27.563	0.00	13.45
145.00	1 5/8" Coax	Yes	4.33	0.000	3.96	1.43	0.00	0.165	1.195	27.563	0.00	24.34
145.75	1-1/4" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.168	1.203	27.593	0.00	0.64
145.75	1.5" Hybrid	Yes	0.75	0.000	1.50	0.09	0.00	0.168	1.203	27.593	0.00	2.33
145.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.25	0.00	0.168	1.203	27.593	0.00	4.21
150.00	1-1/4" Hybrid	Yes	4.25	0.000	0.00	0.00	0.00	0.167	1.201	27.760	0.00	3.65
150.00	1.5" Hybrid	Yes	4.25	0.000	1.50	0.53	0.00	0.167	1.201	27.760	0.00	13.20
150.00	1 5/8" Coax	Yes	4.25	0.000	3.96	1.40	0.00	0.167	1.201	27.760	0.00	23.87
155.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.172	1.216	27.952	0.00	4.29
155.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.172	1.216	27.952	0.00	15.53
155.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.172	1.216	27.952	0.00	28.08
160.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.233	28.140	0.00	4.29
160.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.178	1.233	28.140	0.00	15.53
160.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.178	1.233	28.140	0.00	28.08
165.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.184	1.251	28.323	0.00	4.29
165.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.184	1.251	28.323	0.00	15.53
165.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.184	1.251	28.323	0.00	28.08
170.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.190	1.271	28.501	0.00	4.29
170.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.190	1.271	28.501	0.00	15.53
170.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.190	1.271	28.501	0.00	28.08
172.08	1-1/4" Hybrid	Yes	2.08	0.000	0.00	0.00	0.00	0.195	1.285	28.574	0.00	1.79
172.08	1.5" Hybrid	Yes	2.08	0.000	1.50	0.26	0.00	0.195	1.285	28.574	0.00	6.46
172.08	1 5/8" Coax	Yes	2.08	0.000	3.96	0.69	0.00	0.195	1.285	28.574	0.00	11.68
175.00	1-1/4" Hybrid	Yes	2.92	0.000	0.00	0.00	0.00	0.199	1.296	28.676	0.00	2.51
175.00	1.5" Hybrid	Yes	2.92	0.000	1.50	0.37	0.00	0.199	1.296	28.676	0.00	9.07
175.00	1 5/8" Coax	Yes	2.92	0.000	3.96	0.96	0.00	0.199	1.296	28.676	0.00	16.40
176.50	1-1/4" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.202	0.000	28.727	0.00	1.29
176.50	1.5" Hybrid	Yes	1.50	1.200	1.50	0.19	0.22	0.202	0.000	28.727	11.35	4.65
176.50	1 5/8" Coax	Yes	1.50	1.071	3.96	0.49	0.53	0.202	0.000	28.727	26.74	8.41
180.00	1-1/4" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.203	0.000	28.846	0.00	3.01
180.00	1.5" Hybrid	Yes	3.50	1.200	1.50	0.44	0.53	0.203	0.000	28.846	26.68	10.88
180.00	1 5/8" Coax	Yes	3.50	1.068	3.96	1.16	1.24	0.203	0.000	28.846	62.71	19.67
185.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.209	0.000	29.013	0.00	4.29
185.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.209	0.000	29.013	38.30	15.53
185.00	1 5/8" Coax	Yes	5.00	1.065	3.96	1.65	1.76	0.209	0.000	29.013	89.76	28.08
190.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.218	0.000	29.177	0.00	4.29
190.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.218	0.000	29.177	38.51	15.53
190.00	1 5/8" Coax	Yes	5.00	1.062	3.96	1.65	1.75	0.218	0.000	29.177	90.01	28.08
195.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.227	0.000	29.337	0.00	4.29
195.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.227	0.000	29.337	38.72	15.53
195.00	1 5/8" Coax	Yes	5.00	1.059	3.96	1.65	1.75	0.227	0.000	29.337	90.26	28.08

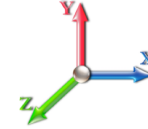
## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 24



**Load Case:** 0.9D + 1.6W 91 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 32

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
200.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	29.493	0.00	4.29
200.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.065	0.000	29.493	0.00	15.53
205.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	29.647	0.00	4.29
205.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.068	0.000	29.647	0.00	15.53
210.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.071	0.000	29.798	0.00	4.29
210.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.071	0.000	29.798	0.00	15.53
212.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	29.857	0.00	1.72
212.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.25	0.00	0.074	0.000	29.857	0.00	6.21
215.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.076	0.000	29.946	0.00	2.58
215.00	1.5" Hybrid	Yes	3.00	0.000	1.50	0.38	0.00	0.076	0.000	29.946	0.00	9.31
220.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.079	0.000	30.091	0.00	4.29
220.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.079	0.000	30.091	0.00	15.53
225.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	30.234	0.00	4.29
225.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.084	0.000	30.234	0.00	15.53
<b>Totals:</b>											<b>513.1</b>	<b>1,986.9</b>

## Calculated Forces

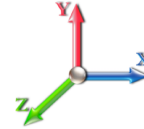
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	<b>9/22/2020</b>
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



**Load Case:** 0.9D + 1.6W 91 mph Wind

**Iterations** 32

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-46.40	-40.04	0.00	-6063.0	0.00	6063.03	5466.70	2733.35	13309.4	6607.36	0.00	0.000	0.000	0.926
5.00	-44.88	-39.66	0.00	-5862.8	0.00	5862.84	5411.44	2705.72	12949.7	6428.82	0.13	-0.235	0.000	0.920
10.00	-43.39	-39.28	0.00	-5664.5	0.00	5664.56	5354.88	2677.44	12591.7	6251.05	0.50	-0.473	0.000	0.914
15.00	-41.92	-38.90	0.00	-5468.1	0.00	5468.18	5297.04	2648.52	12235.3	6074.14	1.12	-0.716	0.000	0.908
20.00	-40.48	-38.48	0.00	-5273.7	0.00	5273.70	5237.89	2618.95	11880.8	5898.16	2.01	-0.964	0.000	0.902
25.00	-39.06	-38.05	0.00	-5081.2	0.00	5081.28	5177.46	2588.73	11528.4	5723.20	3.15	-1.215	0.000	0.896
30.00	-37.66	-37.59	0.00	-4891.0	0.00	4891.05	5115.74	2557.87	11178.1	5549.33	4.56	-1.471	0.000	0.889
35.00	-36.28	-37.12	0.00	-4703.1	0.00	4703.10	5052.72	2526.36	10830.3	5376.63	6.24	-1.732	0.000	0.882
40.00	-34.93	-36.62	0.00	-4517.5	0.00	4517.52	4988.41	2494.20	10484.9	5205.19	8.20	-1.997	0.000	0.875
45.00	-33.67	-36.05	0.00	-4334.4	0.00	4334.41	4922.81	2461.40	10142.3	5035.08	10.43	-2.267	0.000	0.868
45.92	-33.38	-36.01	0.00	-4301.3	0.00	4301.37	4910.64	2455.32	10079.8	5004.05	10.87	-2.318	0.000	0.867
50.00	-31.46	-35.52	0.00	-4154.3	0.00	4154.34	4855.91	2427.96	9802.53	4866.39	12.95	-2.544	0.000	0.860
53.00	-30.07	-35.14	0.00	-4047.8	0.00	4047.80	4874.44	2437.22	9895.68	4912.63	14.60	-2.713	0.000	0.830
55.00	-29.50	-34.97	0.00	-3977.5	0.00	3977.51	4847.46	2423.73	9760.26	4845.41	15.77	-2.827	0.000	0.827
60.00	-28.24	-34.40	0.00	-3802.6	0.00	3802.68	4779.11	2389.56	9423.86	4678.40	18.87	-3.097	0.000	0.819
65.00	-27.00	-33.82	0.00	-3630.6	0.00	3630.69	4709.47	2354.74	9090.65	4512.98	22.26	-3.371	0.000	0.810
70.00	-25.79	-33.24	0.00	-3461.5	0.00	3461.59	4638.54	2319.27	8760.79	4349.22	25.93	-3.649	0.000	0.802
75.00	-24.60	-32.64	0.00	-3295.4	0.00	3295.41	4566.31	2283.16	8434.44	4187.21	29.90	-3.932	0.000	0.793
80.00	-23.44	-32.04	0.00	-3132.2	0.00	3132.21	4492.79	2246.40	8111.77	4027.03	34.17	-4.220	0.000	0.783
85.00	-22.30	-31.43	0.00	-2972.0	0.00	2972.01	4417.98	2208.99	7792.94	3868.74	38.74	-4.512	0.000	0.773
90.00	-21.22	-30.80	0.00	-2814.8	0.00	2814.84	4338.02	2169.01	7471.46	3709.15	43.62	-4.809	0.000	0.764
92.75	-20.63	-30.46	0.00	-2730.1	0.00	2730.15	4280.99	2140.50	7275.30	3611.77	46.44	-4.977	0.000	0.761
95.00	-19.77	-30.16	0.00	-2661.6	0.00	2661.62	4234.33	2117.17	7116.75	3533.05	48.81	-5.116	0.000	0.758
98.92	-18.40	-29.58	0.00	-2543.4	0.00	2543.49	3503.07	1751.53	5900.87	2929.44	53.11	-5.358	0.000	0.874
100.00	-18.12	-29.49	0.00	-2511.4	0.00	2511.44	3490.19	1745.09	5847.72	2903.05	54.33	-5.427	0.000	0.871
105.00	-17.18	-28.88	0.00	-2363.9	0.00	2363.99	3429.94	1714.97	5604.12	2782.12	60.19	-5.768	0.000	0.855
110.00	-16.26	-28.26	0.00	-2219.6	0.00	2219.61	3368.41	1684.21	5363.47	2662.65	66.40	-6.114	0.000	0.839
115.00	-15.36	-27.63	0.00	-2078.3	0.00	2078.34	3305.58	1652.79	5125.94	2544.73	72.98	-6.465	0.000	0.822
120.00	-14.48	-26.99	0.00	-1940.1	0.00	1940.17	3241.47	1620.73	4891.69	2428.44	79.92	-6.819	0.000	0.804
125.00	-13.63	-26.37	0.00	-1805.2	0.00	1805.22	3168.38	1584.19	4649.61	2308.26	87.24	-7.177	0.000	0.787
130.00	-12.81	-25.74	0.00	-1673.3	0.00	1673.39	3079.50	1539.75	4391.09	2179.92	94.93	-7.538	0.000	0.772
135.00	-12.01	-25.11	0.00	-1544.7	0.00	1544.70	2990.62	1495.31	4139.97	2055.26	102.99	-7.903	0.000	0.756
140.00	-11.31	-24.45	0.00	-1419.1	0.00	1419.14	2901.75	1450.87	3896.25	1934.26	111.44	-8.269	0.000	0.738
140.67	-11.15	-24.40	0.00	-1402.8	0.00	1402.84	2889.90	1444.95	3864.31	1918.41	112.59	-8.320	0.000	0.735
145.00	-10.13	-23.75	0.00	-1297.1	0.00	1297.13	2812.87	1406.44	3659.92	1816.94	120.26	-8.640	0.000	0.718
145.75	-9.89	-23.67	0.00	-1279.3	0.00	1279.32	2338.09	1169.04	3100.38	1539.16	121.62	-8.697	0.000	0.836
150.00	-9.33	-23.15	0.00	-1178.7	0.00	1178.73	2293.55	1146.78	2960.24	1469.59	129.47	-9.012	0.000	0.807
155.00	-8.70	-22.53	0.00	-1062.9	0.00	1062.99	2239.96	1119.98	2797.90	1389.00	139.09	-9.423	0.000	0.770
160.00	-8.09	-21.92	0.00	-950.32	0.00	950.32	2172.79	1086.39	2623.62	1302.47	149.13	-9.831	0.000	0.734
165.00	-7.51	-21.31	0.00	-840.73	0.00	840.73	2098.72	1049.36	2446.89	1214.74	159.59	-10.231	0.000	0.696
170.00	-7.00	-20.68	0.00	-734.20	0.00	734.20	2024.66	1012.33	2276.33	1130.07	170.45	-10.622	0.000	0.654
172.08	-6.76	-20.43	0.00	-691.18	0.00	691.18	1993.85	996.92	2207.19	1095.74	175.09	-10.786	0.000	0.635
175.00	-6.31	-20.04	0.00	-631.51	0.00	631.51	1950.60	975.30	2111.93	1048.45	181.72	-11.010	0.000	0.606
176.50	-6.06	-19.77	0.00	-601.52	0.00	601.52	1282.06	641.03	1405.37	697.69	185.17	-11.124	0.000	0.868
180.00	-5.79	-19.20	0.00	-532.25	0.00	532.25	1259.97	629.98	1344.43	667.43	193.37	-11.378	0.000	0.803
185.00	-5.44	-18.39	0.00	-436.27	0.00	436.27	1227.33	613.66	1258.55	624.80	205.45	-11.829	0.000	0.704
190.00	-5.13	-17.59	0.00	-344.34	0.00	344.34	1193.40	596.70	1174.12	582.88	217.98	-12.239	0.000	0.596
195.00	-3.57	-11.71	0.00	-256.39	0.00	256.39	1158.17	579.09	1091.29	541.76	230.89	-12.595	0.000	0.477

## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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200.00	-3.30	-11.29	0.00	-197.86	0.00	197.86	1121.66	560.83	1010.23	501.52	244.14	-12.901	0.000	0.398
205.00	-3.04	-10.89	0.00	-141.41	0.00	141.41	1082.14	541.07	929.63	461.51	257.68	-13.163	0.000	0.310
210.00	-2.81	-10.49	0.00	-86.98	0.00	86.98	1030.28	515.14	842.23	418.12	271.46	-13.366	0.000	0.211
212.00	-1.32	-4.54	0.00	-54.91	0.00	54.91	1009.54	504.77	808.47	401.36	277.02	-13.429	0.000	0.138
215.00	-1.19	-4.31	0.00	-41.30	0.00	41.30	978.43	489.21	759.14	376.87	285.40	-13.492	0.000	0.111
220.00	-1.05	-3.95	0.00	-19.76	0.00	19.76	926.57	463.29	680.37	337.76	299.44	-13.565	0.000	0.060
225.00	0.00	-3.60	0.00	0.00	0.00	0.00	874.71	437.36	605.91	300.80	313.54	-13.593	0.000	0.000

## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Iterations** 31

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	1.860	2.05	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	1.860	2.05	0.00	1.200	1.242	5.00	26.057	31.27	64.0	468.3	2134.1
10.00		1.00	0.85	1.860	2.05	0.00	1.200	1.331	5.00	25.707	30.85	63.1	494.2	2131.6
15.00		1.00	0.85	1.860	2.05	0.00	1.200	1.386	5.00	25.328	30.39	62.2	506.4	2115.2
20.00		1.00	0.90	1.974	2.17	0.00	1.200	1.427	5.00	24.937	29.92	65.0	512.5	2092.9
25.00		1.00	0.95	2.069	2.28	0.00	1.200	1.459	5.00	24.539	29.45	67.0	515.1	2067.0
30.00		1.00	0.98	2.150	2.36	0.00	1.200	1.486	5.00	24.136	28.96	68.5	515.5	2038.8
35.00		1.00	1.01	2.221	2.44	0.00	1.204 *	1.509	5.00	23.731	28.58	69.8	514.1	2009.0
40.00		1.00	1.04	2.284	2.51	0.00	1.211 *	1.529	5.00	23.323	28.25	71.0	511.6	1977.9
45.00		1.00	1.07	2.342	2.58	0.00	1.219 *	1.547	5.00	22.913	27.93	71.9	508.0	1945.9
45.92 Bot - Section 2		1.00	1.07	2.351	2.59	0.00	1.223 *	1.550	0.92	4.155	5.08	13.1	93.0	353.5
50.00		1.00	1.09	2.394	2.63	0.00	1.227 *	1.564	4.08	18.648	22.88	60.3	418.4	2736.5
53.00 Top - Section 1		1.00	1.11	2.424	2.67	0.00	1.233 *	1.573	3.00	13.525	16.67	44.4	305.7	1984.5
55.00		1.00	1.12	2.443	2.69	0.00	1.230 *	1.579	2.00	8.934	10.99	29.5	203.0	761.9
60.00		1.00	1.14	2.488	2.74	0.00	1.235 *	1.592	5.00	22.048	27.23	74.5	501.9	1879.2
65.00		1.00	1.16	2.530	2.78	0.00	1.244 *	1.605	5.00	21.634	26.90	74.9	495.9	1844.7
70.00		1.00	1.17	2.570	2.83	0.00	1.252 *	1.617	5.00	21.219	26.57	75.1	489.5	1809.8
75.00		1.00	1.19	2.607	2.87	0.00	1.261 *	1.628	5.00	20.803	26.24	75.2	482.7	1774.5
80.00		1.00	1.21	2.643	2.91	0.00	1.271 *	1.639	5.00	20.387	25.90	75.3	475.6	1738.9
85.00		1.00	1.22	2.677	2.94	0.00	1.280 *	1.649	5.00	19.971	25.57	75.3	468.1	1703.0
90.00		1.00	1.24	2.709	2.98	0.00	1.291 *	1.658	5.00	19.554	25.24	75.2	460.4	1666.8
92.75 Bot - Section 3		1.00	1.25	2.727	3.00	0.00	1.299 *	1.663	2.75	10.576	13.74	41.2	250.8	902.2
95.00		1.00	1.25	2.740	3.01	0.00	1.305 *	1.667	2.25	8.702	11.35	34.2	207.2	1193.9
98.92 Top - Section 2		1.00	1.26	2.764	3.04	0.00	1.312 *	1.674	3.92	14.948	19.60	59.6	355.6	2047.7
100.00		1.00	1.27	2.770	3.05	0.00	1.309 *	1.676	1.08	4.089	5.35	16.3	98.0	313.7
105.00		1.00	1.28	2.799	3.08	0.00	1.316 *	1.684	5.00	18.619	24.50	75.4	443.9	1424.5
110.00		1.00	1.29	2.826	3.11	0.00	1.328 *	1.692	5.00	18.201	24.17	75.1	435.3	1391.5
115.00		1.00	1.30	2.853	3.14	0.00	1.340 *	1.699	5.00	17.783	23.84	74.8	426.6	1358.3
120.00 Appurtenance(s)		1.00	1.32	2.879	3.17	0.00	1.354 *	1.707	5.00	17.364	23.51	74.4	417.7	1325.0
125.00		1.00	1.33	2.903	3.19	0.00	1.368 *	1.714	5.00	16.945	23.18	74.0	408.6	1291.5
130.00		1.00	1.34	2.928	3.22	0.00	1.383 *	1.720	5.00	16.526	22.85	73.6	399.4	1257.9
135.00		1.00	1.35	2.951	3.25	0.00	1.398 *	1.727	5.00	16.106	22.52	73.1	390.1	1224.2
140.00		1.00	1.36	2.974	3.27	0.00	1.415 *	1.733	5.00	15.687	22.20	72.6	380.6	1190.3
140.67 Bot - Section 4		1.00	1.36	2.977	3.27	0.00	1.425 *	1.734	0.67	2.060	2.93	9.6	50.6	156.7
145.00		1.00	1.37	2.996	3.30	0.00	1.434 *	1.739	4.33	13.437	19.27	63.5	327.5	1584.7
145.75 Top - Section 3		1.00	1.37	2.999	3.30	0.00	1.443 *	1.740	0.75	2.293	3.31	10.9	56.5	270.6
150.00		1.00	1.38	3.017	3.32	0.00	1.441 *	1.745	4.25	12.819	18.47	61.3	313.0	862.5
155.00		1.00	1.39	3.038	3.34	0.00	1.459 *	1.751	5.00	14.692	21.43	71.6	358.4	986.0
160.00		1.00	1.40	3.058	3.36	0.00	1.479 *	1.757	5.00	14.272	21.11	71.0	348.5	955.8
165.00		1.00	1.41	3.078	3.39	0.00	1.501 *	1.762	5.00	13.852	20.80	70.4	338.5	925.4
170.00		1.00	1.42	3.098	3.41	0.00	1.525 *	1.767	5.00	13.431	20.48	69.8	328.4	895.0
172.08 Bot - Section 5		1.00	1.42	3.106	3.42	0.00	1.543 *	1.769	2.08	5.463	8.43	28.8	134.8	364.5
175.00		1.00	1.42	3.117	3.43	0.00	1.556 *	1.772	2.92	7.655	11.91	40.8	188.7	731.2
176.50 Top - Section 4		1.00	1.43	3.122	3.43	0.00	1.200 *	1.774	1.50	3.868	4.64	15.9	95.8	369.3
180.00		1.00	1.43	3.135	3.45	0.00	1.200 *	1.777	3.50	8.907	10.69	36.9	219.2	481.0
185.00		1.00	1.44	3.153	3.47	0.00	1.200 *	1.782	5.00	12.355	14.83	51.4	302.5	664.0
190.00		1.00	1.45	3.171	3.49	0.00	1.200 *	1.787	5.00	11.934	14.32	50.0	292.0	639.3



## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 28



195.00 Appurtenance(s)	1.00	1.46	3.188	3.51	0.00	1.200 *	1.792	5.00	11.514	13.82	48.5	281.5	614.5
200.00	1.00	1.46	3.205	3.53	0.00	1.200	1.796	5.00	11.092	13.31	46.9	270.9	589.7
205.00	1.00	1.47	3.222	3.54	0.00	1.200	1.801	5.00	10.671	12.81	45.4	260.2	564.7
210.00	1.00	1.48	3.239	3.56	0.00	1.200	1.805	5.00	10.250	12.30	43.8	249.5	539.8
212.00 Appurtenance(s)	1.00	1.48	3.245	3.57	0.00	1.200	1.807	2.00	3.982	4.78	17.1	98.1	210.2
215.00	1.00	1.49	3.255	3.58	0.00	1.200	1.809	3.00	5.846	7.02	25.1	143.2	307.1
220.00	1.00	1.49	3.270	3.60	0.00	1.200	1.813	5.00	9.407	11.29	40.6	227.8	489.6
225.00 Appurtenance(s)	1.00	1.50	3.286	3.61	0.00	1.200	1.817	5.00	8.986	10.78	39.0	216.9	464.4
								<b>Totals:</b>	<b>225.00</b>			<b>2,978.3</b>	<b>65,352.4</b>

\* Cf Adjusted by Linear Load Ra Effect



## Discrete Appurtenance Forces

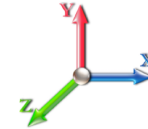
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 31

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	225.00	Beacon	1	3.286	3.614	1.00	1.00	3.71	142.91	0.000	0.000	13.40	0.00	0.00
2	225.00	T-Arm (Round)	3	3.286	3.614	0.56	0.75	25.77	1813.32	0.000	0.000	93.14	0.00	0.00
3	225.00	APXVSP18-C-A20	3	3.286	3.614	0.75	0.90	24.49	596.71	0.000	0.000	88.53	0.00	0.00
4	225.00	2500 MHz RRH - TD-RRH	3	3.286	3.614	0.64	0.90	10.59	491.33	0.000	0.000	38.26	0.00	0.00
5	225.00	RRUS-1900 MHz	3	3.286	3.614	0.45	0.90	4.29	310.00	0.000	0.000	15.51	0.00	0.00
6	225.00	RRUS- 800 MHz	3	3.286	3.614	0.45	0.90	4.29	351.34	0.000	0.000	15.51	0.00	0.00
7	225.00	APXVTM14-ALU-20	3	3.286	3.614	0.73	0.90	16.39	590.97	0.000	0.000	59.22	0.00	0.00
8	212.00	Ericsson RRUS 4478 B14	3	3.245	3.569	0.53	0.75	3.49	314.42	0.000	0.000	12.47	0.00	0.00
9	212.00	Cellmax -	3	3.245	3.569	0.55	0.75	31.55	1463.58	0.000	0.000	112.61	0.00	0.00
10	212.00	Raycap DC6-48-60-18-8F	2	3.255	3.580	1.00	1.00	2.75	168.92	0.000	3.000	9.83	0.00	29.50
11	212.00	Ericsson RRUS 8843 B2	3	3.255	3.580	0.65	0.75	4.26	360.90	0.000	3.000	15.24	0.00	45.72
12	212.00	Ericsson RRUS 11	3	3.255	3.580	0.55	0.75	5.22	360.05	0.000	3.000	18.67	0.00	56.02
13	212.00	RFS ATM192012-0	6	3.255	3.580	0.58	0.75	6.71	217.85	0.000	3.000	24.02	0.00	72.06
14	212.00	Low Profile	1	3.255	3.580	1.00	1.00	40.28	2854.99	0.000	3.000	144.22	0.00	432.65
15	212.00	KMW EPBQ-652L8H8	3	3.255	3.580	0.63	0.75	26.01	1045.73	0.000	3.000	93.13	0.00	279.40
16	212.00	Kathrein 741-989	3	3.255	3.580	0.55	0.75	6.81	304.65	0.000	3.000	24.39	0.00	73.16
17	212.00	Handrail Kit (Site Pro HRK	1	3.255	3.580	1.00	1.00	16.36	1036.65	0.000	3.000	58.55	0.00	175.66
18	195.00	PV-LPP12M-HR-B	1	3.188	3.507	1.00	1.00	100.76	3940.17	0.000	0.000	353.38	0.00	0.00
19	195.00	RFS	3	3.188	3.507	0.55	0.75	12.67	291.01	0.000	0.000	44.45	0.00	0.00
20	195.00	RFS	3	3.188	3.507	0.55	0.75	49.81	2190.32	0.000	0.000	174.69	0.00	0.00
21	195.00	Ericsson 4449 B71+B12	3	3.188	3.507	0.50	0.75	3.32	463.62	0.000	0.000	11.65	0.00	0.00
22	195.00	Ericsson KRY 112 489/2	3	3.188	3.507	0.62	0.75	2.07	87.87	0.000	0.000	7.25	0.00	0.00
23	195.00	CCI KRY112891	4	3.188	3.507	0.40	0.80	2.18	143.38	0.000	0.000	7.64	0.00	0.00
24	120.00	Single light	3	2.879	3.166	0.56	0.75	0.61	30.66	0.000	0.000	1.94	0.00	0.00
<b>Totals:</b>									<b>19,571.36</b>			<b>1,437.72</b>		

## Total Applied Force Summary

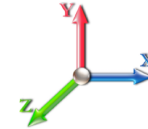
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 31

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		63.99	2396.97	0.00	0.00
10.00		63.13	2404.72	0.00	0.00
15.00		62.20	2394.90	0.00	0.00
20.00		64.98	2377.38	0.00	0.00
25.00		67.02	2355.43	0.00	0.00
30.00		68.50	2330.55	0.00	0.00
35.00		69.82	2303.58	0.00	0.00
40.00		70.99	2275.04	0.00	0.00
45.00		71.93	2245.26	0.00	0.00
45.92		13.15	408.48	0.00	0.00
50.00		60.26	2982.65	0.00	0.00
53.00		44.44	2166.07	0.00	0.00
55.00		29.52	883.19	0.00	0.00
60.00		74.53	2184.28	0.00	0.00
65.00		74.87	2151.42	0.00	0.00
70.00		75.11	2118.03	0.00	0.00
75.00		75.25	2084.17	0.00	0.00
80.00		75.31	2049.90	0.00	0.00
85.00		75.30	2015.25	0.00	0.00
90.00		75.22	1980.27	0.00	0.00
92.75		41.20	1074.97	0.00	0.00
95.00		34.22	1335.50	0.00	0.00
98.92		59.60	2294.91	0.00	0.00
100.00		16.31	382.08	0.00	0.00
105.00		75.42	1741.31	0.00	0.00
110.00		75.13	1709.36	0.00	0.00
115.00		74.80	1677.20	0.00	0.00
120.00	(3) attachments	76.38	1675.49	0.00	0.00
125.00		74.02	1612.26	0.00	0.00
130.00		73.58	1579.52	0.00	0.00
135.00		73.11	1546.61	0.00	0.00
140.00		72.60	1513.55	0.00	0.00
140.67		9.61	199.81	0.00	0.00
145.00		63.49	1865.54	0.00	0.00
145.75		10.92	319.27	0.00	0.00
150.00		61.30	1138.61	0.00	0.00
155.00		71.63	1311.68	0.00	0.00
160.00		71.03	1282.15	0.00	0.00
165.00		70.42	1252.51	0.00	0.00
170.00		69.79	1222.75	0.00	0.00
172.08		28.79	501.03	0.00	0.00
175.00		40.82	923.07	0.00	0.00
176.50		22.39	467.69	0.00	0.00
180.00		52.05	711.59	0.00	0.00
185.00		73.26	993.77	0.00	0.00
190.00		71.94	969.72	0.00	0.00

## Total Applied Force Summary

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 31



195.00	(17) attachments	669.66	8061.94	0.00	0.00
200.00		46.93	767.43	0.00	0.00
205.00		45.39	742.81	0.00	0.00
210.00		43.82	718.11	0.00	0.00
212.00	(28) attachments	530.18	8409.31	0.00	1164.16
215.00		25.12	414.29	0.00	0.00
220.00		40.61	608.07	0.00	0.00
225.00	(19) attachments	362.56	4879.74	0.00	0.00
<b>Totals:</b>		<b>4,503.61</b>	<b>98,011.19</b>	<b>0.00</b>	<b>1,164.16</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



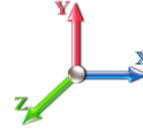
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**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Iterations** 31

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	1.860	0.00	21.84
5.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.66	0.00	0.091	0.000	1.860	0.00	54.68
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.69	0.00	0.091	0.000	1.860	0.00	114.06
10.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	1.860	0.00	23.67
10.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.73	0.00	0.092	0.000	1.860	0.00	57.64
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.76	0.00	0.092	0.000	1.860	0.00	119.58
15.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	1.860	0.00	24.85
15.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.78	0.00	0.094	0.000	1.860	0.00	59.52
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.81	0.00	0.094	0.000	1.860	0.00	123.04
20.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	1.974	0.00	25.75
20.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.81	0.00	0.096	0.000	1.974	0.00	60.92
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.84	0.00	0.096	0.000	1.974	0.00	125.61
25.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.098	0.000	2.069	0.00	26.47
25.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.84	0.00	0.098	0.000	2.069	0.00	62.05
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.87	0.00	0.098	0.000	2.069	0.00	127.66
30.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.099	0.000	2.150	0.00	27.08
30.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.86	0.00	0.099	0.000	2.150	0.00	63.00
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.89	0.00	0.099	0.000	2.150	0.00	129.38
35.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	2.221	0.00	27.62
35.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.88	0.00	0.101	1.004	2.221	0.00	63.83
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.91	0.00	0.101	1.004	2.221	0.00	130.87
40.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.103	1.010	2.284	0.00	28.09
40.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.90	0.00	0.103	1.010	2.284	0.00	64.56
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.92	0.00	0.103	1.010	2.284	0.00	132.19
45.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.105	1.016	2.342	0.00	28.52
45.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.91	0.00	0.105	1.016	2.342	0.00	65.22
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.94	0.00	0.105	1.016	2.342	0.00	133.36
45.92	1-1/4" Hybrid	Yes	0.92	0.000	0.00	0.00	0.00	0.106	1.019	2.351	0.00	5.24
45.92	1.5" Hybrid	Yes	0.92	0.000	1.50	0.35	0.00	0.106	1.019	2.351	0.00	11.98
45.92	1 5/8" Coax	Yes	0.92	0.000	3.96	0.54	0.00	0.106	1.019	2.351	0.00	24.49
50.00	1-1/4" Hybrid	Yes	4.08	0.000	0.00	0.00	0.00	0.108	1.023	2.394	0.00	23.61
50.00	1.5" Hybrid	Yes	4.08	0.000	1.50	1.57	0.00	0.108	1.023	2.394	0.00	53.75
50.00	1 5/8" Coax	Yes	4.08	0.000	3.96	2.41	0.00	0.108	1.023	2.394	0.00	109.79
53.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.109	1.027	2.424	0.00	17.48
53.00	1.5" Hybrid	Yes	3.00	0.000	1.50	1.16	0.00	0.109	1.027	2.424	0.00	39.69
53.00	1 5/8" Coax	Yes	3.00	0.000	3.96	1.78	0.00	0.109	1.027	2.424	0.00	81.02
55.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.108	1.025	2.443	0.00	11.71
55.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.78	0.00	0.108	1.025	2.443	0.00	26.55
55.00	1 5/8" Coax	Yes	2.00	0.000	3.96	1.19	0.00	0.108	1.025	2.443	0.00	54.16
60.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	2.488	0.00	29.61
60.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.95	0.00	0.110	1.029	2.488	0.00	66.87
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.98	0.00	0.110	1.029	2.488	0.00	136.31
65.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	2.530	0.00	29.92
65.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.96	0.00	0.112	1.036	2.530	0.00	67.35
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.99	0.00	0.112	1.036	2.530	0.00	137.16
70.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.114	1.043	2.570	0.00	30.21
70.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.97	0.00	0.114	1.043	2.570	0.00	67.79

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

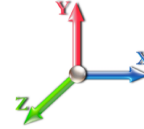


**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Iterations** 31

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.00	0.00	0.114	1.043	2.570	0.00	137.94
75.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.051	2.607	0.00	30.49
75.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.98	0.00	0.117	1.051	2.607	0.00	68.21
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.01	0.00	0.117	1.051	2.607	0.00	138.68
80.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.059	2.643	0.00	30.75
80.00	1.5" Hybrid	Yes	5.00	0.000	1.50	1.99	0.00	0.120	1.059	2.643	0.00	68.60
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.02	0.00	0.120	1.059	2.643	0.00	139.38
85.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.122	1.067	2.677	0.00	31.00
85.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.00	0.00	0.122	1.067	2.677	0.00	68.98
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.02	0.00	0.122	1.067	2.677	0.00	140.04
90.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.125	1.076	2.709	0.00	31.24
90.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.01	0.00	0.125	1.076	2.709	0.00	69.34
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.03	0.00	0.125	1.076	2.709	0.00	140.67
92.75	1-1/4" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.128	1.083	2.727	0.00	17.25
92.75	1.5" Hybrid	Yes	2.75	0.000	1.50	1.11	0.00	0.128	1.083	2.727	0.00	38.24
92.75	1 5/8" Coax	Yes	2.75	0.000	3.96	1.67	0.00	0.128	1.083	2.727	0.00	77.55
95.00	1-1/4" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.129	1.087	2.740	0.00	14.16
95.00	1.5" Hybrid	Yes	2.25	0.000	1.50	0.91	0.00	0.129	1.087	2.740	0.00	31.35
95.00	1 5/8" Coax	Yes	2.25	0.000	3.96	1.37	0.00	0.129	1.087	2.740	0.00	63.57
98.92	1-1/4" Hybrid	Yes	3.92	0.000	0.00	0.00	0.00	0.131	1.093	2.764	0.00	24.78
98.92	1.5" Hybrid	Yes	3.92	0.000	1.50	1.58	0.00	0.131	1.093	2.764	0.00	54.78
98.92	1 5/8" Coax	Yes	3.92	0.000	3.96	2.39	0.00	0.131	1.093	2.764	0.00	111.01
100.00	1-1/4" Hybrid	Yes	1.08	0.000	0.00	0.00	0.00	0.130	1.091	2.770	0.00	6.86
100.00	1.5" Hybrid	Yes	1.08	0.000	1.50	0.44	0.00	0.130	1.091	2.770	0.00	15.17
100.00	1 5/8" Coax	Yes	1.08	0.000	3.96	0.66	0.00	0.130	1.091	2.770	0.00	30.73
105.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.132	1.096	2.799	0.00	31.89
105.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.03	0.00	0.132	1.096	2.799	0.00	70.31
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.05	0.00	0.132	1.096	2.799	0.00	142.38
110.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.135	1.106	2.826	0.00	32.09
110.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.03	0.00	0.135	1.106	2.826	0.00	70.61
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.06	0.00	0.135	1.106	2.826	0.00	142.91
115.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.139	1.117	2.853	0.00	32.28
115.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.04	0.00	0.139	1.117	2.853	0.00	70.90
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.07	0.00	0.139	1.117	2.853	0.00	143.41
120.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	2.879	0.00	32.47
120.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.05	0.00	0.143	1.128	2.879	0.00	71.18
120.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.07	0.00	0.143	1.128	2.879	0.00	143.90
125.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.147	1.140	2.903	0.00	32.65
125.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.05	0.00	0.147	1.140	2.903	0.00	71.45
125.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.08	0.00	0.147	1.140	2.903	0.00	144.37
130.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.151	1.152	2.928	0.00	32.82
130.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.06	0.00	0.151	1.152	2.928	0.00	71.70
130.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.08	0.00	0.151	1.152	2.928	0.00	144.82
135.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.165	2.951	0.00	32.99
135.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.06	0.00	0.155	1.165	2.951	0.00	71.96
135.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.09	0.00	0.155	1.165	2.951	0.00	145.26
140.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.160	1.179	2.974	0.00	33.15

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

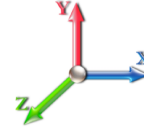


**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Iterations** 31

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
140.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.07	0.00	0.160	1.179	2.974	0.00	72.20
140.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.09	0.00	0.160	1.179	2.974	0.00	145.68
140.67	1-1/4" Hybrid	Yes	0.67	0.000	0.00	0.00	0.00	0.162	1.187	2.977	0.00	4.42
140.67	1.5" Hybrid	Yes	0.67	0.000	1.50	0.28	0.00	0.162	1.187	2.977	0.00	9.63
140.67	1 5/8" Coax	Yes	0.67	0.000	3.96	0.41	0.00	0.162	1.187	2.977	0.00	19.43
145.00	1-1/4" Hybrid	Yes	4.33	0.000	0.00	0.00	0.00	0.165	1.195	2.996	0.00	28.87
145.00	1.5" Hybrid	Yes	4.33	0.000	1.50	1.80	0.00	0.165	1.195	2.996	0.00	62.78
145.00	1 5/8" Coax	Yes	4.33	0.000	3.96	2.69	0.00	0.165	1.195	2.996	0.00	126.61
145.75	1-1/4" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.168	1.203	2.999	0.00	5.00
145.75	1.5" Hybrid	Yes	0.75	0.000	1.50	0.31	0.00	0.168	1.203	2.999	0.00	10.87
145.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.47	0.00	0.168	1.203	2.999	0.00	21.92
150.00	1-1/4" Hybrid	Yes	4.25	0.000	0.00	0.00	0.00	0.167	1.201	3.017	0.00	28.45
150.00	1.5" Hybrid	Yes	4.25	0.000	1.50	1.77	0.00	0.167	1.201	3.017	0.00	61.76
150.00	1 5/8" Coax	Yes	4.25	0.000	3.96	2.64	0.00	0.167	1.201	3.017	0.00	124.52
155.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.172	1.216	3.038	0.00	33.62
155.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.08	0.00	0.172	1.216	3.038	0.00	72.89
155.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.11	0.00	0.172	1.216	3.038	0.00	146.88
160.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.233	3.058	0.00	33.76
160.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.09	0.00	0.178	1.233	3.058	0.00	73.10
160.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.11	0.00	0.178	1.233	3.058	0.00	147.25
165.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.184	1.251	3.078	0.00	33.90
165.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.09	0.00	0.184	1.251	3.078	0.00	73.31
165.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.12	0.00	0.184	1.251	3.078	0.00	147.62
170.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.190	1.271	3.098	0.00	34.04
170.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.10	0.00	0.190	1.271	3.098	0.00	73.52
170.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.12	0.00	0.190	1.271	3.098	0.00	147.98
172.08	1-1/4" Hybrid	Yes	2.08	0.000	0.00	0.00	0.00	0.195	1.285	3.106	0.00	14.19
172.08	1.5" Hybrid	Yes	2.08	0.000	1.50	0.87	0.00	0.195	1.285	3.106	0.00	30.62
172.08	1 5/8" Coax	Yes	2.08	0.000	3.96	1.30	0.00	0.195	1.285	3.106	0.00	61.62
175.00	1-1/4" Hybrid	Yes	2.92	0.000	0.00	0.00	0.00	0.199	1.296	3.117	0.00	19.96
175.00	1.5" Hybrid	Yes	2.92	0.000	1.50	1.23	0.00	0.199	1.296	3.117	0.00	43.05
175.00	1 5/8" Coax	Yes	2.92	0.000	3.96	1.83	0.00	0.199	1.296	3.117	0.00	86.62
176.50	1-1/4" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.202	0.000	3.122	0.00	10.24
176.50	1.5" Hybrid	Yes	1.50	1.200	1.50	0.63	0.76	0.202	0.000	3.122	2.59	22.08
176.50	1 5/8" Coax	Yes	1.50	1.200	3.96	0.94	1.12	0.202	0.000	3.122	3.86	44.43
180.00	1-1/4" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.203	0.000	3.135	0.00	24.04
180.00	1.5" Hybrid	Yes	3.50	1.200	1.50	1.48	1.77	0.203	0.000	3.135	6.11	51.79
180.00	1 5/8" Coax	Yes	3.50	1.200	3.96	2.19	2.63	0.203	0.000	3.135	9.08	104.16
185.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.209	0.000	3.153	0.00	34.44
185.00	1.5" Hybrid	Yes	5.00	1.200	1.50	2.11	2.53	0.209	0.000	3.153	8.78	74.11
185.00	1 5/8" Coax	Yes	5.00	1.200	3.96	3.14	3.76	0.209	0.000	3.153	13.05	149.00
190.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.218	0.000	3.171	0.00	34.57
190.00	1.5" Hybrid	Yes	5.00	1.200	1.50	2.11	2.54	0.218	0.000	3.171	8.85	74.29
190.00	1 5/8" Coax	Yes	5.00	1.200	3.96	3.14	3.77	0.218	0.000	3.171	13.14	149.32
195.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.227	0.000	3.188	0.00	34.69
195.00	1.5" Hybrid	Yes	5.00	1.200	1.50	2.12	2.54	0.227	0.000	3.188	8.91	74.48
195.00	1 5/8" Coax	Yes	5.00	1.200	3.96	3.14	3.77	0.227	0.000	3.188	13.23	149.64

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 35



**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Iterations** 31

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
200.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	3.205	0.00	34.81
200.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.12	0.00	0.065	0.000	3.205	0.00	74.66
205.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	3.222	0.00	34.93
205.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.13	0.00	0.068	0.000	3.222	0.00	74.83
210.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.071	0.000	3.239	0.00	35.05
210.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.13	0.00	0.071	0.000	3.239	0.00	75.00
212.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	3.245	0.00	14.04
212.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.85	0.00	0.074	0.000	3.245	0.00	30.03
215.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.076	0.000	3.255	0.00	21.10
215.00	1.5" Hybrid	Yes	3.00	0.000	1.50	1.28	0.00	0.076	0.000	3.255	0.00	45.10
220.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.079	0.000	3.270	0.00	35.28
220.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.14	0.00	0.079	0.000	3.270	0.00	75.34
225.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	3.286	0.00	35.39
225.00	1.5" Hybrid	Yes	5.00	0.000	1.50	2.14	0.00	0.084	0.000	3.286	0.00	75.50
<b>Totals:</b>											<b>87.6</b>	<b>9,980.4</b>

## Calculated Forces

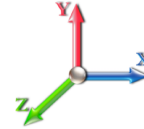
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



**Load Case:** 1.2D + 1.0Di + 1.0Wi 30 mph Wind

**Iterations** 31

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-98.01	-4.53	0.00	-752.45	0.00	752.45	5466.70	2733.35	13309.4	6607.36	0.00	0.000	0.000	0.132
5.00	-95.61	-4.51	0.00	-729.81	0.00	729.81	5411.44	2705.72	12949.7	6428.82	0.02	-0.029	0.000	0.131
10.00	-93.20	-4.50	0.00	-707.24	0.00	707.24	5354.88	2677.44	12591.7	6251.05	0.06	-0.059	0.000	0.131
15.00	-90.81	-4.48	0.00	-684.76	0.00	684.76	5297.04	2648.52	12235.3	6074.14	0.14	-0.089	0.000	0.130
20.00	-88.43	-4.46	0.00	-662.35	0.00	662.35	5237.89	2618.95	11880.8	5898.16	0.25	-0.120	0.000	0.129
25.00	-86.07	-4.43	0.00	-640.06	0.00	640.06	5177.46	2588.73	11528.4	5723.20	0.39	-0.152	0.000	0.128
30.00	-83.74	-4.41	0.00	-617.88	0.00	617.88	5115.74	2557.87	11178.1	5549.33	0.57	-0.184	0.000	0.128
35.00	-81.43	-4.38	0.00	-595.85	0.00	595.85	5052.72	2526.36	10830.3	5376.63	0.78	-0.217	0.000	0.127
40.00	-79.15	-4.34	0.00	-573.97	0.00	573.97	4988.41	2494.20	10484.9	5205.19	1.03	-0.251	0.000	0.126
45.00	-76.91	-4.29	0.00	-552.25	0.00	552.25	4922.81	2461.40	10142.3	5035.08	1.31	-0.285	0.000	0.125
45.92	-76.50	-4.30	0.00	-548.32	0.00	548.32	4910.64	2455.32	10079.8	5004.05	1.36	-0.292	0.000	0.125
50.00	-73.51	-4.25	0.00	-530.78	0.00	530.78	4855.91	2427.96	9802.53	4866.39	1.62	-0.321	0.000	0.124
53.00	-71.35	-4.22	0.00	-518.02	0.00	518.02	4874.44	2437.22	9895.68	4912.63	1.83	-0.342	0.000	0.120
55.00	-70.46	-4.21	0.00	-509.58	0.00	509.58	4847.46	2423.73	9760.26	4845.41	1.98	-0.357	0.000	0.120
60.00	-68.27	-4.17	0.00	-488.51	0.00	488.51	4779.11	2389.56	9423.86	4678.40	2.37	-0.391	0.000	0.119
65.00	-66.12	-4.12	0.00	-467.68	0.00	467.68	4709.47	2354.74	9090.65	4512.98	2.80	-0.427	0.000	0.118
70.00	-64.00	-4.07	0.00	-447.09	0.00	447.09	4638.54	2319.27	8760.79	4349.22	3.27	-0.463	0.000	0.117
75.00	-61.92	-4.01	0.00	-426.76	0.00	426.76	4566.31	2283.16	8434.44	4187.21	3.77	-0.499	0.000	0.115
80.00	-59.86	-3.96	0.00	-406.70	0.00	406.70	4492.79	2246.40	8111.77	4027.03	4.31	-0.536	0.000	0.114
85.00	-57.85	-3.90	0.00	-386.90	0.00	386.90	4417.98	2208.99	7792.94	3868.74	4.89	-0.574	0.000	0.113
90.00	-55.87	-3.84	0.00	-367.39	0.00	367.39	4338.02	2169.01	7471.46	3709.15	5.52	-0.613	0.000	0.112
92.75	-54.79	-3.80	0.00	-356.84	0.00	356.84	4280.99	2140.50	7275.30	3611.77	5.88	-0.635	0.000	0.112
95.00	-53.45	-3.78	0.00	-348.28	0.00	348.28	4234.33	2117.17	7116.75	3533.05	6.18	-0.653	0.000	0.111
98.92	-51.16	-3.71	0.00	-333.49	0.00	333.49	3503.07	1751.53	5900.87	2929.44	6.73	-0.685	0.000	0.128
100.00	-50.77	-3.71	0.00	-329.47	0.00	329.47	3490.19	1745.09	5847.72	2903.05	6.89	-0.694	0.000	0.128
105.00	-49.03	-3.65	0.00	-310.91	0.00	310.91	3429.94	1714.97	5604.12	2782.12	7.64	-0.739	0.000	0.126
110.00	-47.32	-3.59	0.00	-292.64	0.00	292.64	3368.41	1684.21	5363.47	2662.65	8.43	-0.784	0.000	0.124
115.00	-45.64	-3.53	0.00	-274.68	0.00	274.68	3305.58	1652.79	5125.94	2544.73	9.28	-0.831	0.000	0.122
120.00	-43.96	-3.47	0.00	-257.02	0.00	257.02	3241.47	1620.73	4891.69	2428.44	10.18	-0.878	0.000	0.119
125.00	-42.35	-3.40	0.00	-239.68	0.00	239.68	3168.38	1584.19	4649.61	2308.26	11.12	-0.925	0.000	0.117
130.00	-40.77	-3.34	0.00	-222.67	0.00	222.67	3079.50	1539.75	4391.09	2179.92	12.11	-0.973	0.000	0.115
135.00	-39.22	-3.27	0.00	-205.98	0.00	205.98	2990.62	1495.31	4139.97	2055.26	13.16	-1.022	0.000	0.113
140.00	-37.71	-3.19	0.00	-189.62	0.00	189.62	2901.75	1450.87	3896.25	1934.26	14.25	-1.070	0.000	0.111
140.67	-37.51	-3.19	0.00	-187.50	0.00	187.50	2889.90	1444.95	3864.31	1918.41	14.40	-1.077	0.000	0.111
145.00	-35.64	-3.11	0.00	-173.67	0.00	173.67	2812.87	1406.44	3659.92	1816.94	15.40	-1.120	0.000	0.108
145.75	-35.32	-3.11	0.00	-171.34	0.00	171.34	2338.09	1169.04	3100.38	1539.16	15.58	-1.128	0.000	0.126
150.00	-34.18	-3.05	0.00	-158.13	0.00	158.13	2293.55	1146.78	2960.24	1469.59	16.60	-1.170	0.000	0.123
155.00	-32.87	-2.98	0.00	-142.88	0.00	142.88	2239.96	1119.98	2797.90	1389.00	17.86	-1.225	0.000	0.118
160.00	-31.59	-2.92	0.00	-127.96	0.00	127.96	2172.79	1086.39	2623.62	1302.47	19.17	-1.280	0.000	0.113
165.00	-30.33	-2.84	0.00	-113.38	0.00	113.38	2098.72	1049.36	2446.89	1214.74	20.54	-1.334	0.000	0.108
170.00	-29.11	-2.76	0.00	-99.16	0.00	99.16	2024.66	1012.33	2276.33	1130.07	21.96	-1.387	0.000	0.102
172.08	-28.61	-2.74	0.00	-93.41	0.00	93.41	1993.85	996.92	2207.19	1095.74	22.57	-1.409	0.000	0.100
175.00	-27.69	-2.68	0.00	-85.42	0.00	85.42	1950.60	975.30	2111.93	1048.45	23.44	-1.439	0.000	0.096
176.50	-27.22	-2.66	0.00	-81.40	0.00	81.40	1282.06	641.03	1405.37	697.69	23.90	-1.454	0.000	0.138
180.00	-26.51	-2.61	0.00	-72.08	0.00	72.08	1259.97	629.98	1344.43	667.43	24.98	-1.489	0.000	0.129
185.00	-25.51	-2.54	0.00	-59.01	0.00	59.01	1227.33	613.66	1258.55	624.80	26.57	-1.550	0.000	0.115
190.00	-24.54	-2.46	0.00	-46.31	0.00	46.31	1193.40	596.70	1174.12	582.88	28.22	-1.605	0.000	0.100
195.00	-16.50	-1.58	0.00	-33.99	0.00	33.99	1158.17	579.09	1091.29	541.76	29.93	-1.653	0.000	0.077



## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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200.00	-15.73	-1.52	0.00	-26.11	0.00	26.11	1121.66	560.83	1010.23	501.52	31.68	-1.693	0.000	0.066
205.00	-14.99	-1.46	0.00	-18.52	0.00	18.52	1082.14	541.07	929.63	461.51	33.48	-1.728	0.000	0.054
210.00	-14.28	-1.40	0.00	-11.22	0.00	11.22	1030.28	515.14	842.23	418.12	35.30	-1.754	0.000	0.041
212.00	-5.89	-0.61	0.00	-7.27	0.00	7.27	1009.54	504.77	808.47	401.36	36.04	-1.762	0.000	0.024
215.00	-5.47	-0.57	0.00	-5.44	0.00	5.44	978.43	489.21	759.14	376.87	37.15	-1.771	0.000	0.020
220.00	-4.87	-0.51	0.00	-2.57	0.00	2.57	926.57	463.29	680.37	337.76	39.01	-1.780	0.000	0.013
225.00	0.00	-0.36	0.00	0.00	0.00	0.00	874.71	437.36	605.91	300.80	40.87	-1.784	0.000	0.000

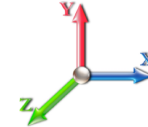
## Seismic Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E				<b>Iterations</b> 29
<b>Gust Response Factor</b>	1.10	<b>Sds</b>	0.19	<b>Ss</b> 0.18
<b>Dead Load Factor</b>	1.20	<b>Seismic Load Factor</b>	1.00	<b>S1</b> 0.08
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.22	<b>SA</b> 0.03
				<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1388.1	0.00	0.02	0.01	21.45	
10.00		1364.4	0.00	0.04	0.02	32.30	
15.00		1340.7	0.01	0.05	0.03	38.24	
20.00		1316.9	0.01	0.06	0.04	41.47	
25.00		1293.2	0.02	0.07	0.04	43.13	
30.00		1269.4	0.03	0.07	0.04	43.86	
35.00		1245.7	0.05	0.07	0.04	44.07	
40.00		1221.9	0.06	0.07	0.04	44.03	
45.00		1198.2	0.08	0.07	0.04	43.89	
45.92	Bot - Section 2	217.10	0.08	0.07	0.04	7.97	
50.00		1931.7	0.09	0.07	0.04	71.90	
53.00	Top - Section 1	1399.0	0.10	0.07	0.04	52.58	
55.00		465.76	0.11	0.07	0.04	17.62	
60.00		1147.7	0.13	0.07	0.03	44.10	
65.00		1124.0	0.16	0.07	0.03	43.76	
70.00		1100.2	0.18	0.06	0.03	43.18	
75.00		1076.5	0.21	0.06	0.02	42.20	
80.00		1052.7	0.24	0.06	0.02	40.62	
85.00		1029.0	0.27	0.05	0.02	38.22	
90.00		1005.3	0.30	0.04	0.01	34.77	
92.75	Bot - Section 3	542.79	0.32	0.04	0.01	17.69	
95.00		822.28	0.34	0.04	0.01	25.18	
98.92	Top - Section 2	1410.0	0.37	0.03	0.01	37.16	
100.00		179.73	0.37	0.03	0.01	4.49	
105.00		817.16	0.41	0.01	0.01	14.36	
110.00		796.81	0.45	0.00	0.01	6.81	
115.00		776.46	0.49	-0.01	0.01	-1.23	
120.00	Appurtenance(s)	765.10	0.54	-0.03	0.01	-9.20	
125.00		735.75	0.58	-0.05	0.01	-16.05	
130.00		715.40	0.63	-0.06	0.02	-21.57	
135.00		695.04	0.68	-0.08	0.03	-25.34	
140.00		674.69	0.73	-0.10	0.04	-27.30	
140.67	Bot - Section 4	88.42	0.74	-0.10	0.04	-3.61	
145.00		1047.6	0.78	-0.11	0.05	-44.06	
145.75	Top - Section 3	178.47	0.79	-0.11	0.05	-7.51	
150.00		457.90	0.84	-0.12	0.07	-18.90	
155.00		523.02	0.90	-0.12	0.09	-19.97	
160.00		506.06	0.96	-0.12	0.11	-16.64	
165.00		489.10	1.02	-0.11	0.14	-12.41	
170.00		472.14	1.08	-0.08	0.17	-7.42	
172.08	Bot - Section 5	191.41	1.11	-0.07	0.19	-2.12	
175.00		452.12	1.14	-0.04	0.21	-1.77	
176.50	Top - Section 4	227.93	1.16	-0.03	0.23	0.01	
180.00		218.15	1.21	0.01	0.26	2.19	
185.00		301.25	1.28	0.09	0.32	7.87	

## Seismic Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	Page: 39
	<b>Struct Class:</b> II	



190.00		289.38	1.35	0.19	0.38	12.84
195.00	Appurtenance(s)	2918.1	1.42	0.32	0.45	189.28
200.00		265.63	1.49	0.48	0.53	23.27
205.00		253.75	1.57	0.69	0.63	28.57
210.00		241.88	1.65	0.93	0.73	33.85
212.00	Appurtenance(s)	3117.9	1.68	1.04	0.78	472.45
215.00		136.58	1.73	1.22	0.85	23.17
220.00		218.13	1.81	1.57	0.99	44.00
225.00	Appurtenance(s)	2135.2	1.89	1.98	1.14	504.43
<b>Totals:</b>		<b>46,849.9</b>				<b>2,001.9</b>
						<b>Total Wind: 39,943.3</b>

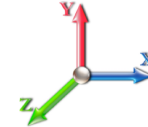
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



<b>Load Case:</b> 1.2D + 1.0E										<b>Iterations</b> 29
<b>Gust Response Factor</b> 1.10					<b>Sds</b> 0.19					<b>Ss</b> 0.18
<b>Dead Load Factor</b> 1.20			<b>Seismic Load Factor</b> 1.00			<b>Sd1</b> 0.13			<b>S1</b> 0.08	
<b>Wind Load Factor</b> 0.00		<b>Structure Frequency (f1)</b> 0.22		<b>SA</b> 0.03		<b>Seismic Importance Factor</b> 1.00				



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-61.98	-2.24	0.00	-367.88	0.00	367.88	5466.70	2733.35	13309.4	6607.36	0.00	0.00	0.00	0.067
5.00	-60.17	-2.24	0.00	-356.66	0.00	356.66	5411.44	2705.72	12949.7	6428.82	0.01	-0.01	0.067	
10.00	-58.40	-2.22	0.00	-345.47	0.00	345.47	5354.88	2677.44	12591.7	6251.05	0.03	-0.03	0.066	
15.00	-56.65	-2.20	0.00	-334.38	0.00	334.38	5297.04	2648.52	12235.3	6074.14	0.07	-0.04	0.066	
20.00	-54.94	-2.17	0.00	-323.40	0.00	323.40	5237.89	2618.95	11880.8	5898.16	0.12	-0.06	0.065	
25.00	-53.25	-2.14	0.00	-312.57	0.00	312.57	5177.46	2588.73	11528.4	5723.20	0.19	-0.07	0.065	
30.00	-51.59	-2.10	0.00	-301.89	0.00	301.89	5115.74	2557.87	11178.1	5549.33	0.28	-0.09	0.064	
35.00	-49.96	-2.07	0.00	-291.37	0.00	291.37	5052.72	2526.36	10830.3	5376.63	0.38	-0.11	0.064	
40.00	-48.35	-2.04	0.00	-281.01	0.00	281.01	4988.41	2494.20	10484.9	5205.19	0.50	-0.12	0.064	
45.00	-46.78	-2.00	0.00	-270.82	0.00	270.82	4922.81	2461.40	10142.3	5035.08	0.64	-0.14	0.063	
45.92	-46.49	-2.00	0.00	-268.99	0.00	268.99	4910.64	2455.32	10079.8	5004.05	0.67	-0.14	0.063	
50.00	-44.06	-1.93	0.00	-260.83	0.00	260.83	4855.91	2427.96	9802.53	4866.39	0.79	-0.16	0.063	
53.00	-42.30	-1.88	0.00	-255.04	0.00	255.04	4874.44	2437.22	9895.68	4912.63	0.90	-0.17	0.061	
55.00	-41.69	-1.87	0.00	-251.29	0.00	251.29	4847.46	2423.73	9760.26	4845.41	0.97	-0.17	0.060	
60.00	-40.18	-1.83	0.00	-241.95	0.00	241.95	4779.11	2389.56	9423.86	4678.40	1.16	-0.19	0.060	
65.00	-38.69	-1.79	0.00	-232.80	0.00	232.80	4709.47	2354.74	9090.65	4512.98	1.37	-0.21	0.060	
70.00	-37.23	-1.76	0.00	-223.84	0.00	223.84	4638.54	2319.27	8760.79	4349.22	1.60	-0.23	0.059	
75.00	-35.81	-1.72	0.00	-215.05	0.00	215.05	4566.31	2283.16	8434.44	4187.21	1.85	-0.25	0.059	
80.00	-34.41	-1.68	0.00	-206.46	0.00	206.46	4492.79	2246.40	8111.77	4027.03	2.11	-0.26	0.059	
85.00	-33.03	-1.65	0.00	-198.03	0.00	198.03	4417.98	2208.99	7792.94	3868.74	2.40	-0.28	0.059	
90.00	-31.69	-1.62	0.00	-189.78	0.00	189.78	4338.02	2169.01	7471.46	3709.15	2.71	-0.30	0.058	
92.75	-30.97	-1.60	0.00	-185.33	0.00	185.33	4280.99	2140.50	7275.30	3611.77	2.89	-0.31	0.059	
95.00	-29.92	-1.58	0.00	-181.72	0.00	181.72	4234.33	2117.17	7116.75	3533.05	3.04	-0.32	0.059	
98.92	-28.12	-1.54	0.00	-175.54	0.00	175.54	3503.07	1751.53	5900.87	2929.44	3.31	-0.34	0.068	
100.00	-27.87	-1.54	0.00	-173.88	0.00	173.88	3490.19	1745.09	5847.72	2903.05	3.39	-0.35	0.068	
105.00	-26.76	-1.53	0.00	-166.20	0.00	166.20	3429.94	1714.97	5604.12	2782.12	3.76	-0.37	0.068	
110.00	-25.66	-1.52	0.00	-158.56	0.00	158.56	3368.41	1684.21	5363.47	2662.65	4.16	-0.39	0.067	
115.00	-24.59	-1.53	0.00	-150.95	0.00	150.95	3305.58	1652.79	5125.94	2544.73	4.59	-0.42	0.067	
120.00	-23.54	-1.53	0.00	-143.31	0.00	143.31	3241.47	1620.73	4891.69	2428.44	5.04	-0.45	0.066	
125.00	-22.52	-1.53	0.00	-135.66	0.00	135.66	3168.38	1584.19	4649.61	2308.26	5.52	-0.47	0.066	
130.00	-21.52	-1.53	0.00	-128.00	0.00	128.00	3079.50	1539.75	4391.09	2179.92	6.03	-0.50	0.066	
135.00	-20.55	-1.54	0.00	-120.33	0.00	120.33	2990.62	1495.31	4139.97	2055.26	6.57	-0.53	0.065	
140.00	-19.61	-1.53	0.00	-112.65	0.00	112.65	2901.75	1450.87	3896.25	1934.26	7.14	-0.56	0.065	
140.67	-19.48	-1.54	0.00	-111.63	0.00	111.63	2889.90	1444.95	3864.31	1918.41	7.21	-0.56	0.065	
145.00	-18.11	-1.53	0.00	-104.97	0.00	104.97	2812.87	1406.44	3659.92	1816.94	7.74	-0.59	0.064	
145.75	-17.87	-1.53	0.00	-103.83	0.00	103.83	2338.09	1169.04	3100.38	1539.16	7.83	-0.59	0.075	
150.00	-17.21	-1.53	0.00	-97.32	0.00	97.32	2293.55	1146.78	2960.24	1469.59	8.36	-0.62	0.074	
155.00	-16.44	-1.53	0.00	-89.66	0.00	89.66	2239.96	1119.98	2797.90	1389.00	9.03	-0.65	0.072	
160.00	-15.70	-1.53	0.00	-82.00	0.00	82.00	2172.79	1086.39	2623.62	1302.47	9.73	-0.69	0.070	
165.00	-14.97	-1.53	0.00	-74.33	0.00	74.33	2098.72	1049.36	2446.89	1214.74	10.47	-0.72	0.068	
170.00	-14.27	-1.53	0.00	-66.65	0.00	66.65	2024.66	1012.33	2276.33	1130.07	11.24	-0.76	0.066	
172.08	-13.98	-1.53	0.00	-63.47	0.00	63.47	1993.85	996.92	2207.19	1095.74	11.57	-0.77	0.065	
175.00	-13.36	-1.53	0.00	-58.99	0.00	58.99	1950.60	975.30	2111.93	1048.45	12.05	-0.79	0.063	
176.50	-13.05	-1.53	0.00	-56.71	0.00	56.71	1282.06	641.03	1405.37	697.69	12.30	-0.80	0.091	
180.00	-12.69	-1.53	0.00	-51.36	0.00	51.36	1259.97	629.98	1344.43	667.43	12.90	-0.83	0.087	
185.00	-12.19	-1.52	0.00	-43.72	0.00	43.72	1227.33	613.66	1258.55	624.80	13.79	-0.87	0.080	
190.00	-11.71	-1.51	0.00	-36.11	0.00	36.11	1193.40	596.70	1174.12	582.88	14.72	-0.91	0.072	

## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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195.00	-8.07	-1.27	0.00	-28.57	0.00	28.57	1158.17	579.09	1091.29	541.76	15.70	-0.95	0.060
200.00	-7.66	-1.24	0.00	-22.24	0.00	22.24	1121.66	560.83	1010.23	501.52	16.71	-0.98	0.051
205.00	-7.26	-1.21	0.00	-16.03	0.00	16.03	1082.14	541.07	929.63	461.51	17.76	-1.01	0.041
210.00	-6.87	-1.17	0.00	-9.99	0.00	9.99	1030.28	515.14	842.23	418.12	18.83	-1.04	0.031
212.00	-3.10	-0.63	0.00	-7.66	0.00	7.66	1009.54	504.77	808.47	401.36	19.27	-1.04	0.022
215.00	-2.88	-0.60	0.00	-5.77	0.00	5.77	978.43	489.21	759.14	376.87	19.93	-1.05	0.018
220.00	-2.59	-0.55	0.00	-2.76	0.00	2.76	926.57	463.29	680.37	337.76	21.04	-1.06	0.011
225.00	0.00	-0.50	0.00	0.00	0.00	0.00	874.71	437.36	605.91	300.80	22.16	-1.07	0.000

## Seismic Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

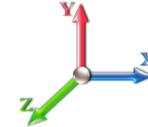


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**Load Case:** 0.9D + 1.0E

**Iterations** 28

<b>Gust Response Factor</b> 1.10	<b>Sds</b> 0.19	<b>Ss</b> 0.18	
<b>Dead Load Factor</b> 0.90	<b>Seismic Load Factor</b> 1.00	<b>Sd1</b> 0.13	<b>S1</b> 0.08
<b>Wind Load Factor</b> 0.00	<b>Structure Frequency (f1)</b> 0.22	<b>SA</b> 0.03	<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1388.1	0.00	0.02	0.01	21.45	
10.00		1364.4	0.00	0.04	0.02	32.30	
15.00		1340.7	0.01	0.05	0.03	38.24	
20.00		1316.9	0.01	0.06	0.04	41.47	
25.00		1293.2	0.02	0.07	0.04	43.13	
30.00		1269.4	0.03	0.07	0.04	43.86	
35.00		1245.7	0.05	0.07	0.04	44.07	
40.00		1221.9	0.06	0.07	0.04	44.03	
45.00		1198.2	0.08	0.07	0.04	43.89	
45.92	Bot - Section 2	217.10	0.08	0.07	0.04	7.97	
50.00		1931.7	0.09	0.07	0.04	71.90	
53.00	Top - Section 1	1399.0	0.10	0.07	0.04	52.58	
55.00		465.76	0.11	0.07	0.04	17.62	
60.00		1147.7	0.13	0.07	0.03	44.10	
65.00		1124.0	0.16	0.07	0.03	43.76	
70.00		1100.2	0.18	0.06	0.03	43.18	
75.00		1076.5	0.21	0.06	0.02	42.20	
80.00		1052.7	0.24	0.06	0.02	40.62	
85.00		1029.0	0.27	0.05	0.02	38.22	
90.00		1005.3	0.30	0.04	0.01	34.77	
92.75	Bot - Section 3	542.79	0.32	0.04	0.01	17.69	
95.00		822.28	0.34	0.04	0.01	25.18	
98.92	Top - Section 2	1410.0	0.37	0.03	0.01	37.16	
100.00		179.73	0.37	0.03	0.01	4.49	
105.00		817.16	0.41	0.01	0.01	14.36	
110.00		796.81	0.45	0.00	0.01	6.81	
115.00		776.46	0.49	-0.01	0.01	-1.23	
120.00	Appurtenance(s)	765.10	0.54	-0.03	0.01	-9.20	
125.00		735.75	0.58	-0.05	0.01	-16.05	
130.00		715.40	0.63	-0.06	0.02	-21.57	
135.00		695.04	0.68	-0.08	0.03	-25.34	
140.00		674.69	0.73	-0.10	0.04	-27.30	
140.67	Bot - Section 4	88.42	0.74	-0.10	0.04	-3.61	
145.00		1047.6	0.78	-0.11	0.05	-44.06	
145.75	Top - Section 3	178.47	0.79	-0.11	0.05	-7.51	
150.00		457.90	0.84	-0.12	0.07	-18.90	
155.00		523.02	0.90	-0.12	0.09	-19.97	
160.00		506.06	0.96	-0.12	0.11	-16.64	
165.00		489.10	1.02	-0.11	0.14	-12.41	
170.00		472.14	1.08	-0.08	0.17	-7.42	
172.08	Bot - Section 5	191.41	1.11	-0.07	0.19	-2.12	
175.00		452.12	1.14	-0.04	0.21	-1.77	
176.50	Top - Section 4	227.93	1.16	-0.03	0.23	0.01	
180.00		218.15	1.21	0.01	0.26	2.19	
185.00		301.25	1.28	0.09	0.32	7.87	

## Seismic Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	Page: 43
	<b>Struct Class:</b> II	



190.00		289.38	1.35	0.19	0.38	12.84
195.00	Appurtenance(s)	2918.1	1.42	0.32	0.45	189.28
200.00		265.63	1.49	0.48	0.53	23.27
205.00		253.75	1.57	0.69	0.63	28.57
210.00		241.88	1.65	0.93	0.73	33.85
212.00	Appurtenance(s)	3117.9	1.68	1.04	0.78	472.45
215.00		136.58	1.73	1.22	0.85	23.17
220.00		218.13	1.81	1.57	0.99	44.00
225.00	Appurtenance(s)	2135.2	1.89	1.98	1.14	504.43
<b>Totals:</b>		<b>46,849.9</b>				<b>2,001.9</b>
						<b>Total Wind: 39,943.3</b>

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

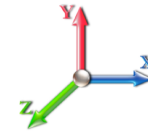
## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.0E										<b>Iterations</b> 28
<b>Gust Response Factor</b> 1.10					<b>Sds</b> 0.19					<b>Ss</b> 0.18
<b>Dead Load Factor</b> 0.90			<b>Seismic Load Factor</b> 1.00			<b>Sd1</b> 0.13			<b>S1</b> 0.08	
<b>Wind Load Factor</b> 0.00		<b>Structure Frequency (f1)</b> 0.22		<b>SA</b> 0.03		<b>Seismic Importance Factor</b> 1.00				



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-46.48	-2.24	0.00	-359.04	0.00	359.04	5466.70	2733.35	13309.4	6607.36	0.00	0.00	0.00	0.063
5.00	-45.13	-2.23	0.00	-347.84	0.00	347.84	5411.44	2705.72	12949.7	6428.82	0.01	-0.01	0.062	
10.00	-43.80	-2.21	0.00	-336.68	0.00	336.68	5354.88	2677.44	12591.7	6251.05	0.03	-0.03	0.062	
15.00	-42.49	-2.18	0.00	-325.64	0.00	325.64	5297.04	2648.52	12235.3	6074.14	0.07	-0.04	0.062	
20.00	-41.20	-2.15	0.00	-314.74	0.00	314.74	5237.89	2618.95	11880.8	5898.16	0.12	-0.06	0.061	
25.00	-39.94	-2.11	0.00	-303.99	0.00	303.99	5177.46	2588.73	11528.4	5723.20	0.19	-0.07	0.061	
30.00	-38.69	-2.08	0.00	-293.42	0.00	293.42	5115.74	2557.87	11178.1	5549.33	0.27	-0.09	0.060	
35.00	-37.47	-2.04	0.00	-283.02	0.00	283.02	5052.72	2526.36	10830.3	5376.63	0.37	-0.10	0.060	
40.00	-36.26	-2.01	0.00	-272.80	0.00	272.80	4988.41	2494.20	10484.9	5205.19	0.49	-0.12	0.060	
45.00	-35.08	-1.97	0.00	-262.76	0.00	262.76	4922.81	2461.40	10142.3	5035.08	0.62	-0.14	0.059	
45.92	-34.87	-1.96	0.00	-260.96	0.00	260.96	4910.64	2455.32	10079.8	5004.05	0.65	-0.14	0.059	
50.00	-33.05	-1.89	0.00	-252.94	0.00	252.94	4855.91	2427.96	9802.53	4866.39	0.77	-0.15	0.059	
53.00	-31.73	-1.84	0.00	-247.26	0.00	247.26	4874.44	2437.22	9895.68	4912.63	0.87	-0.16	0.057	
55.00	-31.27	-1.83	0.00	-243.58	0.00	243.58	4847.46	2423.73	9760.26	4845.41	0.94	-0.17	0.057	
60.00	-30.13	-1.79	0.00	-234.43	0.00	234.43	4779.11	2389.56	9423.86	4678.40	1.13	-0.19	0.056	
65.00	-29.02	-1.75	0.00	-225.47	0.00	225.47	4709.47	2354.74	9090.65	4512.98	1.33	-0.20	0.056	
70.00	-27.92	-1.71	0.00	-216.71	0.00	216.71	4638.54	2319.27	8760.79	4349.22	1.55	-0.22	0.056	
75.00	-26.85	-1.68	0.00	-208.14	0.00	208.14	4566.31	2283.16	8434.44	4187.21	1.79	-0.24	0.056	
80.00	-25.80	-1.64	0.00	-199.76	0.00	199.76	4492.79	2246.40	8111.77	4027.03	2.05	-0.26	0.055	
85.00	-24.77	-1.60	0.00	-191.56	0.00	191.56	4417.98	2208.99	7792.94	3868.74	2.33	-0.28	0.055	
90.00	-23.77	-1.57	0.00	-183.54	0.00	183.54	4338.02	2169.01	7471.46	3709.15	2.63	-0.29	0.055	
92.75	-23.22	-1.55	0.00	-179.22	0.00	179.22	4280.99	2140.50	7275.30	3611.77	2.80	-0.31	0.055	
95.00	-22.44	-1.53	0.00	-175.72	0.00	175.72	4234.33	2117.17	7116.75	3533.05	2.95	-0.31	0.055	
98.92	-21.09	-1.49	0.00	-169.73	0.00	169.73	3503.07	1751.53	5900.87	2929.44	3.22	-0.33	0.064	
100.00	-20.90	-1.49	0.00	-168.12	0.00	168.12	3490.19	1745.09	5847.72	2903.05	3.29	-0.34	0.064	
105.00	-20.06	-1.48	0.00	-160.68	0.00	160.68	3429.94	1714.97	5604.12	2782.12	3.65	-0.36	0.064	
110.00	-19.24	-1.47	0.00	-153.29	0.00	153.29	3368.41	1684.21	5363.47	2662.65	4.04	-0.38	0.063	
115.00	-18.44	-1.48	0.00	-145.93	0.00	145.93	3305.58	1652.79	5125.94	2544.73	4.46	-0.41	0.063	
120.00	-17.65	-1.48	0.00	-138.55	0.00	138.55	3241.47	1620.73	4891.69	2428.44	4.90	-0.43	0.062	
125.00	-16.89	-1.48	0.00	-131.16	0.00	131.16	3168.38	1584.19	4649.61	2308.26	5.36	-0.46	0.062	
130.00	-16.14	-1.48	0.00	-123.76	0.00	123.76	3079.50	1539.75	4391.09	2179.92	5.85	-0.48	0.062	
135.00	-15.41	-1.48	0.00	-116.36	0.00	116.36	2990.62	1495.31	4139.97	2055.26	6.38	-0.51	0.062	
140.00	-14.70	-1.48	0.00	-108.95	0.00	108.95	2901.75	1450.87	3896.25	1934.26	6.93	-0.54	0.061	
140.67	-14.61	-1.48	0.00	-107.96	0.00	107.96	2889.90	1444.95	3864.31	1918.41	7.00	-0.54	0.061	
145.00	-13.58	-1.48	0.00	-101.54	0.00	101.54	2812.87	1406.44	3659.92	1816.94	7.51	-0.57	0.061	
145.75	-13.40	-1.48	0.00	-100.43	0.00	100.43	2338.09	1169.04	3100.38	1539.16	7.59	-0.57	0.071	
150.00	-12.90	-1.48	0.00	-94.15	0.00	94.15	2293.55	1146.78	2960.24	1469.59	8.12	-0.60	0.070	
155.00	-12.33	-1.48	0.00	-86.76	0.00	86.76	2239.96	1119.98	2797.90	1389.00	8.76	-0.63	0.068	
160.00	-11.77	-1.48	0.00	-79.35	0.00	79.35	2172.79	1086.39	2623.62	1302.47	9.44	-0.66	0.066	
165.00	-11.23	-1.48	0.00	-71.95	0.00	71.95	2098.72	1049.36	2446.89	1214.74	10.15	-0.70	0.065	
170.00	-10.70	-1.48	0.00	-64.54	0.00	64.54	2024.66	1012.33	2276.33	1130.07	10.90	-0.73	0.062	
172.08	-10.48	-1.48	0.00	-61.47	0.00	61.47	1993.85	996.92	2207.19	1095.74	11.22	-0.75	0.061	
175.00	-10.02	-1.48	0.00	-57.15	0.00	57.15	1950.60	975.30	2111.93	1048.45	11.68	-0.77	0.060	
176.50	-9.78	-1.48	0.00	-54.94	0.00	54.94	1282.06	641.03	1405.37	697.69	11.93	-0.78	0.086	
180.00	-9.51	-1.48	0.00	-49.77	0.00	49.77	1259.97	629.98	1344.43	667.43	12.50	-0.80	0.082	
185.00	-9.14	-1.47	0.00	-42.39	0.00	42.39	1227.33	613.66	1258.55	624.80	13.37	-0.84	0.075	
190.00	-8.77	-1.46	0.00	-35.04	0.00	35.04	1193.40	596.70	1174.12	582.88	14.27	-0.88	0.067	



## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 45



195.00	-6.05	-1.23	0.00	-27.76	0.00	27.76	1158.17	579.09	1091.29	541.76	15.22	-0.92	0.056
200.00	-5.74	-1.20	0.00	-21.62	0.00	21.62	1121.66	560.83	1010.23	501.52	16.20	-0.95	0.048
205.00	-5.44	-1.17	0.00	-15.60	0.00	15.60	1082.14	541.07	929.63	461.51	17.21	-0.98	0.039
210.00	-5.15	-1.13	0.00	-9.74	0.00	9.74	1030.28	515.14	842.23	418.12	18.26	-1.01	0.028
212.00	-2.32	-0.61	0.00	-7.47	0.00	7.47	1009.54	504.77	808.47	401.36	18.68	-1.01	0.021
215.00	-2.16	-0.59	0.00	-5.63	0.00	5.63	978.43	489.21	759.14	376.87	19.32	-1.02	0.017
220.00	-1.94	-0.54	0.00	-2.70	0.00	2.70	926.57	463.29	680.37	337.76	20.39	-1.03	0.010
225.00	0.00	-0.50	0.00	0.00	0.00	0.00	874.71	437.36	605.91	300.80	21.48	-1.03	0.000

## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 30

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	279.18	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	274.48	0.750	0.000	5.00	25.022	18.77	153.6	0.0	1388.2
10.00		1.00	0.85	7.442	8.19	269.78	0.750	0.000	5.00	24.598	18.45	151.0	0.0	1364.4
15.00		1.00	0.85	7.442	8.19	265.08	0.750	0.000	5.00	24.173	18.13	148.4	0.0	1340.7
20.00		1.00	0.90	7.896	8.69	268.21	0.750	0.000	5.00	23.748	17.81	154.7	0.0	1317.0
25.00		1.00	0.95	8.276	9.10	269.63	0.750	0.000	5.00	23.323	17.49	159.2	0.0	1293.2
30.00		1.00	0.98	8.600	9.46	269.80	0.750	0.000	5.00	22.898	17.17	162.5	0.0	1269.5
35.00		1.00	1.01	8.883	9.77	269.08	0.753 *	0.000	5.00	22.473	16.92	165.3	0.0	1245.7
40.00		1.00	1.04	9.137	10.05	267.68	0.757 *	0.000	5.00	22.049	16.69	167.8	0.0	1222.0
45.00		1.00	1.07	9.366	10.30	265.75	0.762 *	0.000	5.00	21.624	16.47	169.7	0.0	1198.2
45.92 Bot - Section 2		1.00	1.07	9.406	10.35	265.35	0.765 *	0.000	0.92	3.918	3.00	31.0	0.0	217.1
50.00		1.00	1.09	9.576	10.53	263.38	0.767 *	0.000	4.08	17.584	13.49	142.1	0.0	1931.7
53.00 Top - Section 1		1.00	1.11	9.694	10.66	261.78	0.770 *	0.000	3.00	12.738	9.81	104.7	0.0	1399.1
55.00		1.00	1.12	9.770	10.75	265.36	0.769 *	0.000	2.00	8.407	6.46	69.4	0.0	465.8
60.00		1.00	1.14	9.951	10.95	262.37	0.772 *	0.000	5.00	20.721	16.00	175.1	0.0	1147.8
65.00		1.00	1.16	10.120	11.13	259.11	0.777 *	0.000	5.00	20.296	15.77	175.6	0.0	1124.0
70.00		1.00	1.17	10.279	11.31	255.62	0.783 *	0.000	5.00	19.871	15.55	175.8	0.0	1100.3
75.00		1.00	1.19	10.430	11.47	251.91	0.788 *	0.000	5.00	19.446	15.33	175.9	0.0	1076.5
80.00		1.00	1.21	10.572	11.63	248.03	0.794 *	0.000	5.00	19.022	15.11	175.7	0.0	1052.8
85.00		1.00	1.22	10.708	11.78	243.98	0.800 *	0.000	5.00	18.597	14.88	175.3	0.0	1029.0
90.00		1.00	1.24	10.838	11.92	239.78	0.807 *	0.000	5.00	18.172	14.66	174.8	0.0	1005.3
92.75 Bot - Section 3		1.00	1.25	10.907	12.00	237.41	0.812 *	0.000	2.75	9.814	7.97	95.6	0.0	542.8
95.00		1.00	1.25	10.962	12.06	235.44	0.815 *	0.000	2.25	8.077	6.59	79.4	0.0	822.3
98.92 Top - Section 2		1.00	1.26	11.055	12.16	231.96	0.820 *	0.000	3.92	13.855	11.36	138.1	0.0	1410.1
100.00		1.00	1.27	11.081	12.19	235.28	0.818 *	0.000	1.08	3.786	3.10	37.7	0.0	179.7
105.00		1.00	1.28	11.195	12.31	230.73	0.822 *	0.000	5.00	17.216	14.16	174.3	0.0	817.2
110.00		1.00	1.29	11.305	12.44	226.07	0.830 *	0.000	5.00	16.791	13.93	173.3	0.0	796.8
115.00		1.00	1.30	11.412	12.55	221.31	0.838 *	0.000	5.00	16.366	13.71	172.1	0.0	776.5
120.00 Appurtenance(s)		1.00	1.32	11.514	12.67	216.46	0.846 *	0.000	5.00	15.942	13.49	170.8	0.0	756.1
125.00		1.00	1.33	11.614	12.78	211.52	0.855 *	0.000	5.00	15.517	13.27	169.5	0.0	735.7
130.00		1.00	1.34	11.710	12.88	206.50	0.864 *	0.000	5.00	15.092	13.04	168.0	0.0	715.4
135.00		1.00	1.35	11.803	12.98	201.40	0.874 *	0.000	5.00	14.667	12.82	166.4	0.0	695.0
140.00		1.00	1.36	11.894	13.08	196.23	0.884 *	0.000	5.00	14.242	12.60	164.8	0.0	674.7
140.67 Bot - Section 4		1.00	1.36	11.906	13.10	195.54	0.891 *	0.000	0.67	1.867	1.66	21.8	0.0	88.4
145.00		1.00	1.37	11.982	13.18	190.99	0.896 *	0.000	4.33	12.181	10.92	143.9	0.0	1047.6
145.75 Top - Section 3		1.00	1.37	11.995	13.19	190.20	0.902 *	0.000	0.75	2.076	1.87	24.7	0.0	178.5
150.00		1.00	1.38	12.068	13.27	189.43	0.901 *	0.000	4.25	11.582	10.43	138.5	0.0	457.9
155.00		1.00	1.39	12.152	13.37	184.08	0.912 *	0.000	5.00	13.233	12.07	161.3	0.0	523.0
160.00		1.00	1.40	12.233	13.46	178.67	0.925 *	0.000	5.00	12.808	11.84	159.4	0.0	506.1
165.00		1.00	1.41	12.313	13.54	173.20	0.938 *	0.000	5.00	12.384	11.62	157.4	0.0	489.1
170.00		1.00	1.42	12.390	13.63	167.68	0.953 *	0.000	5.00	11.959	11.40	155.3	0.0	472.1
172.08 Bot - Section 5		1.00	1.42	12.422	13.66	165.37	0.964 *	0.000	2.08	4.850	4.68	63.9	0.0	191.4
175.00		1.00	1.42	12.466	13.71	162.11	0.972 *	0.000	2.92	6.793	6.60	90.6	0.0	452.1
176.50 Top - Section 4		1.00	1.43	12.489	13.74	160.44	1.200 *	0.000	1.50	3.426	4.11	56.5	0.0	227.9
180.00		1.00	1.43	12.540	13.79	159.16	1.200 *	0.000	3.50	7.869	9.44	130.3	0.0	218.2
185.00		1.00	1.44	12.613	13.87	153.50	1.200 *	0.000	5.00	10.870	13.04	181.0	0.0	301.3
190.00		1.00	1.45	12.684	13.95	147.80	1.200 *	0.000	5.00	10.445	12.53	174.9	0.0	289.4

## Wind Loading - Shaft

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 47



195.00 Appurtenance(s)	1.00	1.46	12.753	14.03	142.05	1.200 *	0.000	5.00	10.020	12.02	168.7	0.0	277.5	
200.00	1.00	1.46	12.822	14.10	136.26	0.750	0.000	5.00	9.596	7.20	101.5	0.0	265.6	
205.00	1.00	1.47	12.888	14.18	130.43	0.750	0.000	5.00	9.171	6.88	97.5	0.0	253.8	
210.00	1.00	1.48	12.954	14.25	124.56	0.750	0.000	5.00	8.746	6.56	93.5	0.0	241.9	
212.00 Appurtenance(s)	1.00	1.48	12.980	14.28	122.20	0.750	0.000	2.00	3.379	2.53	36.2	0.0	93.4	
215.00	1.00	1.49	13.018	14.32	118.65	0.750	0.000	3.00	4.942	3.71	53.1	0.0	136.6	
220.00	1.00	1.49	13.082	14.39	112.71	0.750	0.000	5.00	7.896	5.92	85.2	0.0	218.1	
225.00 Appurtenance(s)	1.00	1.50	13.144	14.46	106.73	0.750	0.000	5.00	7.471	5.60	81.0	0.0	206.3	
								<b>Totals:</b>	<b>225.00</b>			<b>7,093.6</b>		<b>39,246.7</b>

\* Cf Adjusted by Linear Load Ra Effect

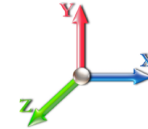
## Discrete Appurtenance Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 48



**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 30

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	225.00	Beacon	1	13.144	14.458	1.00	1.00	2.72	36.00	0.000	0.000	39.33	0.00	0.00
2	225.00	T-Arm (Round)	3	13.144	14.458	0.56	0.75	13.50	1050.00	0.000	0.000	195.18	0.00	0.00
3	225.00	APXVSP18-C-A20	3	13.144	14.458	0.75	0.90	17.97	171.00	0.000	0.000	259.85	0.00	0.00
4	225.00	2500 MHz RRH - TD-RRH	3	13.144	14.458	0.62	0.90	7.55	210.00	0.000	0.000	109.09	0.00	0.00
5	225.00	RRUS-1900 MHz	3	13.144	14.458	0.45	0.90	3.40	132.00	0.000	0.000	49.19	0.00	0.00
6	225.00	RRUS- 800 MHz	3	13.144	14.458	0.45	0.90	3.40	162.00	0.000	0.000	49.19	0.00	0.00
7	225.00	APXVTM14-ALU-20	3	13.144	14.458	0.71	0.90	13.42	168.00	0.000	0.000	194.03	0.00	0.00
8	212.00	Ericsson RRUS 4478 B14	3	12.980	14.278	0.52	0.75	2.60	178.20	0.000	0.000	37.10	0.00	0.00
9	212.00	Cellmax -	3	12.980	14.278	0.55	0.75	28.17	314.70	0.000	0.000	402.19	0.00	0.00
10	212.00	Raycap DC6-48-60-18-8F	2	13.018	14.320	1.00	1.00	1.84	63.60	0.000	3.000	26.35	0.00	79.05
11	212.00	Ericsson RRUS 8843 B2	3	13.018	14.320	0.64	0.75	3.14	210.00	0.000	3.000	44.92	0.00	134.75
12	212.00	Ericsson RRUS 11	3	13.018	14.320	0.53	0.75	4.03	153.00	0.000	3.000	57.65	0.00	172.95
13	212.00	RFS ATM192012-0	6	13.018	14.320	0.57	0.75	3.83	66.00	0.000	3.000	54.85	0.00	164.56
14	212.00	Low Profile	1	13.018	14.320	1.00	1.00	22.00	1500.00	0.000	3.000	315.04	0.00	945.13
15	212.00	KMW EPBQ-652L8H8	3	13.018	14.320	0.61	0.75	22.10	187.20	0.000	3.000	316.52	0.00	949.56
16	212.00	Kathrein 741-989	3	13.018	14.320	0.54	0.75	5.10	49.50	0.000	3.000	73.08	0.00	219.23
17	212.00	Handrail Kit (Site Pro HRK	1	13.018	14.320	1.00	1.00	8.13	302.36	0.000	3.000	116.42	0.00	349.27
18	195.00	PV-LPP12M-HR-B	1	12.753	14.029	1.00	1.00	44.00	1870.00	0.000	0.000	617.27	0.00	0.00
19	195.00	RFS	3	12.753	14.029	0.55	0.75	8.57	72.60	0.000	0.000	120.29	0.00	0.00
20	195.00	RFS	3	12.753	14.029	0.55	0.75	33.70	384.00	0.000	0.000	472.77	0.00	0.00
21	195.00	Ericsson 4449 B71+B12	3	12.753	14.029	0.50	0.75	2.49	210.00	0.000	0.000	34.89	0.00	0.00
22	195.00	Ericsson KRY 112 489/2	3	12.753	14.029	0.62	0.75	1.05	39.60	0.000	0.000	14.67	0.00	0.00
23	195.00	CCI KRY112891	4	12.753	14.029	0.40	0.80	1.12	64.40	0.000	0.000	15.71	0.00	0.00
24	120.00	Single light	3	11.514	12.666	0.56	0.75	0.34	9.00	0.000	0.000	4.27	0.00	0.00
<b>Totals:</b>								<b>7,603.16</b>				<b>3,619.86</b>		

## Total Applied Force Summary

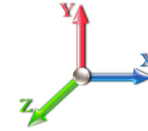
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 30

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		153.63	1501.63	0.00	0.00
10.00		151.02	1477.88	0.00	0.00
15.00		148.41	1454.14	0.00	0.00
20.00		154.70	1430.39	0.00	0.00
25.00		159.24	1406.65	0.00	0.00
30.00		162.46	1382.90	0.00	0.00
35.00		165.31	1359.16	0.00	0.00
40.00		167.78	1335.41	0.00	0.00
45.00		169.70	1311.66	0.00	0.00
45.92		30.99	237.90	0.00	0.00
50.00		142.05	2024.38	0.00	0.00
53.00		104.65	1467.11	0.00	0.00
55.00		69.44	511.13	0.00	0.00
60.00		175.11	1261.21	0.00	0.00
65.00		175.60	1237.46	0.00	0.00
70.00		175.84	1213.72	0.00	0.00
75.00		175.85	1189.97	0.00	0.00
80.00		175.66	1166.22	0.00	0.00
85.00		175.29	1142.48	0.00	0.00
90.00		174.76	1118.73	0.00	0.00
92.75		95.59	605.18	0.00	0.00
95.00		79.41	873.33	0.00	0.00
98.92		138.11	1498.94	0.00	0.00
100.00		37.75	204.31	0.00	0.00
105.00		174.34	930.60	0.00	0.00
110.00		173.28	910.24	0.00	0.00
115.00		172.11	889.89	0.00	0.00
120.00	(3) attachments	175.11	878.54	0.00	0.00
125.00		169.46	849.18	0.00	0.00
130.00		167.99	828.83	0.00	0.00
135.00		166.44	808.48	0.00	0.00
140.00		164.80	788.12	0.00	0.00
140.67		21.77	103.55	0.00	0.00
145.00		143.89	1145.93	0.00	0.00
145.75		24.71	195.49	0.00	0.00
150.00		138.48	554.32	0.00	0.00
155.00		161.29	636.45	0.00	0.00
160.00		159.37	619.49	0.00	0.00
165.00		157.38	602.53	0.00	0.00
170.00		155.34	585.57	0.00	0.00
172.08		63.89	238.60	0.00	0.00
175.00		90.56	518.37	0.00	0.00
176.50		67.70	261.88	0.00	0.00
180.00		156.65	297.63	0.00	0.00
185.00		218.85	414.69	0.00	0.00
190.00		212.97	402.81	0.00	0.00

## Total Applied Force Summary

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	Page: 50
<b>Struct Class:</b> II		



195.00	(17) attachments	1482.60	3031.54	0.00	0.00
200.00		101.50	344.56	0.00	0.00
205.00		97.51	332.69	0.00	0.00
210.00		93.47	320.81	0.00	0.00
212.00	(28) attachments	1480.31	3149.56	0.00	3014.49
215.00		53.07	183.94	0.00	0.00
220.00		85.22	246.71	0.00	0.00
225.00	(19) attachments	976.86	2163.84	0.00	0.00
<b>Totals:</b>		<b>10,865.31</b>	<b>51,646.74</b>	<b>0.00</b>	<b>3,014.49</b>

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

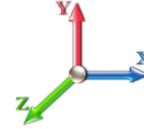


**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 30

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	7.442	0.00	4.77
5.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.091	0.000	7.442	0.00	17.25
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	7.442	0.00	31.20
10.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	7.442	0.00	4.77
10.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.092	0.000	7.442	0.00	17.25
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.092	0.000	7.442	0.00	31.20
15.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	7.442	0.00	4.77
15.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.094	0.000	7.442	0.00	17.25
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.094	0.000	7.442	0.00	31.20
20.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	7.896	0.00	4.77
20.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.096	0.000	7.896	0.00	17.25
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.096	0.000	7.896	0.00	31.20
25.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.098	0.000	8.276	0.00	4.77
25.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.098	0.000	8.276	0.00	17.25
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.098	0.000	8.276	0.00	31.20
30.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.099	0.000	8.600	0.00	4.77
30.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.099	0.000	8.600	0.00	17.25
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.099	0.000	8.600	0.00	31.20
35.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.004	8.883	0.00	4.77
35.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.101	1.004	8.883	0.00	17.25
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.101	1.004	8.883	0.00	31.20
40.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.103	1.010	9.137	0.00	4.77
40.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.103	1.010	9.137	0.00	17.25
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.103	1.010	9.137	0.00	31.20
45.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.105	1.016	9.366	0.00	4.77
45.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.105	1.016	9.366	0.00	17.25
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.105	1.016	9.366	0.00	31.20
45.92	1-1/4" Hybrid	Yes	0.92	0.000	0.00	0.00	0.00	0.106	1.019	9.406	0.00	0.87
45.92	1.5" Hybrid	Yes	0.92	0.000	1.50	0.11	0.00	0.106	1.019	9.406	0.00	3.16
45.92	1 5/8" Coax	Yes	0.92	0.000	3.96	0.30	0.00	0.106	1.019	9.406	0.00	5.72
50.00	1-1/4" Hybrid	Yes	4.08	0.000	0.00	0.00	0.00	0.108	1.023	9.576	0.00	3.90
50.00	1.5" Hybrid	Yes	4.08	0.000	1.50	0.51	0.00	0.108	1.023	9.576	0.00	14.09
50.00	1 5/8" Coax	Yes	4.08	0.000	3.96	1.35	0.00	0.108	1.023	9.576	0.00	25.48
53.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.109	1.027	9.694	0.00	2.86
53.00	1.5" Hybrid	Yes	3.00	0.000	1.50	0.38	0.00	0.109	1.027	9.694	0.00	10.35
53.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.109	1.027	9.694	0.00	18.72
55.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.108	1.025	9.770	0.00	1.91
55.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.25	0.00	0.108	1.025	9.770	0.00	6.90
55.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.108	1.025	9.770	0.00	12.48
60.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	9.951	0.00	4.77
60.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.110	1.029	9.951	0.00	17.25
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.110	1.029	9.951	0.00	31.20
65.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	10.120	0.00	4.77
65.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.112	1.036	10.120	0.00	17.25
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.112	1.036	10.120	0.00	31.20
70.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.114	1.043	10.279	0.00	4.77
70.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.114	1.043	10.279	0.00	17.25

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

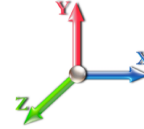


**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 30

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.114	1.043	10.279	0.00	31.20
75.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.051	10.430	0.00	4.77
75.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.117	1.051	10.430	0.00	17.25
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.117	1.051	10.430	0.00	31.20
80.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.059	10.572	0.00	4.77
80.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.120	1.059	10.572	0.00	17.25
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.120	1.059	10.572	0.00	31.20
85.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.122	1.067	10.708	0.00	4.77
85.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.122	1.067	10.708	0.00	17.25
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.122	1.067	10.708	0.00	31.20
90.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.125	1.076	10.838	0.00	4.77
90.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.125	1.076	10.838	0.00	17.25
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.125	1.076	10.838	0.00	31.20
92.75	1-1/4" Hybrid	Yes	2.75	0.000	0.00	0.00	0.00	0.128	1.083	10.907	0.00	2.62
92.75	1.5" Hybrid	Yes	2.75	0.000	1.50	0.34	0.00	0.128	1.083	10.907	0.00	9.49
92.75	1 5/8" Coax	Yes	2.75	0.000	3.96	0.91	0.00	0.128	1.083	10.907	0.00	17.16
95.00	1-1/4" Hybrid	Yes	2.25	0.000	0.00	0.00	0.00	0.129	1.087	10.962	0.00	2.15
95.00	1.5" Hybrid	Yes	2.25	0.000	1.50	0.28	0.00	0.129	1.087	10.962	0.00	7.76
95.00	1 5/8" Coax	Yes	2.25	0.000	3.96	0.74	0.00	0.129	1.087	10.962	0.00	14.04
98.92	1-1/4" Hybrid	Yes	3.92	0.000	0.00	0.00	0.00	0.131	1.093	11.055	0.00	3.74
98.92	1.5" Hybrid	Yes	3.92	0.000	1.50	0.49	0.00	0.131	1.093	11.055	0.00	13.51
98.92	1 5/8" Coax	Yes	3.92	0.000	3.96	1.29	0.00	0.131	1.093	11.055	0.00	24.44
100.00	1-1/4" Hybrid	Yes	1.08	0.000	0.00	0.00	0.00	0.130	1.091	11.081	0.00	1.03
100.00	1.5" Hybrid	Yes	1.08	0.000	1.50	0.14	0.00	0.130	1.091	11.081	0.00	3.74
100.00	1 5/8" Coax	Yes	1.08	0.000	3.96	0.36	0.00	0.130	1.091	11.081	0.00	6.76
105.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.132	1.096	11.195	0.00	4.77
105.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.132	1.096	11.195	0.00	17.25
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.132	1.096	11.195	0.00	31.20
110.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.135	1.106	11.305	0.00	4.77
110.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.135	1.106	11.305	0.00	17.25
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.135	1.106	11.305	0.00	31.20
115.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.139	1.117	11.412	0.00	4.77
115.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.139	1.117	11.412	0.00	17.25
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.139	1.117	11.412	0.00	31.20
120.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.143	1.128	11.514	0.00	4.77
120.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.143	1.128	11.514	0.00	17.25
120.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.143	1.128	11.514	0.00	31.20
125.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.147	1.140	11.614	0.00	4.77
125.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.147	1.140	11.614	0.00	17.25
125.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.147	1.140	11.614	0.00	31.20
130.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.151	1.152	11.710	0.00	4.77
130.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.151	1.152	11.710	0.00	17.25
130.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.151	1.152	11.710	0.00	31.20
135.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.155	1.165	11.803	0.00	4.77
135.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.155	1.165	11.803	0.00	17.25
135.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.155	1.165	11.803	0.00	31.20
140.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.160	1.179	11.894	0.00	4.77



## Linear Appurtenance Segment Forces (Factored)

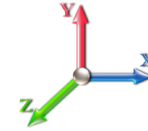
<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
140.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.160	1.179	11.894	0.00	17.25
140.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.160	1.179	11.894	0.00	31.20
140.67	1-1/4" Hybrid	Yes	0.67	0.000	0.00	0.00	0.00	0.162	1.187	11.906	0.00	0.64
140.67	1.5" Hybrid	Yes	0.67	0.000	1.50	0.08	0.00	0.162	1.187	11.906	0.00	2.30
140.67	1 5/8" Coax	Yes	0.67	0.000	3.96	0.22	0.00	0.162	1.187	11.906	0.00	4.16
145.00	1-1/4" Hybrid	Yes	4.33	0.000	0.00	0.00	0.00	0.165	1.195	11.982	0.00	4.13
145.00	1.5" Hybrid	Yes	4.33	0.000	1.50	0.54	0.00	0.165	1.195	11.982	0.00	14.95
145.00	1 5/8" Coax	Yes	4.33	0.000	3.96	1.43	0.00	0.165	1.195	11.982	0.00	27.04
145.75	1-1/4" Hybrid	Yes	0.75	0.000	0.00	0.00	0.00	0.168	1.203	11.995	0.00	0.72
145.75	1.5" Hybrid	Yes	0.75	0.000	1.50	0.09	0.00	0.168	1.203	11.995	0.00	2.59
145.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.25	0.00	0.168	1.203	11.995	0.00	4.68
150.00	1-1/4" Hybrid	Yes	4.25	0.000	0.00	0.00	0.00	0.167	1.201	12.068	0.00	4.05
150.00	1.5" Hybrid	Yes	4.25	0.000	1.50	0.53	0.00	0.167	1.201	12.068	0.00	14.66
150.00	1 5/8" Coax	Yes	4.25	0.000	3.96	1.40	0.00	0.167	1.201	12.068	0.00	26.52
155.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.172	1.216	12.152	0.00	4.77
155.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.172	1.216	12.152	0.00	17.25
155.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.172	1.216	12.152	0.00	31.20
160.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.178	1.233	12.233	0.00	4.77
160.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.178	1.233	12.233	0.00	17.25
160.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.178	1.233	12.233	0.00	31.20
165.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.184	1.251	12.313	0.00	4.77
165.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.184	1.251	12.313	0.00	17.25
165.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.184	1.251	12.313	0.00	31.20
170.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.190	1.271	12.390	0.00	4.77
170.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.190	1.271	12.390	0.00	17.25
170.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.190	1.271	12.390	0.00	31.20
172.08	1-1/4" Hybrid	Yes	2.08	0.000	0.00	0.00	0.00	0.195	1.285	12.422	0.00	1.98
172.08	1.5" Hybrid	Yes	2.08	0.000	1.50	0.26	0.00	0.195	1.285	12.422	0.00	7.18
172.08	1 5/8" Coax	Yes	2.08	0.000	3.96	0.69	0.00	0.195	1.285	12.422	0.00	12.98
175.00	1-1/4" Hybrid	Yes	2.92	0.000	0.00	0.00	0.00	0.199	1.296	12.466	0.00	2.79
175.00	1.5" Hybrid	Yes	2.92	0.000	1.50	0.37	0.00	0.199	1.296	12.466	0.00	10.07
175.00	1 5/8" Coax	Yes	2.92	0.000	3.96	0.96	0.00	0.199	1.296	12.466	0.00	18.22
176.50	1-1/4" Hybrid	Yes	1.50	0.000	0.00	0.00	0.00	0.202	0.000	12.489	0.00	1.43
176.50	1.5" Hybrid	Yes	1.50	1.200	1.50	0.19	0.22	0.202	0.000	12.489	3.08	5.16
176.50	1 5/8" Coax	Yes	1.50	1.200	3.96	0.49	0.59	0.202	0.000	12.489	8.14	9.34
180.00	1-1/4" Hybrid	Yes	3.50	0.000	0.00	0.00	0.00	0.203	0.000	12.540	0.00	3.34
180.00	1.5" Hybrid	Yes	3.50	1.200	1.50	0.44	0.53	0.203	0.000	12.540	7.25	12.09
180.00	1 5/8" Coax	Yes	3.50	1.200	3.96	1.16	1.39	0.203	0.000	12.540	19.14	21.86
185.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.209	0.000	12.613	0.00	4.77
185.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.209	0.000	12.613	10.41	17.25
185.00	1 5/8" Coax	Yes	5.00	1.200	3.96	1.65	1.98	0.209	0.000	12.613	27.47	31.20
190.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.218	0.000	12.684	0.00	4.77
190.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.218	0.000	12.684	10.46	17.25
190.00	1 5/8" Coax	Yes	5.00	1.200	3.96	1.65	1.98	0.218	0.000	12.684	27.63	31.20
195.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.227	0.000	12.753	0.00	4.77
195.00	1.5" Hybrid	Yes	5.00	1.200	1.50	0.63	0.75	0.227	0.000	12.753	10.52	17.25
195.00	1 5/8" Coax	Yes	5.00	1.200	3.96	1.65	1.98	0.227	0.000	12.753	27.78	31.20

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 30

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
200.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	12.822	0.00	4.77
200.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.065	0.000	12.822	0.00	17.25
205.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	12.888	0.00	4.77
205.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.068	0.000	12.888	0.00	17.25
210.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.071	0.000	12.954	0.00	4.77
210.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.071	0.000	12.954	0.00	17.25
212.00	1-1/4" Hybrid	Yes	2.00	0.000	0.00	0.00	0.00	0.074	0.000	12.980	0.00	1.91
212.00	1.5" Hybrid	Yes	2.00	0.000	1.50	0.25	0.00	0.074	0.000	12.980	0.00	6.90
215.00	1-1/4" Hybrid	Yes	3.00	0.000	0.00	0.00	0.00	0.076	0.000	13.018	0.00	2.86
215.00	1.5" Hybrid	Yes	3.00	0.000	1.50	0.38	0.00	0.076	0.000	13.018	0.00	10.35
220.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.079	0.000	13.082	0.00	4.77
220.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.079	0.000	13.082	0.00	17.25
225.00	1-1/4" Hybrid	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	13.144	0.00	4.77
225.00	1.5" Hybrid	Yes	5.00	0.000	1.50	0.63	0.00	0.084	0.000	13.144	0.00	17.25
<b>Totals:</b>											<b>151.9</b>	<b>2,207.7</b>

## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	<b>9/22/2020</b>
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



<b>Load Case:</b> 1.0D + 1.0W 60 mph Wind	<b>Iterations</b> 30
<b>Dead Load Factor</b> 1.00	
<b>Wind Load Factor</b> 1.00	

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-51.64	-10.89	0.00	-1671.7	0.00	1671.74	5466.70	2733.35	13309.4	6607.36	0.00	0.000	0.000	0.262
5.00	-50.13	-10.80	0.00	-1617.2	0.00	1617.27	5411.44	2705.72	12949.7	6428.82	0.03	-0.065	0.000	0.261
10.00	-48.64	-10.70	0.00	-1563.2	0.00	1563.29	5354.88	2677.44	12591.7	6251.05	0.14	-0.131	0.000	0.259
15.00	-47.17	-10.60	0.00	-1509.7	0.00	1509.79	5297.04	2648.52	12235.3	6074.14	0.31	-0.198	0.000	0.257
20.00	-45.73	-10.50	0.00	-1456.7	0.00	1456.78	5237.89	2618.95	11880.8	5898.16	0.55	-0.266	0.000	0.256
25.00	-44.31	-10.38	0.00	-1404.2	0.00	1404.29	5177.46	2588.73	11528.4	5723.20	0.87	-0.335	0.000	0.254
30.00	-42.91	-10.27	0.00	-1352.3	0.00	1352.37	5115.74	2557.87	11178.1	5549.33	1.26	-0.406	0.000	0.252
35.00	-41.54	-10.14	0.00	-1301.0	0.00	1301.04	5052.72	2526.36	10830.3	5376.63	1.72	-0.478	0.000	0.250
40.00	-40.20	-10.02	0.00	-1250.3	0.00	1250.32	4988.41	2494.20	10484.9	5205.19	2.26	-0.552	0.000	0.248
45.00	-38.88	-9.86	0.00	-1200.2	0.00	1200.24	4922.81	2461.40	10142.3	5035.08	2.88	-0.626	0.000	0.246
45.92	-38.64	-9.86	0.00	-1191.2	0.00	1191.20	4910.64	2455.32	10079.8	5004.05	3.00	-0.641	0.000	0.246
50.00	-36.60	-9.72	0.00	-1150.9	0.00	1150.96	4855.91	2427.96	9802.53	4866.39	3.58	-0.703	0.000	0.244
53.00	-35.13	-9.63	0.00	-1121.7	0.00	1121.79	4874.44	2437.22	9895.68	4912.63	4.03	-0.750	0.000	0.236
55.00	-34.61	-9.58	0.00	-1102.5	0.00	1102.54	4847.46	2423.73	9760.26	4845.41	4.36	-0.782	0.000	0.235
60.00	-33.34	-9.43	0.00	-1054.6	0.00	1054.63	4779.11	2389.56	9423.86	4678.40	5.21	-0.856	0.000	0.232
65.00	-32.09	-9.28	0.00	-1007.4	0.00	1007.47	4709.47	2354.74	9090.65	4512.98	6.15	-0.932	0.000	0.230
70.00	-30.87	-9.13	0.00	-961.07	0.00	961.07	4638.54	2319.27	8760.79	4349.22	7.17	-1.010	0.000	0.228
75.00	-29.67	-8.97	0.00	-915.45	0.00	915.45	4566.31	2283.16	8434.44	4187.21	8.27	-1.088	0.000	0.225
80.00	-28.50	-8.81	0.00	-870.60	0.00	870.60	4492.79	2246.40	8111.77	4027.03	9.45	-1.168	0.000	0.223
85.00	-27.35	-8.65	0.00	-826.55	0.00	826.55	4417.98	2208.99	7792.94	3868.74	10.72	-1.249	0.000	0.220
90.00	-26.22	-8.48	0.00	-783.30	0.00	783.30	4338.02	2169.01	7471.46	3709.15	12.07	-1.332	0.000	0.217
92.75	-25.61	-8.39	0.00	-759.98	0.00	759.98	4280.99	2140.50	7275.30	3611.77	12.85	-1.379	0.000	0.216
95.00	-24.74	-8.31	0.00	-741.11	0.00	741.11	4234.33	2117.17	7116.75	3533.05	13.51	-1.418	0.000	0.216
98.92	-23.23	-8.15	0.00	-708.56	0.00	708.56	3503.07	1751.53	5900.87	2929.44	14.70	-1.485	0.000	0.249
100.00	-23.02	-8.13	0.00	-699.73	0.00	699.73	3490.19	1745.09	5847.72	2903.05	15.04	-1.504	0.000	0.248
105.00	-22.08	-7.97	0.00	-659.06	0.00	659.06	3429.94	1714.97	5604.12	2782.12	16.67	-1.599	0.000	0.243
110.00	-21.17	-7.81	0.00	-619.21	0.00	619.21	3368.41	1684.21	5363.47	2662.65	18.39	-1.696	0.000	0.239
115.00	-20.27	-7.64	0.00	-580.18	0.00	580.18	3305.58	1652.79	5125.94	2544.73	20.22	-1.793	0.000	0.234
120.00	-19.38	-7.47	0.00	-541.97	0.00	541.97	3241.47	1620.73	4891.69	2428.44	22.15	-1.892	0.000	0.229
125.00	-18.53	-7.31	0.00	-504.60	0.00	504.60	3168.38	1584.19	4649.61	2308.26	24.19	-1.993	0.000	0.224
130.00	-17.69	-7.14	0.00	-468.07	0.00	468.07	3079.50	1539.75	4391.09	2179.92	26.33	-2.094	0.000	0.220
135.00	-16.88	-6.97	0.00	-432.36	0.00	432.36	2990.62	1495.31	4139.97	2055.26	28.57	-2.195	0.000	0.216
140.00	-16.09	-6.80	0.00	-397.49	0.00	397.49	2901.75	1450.87	3896.25	1934.26	30.93	-2.298	0.000	0.211
140.67	-15.98	-6.78	0.00	-392.96	0.00	392.96	2889.90	1444.95	3864.31	1918.41	31.25	-2.312	0.000	0.210
145.00	-14.84	-6.61	0.00	-363.56	0.00	363.56	2812.87	1406.44	3659.92	1816.94	33.39	-2.402	0.000	0.205
145.75	-14.64	-6.59	0.00	-358.61	0.00	358.61	2338.09	1169.04	3100.38	1539.16	33.77	-2.418	0.000	0.239
150.00	-14.08	-6.45	0.00	-330.61	0.00	330.61	2293.55	1146.78	2960.24	1469.59	35.96	-2.506	0.000	0.231
155.00	-13.44	-6.29	0.00	-298.36	0.00	298.36	2239.96	1119.98	2797.90	1389.00	38.64	-2.622	0.000	0.221
160.00	-12.81	-6.13	0.00	-266.92	0.00	266.92	2172.79	1086.39	2623.62	1302.47	41.45	-2.736	0.000	0.211
165.00	-12.21	-5.96	0.00	-236.29	0.00	236.29	2098.72	1049.36	2446.89	1214.74	44.38	-2.849	0.000	0.200
170.00	-11.62	-5.79	0.00	-206.48	0.00	206.48	2024.66	1012.33	2276.33	1130.07	47.42	-2.958	0.000	0.188
172.08	-11.38	-5.73	0.00	-194.43	0.00	194.43	1993.85	996.92	2207.19	1095.74	48.72	-3.005	0.000	0.183
175.00	-10.86	-5.62	0.00	-177.71	0.00	177.71	1950.60	975.30	2111.93	1048.45	50.57	-3.067	0.000	0.175
176.50	-10.60	-5.55	0.00	-169.30	0.00	169.30	1282.06	641.03	1405.37	697.69	51.54	-3.100	0.000	0.251
180.00	-10.30	-5.39	0.00	-149.87	0.00	149.87	1259.97	629.98	1344.43	667.43	53.84	-3.171	0.000	0.233
185.00	-9.89	-5.17	0.00	-122.91	0.00	122.91	1227.33	613.66	1258.55	624.80	57.23	-3.298	0.000	0.205
190.00	-9.49	-4.95	0.00	-97.05	0.00	97.05	1193.40	596.70	1174.12	582.88	60.74	-3.414	0.000	0.175
195.00	-6.55	-3.30	0.00	-72.28	0.00	72.28	1158.17	579.09	1091.29	541.76	64.37	-3.514	0.000	0.139

## Calculated Forces

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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200.00	-6.21	-3.19	0.00	-55.78	0.00	55.78	1121.66	560.83	1010.23	501.52	68.10	-3.600	0.000	0.117
205.00	-5.88	-3.08	0.00	-39.85	0.00	39.85	1082.14	541.07	929.63	461.51	71.91	-3.674	0.000	0.092
210.00	-5.56	-2.96	0.00	-24.47	0.00	24.47	1030.28	515.14	842.23	418.12	75.79	-3.731	0.000	0.064
212.00	-2.52	-1.28	0.00	-15.53	0.00	15.53	1009.54	504.77	808.47	401.36	77.35	-3.749	0.000	0.041
215.00	-2.34	-1.22	0.00	-11.68	0.00	11.68	978.43	489.21	759.14	376.87	79.71	-3.767	0.000	0.033
220.00	-2.09	-1.12	0.00	-5.59	0.00	5.59	926.57	463.29	680.37	337.76	83.67	-3.788	0.000	0.019
225.00	0.00	-0.98	0.00	0.00	0.00	0.00	874.71	437.36	605.91	300.80	87.63	-3.795	0.000	0.000

## Final Analysis Summary

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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### Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 91 mph Wind	40.1	0.00	61.89	0.00	0.00	6193.58
0.9D + 1.6W 91 mph Wind	40.0	0.00	46.40	0.00	0.00	6063.03
1.2D + 1.0Di + 1.0Wi 30 mph Wind	4.5	0.00	98.01	0.00	0.00	752.45
1.2D + 1.0E	2.2	0.00	61.98	0.00	0.00	367.88
0.9D + 1.0E	2.2	0.00	46.48	0.00	0.00	359.04
1.0D + 1.0W 60 mph Wind	10.9	0.00	51.64	0.00	0.00	1671.74

### Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 91 mph Wind	-61.89	-40.07	0.00	-6193.5	0.00	-6193.5	5466.70	2733.3	13309.4	6607.36	0.00	0.949
0.9D + 1.6W 91 mph Wind	-46.40	-40.04	0.00	-6063.0	0.00	-6063.0	5466.70	2733.3	13309.4	6607.36	0.00	0.926
1.2D + 1.0Di + 1.0Wi 30 mph Wind	-27.22	-2.66	0.00	-81.40	0.00	-81.40	1282.06	641.03	1405.37	697.69	176.50	0.138
1.2D + 1.0E	-13.05	-1.53	0.00	-56.71	0.00	-56.71	1282.06	641.03	1405.37	697.69	176.50	0.091
0.9D + 1.0E	-9.78	-1.48	0.00	-54.94	0.00	-54.94	1282.06	641.03	1405.37	697.69	176.50	0.086
1.0D + 1.0W 60 mph Wind	-51.64	-10.89	0.00	-1671.7	0.00	-1671.7	5466.70	2733.3	13309.4	6607.36	0.00	0.262

## Base Plate Summary

<b>Structure:</b> NC02083-B	<b>Code:</b> EIA/TIA-222-G	9/22/2020
<b>Site Name:</b> Coats	<b>Exposure:</b> C	
<b>Height:</b> 225.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		Page: 58



Reactions	Base Plate	Anchor Bolts
Original Design	<b>Yield (ksi):</b> 60.00	<b>Bolt Circle:</b> 68.00
<b>Moment (kip-ft):</b> 6518.00	<b>Width (in):</b> 74.00	<b>Number Bolts:</b> 20.00
<b>Axial (kip):</b> 52.00	<b>Style:</b> Round	<b>Bolt Type:</b> 2.25" 18J
<b>Shear (kip):</b> 32.00	<b>Polygon Sides:</b> 0.00	<b>Bolt Diameter (in):</b> 2.25
Analysis	<b>Clip Length (in):</b> 0.00	<b>Yield (ksi):</b> 75.00
<b>Moment (kip-ft):</b> 6193.58	<b>Effective Len (in):</b> 13.78	<b>Ultimate (ksi):</b> 100.00
<b>Axial (kip):</b> 61.89	<b>Moment (kip-in):</b> 961.04	<b>Arrangement:</b> Radial
<b>Shear (kip):</b> 40.07	<b>Allow Stress (ksi):</b> 81.00	<b>Cluster Dist (in):</b> 0.00
	<b>Applied Stress (ksi):</b> 55.08	<b>Start Angle (deg):</b> 0.00
<b>Moment Design %:</b> 95.02	<b>Stress Ratio:</b> 0.68	Compression
		<b>Force (kip):</b> 223.50
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.88
		Tension
		<b>Force (kip):</b> 213.70
		<b>Allowable (kip):</b> 260.00
		<b>Ratio:</b> 0.84



# Pier Foundation Design For Monopole

Date

9/22/2020

<b>Customer Name:</b>	AT&T	<b>EIA/TIA Standard:</b>	EIA-222-G
<b>Site Name:</b>		<b>Structure Height (Ft.):</b>	225
<b>Site Number:</b>	NC02083-B	<b>Engineer Name:</b>	D. Yohannes
<b>Engr. Number:</b>		<b>Engineer Login ID:</b>	

**Foundation Info Obtained from:**

Drawings/Calculations Acceptable overstress ( 5.0%

**Structure Type:**

Monopole

**Analysis or Design?**

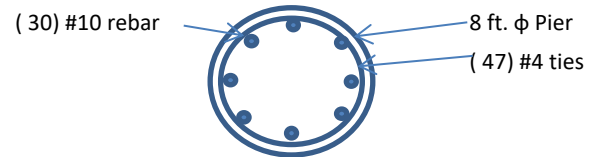
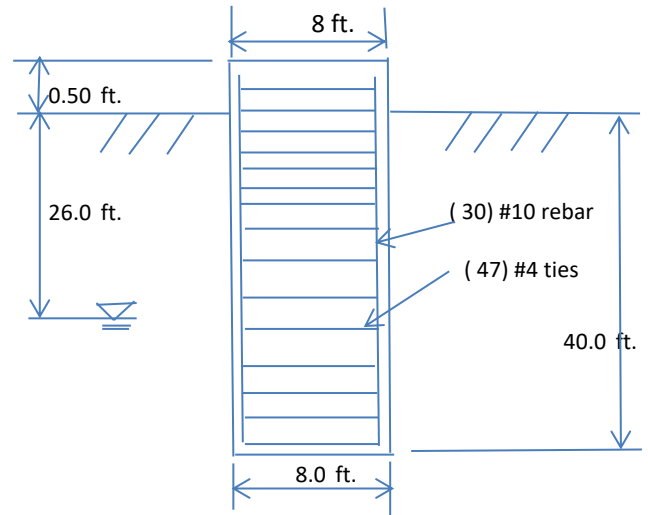
Analysis

**Base Reactions (Factored):**

Axial Load (Kips):	61.9	Shear Force (Kips):	40.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6193.6

**Foundation Geometries:**

Mods required -Yes/No ?:	No	Depth of Base B. G. S. :	40.0	ft.
Diameter of Pier (ft.):	8.0			
Pier Height A. G. (ft.):	0.50			



**Monopole Pier Foundation**

**Material Properties and Reabr Info:**

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	30	Tie Spacing:	12.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

**Soil Design Parameters:**

Water Table B.G.S. (ft):	26.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)
Skin Frictions are to be obtained from:		Soil Report		

Sand  
5000

Depth of Layers (ft)		$\gamma_{soil}$ (pcf)	$\phi$ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types						
Top	Bottom												
0.0	3.0	100	0	0	0	0	Sand						
3.0	10.0	120	0	1100	0	9000	Clay						
10.0	20.0	125	30	0	800	9000	Sand						
20.0	35.0	120	29	0	1000	7500	Sand						
35.0	40.0	125	0	1800	600	10500	Clay						
40.0	45.0	125											

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

**Foundation Analysis and Design:**

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	31544	Dry Soil Weight from Conical Failure:	3773 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	2380	Buoyant Soil Weight from Conical Failure (Kips):	187 Kips
Total Dry Concrete Volume (cu. Ft.):	1332	Total Dry Concrete Weight:	199.8 Kips
Total Buoyant Concrete Volume (cu. Ft.):	703.7	Total Buoyant Concrete Weight:	61.65 Kips
Total Effective Concrete Weight (Kips):	261.5	Total Effective Soil Weight:	3960.2 Kips
Total Effective Vertical Load on Base (Kips):	111.7		

**Check Soil Capacities:**

Allowable Foundation Overturning Resistance (kips-ft.):	34003.7	>	Design Factored Moment (kips-ft):	7206	Usage	0.21	OK!
Factor of Safety of Passive Soil Resistance against Moment:	4.72						OK!

**Check the capacities of Reinforcing Concrete:**

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Reinforcing Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.20	Usage	
Calculated Moment Capacity (Mn,Kips-Ft):	7280.3	>	Design Factored Moment (Mu, K-Ft):	6359.3	0.87 OK!
Calculated Shear Capacity (Kips):	1132.0	>	Design Factored Shear (Kips):	370.1	0.33 OK!
Calculated Tension Capacity (Tn, Kips):	2057.4	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	9547	>	Design Factored Axial Load (Pu Kips):	61.9	0.01 OK!
Moment & Axial Strength Combination:	0.87	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.005		Reinforcement Ratio is satisfied per ACI		