Michael Gentile, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 844-9813
mgentile@clinellc.com

December 10, 2018

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification // Site Number: CT2214
178 New Haven Road (a/k/a Kluge Road), Prospect, CT (Site Name: PROSPECT)
N 41.472275 // W -72.97143

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains nine (9) antennas at the 158-foot level of the existing 160-foot monopole tower at 178 New Haven Road (a/k/a Kluge Road), Prospect, CT. The tower is owned by SBA Communications. The property is owned by Peter and Victor Visockis. AT&T now intends to swap three (3) of its existing antennas for three (3) new models for its LTE upgrade. These antennas would be installed at the same 158-foot level of the tower. AT&T also intends to install three (3) RRUs, add one (1) DC6 Raycap, add one (1) Fiber cable and add two (2) DC cables.

The current proposal involves an antenna swap only (three for three); zero antennas will be added. AT&T was originally approved for nine (9) antennas on August 1, 2002.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Robert J. Chatfield, Mayor for the Town of Prospect, as well as the tower owner, SBA Communications, LLC and the ground owner, Peter and Victor Visockis. A copy of this filing is also being sent to the respective building, zoning and planning offices in the Town of Prospect.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

Attached to accommodate this filing are construction drawings dated 12/05/2018 by Dewberry Engineering LLC, a structural analysis dated 11/30/2018 by Tower Engineering Solutions and an Emissions Analysis Report dated 11/6/2018 by Centerline Communications, LLC.

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

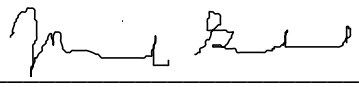
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading as shown in the attached structural analysis by Tower Engineering Solutions, dated 11/30/2018

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Michael Gentile, Site Acquisition
New Cingular Wireless, PCS LLC (AT&T)
c/o Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 844-9813
mgentile@centerlincommunications.com

Attachments

cc: Robert J. Chatfield, Mayor, Town of Prospect - as elected official
SBA Communications, LLC - as tower owner
Peter and Victor Visockis - as property owner
Town of Prospect – Building/Zoning/Planning

JOSEPH SERBIN
6073430588
CENTERLINE COMMUNICATIONS
1471 COUNTY ROAD 32
GREENE NY 13778

1 LBS

1 OF 1

DWT: 12,12,1

SHIP TO:
MELANIE A. BACHMAN
CONNECTICUT SITING COUNCIL
10 FRANKILIN SQ
NEW BRITAIN CT 06051

CT 067 9-06

UPS GROUND
TRACKING #: 1Z 9Y4 503 43 3222 1265

BILLING: P/P

Reference #1: CT2214 - CSC filing to CSC

XOL 18.11.08 NV45 06.0A 10/2018

JOSEPH SERBIN
6073430588
CENTERLINE COMMUNICATIONS
1471 COUNTY ROAD 32
GREENE NY 13778

1 LBS

1 OF 1

DWT: 12,12,1

SHIP TO:
CARLA SHORTER
5612269476
SBA COMMUNICATIONS CORPORATION
8051 CONGRESS AVENUE
BOCA RATON FL 33487

FL 332 6-07

UPS GROUND
TRACKING #: 1Z 9Y4 503 43 3987 8875

BILLING: P/P

Reference #1: CT22124 - CSC Filing to Tower Owner

XOL 18.11.08 NV45 06.0A 10/2018

JOSEPH SERBIN
6073430588
CENTERLINE COMMUNICATIONS
1471 COUNTY ROAD 32
GREENE NY 13778

1 LBS

1 OF 1

DWT: 12,12,1

SHIP TO:
ATTN: PETER & VICTOR VISOCKIS
PETER & VICTOR VISOCKIS
73 GRANDVIEW AVENUE
NEWINGTON CT 06111

CT 061 9-02

UPS GROUND
TRACKING #: 1Z 9Y4 503 43 2242 9480

BILLING: P/P

Reference #1: CT2214 - CSC Filing to Ground Owner

XOL 18.11.08 NV45 06.0A 10/2018

JOSEPH SERBIN
6073430588
CENTERLINE COMMUNICATIONS
1471 COUNTY ROAD 32
GREENE NY 13778

1 LBS

1 OF 1

DWT: 12,12,1

SHIP TO:
ATTN: MAYOR
TOWN OF PROSPECT
MAYOR'S OFFICE
36 CENTER STREET
PROSPECT CT 06712

CT 067 9-05

UPS GROUND

TRACKING #: 1Z 9Y4 503 43 1698 3571

BILLING: P/P

Reference #1: CT2214 - CSC FIling to Mayor

XOL 18.11.08 NV45 06.0A 10/2018

JOSEPH SERBIN
6073430588
CENTERLINE COMMUNICATIONS
1471 COUNTY ROAD 32
GREENE NY 13778

1 LBS

1 OF 1

DWT: 12,12,1

SHIP TO:
ATTN: BUILDING/ZONING
TOWN OF PROSPECT
BUILDING & ZONING
36 CENTER STREET
PROSPECT CT 06712

CT 067 9-05

UPS GROUND
TRACKING #: 1Z 9Y4 503 43 1370 0587

BILLING: P/P

Reference #1: CT2214 - CSC Filing to Building/Zon

XOL 18.11.08 NV45 06.0A 10/2018

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2015.

www.townofprospect.org

Information on the Property Records for the Municipality of Prospect was last updated on 12/8/2018.

Parcel Information

Location:	178 NEW HAVEN RD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	V0301200	Map Block Lot:	112 96 178	Acres:	66.50
490 Acres:	53.00	Zone:	RA-1	Volume / Page:	0548/0303
Developers Map / Lot:		Census:	3472		

Value Information

	Appraised Value	Assessed Value
Land	155,841	109,090
Buildings	0	0
Detached Outbuildings	300,000	210,000
Total	455,841	319,090

Owner's Information

Owner's Data
VISOCKIS PETER JOSEPH & VICTOR AUSTIN 73 GRANDVIEW AVE NEWINGTON CT 06111

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Cell Tower	2011	0.00	0.00	1

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
VISOCKIS PETER JOSEPH & VICTOR AUSTIN	548	303	01/13/2006	Warranty Deed	No	$0

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
7428	Electrical	11/05/2015		Closed	REPLACING EXISTING ANTENNA PANELS WITH NEW MODEL & ADDING REMOTE RADIO HADS
6888		08/22/2013		Permit Issued	SWAP OUT 3 ANTENNAS & ADD 1 FIBER LINE
6052	Residential	03/23/2010		Closed	REMOVE 12 ANTENNAE & REPLACE W/ 12 ANTENNAE;
5761		10/23/2008		Closed	ADD 3 ANTENNAS & GROUND CABINET TO EXISTING TOWER
3747		10/13/1999		Closed	COMM TOWER ON PROPERTY. INCOME INTENSIVE USE WITH TOWER. 175000 ADDED ON 1 ACRE. [11%]
3747		10/13/1999		Closed	COMM TOWER ON PROPERTY. INCOME INTENSIVE USE WITH TOWER. 175000 ADDED ON 1 ACRE. [11%]

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2214

FA#: 10035129

Kluge Road
18 Kluge Road
Prospect, CT 06712

November 6, 2018

Centerline Communications Project Number: 950012-182

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**6.59 %**

November 6, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2214 – Kluge Road**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **18 Kluge Road, Prospect, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **18 Kluge Road, Prospect, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	850 MHz	2	40
5G	850 MHz	2	25
LTE	1900 MHz (PCS)	4	40
LTE	700 MHz	2	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Kathrein 800-10121	158.5
A	2	CCI HPA-65R-BUU-H6	158.5
A	3	Commscope SBNH-1D6565C	158.5
B	1	Kathrein 800-10121	158.5
B	2	CCI HPA-65R-BUU-H6	158.5
B	3	Commscope SBNH-1D6565C	158.5
C	1	Kathrein 800-10121	158.5
C	2	CCI HPA-65R-BUU-H6	158.5
C	3	Commscope SBNH-1D6565C	158.5

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Kathrein 800-10121	850 MHz	11.45	2	60	837.82	0.23
Antenna A2	CCI HPA-65R-BUU-H6	850 MHz / 1900 MHz (PCS)	12.65 / 14.75	8	290	7,169.62	1.39
Antenna A3	Commscope SBNH-1D6565C	700 MHz	13.65	2	80	1,853.92	0.61
Sector A Composite MPE%							**2.23**
Antenna B1	Kathrein 800-10121	850 MHz	11.45	2	60	837.82	0.23
Antenna B2	CCI HPA-65R-BUU-H6	850 MHz / 1900 MHz (PCS)	12.65 / 14.75	8	290	7,169.62	1.39
Antenna B3	Commscope SBNH-1D6565C	700 MHz	13.65	2	80	1,853.92	0.61
Sector B Composite MPE%							**2.23**
Antenna C1	Kathrein 800-10121	850 MHz	11.45	2	60	837.82	0.23
Antenna C2	CCI HPA-65R-BUU-H6	850 MHz / 1900 MHz (PCS)	12.65 / 14.75	8	290	7,169.62	1.39
Antenna C3	Commscope SBNH-1D6565C	700 MHz	13.65	2	80	1,853.92	0.61
Sector C Composite MPE%							**2.23**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**2.23 %**
T-Mobile	0.94 %
Sprint	0.31 %
CL&P	3.11 %
Site Total MPE %:	**6.59 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	2.23 %
AT&T Sector B Total:	2.23 %
AT&T Sector C Total:	2.23 %
Site Total:	6.59 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS – Antenna 1	2	418.91	158.5	1.30	850 MHz	567	0.23%
AT&T 850 MHz LTE – Antenna 2	2	736.31	158.5	2.28	850 MHz	567	0.40%
AT&T 850 MHz 5G – Antenna 2	2	460.19	158.5	1.42	850 MHz	567	0.25%
AT&T 1900 MHz (PCS) LTE – Antenna 2	4	1,194.15	158.5	7.38	1900 MHz (PCS)	1000	0.74%
AT&T 700 MHz LTE – Antenna 3	2	926.96	158.5	2.87	700 MHz	467	0.61%
						Total:	**2.23%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	2.23 %
Sector B:	2.23 %
Sector C:	2.23 %
AT&T Maximum Total (per sector):	2.23 %
Site Total:	6.59 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.59 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 157 ft Nudd Corporation Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT00252-S
Customer Site Name: Prospect
Carrier Name: AT&T (App#: 99554, V3)
Carrier Site ID / Name: CT2214 / Prospect
Site Location: 178 New Haven Road
Prospect, Connecticut
New Haven County
Latitude: 41.472302
Longitude: -72.971597

Analysis Result:

Max Structural Usage: 88.5% [Pass]
Max Foundation Usage: 36.0% [Pass]
Additional Usage Caused by Mount Modification : +1.4%

Report Prepared By : Linfeng Chen

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 157 ft Nudd Corporation Monopole

Customer Name: SBA Communications Corp

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Prospect, Connecticut

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Latitude: 41.472302

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Analysis Result:

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Max Foundation Usage: 36.0% [Pass]

Additional Usage Caused by Mount Modification : +1.4%

Report Prepared By : Linfeng Chen

Introduction

The purpose of this report is to summarize the analysis results on the 157 ft Nudd Corporation Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Fred A. Nudd Corporation, Project No. 6820, Original design drawing dated 05/20/1999
Foundation Drawing	Fred A. Nudd Corporation, Project No. 6820, Original design drawing dated 05/20/1999
Geotechnical Report	SAGE environmental, Inc. Geotechnical Report, dated 05/05/1998
Modification Drawings	Semaan Engineering, Inc. Project No. CT-00252S, Modification Package, dated 04/18/2002

Analysis Criteria

The feasbility/rigorous analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-G**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.188, S_1 = 0.063

This structural analysis is based upon the tower being classified as a Structure 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.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	158.5	6	Andrew - SBNH-1D6565C - Panel	(1) 16' LP Platform	(12) 1 1/4" (7) 1/2" (1) 10mm Fiber (2) DC Cables	AT&T
-		3	CCI – DTMABP 7819VG12A - TMA			
-		6	Kathrein - 800 10025 - RETs			
-		3	Kathrein - 800 10121 - Panel			
-		6	Powerwave - LGP 13519 - Diplexers			
-	155.5	6	Andrew - RRUS 11 - RRUs	(1) Valmont Ring Mount		
-		1	Raycap - DC6-48-60-18-8-F - Surge			
11	132.0	3	ALU - RRH2x60-700 – RRH	(1) 14' LP Platform	(12) 1 5/8" (1) 1 5/8" Fiber	Verizon
12		3	ALU - RRH2x60-PCS - RRH			
13		6	Commscope - SBNHH-1D65B - Panel			
14		6	Decibel - DB844G65ZAXY - Panel			
15		1	RFS - DB-T1-6Z-8AB-0Z - ODU			
16	100.0	3	Kathrein - 742 213 - Panel	(3) Pipe Mount	(6) 1 5/8"	T-Mobile

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	157.0	3	Andrew SBNH-1D6565C 60.8# - Panel	(3) Sabre C10-857-804 [Sector Mounts]	(12) 1 1/4" Coax (1) 1/2" Coax (1) 1/2" Fiber (2) 3/4" DC (1) 3/8" RET Line {(2) 3/4" DC & (1) 1/2" Fiber Inside (1) 3" flex conduit}	AT&T
2		3	Cci HPA65R-BU8A - Panel			
3		3	Kathrein 800-10121 - Panel			
4		6	CCI DTMABP7819VG12A TMA			
5		6	Powerwave LGP21901 Diplexer			
6		6	Kathrein 860 10025 RET			
7		3	Ericsson RRUS-11 RRU			
8		3	Ericsson RRUS 4415 B25 RRU			
9		2	Raycap DC6-48-60-18-8F -SP			
10		1	Nokia CS72188.01 LMU			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**61.2%**	**65.4%**	**88.5%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3051.9	31.1	46.3

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.7757 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-G Standard under the 2015 IBC / 2018 Connecticut State Building Code design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

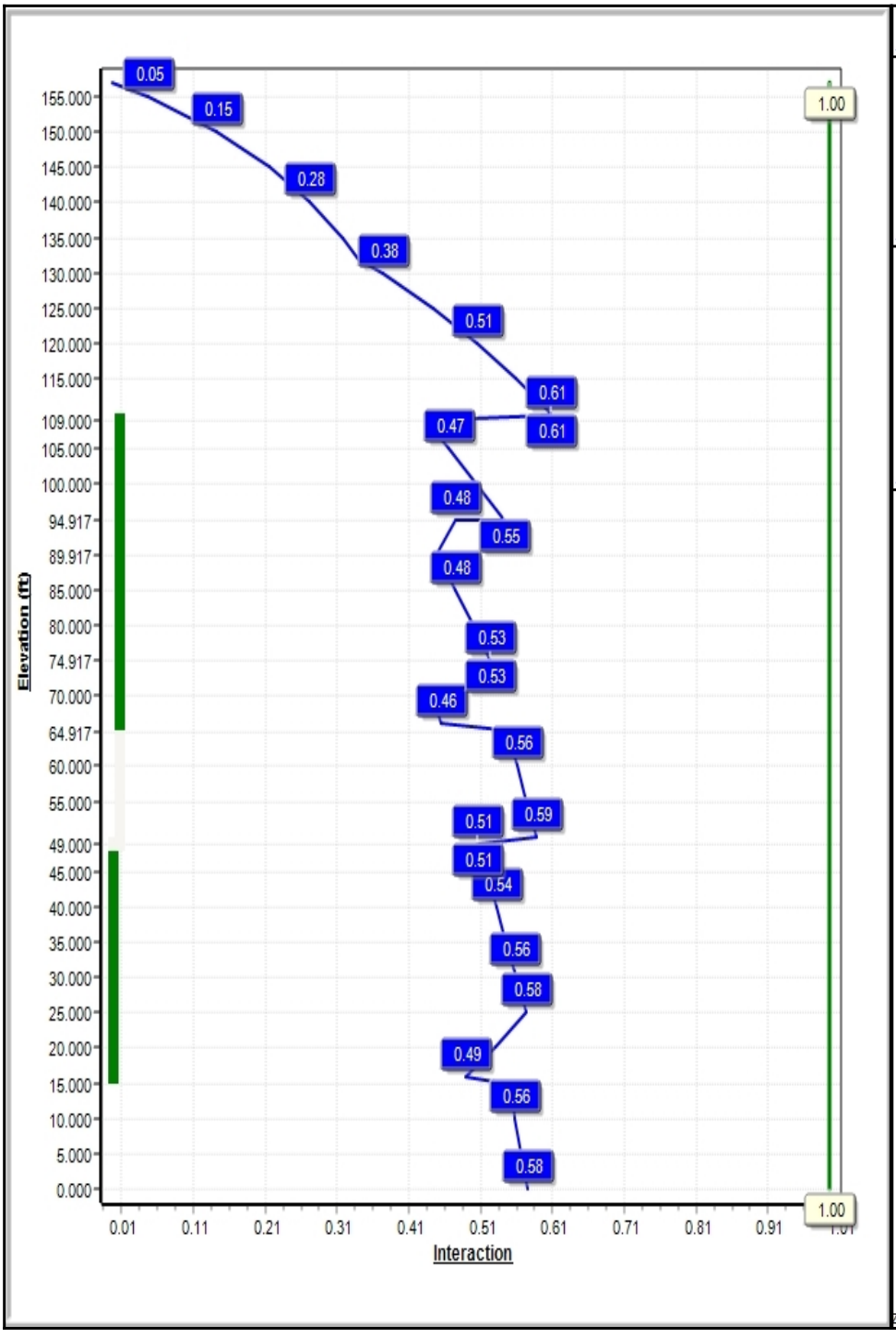
Usage Diagram - Max Ratio 61.23% at 109.9ft

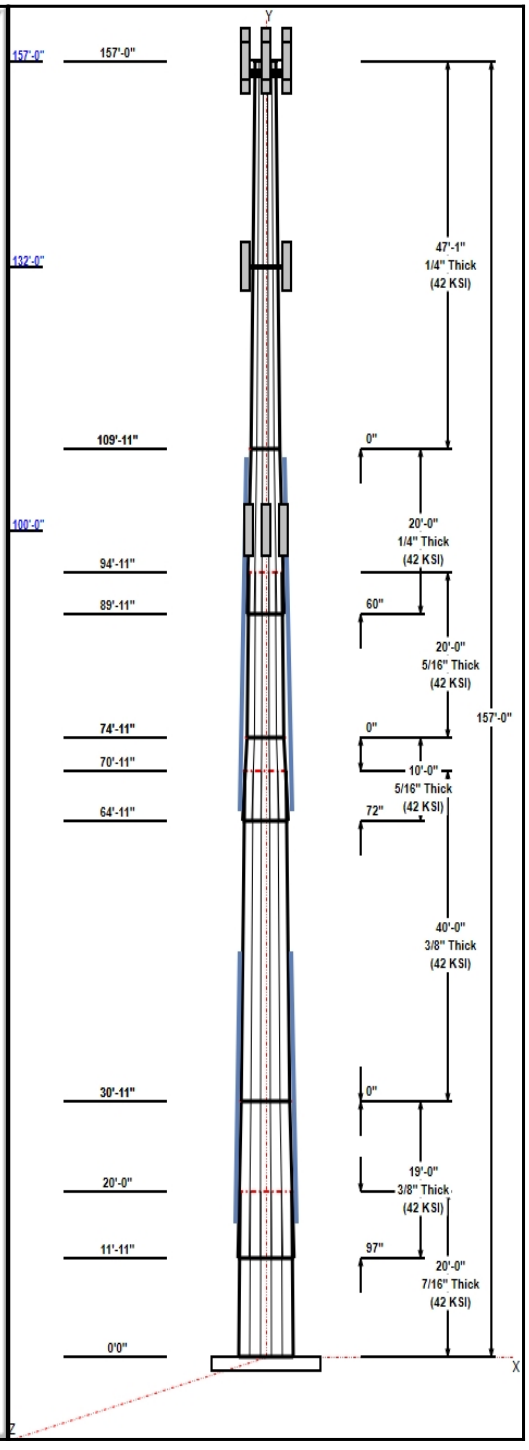
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	21
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT00252-S-SBA

Type: Tapered
Site Name: Prospect
Height: 157.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 0.33161

11/30/2018

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	20.00	61.56	68.19	0.438		0.33161	42
2	19.00	58.69	64.99	0.375	Slip	0.33161	42
3	40.00	45.42	58.69	0.375	Butt	0.33161	42
4	10.00	44.72	48.04	0.313	Slip	0.33161	42
5	20.00	38.09	44.72	0.313	Butt	0.33161	42
6	20.00	33.61	40.25	0.250	Slip	0.33161	42
7	47.08	18.00	33.61	0.250	Butt	0.33161	42

Discrete Appurtenances

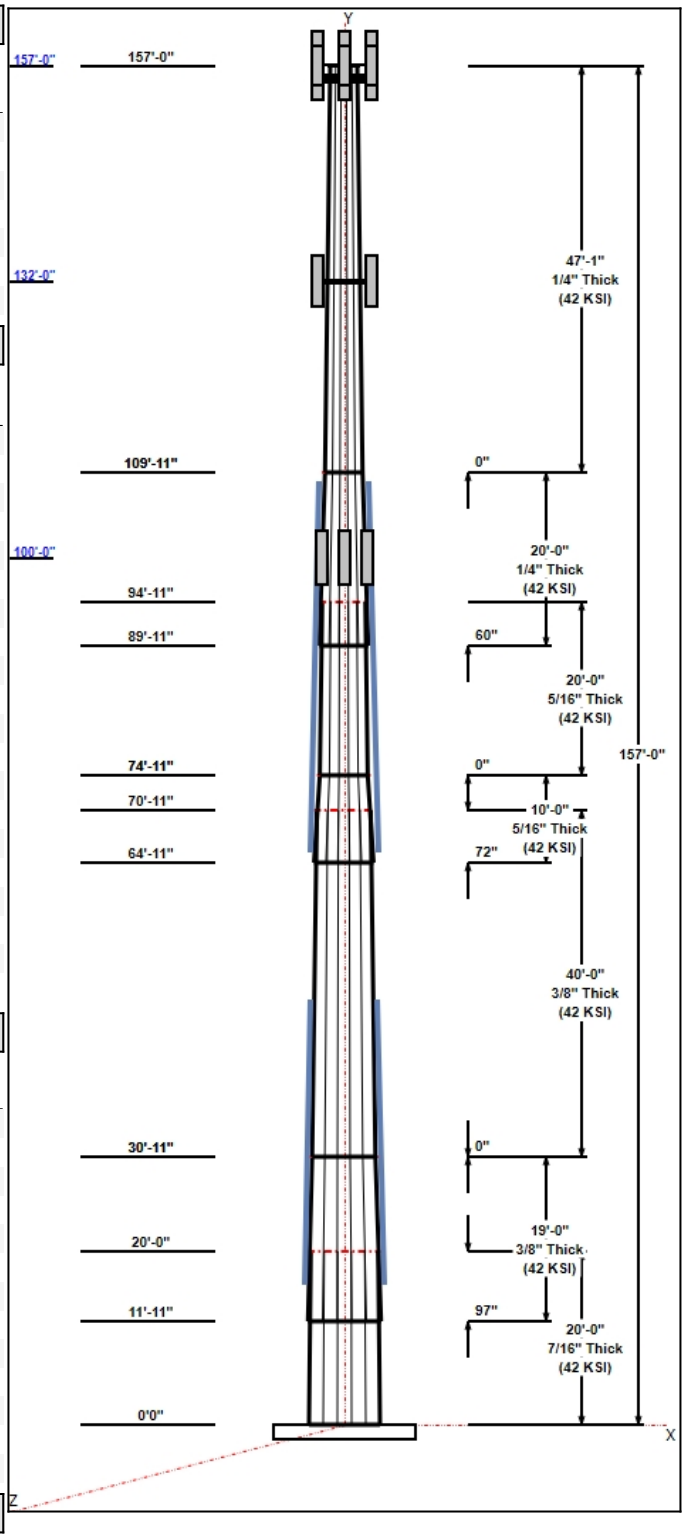
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
157.00	157.00	3	Andrew SBNH-1D6565C	AT&T
157.00	157.00	3	Cci HPA65R-BU8A	AT&T
157.00	157.00	3	Kathrein 800-10121	AT&T
157.00	157.00	3	Sabre C10-857-804	AT&T
157.00	157.00	6	CCI DTMABP7819VG12A	AT&T
157.00	157.00	6	Powerwave LGP21901	AT&T
157.00	157.00	6	Kathrein 860 10025 RET	AT&T
157.00	157.00	3	Ericsson RRUS-11 RRU	AT&T
157.00	157.00	3	Ericsson RRUS 4415 B25	AT&T
157.00	157.00	2	Raycap DC6-48-60-18-8F	AT&T
157.00	157.50	1	Nokia CS72188.01 LMU	AT&T
157.00	160.50	1	Lightning Rod	
132.00	132.00	6	DB844G65ZAXY	Verizon
132.00	132.00	6	SBNHH-1D65B	Verizon
132.00	132.00	3	RRH2X60-AWS	Verizon
132.00	132.00	3	RRH2X60-PCS	Verizon
132.00	132.00	1	DB-T1-6Z-8AB-0Z	Verizon
132.00	132.00	1	14' LP Platform	Verizon
100.00	100.00	3	15'x2.875"mount pipe	T-Mobile
100.00	100.00	3	742 213	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	157.00	Inside	1 1/4" Coax	AT&T
0.00	157.00	Inside	1/2" Coax	AT&T
0.00	157.00	Inside	1/2" Fiber	AT&T
0.00	157.00	Inside	3" flex conduit	AT&T
0.00	157.00	Inside	3/4" DC	AT&T
0.00	157.00	Inside	3/8" RET Line	AT&T
0.00	157.00	Outside	Safety Cable	
0.00	157.00	Outside	Step bolts (ladder)	
0.00	132.00	Inside	1 5/8" Coax	Verizon
0.00	132.00	Inside	1 5/8" Fiber	Verizon
65.00	110.00	Outside	1" Reinforcing plate	
0.00	100.00	Inside	1 5/8" Coax	T-Mobile
15.00	50.00	Outside	1" Reinforcing plate	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
18	2.00" F1554 105	81.0	Radial



Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	56.0	36.0	Round

Reactions

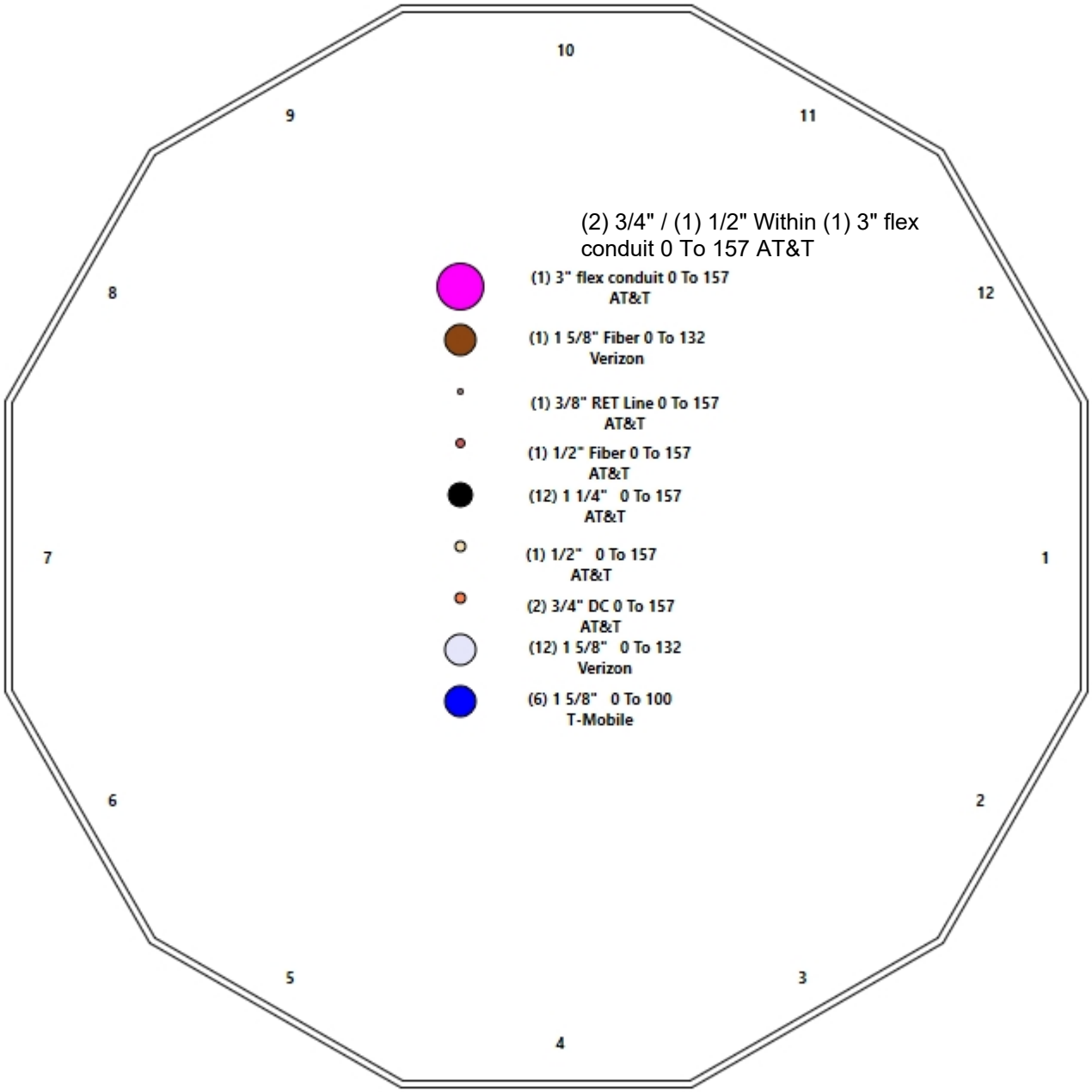
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	3051.9	31.1	46.3
0.9D + 1.6W 97 mph Wind	3038.7	31.1	34.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	720.6	7.0	70.1
1.2D + 1.0E	186.7	1.6	46.3
0.9D + 1.0E	185.7	1.6	34.7
1.0D + 1.0W 60 mph Wind	727.9	7.4	38.6

Structure: CT00252-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Prospect
Height: 157.00 (ft)

11/30/2018

Tower Engineering Solutions



Shaft Properties

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	12	20.000	0.4375	42		0.00	6,177
2	12	19.000	0.3750	42	Slip	97.00	4,798
3	12	40.000	0.3750	42	Flange	0.00	8,494
4	12	10.000	0.3125	42	Slip	72.00	1,577
5	12	20.000	0.3125	42	Flange	0.00	2,814
6	12	20.000	0.2500	42	Slip	60.00	2,009
7	12	47.083	0.2500	42	Flange	0.00	3,296
					Total Shaft Weight:		**29,166**

	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	68.19	0.00	95.44	55917.50	39.62	155.86	61.56	20.00	86.10	41051.0	35.56	140.7	0.331608
2	64.99	11.92	78.02	41570.87	44.29	173.30	58.69	30.92	70.41	30556.8	39.79	156.4	0.331608
3	58.69	30.92	70.41	30556.84	39.79	156.49	45.42	70.92	54.39	14087.7	30.31	121.1	0.331608
4	48.04	64.92	48.02	13959.75	39.04	153.71	44.72	74.92	44.68	11247.2	36.20	143.1	0.331608
5	44.72	74.92	44.68	11247.25	36.20	143.10	38.09	94.92	38.01	6923.09	30.51	121.8	0.331608
6	40.25	89.92	32.20	6573.73	40.99	160.98	33.61	109.92	26.86	3815.80	33.88	134.4	0.331608
7	33.61	109.9	26.86	3815.80	33.88	134.45	18.00	157.00	14.29	574.61	17.15	72.00	0.331608

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
16.00	49.00	3	PLT C6x10.5(1.5" Hole)	65	80	0.86	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt			
66.00	109.0	3	PLT C6x10.5(1.5" Hole)	65	80	0.86	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt			

Load Summary

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	157.00	Andrew SBNH-1D6565C 60.8#	3	60.80	11.47	0.80	291.77	14.736	0.80	0.00	0.00
2	157.00	Cci HPA65R-BU8A	3	69.00	11.22	0.89	346.82	12.885	0.89	0.00	0.00
3	157.00	Kathrein 800-10121	3	44.10	5.15	0.79	159.49	7.266	0.79	0.00	0.00
4	157.00	Sabre C10-857-804 (Sector Frame)	3	462.00	18.53	0.75	1109.98	38.022	0.75	0.00	0.00
5	157.00	CCI DTMABP7819VG12A TMA	6	19.20	1.14	0.67	44.84	1.913	0.69	0.00	0.00
6	157.00	Powerwave LGP21901 Diplexer	6	31.00	1.67	0.93	72.24	2.212	0.95	0.00	0.00
7	157.00	Kathrein 860 10025 RET	6	1.20	0.18	0.67	7.22	0.561	0.67	0.00	0.00
8	157.00	Ericsson RRUS-11 RRU	3	51.00	2.52	0.67	123.60	3.156	0.73	0.00	0.00
9	157.00	Ericsson RRUS 4415 B25 RRU	3	46.00	1.64	0.67	87.29	2.158	0.72	0.00	0.00
10	157.00	Raycap DC6-48-60-18-8F -Surge	2	31.80	0.92	1.00	93.91	1.360	1.00	0.00	0.00
11	157.00	Nokia CS72188.01 LMU Omni	1	5.00	0.13	1.00	11.16	0.415	1.00	0.00	0.50
12	157.00	Lightning Rod	1	35.00	1.05	1.00	66.56	3.434	1.00	0.00	3.50
13	132.00	DB844G65ZAXY	6	12.00	4.33	0.90	144.15	5.269	0.92	0.00	0.00
14	132.00	SBNHH-1D65B	6	40.60	8.08	0.83	239.16	9.354	0.85	0.00	0.00
15	132.00	RRH2X60-AWS	3	55.00	3.50	0.76	134.00	4.279	0.76	0.00	0.00
16	132.00	RRH2X60-PCS	3	55.00	2.20	0.89	138.20	2.827	0.89	0.00	0.00
17	132.00	DB-T1-6Z-8AB-0Z	1	18.90	4.80	1.00	160.48	5.662	1.00	0.00	0.00
18	132.00	14' LP Platform	1	1500.00	25.00	1.00	2792.29	45.677	1.00	0.00	0.00
19	100.00	15'x2.875"mount pipe	3	87.00	4.31	1.00	215.30	9.482	1.00	0.00	0.00
20	100.00	742 213	3	22.00	5.12	0.72	129.19	6.358	0.72	0.00	0.00
		Totals:	**66**	**5,102.20**			**14,470.91**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	157.00	(12) 1 1/4" Coax	0.00	Inside
0.00	157.00	(1) 1/2" Coax	0.00	Inside
0.00	157.00	(1) 1/2" Fiber	0.00	Inside
0.00	157.00	(1) 3" flex conduit	0.00	Inside
0.00	157.00	(2) 3/4" DC	0.00	Inside
0.00	157.00	(1) 3/8" RET Line	0.00	Inside
0.00	157.00	(1) Safety Cable	0.38	Outside
0.00	157.00	(1) Step bolts (ladder)	0.63	Outside
0.00	132.00	(12) 1 5/8" Coax	0.00	Inside
0.00	132.00	(1) 1 5/8" Fiber	0.00	Inside
65.00	110.00	(3) 1" Reinforcing plate	2.00	Outside
0.00	100.00	(6) 1 5/8" Coax	0.00	Inside
15.00	50.00	(3) 1" Reinforcing plate	2.00	Outside

Shaft Section Properties

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Increment Length: **5 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.4375	68.188	95.443	55917.5	39.62	155.86	42	45	0.0				
5.00		0.4375	66.529	93.107	51911.8	38.60	152.07	42	46	1604.0				
10.00		0.4375	64.871	90.771	48102.0	37.59	148.28	42	46	1564.2				
11.92	Bot - Section 2	0.4375	64.236	89.876	46692.6	37.20	146.82	42	47	589.1				
15.00		0.4375	63.213	88.436	44483.4	36.57	144.49	42	47	1747.5				
16.00	RB1	0.4375	62.882	87.968	43782.2	36.37	143.73	42	47	560.7	9.24	5233.9	5233.9	31.5
20.00	Top - Section 1	0.3750	62.305	74.781	36608.6	42.38	166.15	42	44	2213.4	9.24	5029.7	5029.7	126.0
25.00		0.3750	60.647	72.779	33746.3	41.19	161.73	42	44	1255.3	9.24	4780.2	4780.2	157.5
30.00		0.3750	58.989	70.777	31037.2	40.01	157.30	42	45	1221.2	9.24	4537.1	4537.1	157.5
30.92	Top - Section 2	0.3750	58.685	70.410	30556.8	39.79	156.49	42	45	220.2	9.24	4493.2	4493.2	28.9
30.92	Bot - Section 3	0.3750	58.685	70.410	30556.8	39.79	156.49	42	45					
35.00		0.3750	57.331	68.775	28477.1	38.82	152.88	42	46	967.0	9.24	4300.2	4300.2	128.6
40.00		0.3750	55.673	66.773	26061.9	37.64	148.46	42	46	1153.1	9.24	4069.8	4069.8	157.5
45.00		0.3750	54.015	64.770	23787.2	36.45	144.04	42	47	1119.0	9.24	3845.7	3845.7	157.5
49.00	RT1	0.3750	52.689	63.169	22065.8	35.50	140.50	42	48	870.7	9.24	3671.0	3671.0	126.0
50.00		0.3750	52.357	62.768	21648.8	35.27	139.62	42	48	214.3				
55.00		0.3750	50.699	60.766	19642.6	34.08	135.20	42	48	1050.9				
60.00		0.3750	49.041	58.764	17764.4	32.90	130.78	42	49	1016.8				
64.92	Bot - Section 4	0.3750	47.411	56.795	16038.1	31.73	126.43	42	50	966.7				
65.00		0.3750	47.383	56.762	16009.9	31.71	126.35	42	50	29.7				
66.00	RB2	0.3750	47.051	56.362	15673.4	31.48	125.47	42	50	355.2	9.24	3047.4	3047.4	31.5
70.00		0.3750	45.725	54.760	14374.8	30.53	121.93	42	50	1395.9	9.24	2892.1	2892.1	126.0
70.92	Top - Section 3	0.3125	46.046	46.019	12285.5	37.34	147.35	42	47	314.3	9.24	2857.1	2857.1	28.9
74.92	Top - Section 4	0.3125	44.720	44.685	11247.3	36.20	143.10	42	47	617.3	9.24	2706.8	2706.8	126.0
74.92	Bot - Section 5	0.3125	44.720	44.685	11247.3	36.20	143.10	42	47					
75.00		0.3125	44.692	44.657	11226.3	36.18	143.01	42	47	12.7	9.24	2703.7	2703.7	2.6
80.00		0.3125	43.034	42.988	10014.4	34.76	137.71	42	48	745.6	9.24	2521.7	2521.7	157.5
85.00		0.3125	41.376	41.320	8893.1	33.33	132.40	42	49	717.2	9.24	2346.0	2346.0	157.5
89.92	Bot - Section 6	0.3125	39.745	39.679	7875.3	31.94	127.19	42	50	677.6	9.24	2179.4	2179.4	154.9
90.00		0.3125	39.718	39.652	7858.8	31.91	127.10	42	50	20.4	9.24	2227.0	2227.0	2.6
94.92	Top - Section 5	0.2500	38.587	30.862	5789.6	39.21	154.35	42	45	1177.0	9.24	2064.8	2064.8	154.9
95.00		0.2500	38.560	30.839	5777.1	39.18	154.24	42	45	8.7	9.24	2062.1	2062.1	2.6
100.00		0.2500	36.902	29.505	5059.0	37.41	147.61	42	46	513.3	9.24	1903.5	1903.5	157.5
105.00		0.2500	35.244	28.170	4403.0	35.63	140.97	42	47	490.6	9.24	1751.3	1751.3	157.5
109.00	RT2	0.2500	33.917	27.102	3921.1	34.21	135.67	42	48	376.2	9.24	1634.1	1634.1	126.0
109.92	Top - Section 6	0.2500	33.613	26.857	3815.8	33.88	134.45	42	48	84.2				
109.92	Bot - Section 7	0.2500	33.613	26.857	3815.8	33.88	134.45	42	48					
110.00		0.2500	33.586	26.835	3806.3	33.85	134.34	42	48	7.6				
115.00		0.2500	31.928	25.500	3266.2	32.08	127.71	42	49	445.2				
120.00		0.2500	30.270	24.166	2779.7	30.30	121.08	42	50	422.5				
125.00		0.2500	28.611	22.831	2344.1	28.52	114.45	42	52	399.8				
130.00		0.2500	26.953	21.496	1956.5	26.74	107.81	42	53	377.1				
132.00		0.2500	26.290	20.962	1814.3	26.03	105.16	42	53	144.5				
135.00		0.2500	25.295	20.162	1614.2	24.97	101.18	42	53	209.9				
140.00		0.2500	23.637	18.827	1314.4	23.19	94.55	42	53	331.7				
145.00		0.2500	21.979	17.492	1054.2	21.41	87.92	42	53	309.0				
150.00		0.2500	20.321	16.157	830.8	19.64	81.29	42	53	286.3				
155.00		0.2500	18.663	14.823	641.5	17.86	74.65	42	53	263.5				
157.00		0.2500	18.000	14.289	574.6	17.15	72.00	42	53	99.1				
									Total Weight	**29165.9**				**2457.0**

Wind Loading - Shaft

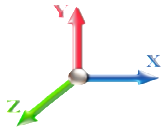
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

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	0.70	16.018	17.62	477.42	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	465.81	1.000	0.000	5.00	29.056	29.06	819.1	0.0	1924.8
10.00		1.00	0.70	16.018	17.62	454.20	1.000	0.000	5.00	28.341	28.34	799.0	0.0	1877.1
11.92	Bot - Section 2	1.00	0.70	16.018	17.62	449.75	1.000	0.000	1.92	10.674	10.67	300.9	0.0	706.9
15.00		1.00	0.70	16.018	17.62	442.59	1.000	0.000	3.08	17.151	17.15	483.5	0.0	2097.0
16.00	RB1	1.00	0.70	16.018	17.62	440.27	1.000	0.000	1.00	5.504	5.50	155.2	0.0	672.9
20.00	Top - Section 1	1.00	0.70	16.018	17.62	430.98	1.000	0.000	4.00	21.730	21.73	612.6	0.0	2656.1
25.00		1.00	0.70	16.018	17.62	424.63	1.000	0.000	5.00	26.519	26.52	747.6	0.0	1506.3
30.00		1.00	0.70	16.031	17.63	413.19	1.000	0.000	5.00	25.804	25.80	728.1	0.0	1465.5
30.92	Top - Section 2	1.00	0.71	16.170	17.79	412.83	1.000	0.000	0.92	4.653	4.65	132.4	0.0	264.2
35.00		1.00	0.73	16.753	18.43	410.52	1.000	0.000	4.08	20.435	20.44	602.5	0.0	1160.4
40.00		1.00	0.76	17.405	19.15	406.32	1.000	0.000	5.00	24.373	24.37	746.6	0.0	1383.7
45.00		1.00	0.79	18.000	19.80	400.91	1.000	0.000	5.00	23.658	23.66	749.5	0.0	1342.8
49.00	RT1	1.00	0.81	18.444	20.29	395.85	1.000	0.000	4.00	18.411	18.41	597.7	0.0	1044.8
50.00		1.00	0.81	18.551	20.41	394.50	1.000	0.000	1.00	4.531	4.53	147.9	0.0	257.1
55.00		1.00	0.83	19.063	20.97	387.24	1.000	0.000	5.00	22.227	22.23	745.7	0.0	1261.1
60.00		1.00	0.85	19.543	21.50	379.26	1.000	0.000	5.00	21.512	21.51	739.9	0.0	1220.2
64.92	Bot - Section 4	1.00	0.87	19.987	21.99	370.80	1.000	0.000	4.92	20.456	20.46	719.6	0.0	1160.0
65.00		1.00	0.87	19.995	21.99	370.66	1.000	0.000	0.08	0.345	0.35	12.1	0.0	35.7
66.00	RB2	1.00	0.88	20.082	22.09	368.87	1.000	0.000	1.00	4.127	4.13	145.9	0.0	426.3
70.00		1.00	0.89	20.422	22.46	361.49	1.000	0.000	4.00	16.224	16.22	583.1	0.0	1675.0
70.92	Top - Section 3	1.00	0.90	20.499	22.55	359.76	1.000	0.000	0.92	3.653	3.65	131.8	0.0	377.1
74.92	Top - Section 4	1.00	0.91	20.822	22.90	356.99	1.000	0.000	4.00	15.661	15.66	573.9	0.0	740.7
75.00		1.00	0.91	20.829	22.91	356.83	1.000	0.000	0.08	0.321	0.32	11.8	0.0	15.2
80.00		1.00	0.93	21.217	23.34	346.77	1.000	0.000	5.00	18.921	18.92	706.5	0.0	894.7
85.00		1.00	0.94	21.587	23.75	336.31	1.000	0.000	5.00	18.206	18.21	691.7	0.0	860.6
89.92	Bot - Section 6	1.00	0.96	21.937	24.13	325.66	1.000	0.000	4.92	17.205	17.20	664.3	0.0	813.1
90.00		1.00	0.96	21.943	24.14	325.48	1.000	0.000	0.08	0.289	0.29	11.2	0.0	24.4
94.92	Top - Section 5	1.00	0.97	22.279	24.51	314.50	1.000	0.000	4.92	16.714	16.71	655.4	0.0	1412.4
95.00		1.00	0.97	22.284	24.51	318.44	1.000	0.000	0.08	0.277	0.28	10.9	0.0	10.5
100.00	Appurtenance(s)	1.00	0.99	22.613	24.87	306.99	1.000	0.000	5.00	16.276	16.28	647.8	0.0	616.0
105.00		1.00	1.00	22.931	25.22	295.25	1.000	0.000	5.00	15.560	15.56	628.0	0.0	588.8
109.00	RT2	1.00	1.01	23.177	25.49	285.66	1.000	0.000	4.00	11.933	11.93	486.8	0.0	451.4
109.92	Top - Section 6	1.00	1.02	23.233	25.56	283.43	1.000	0.000	0.92	2.670	2.67	109.2	0.0	101.0
110.00		1.00	1.02	23.238	25.56	283.23	1.000	0.000	0.08	0.242	0.24	9.9	0.0	9.1
115.00		1.00	1.03	23.535	25.89	270.96	1.000	0.000	5.00	14.130	14.13	585.3	0.0	534.3
120.00		1.00	1.04	23.823	26.20	258.46	1.000	0.000	5.00	13.415	13.41	562.5	0.0	507.0
125.00		1.00	1.05	24.102	26.51	245.73	1.000	0.000	5.00	12.700	12.70	538.7	0.0	479.8
130.00		1.00	1.07	24.374	26.81	232.79	1.000	0.000	5.00	11.984	11.98	514.1	0.0	452.5
132.00	Appurtenance(s)	1.00	1.07	24.480	26.93	227.56	1.000	0.000	2.00	4.593	4.59	197.9	0.0	173.4
135.00		1.00	1.08	24.638	27.10	219.65	1.000	0.000	3.00	6.676	6.68	289.5	0.0	251.9
140.00		1.00	1.09	24.895	27.38	206.32	1.000	0.000	5.00	10.554	10.55	462.4	0.0	398.0
145.00		1.00	1.10	25.146	27.66	192.82	1.000	0.000	5.00	9.839	9.84	435.4	0.0	370.8
150.00		1.00	1.11	25.391	27.93	179.14	1.000	0.000	5.00	9.123	9.12	407.7	0.0	343.5
155.00		1.00	1.12	25.630	28.19	165.29	1.000	0.000	5.00	8.408	8.41	379.3	0.0	316.3
157.00	Appurtenance(s)	1.00	1.12	25.724	28.30	159.71	1.000	0.000	2.00	3.163	3.16	143.2	0.0	118.9

Totals:	**157.00**	**20,424.1**	**34,999.1**

Discrete Appurtenance Forces

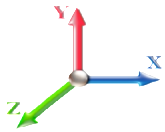
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

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	157.00	Kathrein 800-10121	3	25.724	28.296	0.79	1.00	12.21	158.76	0.000	0.000	552.59	0.00	0.00
2	157.00	Nokia CS72188.01 LMU	1	25.747	28.322	1.00	1.00	0.13	6.00	0.000	0.500	5.89	0.00	2.95
3	157.00	Raycap DC6-48-60-18-8F	2	25.724	28.296	1.00	1.00	1.84	76.32	0.000	0.000	83.30	0.00	0.00
4	157.00	Ericsson RRUS 4415 B25	3	25.724	28.296	0.67	1.00	3.30	165.60	0.000	0.000	149.24	0.00	0.00
5	157.00	Ericsson RRUS-11 RRU	3	25.724	28.296	0.67	1.00	5.07	183.60	0.000	0.000	229.32	0.00	0.00
6	157.00	Kathrein 860 10025 RET	6	25.724	28.296	0.67	1.00	0.72	8.64	0.000	0.000	32.76	0.00	0.00
7	157.00	Powerwave LGP21901	6	25.724	28.296	0.93	1.00	9.32	223.20	0.000	0.000	421.89	0.00	0.00
8	157.00	CCI DTMABP7819VG12A	6	25.724	28.296	0.67	1.00	4.58	138.24	0.000	0.000	207.48	0.00	0.00
9	157.00	Sabre C10-857-804	3	25.724	28.296	0.56	0.75	31.27	1663.20	0.000	0.000	1415.69	0.00	0.00
10	157.00	Lightning Rod	1	25.886	28.475	1.00	1.00	1.05	42.00	0.000	3.500	47.84	0.00	167.43
11	157.00	Cci HPA65R-BU8A	3	25.724	28.296	0.89	1.00	29.96	248.40	0.000	0.000	1356.29	0.00	0.00
12	157.00	Andrew SBNH-1D6565C	3	25.724	28.296	0.80	1.00	27.53	218.88	0.000	0.000	1246.30	0.00	0.00
13	132.00	14' LP Platform	1	24.480	26.928	1.00	1.00	25.00	1800.00	0.000	0.000	1077.13	0.00	0.00
14	132.00	DB-T1-6Z-8AB-0Z	1	24.480	26.928	1.00	1.00	4.80	22.68	0.000	0.000	206.81	0.00	0.00
15	132.00	RRH2X60-PCS	3	24.480	26.928	0.71	0.80	4.70	198.00	0.000	0.000	202.47	0.00	0.00
16	132.00	RRH2X60-AWS	3	24.480	26.928	0.61	0.80	6.38	198.00	0.000	0.000	275.06	0.00	0.00
17	132.00	SBNHH-1D65B	6	24.480	26.928	0.66	0.80	32.19	292.32	0.000	0.000	1386.94	0.00	0.00
18	132.00	DB844G65ZAXY	6	24.480	26.928	0.72	0.80	18.71	86.40	0.000	0.000	805.93	0.00	0.00
19	100.00	742 213	3	22.613	24.875	0.72	1.00	11.06	79.20	0.000	0.000	440.15	0.00	0.00
20	100.00	15'x2.875"mount pipe	3	22.613	24.875	1.00	1.00	12.93	313.20	0.000	0.000	514.61	0.00	0.00
							Totals:		**6,122.64**			**10,657.71**		

Total Applied Force Summary

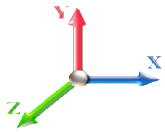
Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

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		819.13	2117.10	0.00	0.00
10.00		798.97	2069.41	0.00	0.00
11.92		300.93	780.63	0.00	0.00
15.00		483.51	2215.58	0.00	0.00
16.00		155.17	711.33	0.00	0.00
20.00		612.60	2809.91	0.00	0.00
25.00		747.60	1698.66	0.00	0.00
30.00		728.05	1657.78	0.00	0.00
30.92		132.42	299.49	0.00	0.00
35.00		602.55	1317.41	0.00	0.00
40.00		746.61	1576.03	0.00	0.00
45.00		749.50	1535.15	0.00	0.00
49.00		597.65	1198.69	0.00	0.00
50.00		147.94	295.59	0.00	0.00
55.00		745.74	1453.40	0.00	0.00
60.00		739.91	1412.53	0.00	0.00
64.92		719.60	1349.12	0.00	0.00
65.00		12.15	38.86	0.00	0.00
66.00		145.88	464.72	0.00	0.00
70.00		583.14	1828.89	0.00	0.00
70.92		131.81	412.37	0.00	0.00
74.92		573.94	894.60	0.00	0.00
75.00		11.78	18.41	0.00	0.00
80.00		706.53	1087.03	0.00	0.00
85.00		691.70	1052.97	0.00	0.00
89.92		664.26	1002.20	0.00	0.00
90.00		11.17	27.65	0.00	0.00
94.92		655.35	1601.47	0.00	0.00
95.00		10.88	13.70	0.00	0.00
100.00	(6) attachments	1602.53	1200.73	0.00	0.00
105.00		627.99	743.64	0.00	0.00
109.00		486.78	575.29	0.00	0.00
109.92		109.19	129.38	0.00	0.00
110.00		9.88	11.72	0.00	0.00
115.00		585.28	689.14	0.00	0.00
120.00		562.45	661.89	0.00	0.00
125.00		538.71	634.64	0.00	0.00
130.00		514.10	607.39	0.00	0.00
132.00	(20) attachments	4152.25	2832.72	0.00	0.00
135.00		289.48	295.92	0.00	0.00
140.00		462.43	471.40	0.00	0.00
145.00		435.43	444.15	0.00	0.00
150.00		407.71	416.90	0.00	0.00
155.00		379.28	389.65	0.00	0.00
157.00	(40) attachments	5891.82	3281.07	0.00	170.38

Total Applied Force Summary

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Tower Engineering Solutions

Totals:	**31,081.79**	**46,326.31**	**0.00**	**170.38**

Linear Appurtenance Segment Forces (Factored)

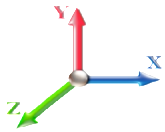
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

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	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	16.018	0.00	1.64
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.014	0.000	16.018	0.00	6.24
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	16.018	0.00	1.64
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	16.018	0.00	6.24
11.92	Safety Cable	Yes	1.92	0.000	0.38	0.06	0.00	0.015	0.000	16.018	0.00	0.63
11.92	Step bolts (ladder)	Yes	1.92	0.000	0.63	0.10	0.00	0.015	0.000	16.018	0.00	2.39
15.00	Safety Cable	Yes	3.08	0.000	0.38	0.10	0.00	0.015	0.000	16.018	0.00	1.01
15.00	Step bolts (ladder)	Yes	3.08	0.000	0.63	0.16	0.00	0.015	0.000	16.018	0.00	3.85
16.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.046	0.000	16.018	0.00	0.33
16.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.046	0.000	16.018	0.00	1.25
16.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.046	0.000	16.018	0.00	0.00
20.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.047	0.000	16.018	0.00	1.31
20.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.047	0.000	16.018	0.00	4.99
20.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.047	0.000	16.018	0.00	0.00
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.047	0.000	16.018	0.00	1.64
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.047	0.000	16.018	0.00	6.24
25.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.047	0.000	16.018	0.00	0.00
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.049	0.000	16.031	0.00	1.64
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.049	0.000	16.031	0.00	6.24
30.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.049	0.000	16.031	0.00	0.00
30.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.049	0.000	16.170	0.00	0.30
30.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.049	0.000	16.170	0.00	1.14
30.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.049	0.000	16.170	0.00	0.00
35.00	Safety Cable	Yes	4.08	0.000	0.38	0.13	0.00	0.050	0.000	16.753	0.00	1.34
35.00	Step bolts (ladder)	Yes	4.08	0.000	0.63	0.21	0.00	0.050	0.000	16.753	0.00	5.10
35.00	1" Reinforcing plate	Yes	4.08	0.000	2.00	0.68	0.00	0.050	0.000	16.753	0.00	0.00
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.051	0.000	17.405	0.00	1.64
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.051	0.000	17.405	0.00	6.24
40.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	17.405	0.00	0.00
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.053	0.000	18.000	0.00	1.64
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.053	0.000	18.000	0.00	6.24
45.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.053	0.000	18.000	0.00	0.00
49.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.054	0.000	18.444	0.00	1.31
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.054	0.000	18.444	0.00	4.99
49.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.054	0.000	18.444	0.00	0.00
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.055	0.000	18.551	0.00	0.33
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.055	0.000	18.551	0.00	1.25
50.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.055	0.000	18.551	0.00	0.00
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	19.063	0.00	1.64
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	19.063	0.00	6.24
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	19.543	0.00	1.64
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	19.543	0.00	6.24
64.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.020	0.000	19.987	0.00	1.61
64.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.020	0.000	19.987	0.00	6.14
65.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.021	0.000	19.995	0.00	0.03
65.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.021	0.000	19.995	0.00	0.10
66.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.062	0.000	20.082	0.00	0.33

Linear Appurtenance Segment Forces (Factored)

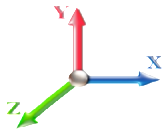
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

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)
66.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.062	0.000	20.082	0.00	1.25
66.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.062	0.000	20.082	0.00	0.00
70.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.063	0.000	20.422	0.00	1.31
70.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.063	0.000	20.422	0.00	4.99
70.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.063	0.000	20.422	0.00	0.00
70.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.064	0.000	20.499	0.00	0.30
70.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.064	0.000	20.499	0.00	1.14
70.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.064	0.000	20.499	0.00	0.00
74.92	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.064	0.000	20.822	0.00	1.31
74.92	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.064	0.000	20.822	0.00	4.99
74.92	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.064	0.000	20.822	0.00	0.00
75.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.065	0.000	20.829	0.00	0.03
75.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.065	0.000	20.829	0.00	0.10
75.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.065	0.000	20.829	0.00	0.00
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.066	0.000	21.217	0.00	1.64
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.066	0.000	21.217	0.00	6.24
80.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.066	0.000	21.217	0.00	0.00
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.069	0.000	21.587	0.00	1.64
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.069	0.000	21.587	0.00	6.24
85.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.069	0.000	21.587	0.00	0.00
89.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.072	0.000	21.937	0.00	1.61
89.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.072	0.000	21.937	0.00	6.14
89.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	0.82	0.00	0.072	0.000	21.937	0.00	0.00
90.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.073	0.000	21.943	0.00	0.03
90.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.073	0.000	21.943	0.00	0.10
90.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.073	0.000	21.943	0.00	0.00
94.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.075	0.000	22.279	0.00	1.61
94.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.075	0.000	22.279	0.00	6.14
94.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	0.82	0.00	0.075	0.000	22.279	0.00	0.00
95.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.075	0.000	22.284	0.00	0.03
95.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.075	0.000	22.284	0.00	0.10
95.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.075	0.000	22.284	0.00	0.00
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.077	0.000	22.613	0.00	1.64
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.077	0.000	22.613	0.00	6.24
100.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.077	0.000	22.613	0.00	0.00
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.081	0.000	22.931	0.00	1.64
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.081	0.000	22.931	0.00	6.24
105.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.081	0.000	22.931	0.00	0.00
109.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.084	0.000	23.177	0.00	1.31
109.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.084	0.000	23.177	0.00	4.99
109.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.084	0.000	23.177	0.00	0.00
109.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.086	0.000	23.233	0.00	0.30
109.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.086	0.000	23.233	0.00	1.14
109.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.086	0.000	23.233	0.00	0.00
110.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.087	0.000	23.238	0.00	0.03
110.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.087	0.000	23.238	0.00	0.10
110.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.087	0.000	23.238	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

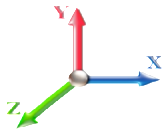
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

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)
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	23.535	0.00	1.64
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	23.535	0.00	6.24
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	23.823	0.00	1.64
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	23.823	0.00	6.24
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	24.102	0.00	1.64
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	24.102	0.00	6.24
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.035	0.000	24.374	0.00	1.64
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.035	0.000	24.374	0.00	6.24
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.037	0.000	24.480	0.00	0.66
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.037	0.000	24.480	0.00	2.50
135.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.038	0.000	24.638	0.00	0.98
135.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.038	0.000	24.638	0.00	3.74
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.040	0.000	24.895	0.00	1.64
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.040	0.000	24.895	0.00	6.24
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.043	0.000	25.146	0.00	1.64
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.043	0.000	25.146	0.00	6.24
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.046	0.000	25.391	0.00	1.64
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.046	0.000	25.391	0.00	6.24
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.050	0.000	25.630	0.00	1.64
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.050	0.000	25.630	0.00	6.24
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.053	0.000	25.724	0.00	0.66
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.053	0.000	25.724	0.00	2.50
										Totals:	**0.0**	**247.4**

Calculated Forces

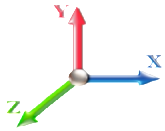
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 21

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	-46.30	-31.11	0.00	-3051.8	0.00	3051.85	3884.21	1942.11	10879.0	5372.74	0.00	0.000	0.000	0.580
5.00	-44.15	-30.35	0.00	-2896.2	0.00	2896.29	3837.36	1918.68	10483.0	5177.19	0.04	-0.076	0.000	0.571
10.00	-42.05	-29.59	0.00	-2744.5	0.00	2744.53	3788.09	1894.04	10087.1	4981.66	0.16	-0.153	0.000	0.562
11.92	-41.25	-29.31	0.00	-2687.8	0.00	2687.82	3768.56	1884.28	9935.49	4906.76	0.23	-0.184	0.000	0.559
15.00	-39.02	-28.84	0.00	-2597.4	0.00	2597.44	3736.40	1868.20	9691.75	4786.39	0.37	-0.233	0.000	0.553
16.00	-38.29	-28.71	0.00	-2568.6	0.00	2568.60	3725.77	1862.88	9612.78	4747.39	0.42	-0.250	0.000	0.493
20.00	-35.45	-28.13	0.00	-2453.7	0.00	2453.75	2938.21	1469.11	7525.54	3716.58	0.65	-0.308	0.000	0.534
25.00	-33.72	-27.41	0.00	-2313.1	0.00	2313.13	2903.51	1451.76	7236.35	3573.76	1.02	-0.382	0.000	0.578
30.00	-32.05	-26.70	0.00	-2176.0	0.00	2176.06	2866.39	1433.19	6946.10	3430.42	1.46	-0.465	0.000	0.564
30.92	-31.73	-26.59	0.00	-2151.5	0.00	2151.58	2859.32	1429.66	6892.81	3404.10	1.55	-0.481	0.000	0.561
30.92	-31.73	-26.59	0.00	-2151.5	0.00	2151.58	2859.32	1429.66	6892.81	3404.10	1.55	-0.481	0.000	0.561
35.00	-30.38	-26.02	0.00	-2043.0	0.00	2043.01	2826.85	1413.42	6655.27	3286.79	1.99	-0.550	0.000	0.550
40.00	-28.77	-25.30	0.00	-1912.9	0.00	1912.92	2784.89	1392.44	6364.37	3143.12	2.62	-0.636	0.000	0.536
45.00	-27.21	-24.57	0.00	-1786.4	0.00	1786.44	2740.51	1370.25	6073.90	2999.67	3.33	-0.723	0.000	0.522
49.00	-26.00	-23.97	0.00	-1688.1	0.00	1688.17	2703.26	1351.63	5842.17	2885.23	3.97	-0.795	0.000	0.510
49.00	-26.00	-23.97	0.00	-1688.1	0.00	1688.17	2703.26	1351.63	5842.17	2885.23	3.97	-0.795	0.000	0.510
50.00	-25.69	-23.85	0.00	-1664.2	0.00	1664.20	2693.71	1346.86	5784.36	2856.68	4.14	-0.813	0.000	0.592
55.00	-24.20	-23.13	0.00	-1544.9	0.00	1544.94	2644.50	1322.25	5496.25	2714.39	5.04	-0.919	0.000	0.579
60.00	-22.76	-22.41	0.00	-1429.3	0.00	1429.31	2592.86	1296.43	5210.07	2573.06	6.07	-1.026	0.000	0.565
64.92	-21.40	-21.68	0.00	-1319.1	0.00	1319.14	2539.73	1269.86	4931.03	2435.25	7.18	-1.135	0.000	0.550
65.00	-21.36	-21.67	0.00	-1317.3	0.00	1317.33	2538.81	1269.40	4926.33	2432.93	7.20	-1.137	0.000	0.550
66.00	-20.88	-21.54	0.00	-1295.6	0.00	1295.66	2527.71	1263.85	4869.91	2405.07	7.44	-1.160	0.000	0.458
70.00	-19.05	-20.93	0.00	-1209.5	0.00	1209.51	2482.34	1241.17	4645.51	2294.24	8.45	-1.236	0.000	0.446
70.92	-18.62	-20.81	0.00	-1190.3	0.00	1190.33	1926.34	963.17	3640.67	1797.99	8.68	-1.254	0.000	0.487
74.92	-17.72	-20.22	0.00	-1107.1	0.00	1107.10	1896.38	948.19	3479.39	1718.34	9.77	-1.331	0.000	0.528
74.92	-17.72	-20.22	0.00	-1107.1	0.00	1107.10	1896.38	948.19	3479.39	1718.34	9.77	-1.331	0.000	0.528
75.00	-17.69	-20.23	0.00	-1105.4	0.00	1105.42	1895.74	947.87	3476.04	1716.68	9.79	-1.333	0.000	0.527
80.00	-16.58	-19.53	0.00	-1004.2	0.00	1004.27	1856.07	928.04	3275.27	1617.53	11.25	-1.441	0.000	0.504
85.00	-15.51	-18.84	0.00	-906.63	0.00	906.63	1813.98	906.99	3075.87	1519.05	12.81	-1.549	0.000	0.480
89.92	-14.51	-18.16	0.00	-814.01	0.00	814.01	1770.24	885.12	2881.61	1423.12	14.47	-1.656	0.000	0.455
90.00	-14.46	-18.16	0.00	-812.50	0.00	812.50	1769.48	884.74	2878.34	1421.50	14.50	-1.658	0.000	0.452
94.92	-12.87	-17.47	0.00	-723.20	0.00	723.20	1262.32	631.16	2000.52	987.98	16.26	-1.765	0.000	0.479
95.00	-12.83	-17.47	0.00	-721.75	0.00	721.75	1261.88	630.94	1998.36	986.92	16.29	-1.767	0.000	0.548
100.00	-11.65	-15.86	0.00	-634.38	0.00	634.38	1234.00	617.00	1869.08	923.07	18.21	-1.890	0.000	0.507
105.00	-10.90	-15.23	0.00	-555.09	0.00	555.09	1203.70	601.85	1740.15	859.39	20.25	-2.011	0.000	0.470
109.00	-10.33	-14.73	0.00	-494.18	0.00	494.18	1177.71	588.86	1637.59	808.75	21.98	-2.108	0.000	0.438
109.00	-10.33	-14.73	0.00	-494.18	0.00	494.18	1177.71	588.86	1637.59	808.75	21.98	-2.108	0.000	0.438
109.92	-10.20	-14.62	0.00	-480.68	0.00	480.68	1171.54	585.77	1614.20	797.19	22.39	-2.131	0.000	0.612
109.92	-10.20	-14.62	0.00	-480.68	0.00	480.68	1171.54	585.77	1614.20	797.19	22.39	-2.131	0.000	0.612
110.00	-10.17	-14.62	0.00	-479.46	0.00	479.46	1170.98	585.49	1612.07	796.14	22.43	-2.134	0.000	0.612
115.00	-9.46	-14.04	0.00	-406.34	0.00	406.34	1135.84	567.92	1485.34	733.56	24.75	-2.300	0.000	0.563
120.00	-8.78	-13.47	0.00	-336.15	0.00	336.15	1098.28	549.14	1360.47	671.88	27.25	-2.461	0.000	0.509
125.00	-8.14	-12.93	0.00	-268.78	0.00	268.78	1058.31	529.15	1237.95	611.38	29.91	-2.616	0.000	0.448
130.00	-7.54	-12.40	0.00	-204.13	0.00	204.13	1015.91	507.96	1118.28	552.28	32.73	-2.760	0.000	0.378
132.00	-4.90	-8.12	0.00	-179.33	0.00	179.33	998.40	499.20	1071.45	529.15	33.90	-2.815	0.000	0.344
135.00	-4.61	-7.82	0.00	-154.97	0.00	154.97	960.25	480.13	990.77	489.30	35.69	-2.894	0.000	0.322
140.00	-4.14	-7.35	0.00	-115.85	0.00	115.85	896.68	448.34	863.33	426.36	38.79	-3.013	0.000	0.277
145.00	-3.71	-6.89	0.00	-79.12	0.00	79.12	833.11	416.56	744.65	367.76	42.00	-3.119	0.000	0.220

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

150.00	-3.31	-6.47	0.00	-44.65	0.00	44.65	769.54	384.77	634.75	313.48	45.32	-3.202	0.000	0.147
155.00	-2.94	-6.07	0.00	-12.31	0.00	12.31	705.97	352.99	533.62	263.54	48.70	-3.251	0.000	0.051
157.00	0.00	-5.89	0.00	-0.17	0.00	0.17	680.54	340.27	495.63	244.77	50.06	-3.257	0.000	0.001

Wind Loading - Shaft

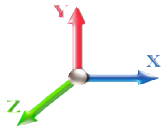
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

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	0.70	16.018	17.62	477.42	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	465.81	1.000	0.000	5.00	29.056	29.06	819.1	0.0	1443.6
10.00		1.00	0.70	16.018	17.62	454.20	1.000	0.000	5.00	28.341	28.34	799.0	0.0	1407.8
11.92	Bot - Section 2	1.00	0.70	16.018	17.62	449.75	1.000	0.000	1.92	10.674	10.67	300.9	0.0	530.2
15.00		1.00	0.70	16.018	17.62	442.59	1.000	0.000	3.08	17.151	17.15	483.5	0.0	1572.7
16.00	RB1	1.00	0.70	16.018	17.62	440.27	1.000	0.000	1.00	5.504	5.50	155.2	0.0	504.7
20.00	Top - Section 1	1.00	0.70	16.018	17.62	430.98	1.000	0.000	4.00	21.730	21.73	612.6	0.0	1992.0
25.00		1.00	0.70	16.018	17.62	424.63	1.000	0.000	5.00	26.519	26.52	747.6	0.0	1129.8
30.00		1.00	0.70	16.031	17.63	413.19	1.000	0.000	5.00	25.804	25.80	728.1	0.0	1099.1
30.92	Top - Section 2	1.00	0.71	16.170	17.79	412.83	1.000	0.000	0.92	4.653	4.65	132.4	0.0	198.2
35.00		1.00	0.73	16.753	18.43	410.52	1.000	0.000	4.08	20.435	20.44	602.5	0.0	870.3
40.00		1.00	0.76	17.405	19.15	406.32	1.000	0.000	5.00	24.373	24.37	746.6	0.0	1037.8
45.00		1.00	0.79	18.000	19.80	400.91	1.000	0.000	5.00	23.658	23.66	749.5	0.0	1007.1
49.00	RT1	1.00	0.81	18.444	20.29	395.85	1.000	0.000	4.00	18.411	18.41	597.7	0.0	783.6
50.00		1.00	0.81	18.551	20.41	394.50	1.000	0.000	1.00	4.531	4.53	147.9	0.0	192.8
55.00		1.00	0.83	19.063	20.97	387.24	1.000	0.000	5.00	22.227	22.23	745.7	0.0	945.8
60.00		1.00	0.85	19.543	21.50	379.26	1.000	0.000	5.00	21.512	21.51	739.9	0.0	915.2
64.92	Bot - Section 4	1.00	0.87	19.987	21.99	370.80	1.000	0.000	4.92	20.456	20.46	719.6	0.0	870.0
65.00		1.00	0.87	19.995	21.99	370.66	1.000	0.000	0.08	0.345	0.35	12.1	0.0	26.7
66.00	RB2	1.00	0.88	20.082	22.09	368.87	1.000	0.000	1.00	4.127	4.13	145.9	0.0	319.7
70.00		1.00	0.89	20.422	22.46	361.49	1.000	0.000	4.00	16.224	16.22	583.1	0.0	1256.3
70.92	Top - Section 3	1.00	0.90	20.499	22.55	359.76	1.000	0.000	0.92	3.653	3.65	131.8	0.0	282.8
74.92	Top - Section 4	1.00	0.91	20.822	22.90	356.99	1.000	0.000	4.00	15.661	15.66	573.9	0.0	555.6
75.00		1.00	0.91	20.829	22.91	356.83	1.000	0.000	0.08	0.321	0.32	11.8	0.0	11.4
80.00		1.00	0.93	21.217	23.34	346.77	1.000	0.000	5.00	18.921	18.92	706.5	0.0	671.0
85.00		1.00	0.94	21.587	23.75	336.31	1.000	0.000	5.00	18.206	18.21	691.7	0.0	645.5
89.92	Bot - Section 6	1.00	0.96	21.937	24.13	325.66	1.000	0.000	4.92	17.205	17.20	664.3	0.0	609.8
90.00		1.00	0.96	21.943	24.14	325.48	1.000	0.000	0.08	0.289	0.29	11.2	0.0	18.3
94.92	Top - Section 5	1.00	0.97	22.279	24.51	314.50	1.000	0.000	4.92	16.714	16.71	655.4	0.0	1059.3
95.00		1.00	0.97	22.284	24.51	318.44	1.000	0.000	0.08	0.277	0.28	10.9	0.0	7.9
100.00	Appurtenance(s)	1.00	0.99	22.613	24.87	306.99	1.000	0.000	5.00	16.276	16.28	647.8	0.0	462.0
105.00		1.00	1.00	22.931	25.22	295.25	1.000	0.000	5.00	15.560	15.56	628.0	0.0	441.6
109.00	RT2	1.00	1.01	23.177	25.49	285.66	1.000	0.000	4.00	11.933	11.93	486.8	0.0	338.5
109.92	Top - Section 6	1.00	1.02	23.233	25.56	283.43	1.000	0.000	0.92	2.670	2.67	109.2	0.0	75.7
110.00		1.00	1.02	23.238	25.56	283.23	1.000	0.000	0.08	0.242	0.24	9.9	0.0	6.9
115.00		1.00	1.03	23.535	25.89	270.96	1.000	0.000	5.00	14.130	14.13	585.3	0.0	400.7
120.00		1.00	1.04	23.823	26.20	258.46	1.000	0.000	5.00	13.415	13.41	562.5	0.0	380.3
125.00		1.00	1.05	24.102	26.51	245.73	1.000	0.000	5.00	12.700	12.70	538.7	0.0	359.8
130.00		1.00	1.07	24.374	26.81	232.79	1.000	0.000	5.00	11.984	11.98	514.1	0.0	339.4
132.00	Appurtenance(s)	1.00	1.07	24.480	26.93	227.56	1.000	0.000	2.00	4.593	4.59	197.9	0.0	130.0
135.00		1.00	1.08	24.638	27.10	219.65	1.000	0.000	3.00	6.676	6.68	289.5	0.0	188.9
140.00		1.00	1.09	24.895	27.38	206.32	1.000	0.000	5.00	10.554	10.55	462.4	0.0	298.5
145.00		1.00	1.10	25.146	27.66	192.82	1.000	0.000	5.00	9.839	9.84	435.4	0.0	278.1
150.00		1.00	1.11	25.391	27.93	179.14	1.000	0.000	5.00	9.123	9.12	407.7	0.0	257.6
155.00		1.00	1.12	25.630	28.19	165.29	1.000	0.000	5.00	8.408	8.41	379.3	0.0	237.2
157.00	Appurtenance(s)	1.00	1.12	25.724	28.30	159.71	1.000	0.000	2.00	3.163	3.16	143.2	0.0	89.2

Wind Loading - Shaft

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Tower Engineering Solutions

Totals:	**157.00**	**20,424.1**	**26,249.3**

Discrete Appurtenance Forces

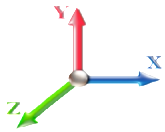
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

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	157.00	Kathrein 800-10121	3	25.724	28.296	0.79	1.00	12.21	119.07	0.000	0.000	552.59	0.00	0.00
2	157.00	Nokia CS72188.01 LMU	1	25.747	28.322	1.00	1.00	0.13	4.50	0.000	0.500	5.89	0.00	2.95
3	157.00	Raycap DC6-48-60-18-8F	2	25.724	28.296	1.00	1.00	1.84	57.24	0.000	0.000	83.30	0.00	0.00
4	157.00	Ericsson RRUS 4415 B25	3	25.724	28.296	0.67	1.00	3.30	124.20	0.000	0.000	149.24	0.00	0.00
5	157.00	Ericsson RRUS-11 RRU	3	25.724	28.296	0.67	1.00	5.07	137.70	0.000	0.000	229.32	0.00	0.00
6	157.00	Kathrein 860 10025 RET	6	25.724	28.296	0.67	1.00	0.72	6.48	0.000	0.000	32.76	0.00	0.00
7	157.00	Powerwave LGP21901	6	25.724	28.296	0.93	1.00	9.32	167.40	0.000	0.000	421.89	0.00	0.00
8	157.00	CCI DTMABP7819VG12A	6	25.724	28.296	0.67	1.00	4.58	103.68	0.000	0.000	207.48	0.00	0.00
9	157.00	Sabre C10-857-804	3	25.724	28.296	0.56	0.75	31.27	1247.40	0.000	0.000	1415.69	0.00	0.00
10	157.00	Lightning Rod	1	25.886	28.475	1.00	1.00	1.05	31.50	0.000	3.500	47.84	0.00	167.43
11	157.00	Cci HPA65R-BU8A	3	25.724	28.296	0.89	1.00	29.96	186.30	0.000	0.000	1356.29	0.00	0.00
12	157.00	Andrew SBNH-1D6565C	3	25.724	28.296	0.80	1.00	27.53	164.16	0.000	0.000	1246.30	0.00	0.00
13	132.00	14' LP Platform	1	24.480	26.928	1.00	1.00	25.00	1350.00	0.000	0.000	1077.13	0.00	0.00
14	132.00	DB-T1-6Z-8AB-0Z	1	24.480	26.928	1.00	1.00	4.80	17.01	0.000	0.000	206.81	0.00	0.00
15	132.00	RRH2X60-PCS	3	24.480	26.928	0.71	0.80	4.70	148.50	0.000	0.000	202.47	0.00	0.00
16	132.00	RRH2X60-AWS	3	24.480	26.928	0.61	0.80	6.38	148.50	0.000	0.000	275.06	0.00	0.00
17	132.00	SBNHH-1D65B	6	24.480	26.928	0.66	0.80	32.19	219.24	0.000	0.000	1386.94	0.00	0.00
18	132.00	DB844G65ZAXY	6	24.480	26.928	0.72	0.80	18.71	64.80	0.000	0.000	805.93	0.00	0.00
19	100.00	742 213	3	22.613	24.875	0.72	1.00	11.06	59.40	0.000	0.000	440.15	0.00	0.00
20	100.00	15'x2.875"mount pipe	3	22.613	24.875	1.00	1.00	12.93	234.90	0.000	0.000	514.61	0.00	0.00
							Totals:		**4,591.98**			**10,657.71**		

Total Applied Force Summary

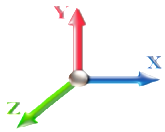
Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

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		819.13	1587.82	0.00	0.00
10.00		798.97	1552.06	0.00	0.00
11.92		300.93	585.47	0.00	0.00
15.00		483.51	1661.69	0.00	0.00
16.00		155.17	533.50	0.00	0.00
20.00		612.60	2107.43	0.00	0.00
25.00		747.60	1273.99	0.00	0.00
30.00		728.05	1243.34	0.00	0.00
30.92		132.42	224.62	0.00	0.00
35.00		602.55	988.06	0.00	0.00
40.00		746.61	1182.02	0.00	0.00
45.00		749.50	1151.36	0.00	0.00
49.00		597.65	899.02	0.00	0.00
50.00		147.94	221.69	0.00	0.00
55.00		745.74	1090.05	0.00	0.00
60.00		739.91	1059.39	0.00	0.00
64.92		719.60	1011.84	0.00	0.00
65.00		12.15	29.15	0.00	0.00
66.00		145.88	348.54	0.00	0.00
70.00		583.14	1371.67	0.00	0.00
70.92		131.81	309.27	0.00	0.00
74.92		573.94	670.95	0.00	0.00
75.00		11.78	13.80	0.00	0.00
80.00		706.53	815.27	0.00	0.00
85.00		691.70	789.72	0.00	0.00
89.92		664.26	751.65	0.00	0.00
90.00		11.17	20.74	0.00	0.00
94.92		655.35	1201.10	0.00	0.00
95.00		10.88	10.28	0.00	0.00
100.00	(6) attachments	1602.53	900.55	0.00	0.00
105.00		627.99	557.73	0.00	0.00
109.00		486.78	431.47	0.00	0.00
109.92		109.19	97.04	0.00	0.00
110.00		9.88	8.79	0.00	0.00
115.00		585.28	516.85	0.00	0.00
120.00		562.45	496.41	0.00	0.00
125.00		538.71	475.98	0.00	0.00
130.00		514.10	455.54	0.00	0.00
132.00	(20) attachments	4152.25	2124.54	0.00	0.00
135.00		289.48	221.94	0.00	0.00
140.00		462.43	353.55	0.00	0.00
145.00		435.43	333.12	0.00	0.00
150.00		407.71	312.68	0.00	0.00
155.00		379.28	292.24	0.00	0.00
157.00	(40) attachments	5891.82	2460.80	0.00	170.38

Total Applied Force Summary

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Totals:	**31,081.79**	**34,744.73**	**0.00**	**170.38**

Linear Appurtenance Segment Forces (Factored)

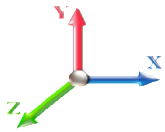
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

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	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	16.018	0.00	1.23
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.014	0.000	16.018	0.00	4.68
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	16.018	0.00	1.23
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	16.018	0.00	4.68
11.92	Safety Cable	Yes	1.92	0.000	0.38	0.06	0.00	0.015	0.000	16.018	0.00	0.47
11.92	Step bolts (ladder)	Yes	1.92	0.000	0.63	0.10	0.00	0.015	0.000	16.018	0.00	1.79
15.00	Safety Cable	Yes	3.08	0.000	0.38	0.10	0.00	0.015	0.000	16.018	0.00	0.76
15.00	Step bolts (ladder)	Yes	3.08	0.000	0.63	0.16	0.00	0.015	0.000	16.018	0.00	2.89
16.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.046	0.000	16.018	0.00	0.25
16.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.046	0.000	16.018	0.00	0.94
16.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.046	0.000	16.018	0.00	0.00
20.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.047	0.000	16.018	0.00	0.98
20.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.047	0.000	16.018	0.00	3.74
20.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.047	0.000	16.018	0.00	0.00
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.047	0.000	16.018	0.00	1.23
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.047	0.000	16.018	0.00	4.68
25.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.047	0.000	16.018	0.00	0.00
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.049	0.000	16.031	0.00	1.23
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.049	0.000	16.031	0.00	4.68
30.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.049	0.000	16.031	0.00	0.00
30.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.049	0.000	16.170	0.00	0.23
30.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.049	0.000	16.170	0.00	0.86
30.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.049	0.000	16.170	0.00	0.00
35.00	Safety Cable	Yes	4.08	0.000	0.38	0.13	0.00	0.050	0.000	16.753	0.00	1.00
35.00	Step bolts (ladder)	Yes	4.08	0.000	0.63	0.21	0.00	0.050	0.000	16.753	0.00	3.82
35.00	1" Reinforcing plate	Yes	4.08	0.000	2.00	0.68	0.00	0.050	0.000	16.753	0.00	0.00
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.051	0.000	17.405	0.00	1.23
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.051	0.000	17.405	0.00	4.68
40.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	17.405	0.00	0.00
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.053	0.000	18.000	0.00	1.23
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.053	0.000	18.000	0.00	4.68
45.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.053	0.000	18.000	0.00	0.00
49.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.054	0.000	18.444	0.00	0.98
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.054	0.000	18.444	0.00	3.74
49.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.054	0.000	18.444	0.00	0.00
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.055	0.000	18.551	0.00	0.25
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.055	0.000	18.551	0.00	0.94
50.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.055	0.000	18.551	0.00	0.00
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	19.063	0.00	1.23
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	19.063	0.00	4.68
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	19.543	0.00	1.23
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	19.543	0.00	4.68
64.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.020	0.000	19.987	0.00	1.21
64.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.020	0.000	19.987	0.00	4.60
65.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.021	0.000	19.995	0.00	0.02
65.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.021	0.000	19.995	0.00	0.08
66.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.062	0.000	20.082	0.00	0.25

Linear Appurtenance Segment Forces (Factored)

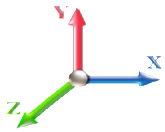
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

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)
66.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.062	0.000	20.082	0.00	0.94
66.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.062	0.000	20.082	0.00	0.00
70.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.063	0.000	20.422	0.00	0.98
70.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.063	0.000	20.422	0.00	3.74
70.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.063	0.000	20.422	0.00	0.00
70.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.064	0.000	20.499	0.00	0.23
70.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.064	0.000	20.499	0.00	0.86
70.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.064	0.000	20.499	0.00	0.00
74.92	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.064	0.000	20.822	0.00	0.98
74.92	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.064	0.000	20.822	0.00	3.74
74.92	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.064	0.000	20.822	0.00	0.00
75.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.065	0.000	20.829	0.00	0.02
75.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.065	0.000	20.829	0.00	0.08
75.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.065	0.000	20.829	0.00	0.00
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.066	0.000	21.217	0.00	1.23
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.066	0.000	21.217	0.00	4.68
80.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.066	0.000	21.217	0.00	0.00
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.069	0.000	21.587	0.00	1.23
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.069	0.000	21.587	0.00	4.68
85.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.069	0.000	21.587	0.00	0.00
89.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.072	0.000	21.937	0.00	1.21
89.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.072	0.000	21.937	0.00	4.60
89.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	0.82	0.00	0.072	0.000	21.937	0.00	0.00
90.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.073	0.000	21.943	0.00	0.02
90.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.073	0.000	21.943	0.00	0.08
90.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.073	0.000	21.943	0.00	0.00
94.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.075	0.000	22.279	0.00	1.21
94.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.075	0.000	22.279	0.00	4.60
94.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	0.82	0.00	0.075	0.000	22.279	0.00	0.00
95.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.075	0.000	22.284	0.00	0.02
95.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.075	0.000	22.284	0.00	0.08
95.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.075	0.000	22.284	0.00	0.00
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.077	0.000	22.613	0.00	1.23
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.077	0.000	22.613	0.00	4.68
100.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.077	0.000	22.613	0.00	0.00
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.081	0.000	22.931	0.00	1.23
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.081	0.000	22.931	0.00	4.68
105.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.081	0.000	22.931	0.00	0.00
109.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.084	0.000	23.177	0.00	0.98
109.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.084	0.000	23.177	0.00	3.74
109.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.084	0.000	23.177	0.00	0.00
109.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.086	0.000	23.233	0.00	0.23
109.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.086	0.000	23.233	0.00	0.86
109.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.086	0.000	23.233	0.00	0.00
110.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.087	0.000	23.238	0.00	0.02
110.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.087	0.000	23.238	0.00	0.08
110.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.087	0.000	23.238	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

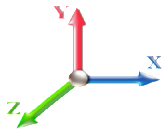
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

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)
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	23.535	0.00	1.23
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	23.535	0.00	4.68
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	23.823	0.00	1.23
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	23.823	0.00	4.68
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	24.102	0.00	1.23
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	24.102	0.00	4.68
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.035	0.000	24.374	0.00	1.23
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.035	0.000	24.374	0.00	4.68
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.037	0.000	24.480	0.00	0.49
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.037	0.000	24.480	0.00	1.87
135.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.038	0.000	24.638	0.00	0.74
135.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.038	0.000	24.638	0.00	2.81
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.040	0.000	24.895	0.00	1.23
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.040	0.000	24.895	0.00	4.68
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.043	0.000	25.146	0.00	1.23
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.043	0.000	25.146	0.00	4.68
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.046	0.000	25.391	0.00	1.23
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.046	0.000	25.391	0.00	4.68
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.050	0.000	25.630	0.00	1.23
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.050	0.000	25.630	0.00	4.68
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.053	0.000	25.724	0.00	0.49
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.053	0.000	25.724	0.00	1.87
										Totals:	**0.0**	**185.5**

Calculated Forces

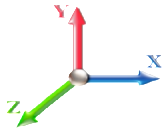
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 21

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	-34.72	-31.11	0.00	-3038.6	0.00	3038.67	3884.21	1942.11	10879.0	5372.74	0.00	0.000	0.000	0.575
5.00	-33.10	-30.33	0.00	-2883.1	0.00	2883.15	3837.36	1918.68	10483.0	5177.19	0.04	-0.075	0.000	0.566
10.00	-31.52	-29.56	0.00	-2731.5	0.00	2731.51	3788.09	1894.04	10087.1	4981.66	0.16	-0.152	0.000	0.557
11.92	-30.91	-29.28	0.00	-2674.8	0.00	2674.86	3768.56	1884.28	9935.49	4906.76	0.23	-0.183	0.000	0.554
15.00	-29.24	-28.80	0.00	-2584.6	0.00	2584.60	3736.40	1868.20	9691.75	4786.39	0.36	-0.232	0.000	0.548
16.00	-28.68	-28.66	0.00	-2555.7	0.00	2555.79	3725.77	1862.88	9612.78	4747.39	0.42	-0.249	0.000	0.488
20.00	-26.55	-28.07	0.00	-2441.1	0.00	2441.14	2938.21	1469.11	7525.54	3716.58	0.65	-0.307	0.000	0.529
25.00	-25.24	-27.35	0.00	-2300.7	0.00	2300.79	2903.51	1451.76	7236.35	3573.76	1.01	-0.380	0.000	0.572
30.00	-23.98	-26.63	0.00	-2164.0	0.00	2164.04	2866.39	1433.19	6946.10	3430.42	1.45	-0.462	0.000	0.558
30.92	-23.74	-26.52	0.00	-2139.6	0.00	2139.62	2859.32	1429.66	6892.81	3404.10	1.54	-0.478	0.000	0.556
30.92	-23.74	-26.52	0.00	-2139.6	0.00	2139.62	2859.32	1429.66	6892.81	3404.10	1.54	-0.478	0.000	0.556
35.00	-22.72	-25.94	0.00	-2031.3	0.00	2031.35	2826.85	1413.42	6655.27	3286.79	1.98	-0.547	0.000	0.544
40.00	-21.51	-25.21	0.00	-1901.6	0.00	1901.67	2784.89	1392.44	6364.37	3143.12	2.60	-0.633	0.000	0.530
45.00	-20.33	-24.47	0.00	-1775.6	0.00	1775.62	2740.51	1370.25	6073.90	2999.67	3.31	-0.719	0.000	0.516
49.00	-19.42	-23.88	0.00	-1677.7	0.00	1677.72	2703.26	1351.63	5842.17	2885.23	3.95	-0.791	0.000	0.505
49.00	-19.42	-23.88	0.00	-1677.7	0.00	1677.72	2703.26	1351.63	5842.17	2885.23	3.95	-0.791	0.000	0.505
50.00	-19.18	-23.75	0.00	-1653.8	0.00	1653.84	2693.71	1346.86	5784.36	2856.68	4.11	-0.809	0.000	0.586
55.00	-18.06	-23.02	0.00	-1535.0	0.00	1535.09	2644.50	1322.25	5496.25	2714.39	5.02	-0.914	0.000	0.573
60.00	-16.97	-22.30	0.00	-1419.9	0.00	1419.98	2592.86	1296.43	5210.07	2573.06	6.03	-1.021	0.000	0.559
64.92	-15.95	-21.57	0.00	-1310.3	0.00	1310.36	2539.73	1269.86	4931.03	2435.25	7.14	-1.128	0.000	0.545
65.00	-15.92	-21.56	0.00	-1308.5	0.00	1308.57	2538.81	1269.40	4926.33	2432.93	7.16	-1.130	0.000	0.544
66.00	-15.55	-21.42	0.00	-1287.0	0.00	1287.00	2527.71	1263.85	4869.91	2405.07	7.40	-1.153	0.000	0.454
70.00	-14.18	-20.82	0.00	-1201.3	0.00	1201.31	2482.34	1241.17	4645.51	2294.24	8.40	-1.229	0.000	0.441
70.92	-13.85	-20.70	0.00	-1182.2	0.00	1182.22	1926.34	963.17	3640.67	1797.99	8.64	-1.247	0.000	0.482
74.92	-13.18	-20.12	0.00	-1099.4	0.00	1099.43	1896.38	948.19	3479.39	1718.34	9.72	-1.323	0.000	0.522
74.92	-13.18	-20.12	0.00	-1099.4	0.00	1099.43	1896.38	948.19	3479.39	1718.34	9.72	-1.323	0.000	0.522
75.00	-13.15	-20.12	0.00	-1097.7	0.00	1097.76	1895.74	947.87	3476.04	1716.68	9.74	-1.325	0.000	0.522
80.00	-12.31	-19.41	0.00	-997.17	0.00	997.17	1856.07	928.04	3275.27	1617.53	11.19	-1.432	0.000	0.498
85.00	-11.51	-18.72	0.00	-900.10	0.00	900.10	1813.98	906.99	3075.87	1519.05	12.74	-1.540	0.000	0.474
89.92	-10.76	-18.05	0.00	-808.04	0.00	808.04	1770.24	885.12	2881.61	1423.12	14.39	-1.646	0.000	0.450
90.00	-10.72	-18.05	0.00	-806.54	0.00	806.54	1769.48	884.74	2878.34	1421.50	14.42	-1.648	0.000	0.447
94.92	-9.52	-17.37	0.00	-717.80	0.00	717.80	1262.32	631.16	2000.52	987.98	16.17	-1.754	0.000	0.474
95.00	-9.49	-17.37	0.00	-716.36	0.00	716.36	1261.88	630.94	1998.36	986.92	16.20	-1.756	0.000	0.541
100.00	-8.61	-15.75	0.00	-629.53	0.00	629.53	1234.00	617.00	1869.08	923.07	18.11	-1.878	0.000	0.502
105.00	-8.05	-15.12	0.00	-550.77	0.00	550.77	1203.70	601.85	1740.15	859.39	20.14	-1.998	0.000	0.464
109.00	-7.62	-14.63	0.00	-490.28	0.00	490.28	1177.71	588.86	1637.59	808.75	21.85	-2.095	0.000	0.433
109.00	-7.62	-14.63	0.00	-490.28	0.00	490.28	1177.71	588.86	1637.59	808.75	21.85	-2.095	0.000	0.433
109.92	-7.52	-14.52	0.00	-476.87	0.00	476.87	1171.54	585.77	1614.20	797.19	22.26	-2.117	0.000	0.605
109.92	-7.52	-14.52	0.00	-476.87	0.00	476.87	1171.54	585.77	1614.20	797.19	22.26	-2.117	0.000	0.605
110.00	-7.49	-14.52	0.00	-475.66	0.00	475.66	1170.98	585.49	1612.07	796.14	22.30	-2.120	0.000	0.604
115.00	-6.96	-13.93	0.00	-403.07	0.00	403.07	1135.84	567.92	1485.34	733.56	24.61	-2.285	0.000	0.556
120.00	-6.45	-13.37	0.00	-333.41	0.00	333.41	1098.28	549.14	1360.47	671.88	27.09	-2.445	0.000	0.503
125.00	-5.96	-12.82	0.00	-266.57	0.00	266.57	1058.31	529.15	1237.95	611.38	29.73	-2.598	0.000	0.442
130.00	-5.51	-12.30	0.00	-202.45	0.00	202.45	1015.91	507.96	1118.28	552.28	32.53	-2.741	0.000	0.373
132.00	-3.58	-8.05	0.00	-177.85	0.00	177.85	998.40	499.20	1071.45	529.15	33.69	-2.796	0.000	0.340
135.00	-3.36	-7.76	0.00	-153.69	0.00	153.69	960.25	480.13	990.77	489.30	35.47	-2.874	0.000	0.318
140.00	-3.02	-7.28	0.00	-114.90	0.00	114.90	896.68	448.34	863.33	426.36	38.55	-2.992	0.000	0.273
145.00	-2.69	-6.84	0.00	-78.47	0.00	78.47	833.11	416.56	744.65	367.76	41.74	-3.097	0.000	0.217

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Tower Engineering Solutions

150.00	-2.40	-6.42	0.00	-44.29	0.00	44.29	769.54	384.77	634.75	313.48	45.03	-3.180	0.000	0.145
155.00	-2.12	-6.02	0.00	-12.21	0.00	12.21	705.97	352.99	533.62	263.54	48.39	-3.228	0.000	0.050
157.00	0.00	-5.89	0.00	-0.17	0.00	0.17	680.54	340.27	495.63	244.77	49.75	-3.234	0.000	0.001

Wind Loading - Shaft

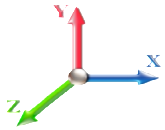
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

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	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	30.091	36.11	169.0	545.3	2470.1
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	29.450	35.34	165.4	570.9	2447.9
11.92	Bot - Section 2	1.00	0.70	4.256	4.68	0.00	1.200	1.355	1.92	11.107	13.33	62.4	220.6	927.5
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	3.08	17.863	21.44	100.4	361.9	2458.8
16.00	RB1	1.00	0.70	4.256	4.68	0.00	1.200	1.395	1.00	5.737	6.88	32.2	117.5	790.4
20.00	Top - Section 1	1.00	0.70	4.256	4.68	0.00	1.200	1.427	4.00	22.681	27.22	127.4	471.2	3127.2
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	27.735	33.28	155.8	586.9	2093.2
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	27.042	32.45	152.0	581.9	2047.4
30.92	Top - Section 2	1.00	0.71	4.296	4.73	0.00	1.200	1.490	0.92	4.881	5.86	27.7	106.5	370.7
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	4.08	21.462	25.75	126.1	469.6	1629.9
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	5.00	25.647	30.78	156.6	566.5	1950.2
45.00		1.00	0.79	4.783	5.26	0.00	1.200	1.547	5.00	24.947	29.94	157.5	556.7	1899.6
49.00	RT1	1.00	0.81	4.901	5.39	0.00	1.200	1.560	4.00	19.452	23.34	125.8	438.6	1483.4
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	1.00	4.792	5.75	31.2	109.2	366.3
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	5.00	23.543	28.25	157.4	534.4	1795.5
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	22.839	27.41	156.5	522.1	1742.3
64.92	Bot - Section 4	1.00	0.87	5.311	5.84	0.00	1.200	1.605	4.92	21.771	26.13	152.6	500.9	1660.9
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	0.08	0.368	0.44	2.6	8.6	44.3
66.00	RB2	1.00	0.88	5.336	5.87	0.00	1.200	1.608	1.00	4.395	5.27	31.0	102.6	528.9
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	4.00	17.302	20.76	123.9	401.8	2076.8
70.92	Top - Section 3	1.00	0.90	5.447	5.99	0.00	1.200	1.619	0.92	3.901	4.68	28.0	91.6	468.7
74.92	Top - Section 4	1.00	0.91	5.533	6.09	0.00	1.200	1.628	4.00	16.747	20.10	122.3	390.8	1131.6
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	0.08	0.344	0.41	2.5	8.1	23.3
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	5.00	20.287	24.34	151.0	474.0	1368.7
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	5.00	19.580	23.50	148.2	459.2	1319.9
89.92	Bot - Section 6	1.00	0.96	5.829	6.41	0.00	1.200	1.658	4.92	18.564	22.28	142.8	437.0	1250.1
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	0.08	0.312	0.37	2.4	7.5	31.9
94.92	Top - Section 5	1.00	0.97	5.920	6.51	0.00	1.200	1.667	4.92	18.080	21.70	141.3	427.2	1839.5
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	0.08	0.300	0.36	2.3	7.2	17.7
100.00	Appurtenance(s)	1.00	0.99	6.008	6.61	0.00	1.200	1.676	5.00	17.672	21.21	140.2	418.4	1034.5
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	5.00	16.964	20.36	136.4	402.5	991.2
109.00	RT2	1.00	1.01	6.158	6.77	0.00	1.200	1.690	4.00	13.060	15.67	106.2	311.6	763.0
109.92	Top - Section 6	1.00	1.02	6.173	6.79	0.00	1.200	1.692	0.92	2.929	3.51	23.9	70.9	171.9
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	0.08	0.265	0.32	2.2	6.4	15.6
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	5.00	15.546	18.66	128.3	369.8	904.1
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	5.00	14.837	17.80	124.0	353.1	860.1
125.00		1.00	1.05	6.404	7.04	0.00	1.200	1.714	5.00	14.128	16.95	119.4	336.2	816.0
130.00		1.00	1.07	6.476	7.12	0.00	1.200	1.720	5.00	13.418	16.10	114.7	319.1	771.6
132.00	Appurtenance(s)	1.00	1.07	6.504	7.15	0.00	1.200	1.723	2.00	5.168	6.20	44.4	124.9	298.3
135.00		1.00	1.08	6.546	7.20	0.00	1.200	1.727	3.00	7.539	9.05	65.1	181.1	433.0
140.00		1.00	1.09	6.615	7.28	0.00	1.200	1.733	5.00	11.998	14.40	104.8	284.4	682.4
145.00		1.00	1.10	6.681	7.35	0.00	1.200	1.739	5.00	11.288	13.55	99.6	266.7	637.5
150.00		1.00	1.11	6.746	7.42	0.00	1.200	1.745	5.00	10.578	12.69	94.2	249.0	592.5
155.00		1.00	1.12	6.810	7.49	0.00	1.200	1.751	5.00	9.867	11.84	88.7	231.0	547.3
157.00	Appurtenance(s)	1.00	1.12	6.835	7.52	0.00	1.200	1.753	2.00	3.747	4.50	33.8	89.5	208.4

Totals:	**157.00**	**4,380.3**	**49,089.8**

Discrete Appurtenance Forces

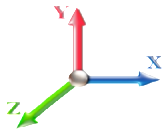
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

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	157.00	Kathrein 800-10121	3	6.835	7.518	0.79	1.00	17.22	406.22	0.000	0.000	129.48	0.00	0.00
2	157.00	Nokia CS72188.01 LMU	1	6.841	7.525	1.00	1.00	0.41	10.46	0.000	0.500	3.12	0.00	1.56
3	157.00	Raycap DC6-48-60-18-8F	2	6.835	7.518	1.00	1.00	2.72	165.13	0.000	0.000	20.45	0.00	0.00
4	157.00	Ericsson RRUS 4415 B25	3	6.835	7.518	0.72	1.00	4.66	261.27	0.000	0.000	35.04	0.00	0.00
5	157.00	Ericsson RRUS-11 RRU	3	6.835	7.518	0.73	1.00	6.91	353.41	0.000	0.000	51.97	0.00	0.00
6	157.00	Kathrein 860 10025 RET	6	6.835	7.518	0.67	1.00	2.25	35.18	0.000	0.000	16.94	0.00	0.00
7	157.00	Powerwave LGP21901	6	6.835	7.518	0.95	1.00	12.61	554.04	0.000	0.000	94.81	0.00	0.00
8	157.00	CCI DTMABP7819VG12A	6	6.835	7.518	0.69	1.00	7.92	248.26	0.000	0.000	59.55	0.00	0.00
9	157.00	Sabre C10-857-804	3	6.835	7.518	0.56	0.75	64.16	2998.14	0.000	0.000	482.40	0.00	0.00
10	157.00	Lightning Rod	1	6.878	7.566	1.00	1.00	3.43	64.56	0.000	3.500	25.98	0.00	90.94
11	157.00	Cci HPA65R-BU8A	3	6.835	7.518	0.89	1.00	34.40	1081.87	0.000	0.000	258.65	0.00	0.00
12	157.00	Andrew SBNH-1D6565C	3	6.835	7.518	0.80	1.00	35.37	714.08	0.000	0.000	265.89	0.00	0.00
13	132.00	14' LP Platform	1	6.504	7.155	1.00	1.00	45.68	2792.29	0.000	0.000	326.81	0.00	0.00
14	132.00	DB-T1-6Z-8AB-0Z	1	6.504	7.155	1.00	1.00	5.66	164.26	0.000	0.000	40.51	0.00	0.00
15	132.00	RRH2X60-PCS	3	6.504	7.155	0.71	0.80	6.04	447.61	0.000	0.000	43.21	0.00	0.00
16	132.00	RRH2X60-AWS	3	6.504	7.155	0.61	0.80	7.81	374.69	0.000	0.000	55.85	0.00	0.00
17	132.00	SBNHH-1D65B	6	6.504	7.155	0.68	0.80	38.17	1483.68	0.000	0.000	273.07	0.00	0.00
18	132.00	DB844G65ZAXY	6	6.504	7.155	0.74	0.80	23.27	879.31	0.000	0.000	166.48	0.00	0.00
19	100.00	742 213	3	6.008	6.609	0.72	1.00	13.73	400.76	0.000	0.000	90.77	0.00	0.00
20	100.00	15'x2.875"mount pipe	3	6.008	6.609	1.00	1.00	28.44	605.11	0.000	0.000	188.00	0.00	0.00
							Totals:		**14,040.35**			**2,628.99**		

Total Applied Force Summary

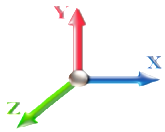
Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

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		169.05	2686.28	0.00	0.00
10.00		165.45	2667.31	0.00	0.00
11.92		62.40	1011.96	0.00	0.00
15.00		100.35	2595.38	0.00	0.00
16.00		32.23	840.64	0.00	0.00
20.00		127.42	3329.85	0.00	0.00
25.00		155.81	2348.68	0.00	0.00
30.00		152.05	2304.75	0.00	0.00
30.92		27.68	417.95	0.00	0.00
35.00		126.11	1841.42	0.00	0.00
40.00		156.56	2210.60	0.00	0.00
45.00		157.50	2161.29	0.00	0.00
49.00		125.83	1693.55	0.00	0.00
50.00		31.18	418.90	0.00	0.00
55.00		157.40	2024.59	0.00	0.00
60.00		156.54	1972.00	0.00	0.00
64.92		152.62	1887.31	0.00	0.00
65.00		2.58	48.09	0.00	0.00
66.00		30.96	582.09	0.00	0.00
70.00		123.93	2290.32	0.00	0.00
70.92		28.05	517.68	0.00	0.00
74.92		122.30	1345.75	0.00	0.00
75.00		2.51	27.80	0.00	0.00
80.00		150.96	1637.19	0.00	0.00
85.00		148.24	1589.15	0.00	0.00
89.92		142.83	1515.55	0.00	0.00
90.00		2.40	36.44	0.00	0.00
94.92		141.27	2105.66	0.00	0.00
95.00		2.35	22.24	0.00	0.00
100.00	(6) attachments	418.93	2311.66	0.00	0.00
105.00		136.43	1225.76	0.00	0.00
109.00		106.17	951.01	0.00	0.00
109.92		23.86	214.96	0.00	0.00
110.00		2.16	19.49	0.00	0.00
115.00		128.32	1101.04	0.00	0.00
120.00		123.97	1057.44	0.00	0.00
125.00		119.42	1013.61	0.00	0.00
130.00		114.70	969.57	0.00	0.00
132.00	(20) attachments	950.31	6519.34	0.00	0.00
135.00		65.15	503.04	0.00	0.00
140.00		104.76	799.43	0.00	0.00
145.00		99.56	754.84	0.00	0.00
150.00		94.20	710.08	0.00	0.00
155.00		88.70	665.15	0.00	0.00
157.00	(40) attachments	1478.09	7148.21	0.00	92.51

Total Applied Force Summary

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Totals:	**7,009.28**	**70,095.05**	**0.00**	**92.51**

Linear Appurtenance Segment Forces (Factored)

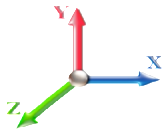
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

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	Safety Cable	Yes	5.00	0.000	0.38	1.19	0.00	0.014	0.000	4.256	0.00	12.93
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.30	0.00	0.014	0.000	4.256	0.00	18.85
10.00	Safety Cable	Yes	5.00	0.000	0.38	1.27	0.00	0.015	0.000	4.256	0.00	14.46
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.37	0.00	0.015	0.000	4.256	0.00	20.46
11.92	Safety Cable	Yes	1.92	0.000	0.38	0.49	0.00	0.015	0.000	4.256	0.00	5.71
11.92	Step bolts (ladder)	Yes	1.92	0.000	0.63	0.53	0.00	0.015	0.000	4.256	0.00	8.01
15.00	Safety Cable	Yes	3.08	0.000	0.38	0.81	0.00	0.015	0.000	4.256	0.00	9.53
15.00	Step bolts (ladder)	Yes	3.08	0.000	0.63	0.87	0.00	0.015	0.000	4.256	0.00	13.27
16.00	Safety Cable	Yes	1.00	0.000	0.38	0.26	0.00	0.046	0.000	4.256	0.00	3.12
16.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.29	0.00	0.046	0.000	4.256	0.00	4.34
16.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.40	0.00	0.046	0.000	4.256	0.00	5.88
20.00	Safety Cable	Yes	4.00	0.000	0.38	1.08	0.00	0.047	0.000	4.256	0.00	12.97
20.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.16	0.00	0.047	0.000	4.256	0.00	17.84
20.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	1.62	0.00	0.047	0.000	4.256	0.00	24.27
25.00	Safety Cable	Yes	5.00	0.000	0.38	1.37	0.00	0.047	0.000	4.256	0.00	16.83
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.48	0.00	0.047	0.000	4.256	0.00	22.95
25.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.05	0.00	0.047	0.000	4.256	0.00	31.27
30.00	Safety Cable	Yes	5.00	0.000	0.38	1.40	0.00	0.049	0.000	4.260	0.00	17.35
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.50	0.00	0.049	0.000	4.260	0.00	23.50
30.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.07	0.00	0.049	0.000	4.260	0.00	32.07
30.92	Safety Cable	Yes	0.92	0.000	0.38	0.26	0.00	0.049	0.000	4.296	0.00	3.20
30.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.28	0.00	0.049	0.000	4.296	0.00	4.33
30.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.38	0.00	0.049	0.000	4.296	0.00	5.90
35.00	Safety Cable	Yes	4.08	0.000	0.38	1.16	0.00	0.050	0.000	4.451	0.00	14.54
35.00	Step bolts (ladder)	Yes	4.08	0.000	0.63	1.24	0.00	0.050	0.000	4.451	0.00	19.58
35.00	1" Reinforcing plate	Yes	4.08	0.000	2.00	1.71	0.00	0.050	0.000	4.451	0.00	26.76
40.00	Safety Cable	Yes	5.00	0.000	0.38	1.43	0.00	0.051	0.000	4.625	0.00	18.21
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.54	0.00	0.051	0.000	4.625	0.00	24.40
40.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.11	0.00	0.051	0.000	4.625	0.00	33.38
45.00	Safety Cable	Yes	5.00	0.000	0.38	1.45	0.00	0.053	0.000	4.783	0.00	18.58
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.55	0.00	0.053	0.000	4.783	0.00	24.79
45.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.12	0.00	0.053	0.000	4.783	0.00	33.93
49.00	Safety Cable	Yes	4.00	0.000	0.38	1.17	0.00	0.054	0.000	4.901	0.00	15.08
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.25	0.00	0.054	0.000	4.901	0.00	20.06
49.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	1.71	0.00	0.054	0.000	4.901	0.00	27.47
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.29	0.00	0.055	0.000	4.929	0.00	3.78
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.31	0.00	0.055	0.000	4.929	0.00	5.03
50.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.43	0.00	0.055	0.000	4.929	0.00	6.89
55.00	Safety Cable	Yes	5.00	0.000	0.38	1.47	0.00	0.019	0.000	5.065	0.00	19.22
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.58	0.00	0.019	0.000	5.065	0.00	25.46
60.00	Safety Cable	Yes	5.00	0.000	0.38	1.49	0.00	0.020	0.000	5.193	0.00	19.51
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.59	0.00	0.020	0.000	5.193	0.00	25.76
64.92	Safety Cable	Yes	4.92	0.000	0.38	1.47	0.00	0.020	0.000	5.311	0.00	19.44
64.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	1.57	0.00	0.020	0.000	5.311	0.00	25.61
65.00	Safety Cable	Yes	0.08	0.000	0.38	0.02	0.00	0.021	0.000	5.313	0.00	0.33
65.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.03	0.00	0.021	0.000	5.313	0.00	0.43
66.00	Safety Cable	Yes	1.00	0.000	0.38	0.30	0.00	0.062	0.000	5.336	0.00	3.97

Linear Appurtenance Segment Forces (Factored)

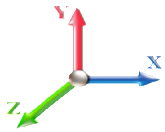
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

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)
66.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.32	0.00	0.062	0.000	5.336	0.00	5.22
66.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.43	0.00	0.062	0.000	5.336	0.00	7.16
70.00	Safety Cable	Yes	4.00	0.000	0.38	1.20	0.00	0.063	0.000	5.426	0.00	16.02
70.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.29	0.00	0.063	0.000	5.426	0.00	21.05
70.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	1.74	0.00	0.063	0.000	5.426	0.00	28.87
70.92	Safety Cable	Yes	0.92	0.000	0.38	0.28	0.00	0.064	0.000	5.447	0.00	3.68
70.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.30	0.00	0.064	0.000	5.447	0.00	4.83
70.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.40	0.00	0.064	0.000	5.447	0.00	6.63
74.92	Safety Cable	Yes	4.00	0.000	0.38	1.21	0.00	0.064	0.000	5.533	0.00	16.21
74.92	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.30	0.00	0.064	0.000	5.533	0.00	21.24
74.92	1" Reinforcing plate	Yes	4.00	0.000	2.00	1.75	0.00	0.064	0.000	5.533	0.00	29.15
75.00	Safety Cable	Yes	0.08	0.000	0.38	0.03	0.00	0.065	0.000	5.534	0.00	0.34
75.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.03	0.00	0.065	0.000	5.534	0.00	0.44
75.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.04	0.00	0.065	0.000	5.534	0.00	0.61
80.00	Safety Cable	Yes	5.00	0.000	0.38	1.52	0.00	0.066	0.000	5.637	0.00	20.49
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.63	0.00	0.066	0.000	5.637	0.00	26.79
80.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.20	0.00	0.066	0.000	5.637	0.00	36.78
85.00	Safety Cable	Yes	5.00	0.000	0.38	1.53	0.00	0.069	0.000	5.736	0.00	20.71
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.64	0.00	0.069	0.000	5.736	0.00	27.02
85.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.21	0.00	0.069	0.000	5.736	0.00	37.10
89.92	Safety Cable	Yes	4.92	0.000	0.38	1.51	0.00	0.072	0.000	5.829	0.00	20.56
89.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	1.62	0.00	0.072	0.000	5.829	0.00	26.77
89.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	2.18	0.00	0.072	0.000	5.829	0.00	36.77
90.00	Safety Cable	Yes	0.08	0.000	0.38	0.03	0.00	0.073	0.000	5.830	0.00	0.35
90.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.03	0.00	0.073	0.000	5.830	0.00	0.45
90.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.04	0.00	0.073	0.000	5.830	0.00	0.62
94.92	Safety Cable	Yes	4.92	0.000	0.38	1.52	0.00	0.075	0.000	5.920	0.00	20.75
94.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	1.62	0.00	0.075	0.000	5.920	0.00	26.98
94.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	2.19	0.00	0.075	0.000	5.920	0.00	37.05
95.00	Safety Cable	Yes	0.08	0.000	0.38	0.03	0.00	0.075	0.000	5.921	0.00	0.35
95.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.03	0.00	0.075	0.000	5.921	0.00	0.46
95.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.04	0.00	0.075	0.000	5.921	0.00	0.63
100.00	Safety Cable	Yes	5.00	0.000	0.38	1.55	0.00	0.077	0.000	6.008	0.00	21.30
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.66	0.00	0.077	0.000	6.008	0.00	27.63
100.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.23	0.00	0.077	0.000	6.008	0.00	37.96
105.00	Safety Cable	Yes	5.00	0.000	0.38	1.56	0.00	0.081	0.000	6.093	0.00	21.48
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.67	0.00	0.081	0.000	6.093	0.00	27.82
105.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	2.24	0.00	0.081	0.000	6.093	0.00	38.22
109.00	Safety Cable	Yes	4.00	0.000	0.38	1.25	0.00	0.084	0.000	6.158	0.00	17.29
109.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.34	0.00	0.084	0.000	6.158	0.00	22.37
109.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	1.79	0.00	0.084	0.000	6.158	0.00	30.74
109.92	Safety Cable	Yes	0.92	0.000	0.38	0.29	0.00	0.086	0.000	6.173	0.00	3.97
109.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.31	0.00	0.086	0.000	6.173	0.00	5.13
109.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.41	0.00	0.086	0.000	6.173	0.00	7.05
110.00	Safety Cable	Yes	0.08	0.000	0.38	0.03	0.00	0.087	0.000	6.174	0.00	0.36
110.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.03	0.00	0.087	0.000	6.174	0.00	0.47
110.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.04	0.00	0.087	0.000	6.174	0.00	0.64

Linear Appurtenance Segment Forces (Factored)

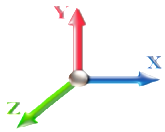
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

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)
115.00	Safety Cable	Yes	5.00	0.000	0.38	1.57	0.00	0.030	0.000	6.253	0.00	21.82
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.68	0.00	0.030	0.000	6.253	0.00	28.18
120.00	Safety Cable	Yes	5.00	0.000	0.38	1.58	0.00	0.031	0.000	6.330	0.00	21.98
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.68	0.00	0.031	0.000	6.330	0.00	28.34
125.00	Safety Cable	Yes	5.00	0.000	0.38	1.59	0.00	0.033	0.000	6.404	0.00	22.14
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.69	0.00	0.033	0.000	6.404	0.00	28.51
130.00	Safety Cable	Yes	5.00	0.000	0.38	1.59	0.00	0.035	0.000	6.476	0.00	22.29
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.70	0.00	0.035	0.000	6.476	0.00	28.67
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.64	0.00	0.037	0.000	6.504	0.00	8.94
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.68	0.00	0.037	0.000	6.504	0.00	11.49
135.00	Safety Cable	Yes	3.00	0.000	0.38	0.96	0.00	0.038	0.000	6.546	0.00	13.46
135.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.02	0.00	0.038	0.000	6.546	0.00	17.29
140.00	Safety Cable	Yes	5.00	0.000	0.38	1.60	0.00	0.040	0.000	6.615	0.00	22.57
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.71	0.00	0.040	0.000	6.615	0.00	28.97
145.00	Safety Cable	Yes	5.00	0.000	0.38	1.61	0.00	0.043	0.000	6.681	0.00	22.71
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.71	0.00	0.043	0.000	6.681	0.00	29.11
150.00	Safety Cable	Yes	5.00	0.000	0.38	1.61	0.00	0.046	0.000	6.746	0.00	22.85
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.72	0.00	0.046	0.000	6.746	0.00	29.25
155.00	Safety Cable	Yes	5.00	0.000	0.38	1.62	0.00	0.050	0.000	6.810	0.00	22.98
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.72	0.00	0.050	0.000	6.810	0.00	29.39
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.65	0.00	0.053	0.000	6.835	0.00	9.21
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.69	0.00	0.053	0.000	6.835	0.00	11.78
										Totals:	**0.0**	**2,007.7**

Calculated Forces

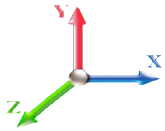
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

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	-70.09	-7.02	0.00	-720.63	0.00	720.63	3884.21	1942.11	10879.0	5372.74	0.00	0.000	0.000	0.152
5.00	-67.41	-6.87	0.00	-685.53	0.00	685.53	3837.36	1918.68	10483.0	5177.19	0.01	-0.018	0.000	0.150
10.00	-64.74	-6.72	0.00	-651.17	0.00	651.17	3788.09	1894.04	10087.1	4981.66	0.04	-0.036	0.000	0.148
11.92	-63.72	-6.67	0.00	-638.29	0.00	638.29	3768.56	1884.28	9935.49	4906.76	0.05	-0.044	0.000	0.147
15.00	-61.13	-6.57	0.00	-617.74	0.00	617.74	3736.40	1868.20	9691.75	4786.39	0.09	-0.055	0.000	0.145
16.00	-60.29	-6.55	0.00	-611.16	0.00	611.16	3725.77	1862.88	9612.78	4747.39	0.10	-0.059	0.000	0.130
20.00	-56.95	-6.43	0.00	-584.97	0.00	584.97	2938.21	1469.11	7525.54	3716.58	0.15	-0.073	0.000	0.140
25.00	-54.60	-6.29	0.00	-552.80	0.00	552.80	2903.51	1451.76	7236.35	3573.76	0.24	-0.091	0.000	0.152
30.00	-52.30	-6.15	0.00	-521.34	0.00	521.34	2866.39	1433.19	6946.10	3430.42	0.35	-0.111	0.000	0.149
30.92	-51.88	-6.13	0.00	-515.71	0.00	515.71	2859.32	1429.66	6892.81	3404.10	0.37	-0.114	0.000	0.148
30.92	-51.88	-6.13	0.00	-515.71	0.00	515.71	2859.32	1429.66	6892.81	3404.10	0.37	-0.114	0.000	0.148
35.00	-50.04	-6.01	0.00	-490.69	0.00	490.69	2826.85	1413.42	6655.27	3286.79	0.47	-0.131	0.000	0.145
40.00	-47.82	-5.87	0.00	-460.62	0.00	460.62	2784.89	1392.44	6364.37	3143.12	0.62	-0.152	0.000	0.142
45.00	-45.66	-5.72	0.00	-431.27	0.00	431.27	2740.51	1370.25	6073.90	2999.67	0.79	-0.173	0.000	0.138
49.00	-43.97	-5.60	0.00	-408.39	0.00	408.39	2703.26	1351.63	5842.17	2885.23	0.94	-0.190	0.000	0.136
49.00	-43.97	-5.60	0.00	-408.39	0.00	408.39	2703.26	1351.63	5842.17	2885.23	0.94	-0.190	0.000	0.136
50.00	-43.55	-5.58	0.00	-402.79	0.00	402.79	2693.71	1346.86	5784.36	2856.68	0.98	-0.194	0.000	0.157
55.00	-41.52	-5.43	0.00	-374.91	0.00	374.91	2644.50	1322.25	5496.25	2714.39	1.20	-0.220	0.000	0.154
60.00	-39.55	-5.28	0.00	-347.75	0.00	347.75	2592.86	1296.43	5210.07	2573.06	1.45	-0.246	0.000	0.150
64.92	-37.66	-5.13	0.00	-321.77	0.00	321.77	2539.73	1269.86	4931.03	2435.25	1.71	-0.273	0.000	0.147
65.00	-37.61	-5.13	0.00	-321.34	0.00	321.34	2538.81	1269.40	4926.33	2432.93	1.72	-0.273	0.000	0.147
66.00	-37.03	-5.11	0.00	-316.21	0.00	316.21	2527.71	1263.85	4869.91	2405.07	1.78	-0.279	0.000	0.123
70.00	-34.74	-4.98	0.00	-295.79	0.00	295.79	2482.34	1241.17	4645.51	2294.24	2.02	-0.297	0.000	0.119
70.92	-34.22	-4.95	0.00	-291.23	0.00	291.23	1926.34	963.17	3640.67	1797.99	2.08	-0.302	0.000	0.130
74.92	-32.87	-4.83	0.00	-271.42	0.00	271.42	1896.38	948.19	3479.39	1718.34	2.34	-0.321	0.000	0.142
74.92	-32.87	-4.83	0.00	-271.42	0.00	271.42	1896.38	948.19	3479.39	1718.34	2.34	-0.321	0.000	0.142
75.00	-32.84	-4.83	0.00	-271.01	0.00	271.01	1895.74	947.87	3476.04	1716.68	2.34	-0.321	0.000	0.142
80.00	-31.20	-4.69	0.00	-246.84	0.00	246.84	1856.07	928.04	3275.27	1617.53	2.69	-0.348	0.000	0.136
85.00	-29.61	-4.54	0.00	-223.40	0.00	223.40	1813.98	906.99	3075.87	1519.05	3.07	-0.374	0.000	0.130
89.92	-28.10	-4.40	0.00	-201.06	0.00	201.06	1770.24	885.12	2881.61	1423.12	3.47	-0.401	0.000	0.124
90.00	-28.06	-4.40	0.00	-200.70	0.00	200.70	1769.48	884.74	2878.34	1421.50	3.48	-0.401	0.000	0.123
94.92	-25.96	-4.25	0.00	-179.06	0.00	179.06	1262.32	631.16	2000.52	987.98	3.91	-0.427	0.000	0.130
95.00	-25.93	-4.26	0.00	-178.71	0.00	178.71	1261.88	630.94	1998.36	986.92	3.91	-0.428	0.000	0.149
100.00	-23.62	-3.83	0.00	-157.43	0.00	157.43	1234.00	617.00	1869.08	923.07	4.38	-0.458	0.000	0.139
105.00	-22.40	-3.70	0.00	-138.28	0.00	138.28	1203.70	601.85	1740.15	859.39	4.87	-0.489	0.000	0.129
109.00	-21.44	-3.59	0.00	-123.50	0.00	123.50	1177.71	588.86	1637.59	808.75	5.29	-0.513	0.000	0.121
109.00	-21.44	-3.59	0.00	-123.50	0.00	123.50	1177.71	588.86	1637.59	808.75	5.29	-0.513	0.000	0.121
109.92	-21.23	-3.56	0.00	-120.21	0.00	120.21	1171.54	585.77	1614.20	797.19	5.39	-0.519	0.000	0.169
109.92	-21.23	-3.56	0.00	-120.21	0.00	120.21	1171.54	585.77	1614.20	797.19	5.39	-0.519	0.000	0.169
110.00	-21.21	-3.57	0.00	-119.91	0.00	119.91	1170.98	585.49	1612.07	796.14	5.40	-0.519	0.000	0.169
115.00	-20.11	-3.44	0.00	-102.08	0.00	102.08	1135.84	567.92	1485.34	733.56	5.97	-0.561	0.000	0.157
120.00	-19.05	-3.32	0.00	-84.86	0.00	84.86	1098.28	549.14	1360.47	671.88	6.58	-0.601	0.000	0.144
125.00	-18.03	-3.20	0.00	-68.25	0.00	68.25	1058.31	529.15	1237.95	611.38	7.23	-0.641	0.000	0.129
130.00	-17.06	-3.08	0.00	-52.24	0.00	52.24	1015.91	507.96	1118.28	552.28	7.92	-0.677	0.000	0.111
132.00	-10.56	-2.06	0.00	-46.07	0.00	46.07	998.40	499.20	1071.45	529.15	8.21	-0.691	0.000	0.098
135.00	-10.05	-1.99	0.00	-39.89	0.00	39.89	960.25	480.13	990.77	489.30	8.65	-0.712	0.000	0.092
140.00	-9.25	-1.88	0.00	-29.93	0.00	29.93	896.68	448.34	863.33	426.36	9.41	-0.742	0.000	0.081
145.00	-8.50	-1.78	0.00	-20.51	0.00	20.51	833.11	416.56	744.65	367.76	10.21	-0.770	0.000	0.066

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

150.00	-7.79	-1.68	0.00	-11.63	0.00	11.63	769.54	384.77	634.75	313.48	11.02	-0.791	0.000	0.047
155.00	-7.13	-1.58	0.00	-3.25	0.00	3.25	705.97	352.99	533.62	263.54	11.86	-0.804	0.000	0.022
157.00	0.00	-1.48	0.00	-0.09	0.00	0.09	680.54	340.27	495.63	244.77	12.20	-0.806	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 38

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	19
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency**	0.55		**SA**	0.06	**Seismic Importance Factor**		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		1603.9	0.00	0.03	0.02	22.05	
10.00		1564.2	0.01	0.05	0.03	33.08	
11.92	Bot - Section 2	589.09	0.01	0.06	0.03	13.55	
15.00		1747.4	0.02	0.06	0.04	44.10	
16.00	RB1	560.73	0.02	0.06	0.04	14.47	
20.00	Top - Section 1	2213.3	0.03	0.07	0.04	60.98	
25.00		1255.2	0.05	0.07	0.04	36.37	
30.00		1221.2	0.07	0.07	0.04	36.65	
30.92	Top - Section 2	220.20	0.07	0.07	0.04	6.65	
35.00		966.96	0.09	0.07	0.04	29.91	
40.00		1153.0	0.12	0.07	0.03	36.67	
45.00		1119.0	0.16	0.07	0.03	36.43	
49.00	RT1	870.70	0.18	0.06	0.03	28.69	
50.00		214.27	0.19	0.06	0.02	7.07	
55.00		1050.9	0.23	0.06	0.02	34.50	
60.00		1016.8	0.28	0.05	0.01	32.22	
64.92	Bot - Section 4	966.68	0.32	0.04	0.01	28.28	
65.00		29.71	0.32	0.04	0.01	0.87	
66.00	RB2	355.21	0.33	0.04	0.01	10.13	
70.00		1395.8	0.38	0.03	0.01	34.96	
70.92	Top - Section 3	314.26	0.39	0.02	0.01	7.57	
74.92	Top - Section 4	617.29	0.43	0.01	0.01	11.86	
75.00		12.67	0.43	0.01	0.01	0.24	
80.00		745.59	0.49	-0.01	0.01	8.61	
85.00		717.21	0.55	-0.04	0.01	2.15	
89.92	Bot - Section 6	677.57	0.62	-0.06	0.02	-3.67	
90.00		20.37	0.62	-0.06	0.02	-0.11	
94.92	Top - Section 5	1176.9	0.69	-0.08	0.03	-14.99	
95.00		8.75	0.69	-0.08	0.03	-0.11	
100.00	Appurtenance(s)	840.34	0.77	-0.10	0.04	-14.79	
105.00		490.63	0.85	-0.12	0.07	-9.24	
109.00	RT2	376.16	0.91	-0.12	0.09	-6.31	
109.92	Top - Section 6	84.16	0.93	-0.12	0.10	-1.34	
110.00		7.61	0.93	-0.12	0.10	-0.12	
115.00		445.22	1.01	-0.11	0.14	-3.60	
120.00		422.51	1.10	-0.07	0.19	1.90	
125.00		399.80	1.20	0.00	0.25	8.85	
130.00		377.09	1.30	0.11	0.33	16.90	
132.00	Appurtenance(s)	2308.9	1.34	0.17	0.37	127.76	
135.00		209.90	1.40	0.28	0.43	15.25	
140.00		331.67	1.50	0.51	0.55	35.04	
145.00		308.96	1.61	0.82	0.69	44.46	
150.00		286.25	1.73	1.22	0.85	53.67	
155.00		263.55	1.84	1.74	1.05	62.32	
157.00	Appurtenance(s)	2709.7	1.89	1.98	1.14	697.97	

Seismic Segment Forces (Factored)

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Totals:	**34,268.1**	**1,587.9**	**Total Wind:**	**31,081.8**

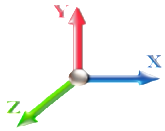
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.20			**Iterations**	19
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.19
Wind Load Factor	0.00	**Structure Frequency**	0.55	**SA**	0.06			**S1**	0.06
								Seismic Importance 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	-46.33	-1.64	0.00	-186.66	0.00	186.66	3884.21	1942.11	10879.0	5372.74		0.00	0.00	0.047
5.00	-44.21	-1.62	0.00	-178.44	0.00	178.44	3837.36	1918.68	10483.0	5177.19		0.00	0.00	0.046
10.00	-42.14	-1.59	0.00	-170.32	0.00	170.32	3788.09	1894.04	10087.1	4981.66		0.01	-0.01	0.045
11.92	-41.36	-1.58	0.00	-167.26	0.00	167.26	3768.56	1884.28	9935.49	4906.76		0.01	-0.01	0.045
15.00	-39.14	-1.54	0.00	-162.38	0.00	162.38	3736.40	1868.20	9691.75	4786.39		0.02	-0.01	0.044
16.00	-38.43	-1.53	0.00	-160.84	0.00	160.84	3725.77	1862.88	9612.78	4747.39		0.03	-0.02	0.040
20.00	-35.62	-1.47	0.00	-154.74	0.00	154.74	2938.21	1469.11	7525.54	3716.58		0.04	-0.02	0.043
25.00	-33.92	-1.43	0.00	-147.41	0.00	147.41	2903.51	1451.76	7236.35	3573.76		0.06	-0.02	0.046
30.00	-32.27	-1.40	0.00	-140.24	0.00	140.24	2866.39	1433.19	6946.10	3430.42		0.09	-0.03	0.046
30.92	-31.97	-1.39	0.00	-138.96	0.00	138.96	2859.32	1429.66	6892.81	3404.10		0.10	-0.03	0.045
30.92	-31.97	-1.39	0.00	-138.96	0.00	138.96	2859.32	1429.66	6892.81	3404.10		0.10	-0.03	0.045
35.00	-30.65	-1.36	0.00	-133.28	0.00	133.28	2826.85	1413.42	6655.27	3286.79		0.12	-0.03	0.045
40.00	-29.07	-1.33	0.00	-126.46	0.00	126.46	2784.89	1392.44	6364.37	3143.12		0.16	-0.04	0.044
45.00	-27.54	-1.29	0.00	-119.82	0.00	119.82	2740.51	1370.25	6073.90	2999.67		0.21	-0.05	0.043
49.00	-26.34	-1.27	0.00	-114.64	0.00	114.64	2703.26	1351.63	5842.17	2885.23		0.25	-0.05	0.043
49.00	-26.34	-1.27	0.00	-114.64	0.00	114.64	2703.26	1351.63	5842.17	2885.23		0.25	-0.05	0.043
50.00	-26.04	-1.26	0.00	-113.38	0.00	113.38	2693.71	1346.86	5784.36	2856.68		0.26	-0.05	0.049
55.00	-24.59	-1.23	0.00	-107.08	0.00	107.08	2644.50	1322.25	5496.25	2714.39		0.32	-0.06	0.049
60.00	-23.18	-1.20	0.00	-100.94	0.00	100.94	2592.86	1296.43	5210.07	2573.06		0.39	-0.07	0.048
64.92	-21.83	-1.17	0.00	-95.05	0.00	95.05	2539.73	1269.86	4931.03	2435.25		0.46	-0.07	0.048
65.00	-21.79	-1.17	0.00	-94.96	0.00	94.96	2538.81	1269.40	4926.33	2432.93		0.46	-0.07	0.048
66.00	-21.32	-1.16	0.00	-93.79	0.00	93.79	2527.71	1263.85	4869.91	2405.07		0.48	-0.08	0.040
70.00	-19.49	-1.12	0.00	-89.15	0.00	89.15	2482.34	1241.17	4645.51	2294.24		0.54	-0.08	0.039
70.92	-19.08	-1.12	0.00	-88.13	0.00	88.13	1926.34	963.17	3640.67	1797.99		0.56	-0.08	0.043
74.92	-18.19	-1.10	0.00	-83.67	0.00	83.67	1896.38	948.19	3479.39	1718.34		0.63	-0.09	0.047
74.92	-18.19	-1.10	0.00	-83.67	0.00	83.67	1896.38	948.19	3479.39	1718.34		0.63	-0.09	0.047
75.00	-18.17	-1.10	0.00	-83.57	0.00	83.57	1895.74	947.87	3476.04	1716.68		0.63	-0.09	0.047
80.00	-17.08	-1.10	0.00	-78.05	0.00	78.05	1856.07	928.04	3275.27	1617.53		0.73	-0.10	0.046
85.00	-16.03	-1.09	0.00	-72.57	0.00	72.57	1813.98	906.99	3075.87	1519.05		0.84	-0.11	0.045
89.92	-15.03	-1.09	0.00	-67.19	0.00	67.19	1770.24	885.12	2881.61	1423.12		0.95	-0.11	0.044
90.00	-15.00	-1.09	0.00	-67.10	0.00	67.10	1769.48	884.74	2878.34	1421.50		0.95	-0.11	0.044
94.92	-13.40	-1.09	0.00	-61.72	0.00	61.72	1262.32	631.16	2000.52	987.98		1.08	-0.12	0.047
95.00	-13.38	-1.09	0.00	-61.63	0.00	61.63	1261.88	630.94	1998.36	986.92		1.08	-0.12	0.054
100.00	-12.18	-1.09	0.00	-56.16	0.00	56.16	1234.00	617.00	1869.08	923.07		1.21	-0.13	0.052
105.00	-11.44	-1.09	0.00	-50.69	0.00	50.69	1203.70	601.85	1740.15	859.39		1.36	-0.15	0.049
109.00	-10.86	-1.09	0.00	-46.32	0.00	46.32	1177.71	588.86	1637.59	808.75		1.49	-0.15	0.047
109.00	-10.86	-1.09	0.00	-46.32	0.00	46.32	1177.71	588.86	1637.59	808.75		1.49	-0.15	0.047
109.92	-10.73	-1.09	0.00	-45.31	0.00	45.31	1171.54	585.77	1614.20	797.19		1.52	-0.16	0.066
109.92	-10.73	-1.09	0.00	-45.31	0.00	45.31	1171.54	585.77	1614.20	797.19		1.52	-0.16	0.066
110.00	-10.72	-1.09	0.00	-45.22	0.00	45.22	1170.98	585.49	1612.07	796.14		1.52	-0.16	0.066
115.00	-10.03	-1.10	0.00	-39.75	0.00	39.75	1135.84	567.92	1485.34	733.56		1.69	-0.17	0.063
120.00	-9.37	-1.09	0.00	-34.27	0.00	34.27	1098.28	549.14	1360.47	671.88		1.88	-0.19	0.060
125.00	-8.74	-1.09	0.00	-28.80	0.00	28.80	1058.31	529.15	1237.95	611.38		2.09	-0.21	0.055
130.00	-8.13	-1.07	0.00	-23.37	0.00	23.37	1015.91	507.96	1118.28	552.28		2.31	-0.22	0.050
132.00	-5.30	-0.93	0.00	-21.24	0.00	21.24	998.40	499.20	1071.45	529.15		2.41	-0.23	0.045
135.00	-5.00	-0.91	0.00	-18.45	0.00	18.45	960.25	480.13	990.77	489.30		2.55	-0.24	0.043
140.00	-4.53	-0.88	0.00	-13.88	0.00	13.88	896.68	448.34	863.33	426.36		2.81	-0.25	0.038

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

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145.00	-4.08	-0.83	0.00	-9.48	0.00	9.48	833.11	416.56	744.65	367.76	3.08	-0.26	0.031
150.00	-3.67	-0.78	0.00	-5.32	0.00	5.32	769.54	384.77	634.75	313.48	3.36	-0.27	0.022
155.00	-3.28	-0.71	0.00	-1.43	0.00	1.43	705.97	352.99	533.62	263.54	3.65	-0.28	0.010
157.00	0.00	-0.70	0.00	0.00	0.00	0.00	680.54	340.27	495.63	244.77	3.77	-0.28	0.000

Seismic Segment Forces (Factored)

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

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Load Case:	0.9D + 1.0E							**Iterations**	19
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency**	0.55		**SA**	0.06	**Seismic Importance Factor**		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		1603.9	0.00	0.03	0.02	22.05	
10.00		1564.2	0.01	0.05	0.03	33.08	
11.92	Bot - Section 2	589.09	0.01	0.06	0.03	13.55	
15.00		1747.4	0.02	0.06	0.04	44.10	
16.00	RB1	560.73	0.02	0.06	0.04	14.47	
20.00	Top - Section 1	2213.3	0.03	0.07	0.04	60.98	
25.00		1255.2	0.05	0.07	0.04	36.37	
30.00		1221.2	0.07	0.07	0.04	36.65	
30.92	Top - Section 2	220.20	0.07	0.07	0.04	6.65	
35.00		966.96	0.09	0.07	0.04	29.91	
40.00		1153.0	0.12	0.07	0.03	36.67	
45.00		1119.0	0.16	0.07	0.03	36.43	
49.00	RT1	870.70	0.18	0.06	0.03	28.69	
50.00		214.27	0.19	0.06	0.02	7.07	
55.00		1050.9	0.23	0.06	0.02	34.50	
60.00		1016.8	0.28	0.05	0.01	32.22	
64.92	Bot - Section 4	966.68	0.32	0.04	0.01	28.28	
65.00		29.71	0.32	0.04	0.01	0.87	
66.00	RB2	355.21	0.33	0.04	0.01	10.13	
70.00		1395.8	0.38	0.03	0.01	34.96	
70.92	Top - Section 3	314.26	0.39	0.02	0.01	7.57	
74.92	Top - Section 4	617.29	0.43	0.01	0.01	11.86	
75.00		12.67	0.43	0.01	0.01	0.24	
80.00		745.59	0.49	-0.01	0.01	8.61	
85.00		717.21	0.55	-0.04	0.01	2.15	
89.92	Bot - Section 6	677.57	0.62	-0.06	0.02	-3.67	
90.00		20.37	0.62	-0.06	0.02	-0.11	
94.92	Top - Section 5	1176.9	0.69	-0.08	0.03	-14.99	
95.00		8.75	0.69	-0.08	0.03	-0.11	
100.00	Appurtenance(s)	840.34	0.77	-0.10	0.04	-14.79	
105.00		490.63	0.85	-0.12	0.07	-9.24	
109.00	RT2	376.16	0.91	-0.12	0.09	-6.31	
109.92	Top - Section 6	84.16	0.93	-0.12	0.10	-1.34	
110.00		7.61	0.93	-0.12	0.10	-0.12	
115.00		445.22	1.01	-0.11	0.14	-3.60	
120.00		422.51	1.10	-0.07	0.19	1.90	
125.00		399.80	1.20	0.00	0.25	8.85	
130.00		377.09	1.30	0.11	0.33	16.90	
132.00	Appurtenance(s)	2308.9	1.34	0.17	0.37	127.76	
135.00		209.90	1.40	0.28	0.43	15.25	
140.00		331.67	1.50	0.51	0.55	35.04	
145.00		308.96	1.61	0.82	0.69	44.46	
150.00		286.25	1.73	1.22	0.85	53.67	
155.00		263.55	1.84	1.74	1.05	62.32	
157.00	Appurtenance(s)	2709.7	1.89	1.98	1.14	697.97	

Seismic Segment Forces (Factored)

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 43

Tower Engineering Solutions

Totals:	**34,268.1**	**1,587.9**	**Total Wind:**	**31,081.8**

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

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 19

Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency**	0.55	**SA**	0.06			**Seismic Importance 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	-34.74	-1.64	0.00	-185.73	0.00	185.73	3884.21	1942.11	10879.0	5372.74		0.00	0.00	0.044
5.00	-33.16	-1.62	0.00	-177.52	0.00	177.52	3837.36	1918.68	10483.0	5177.19		0.00	0.00	0.043
10.00	-31.60	-1.59	0.00	-169.40	0.00	169.40	3788.09	1894.04	10087.1	4981.66		0.01	-0.01	0.042
11.92	-31.02	-1.58	0.00	-166.35	0.00	166.35	3768.56	1884.28	9935.49	4906.76		0.01	-0.01	0.042
15.00	-29.36	-1.54	0.00	-161.48	0.00	161.48	3736.40	1868.20	9691.75	4786.39		0.02	-0.01	0.042
16.00	-28.82	-1.52	0.00	-159.94	0.00	159.94	3725.77	1862.88	9612.78	4747.39		0.03	-0.02	0.037
20.00	-26.72	-1.46	0.00	-153.85	0.00	153.85	2938.21	1469.11	7525.54	3716.58		0.04	-0.02	0.040
25.00	-25.44	-1.43	0.00	-146.53	0.00	146.53	2903.51	1451.76	7236.35	3573.76		0.06	-0.02	0.044
30.00	-24.20	-1.39	0.00	-139.39	0.00	139.39	2866.39	1433.19	6946.10	3430.42		0.09	-0.03	0.043
30.92	-23.97	-1.39	0.00	-138.11	0.00	138.11	2859.32	1429.66	6892.81	3404.10		0.10	-0.03	0.043
30.92	-23.97	-1.39	0.00	-138.11	0.00	138.11	2859.32	1429.66	6892.81	3404.10		0.10	-0.03	0.043
35.00	-22.99	-1.36	0.00	-132.45	0.00	132.45	2826.85	1413.42	6655.27	3286.79		0.12	-0.03	0.042
40.00	-21.80	-1.32	0.00	-125.65	0.00	125.65	2784.89	1392.44	6364.37	3143.12		0.16	-0.04	0.041
45.00	-20.65	-1.29	0.00	-119.04	0.00	119.04	2740.51	1370.25	6073.90	2999.67		0.21	-0.05	0.041
49.00	-19.75	-1.26	0.00	-113.89	0.00	113.89	2703.26	1351.63	5842.17	2885.23		0.25	-0.05	0.040
49.00	-19.75	-1.26	0.00	-113.89	0.00	113.89	2703.26	1351.63	5842.17	2885.23		0.25	-0.05	0.040
50.00	-19.53	-1.25	0.00	-112.63	0.00	112.63	2693.71	1346.86	5784.36	2856.68		0.26	-0.05	0.047
55.00	-18.44	-1.22	0.00	-106.36	0.00	106.36	2644.50	1322.25	5496.25	2714.39		0.32	-0.06	0.046
60.00	-17.38	-1.19	0.00	-100.25	0.00	100.25	2592.86	1296.43	5210.07	2573.06		0.38	-0.07	0.046
64.92	-16.37	-1.16	0.00	-94.41	0.00	94.41	2539.73	1269.86	4931.03	2435.25		0.46	-0.07	0.045
65.00	-16.34	-1.16	0.00	-94.31	0.00	94.31	2538.81	1269.40	4926.33	2432.93		0.46	-0.07	0.045
66.00	-15.99	-1.15	0.00	-93.15	0.00	93.15	2527.71	1263.85	4869.91	2405.07		0.47	-0.08	0.038
70.00	-14.62	-1.11	0.00	-88.55	0.00	88.55	2482.34	1241.17	4645.51	2294.24		0.54	-0.08	0.037
70.92	-14.31	-1.11	0.00	-87.52	0.00	87.52	1926.34	963.17	3640.67	1797.99		0.55	-0.08	0.041
74.92	-13.64	-1.10	0.00	-83.09	0.00	83.09	1896.38	948.19	3479.39	1718.34		0.63	-0.09	0.045
74.92	-13.64	-1.10	0.00	-83.09	0.00	83.09	1896.38	948.19	3479.39	1718.34		0.63	-0.09	0.045
75.00	-13.63	-1.10	0.00	-83.00	0.00	83.00	1895.74	947.87	3476.04	1716.68		0.63	-0.09	0.045
80.00	-12.81	-1.09	0.00	-77.52	0.00	77.52	1856.07	928.04	3275.27	1617.53		0.73	-0.10	0.044
85.00	-12.02	-1.09	0.00	-72.08	0.00	72.08	1813.98	906.99	3075.87	1519.05		0.83	-0.11	0.043
89.92	-11.27	-1.09	0.00	-66.73	0.00	66.73	1770.24	885.12	2881.61	1423.12		0.94	-0.11	0.042
90.00	-11.25	-1.09	0.00	-66.64	0.00	66.64	1769.48	884.74	2878.34	1421.50		0.95	-0.11	0.042
94.92	-10.05	-1.09	0.00	-61.30	0.00	61.30	1262.32	631.16	2000.52	987.98		1.07	-0.12	0.045
95.00	-10.04	-1.09	0.00	-61.21	0.00	61.21	1261.88	630.94	1998.36	986.92		1.07	-0.12	0.052
100.00	-9.14	-1.09	0.00	-55.78	0.00	55.78	1234.00	617.00	1869.08	923.07		1.21	-0.13	0.050
105.00	-8.58	-1.09	0.00	-50.35	0.00	50.35	1203.70	601.85	1740.15	859.39		1.35	-0.14	0.047
109.00	-8.15	-1.09	0.00	-46.01	0.00	46.01	1177.71	588.86	1637.59	808.75		1.48	-0.15	0.045
109.00	-8.15	-1.09	0.00	-46.01	0.00	46.01	1177.71	588.86	1637.59	808.75		1.48	-0.15	0.045
109.92	-8.05	-1.09	0.00	-45.01	0.00	45.01	1171.54	585.77	1614.20	797.19		1.51	-0.16	0.063
109.92	-8.05	-1.09	0.00	-45.01	0.00	45.01	1171.54	585.77	1614.20	797.19		1.51	-0.16	0.063
110.00	-8.04	-1.09	0.00	-44.92	0.00	44.92	1170.98	585.49	1612.07	796.14		1.51	-0.16	0.063
115.00	-7.52	-1.09	0.00	-39.49	0.00	39.49	1135.84	567.92	1485.34	733.56		1.68	-0.17	0.060
120.00	-7.03	-1.09	0.00	-34.05	0.00	34.05	1098.28	549.14	1360.47	671.88		1.87	-0.19	0.057
125.00	-6.55	-1.08	0.00	-28.62	0.00	28.62	1058.31	529.15	1237.95	611.38		2.08	-0.20	0.053
130.00	-6.09	-1.06	0.00	-23.23	0.00	23.23	1015.91	507.96	1118.28	552.28		2.30	-0.22	0.048
132.00	-3.97	-0.92	0.00	-21.11	0.00	21.11	998.40	499.20	1071.45	529.15		2.39	-0.23	0.044
135.00	-3.75	-0.91	0.00	-18.34	0.00	18.34	960.25	480.13	990.77	489.30		2.54	-0.24	0.041
140.00	-3.39	-0.87	0.00	-13.79	0.00	13.79	896.68	448.34	863.33	426.36		2.79	-0.25	0.036

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

Tower Engineering Solutions

145.00	-3.06	-0.83	0.00	-9.43	0.00	9.43	833.11	416.56	744.65	367.76	3.06	-0.26	0.029
150.00	-2.75	-0.77	0.00	-5.29	0.00	5.29	769.54	384.77	634.75	313.48	3.34	-0.27	0.020
155.00	-2.46	-0.71	0.00	-1.42	0.00	1.42	705.97	352.99	533.62	263.54	3.63	-0.28	0.009
157.00	0.00	-0.70	0.00	0.00	0.00	0.00	680.54	340.27	495.63	244.77	3.74	-0.28	0.000

Wind Loading - Shaft

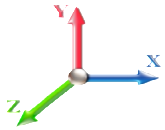
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

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	0.70	6.129	6.74	295.31	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	288.13	1.000	0.000	5.00	29.056	29.06	195.9	0.0	1604.0
10.00		1.00	0.70	6.129	6.74	280.95	1.000	0.000	5.00	28.341	28.34	191.1	0.0	1564.2
11.92	Bot - Section 2	1.00	0.70	6.129	6.74	278.20	1.000	0.000	1.92	10.674	10.67	72.0	0.0	589.1
15.00		1.00	0.70	6.129	6.74	273.77	1.000	0.000	3.08	17.151	17.15	115.6	0.0	1747.5
16.00	RB1	1.00	0.70	6.129	6.74	272.33	1.000	0.000	1.00	5.504	5.50	37.1	0.0	560.7
20.00	Top - Section 1	1.00	0.70	6.129	6.74	266.59	1.000	0.000	4.00	21.730	21.73	146.5	0.0	2213.4
25.00		1.00	0.70	6.129	6.74	262.66	1.000	0.000	5.00	26.519	26.52	178.8	0.0	1255.3
30.00		1.00	0.70	6.134	6.75	255.58	1.000	0.000	5.00	25.804	25.80	174.1	0.0	1221.2
30.92	Top - Section 2	1.00	0.71	6.187	6.81	255.36	1.000	0.000	0.92	4.653	4.65	31.7	0.0	220.2
35.00		1.00	0.73	6.410	7.05	253.93	1.000	0.000	4.08	20.435	20.44	144.1	0.0	967.0
40.00		1.00	0.76	6.659	7.33	251.33	1.000	0.000	5.00	24.373	24.37	178.5	0.0	1153.1
45.00		1.00	0.79	6.887	7.58	247.99	1.000	0.000	5.00	23.658	23.66	179.2	0.0	1119.0
49.00	RT1	1.00	0.81	7.057	7.76	244.86	1.000	0.000	4.00	18.411	18.41	142.9	0.0	870.7
50.00		1.00	0.81	7.098	7.81	244.02	1.000	0.000	1.00	4.531	4.53	35.4	0.0	214.3
55.00		1.00	0.83	7.294	8.02	239.53	1.000	0.000	5.00	22.227	22.23	178.3	0.0	1050.9
60.00		1.00	0.85	7.477	8.22	234.60	1.000	0.000	5.00	21.512	21.51	176.9	0.0	1016.8
64.92	Bot - Section 4	1.00	0.87	7.647	8.41	229.36	1.000	0.000	4.92	20.456	20.46	172.1	0.0	966.7
65.00		1.00	0.87	7.650	8.42	229.27	1.000	0.000	0.08	0.345	0.35	2.9	0.0	29.7
66.00	RB2	1.00	0.88	7.684	8.45	228.16	1.000	0.000	1.00	4.127	4.13	34.9	0.0	355.2
70.00		1.00	0.89	7.814	8.60	223.60	1.000	0.000	4.00	16.224	16.22	139.4	0.0	1395.9
70.92	Top - Section 3	1.00	0.90	7.843	8.63	222.53	1.000	0.000	0.92	3.653	3.65	31.5	0.0	314.3
74.92	Top - Section 4	1.00	0.91	7.967	8.76	220.82	1.000	0.000	4.00	15.661	15.66	137.2	0.0	617.3
75.00		1.00	0.91	7.969	8.77	220.72	1.000	0.000	0.08	0.321	0.32	2.8	0.0	12.7
80.00		1.00	0.93	8.118	8.93	214.50	1.000	0.000	5.00	18.921	18.92	169.0	0.0	745.6
85.00		1.00	0.94	8.260	9.09	208.03	1.000	0.000	5.00	18.206	18.21	165.4	0.0	717.2
89.92	Bot - Section 6	1.00	0.96	8.393	9.23	201.44	1.000	0.000	4.92	17.205	17.20	158.8	0.0	677.6
90.00		1.00	0.96	8.396	9.24	201.33	1.000	0.000	0.08	0.289	0.29	2.7	0.0	20.4
94.92	Top - Section 5	1.00	0.97	8.524	9.38	194.54	1.000	0.000	4.92	16.714	16.71	156.7	0.0	1177.0
95.00		1.00	0.97	8.526	9.38	196.97	1.000	0.000	0.08	0.277	0.28	2.6	0.0	8.7
100.00	Appurtenance(s)	1.00	0.99	8.652	9.52	189.89	1.000	0.000	5.00	16.276	16.28	154.9	0.0	513.3
105.00		1.00	1.00	8.774	9.65	182.63	1.000	0.000	5.00	15.560	15.56	150.2	0.0	490.6
109.00	RT2	1.00	1.01	8.868	9.75	176.69	1.000	0.000	4.00	11.933	11.93	116.4	0.0	376.2
109.92	Top - Section 6	1.00	1.02	8.889	9.78	175.32	1.000	0.000	0.92	2.670	2.67	26.1	0.0	84.2
110.00		1.00	1.02	8.891	9.78	175.20	1.000	0.000	0.08	0.242	0.24	2.4	0.0	7.6
115.00		1.00	1.03	9.005	9.91	167.61	1.000	0.000	5.00	14.130	14.13	140.0	0.0	445.2
120.00		1.00	1.04	9.115	10.03	159.87	1.000	0.000	5.00	13.415	13.41	134.5	0.0	422.5
125.00		1.00	1.05	9.222	10.14	152.00	1.000	0.000	5.00	12.700	12.70	128.8	0.0	399.8
130.00		1.00	1.07	9.326	10.26	143.99	1.000	0.000	5.00	11.984	11.98	122.9	0.0	377.1
132.00	Appurtenance(s)	1.00	1.07	9.366	10.30	140.76	1.000	0.000	2.00	4.593	4.59	47.3	0.0	144.5
135.00		1.00	1.08	9.427	10.37	135.87	1.000	0.000	3.00	6.676	6.68	69.2	0.0	209.9
140.00		1.00	1.09	9.525	10.48	127.62	1.000	0.000	5.00	10.554	10.55	110.6	0.0	331.7
145.00		1.00	1.10	9.621	10.58	119.27	1.000	0.000	5.00	9.839	9.84	104.1	0.0	309.0
150.00		1.00	1.11	9.715	10.69	110.81	1.000	0.000	5.00	9.123	9.12	97.5	0.0	286.3
155.00		1.00	1.12	9.806	10.79	102.24	1.000	0.000	5.00	8.408	8.41	90.7	0.0	263.5
157.00	Appurtenance(s)	1.00	1.12	9.842	10.83	98.79	1.000	0.000	2.00	3.163	3.16	34.2	0.0	99.1

Wind Loading - Shaft

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Totals:	**157.00**	**4,884.1**	**29,165.9**

Discrete Appurtenance Forces

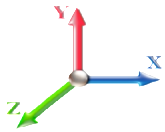
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

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	157.00	Kathrein 800-10121	3	9.842	10.827	0.79	1.00	12.21	132.30	0.000	0.000	132.14	0.00	0.00
2	157.00	Nokia CS72188.01 LMU	1	9.851	10.836	1.00	1.00	0.13	5.00	0.000	0.500	1.41	0.00	0.70
3	157.00	Raycap DC6-48-60-18-8F	2	9.842	10.827	1.00	1.00	1.84	63.60	0.000	0.000	19.92	0.00	0.00
4	157.00	Ericsson RRUS 4415 B25	3	9.842	10.827	0.67	1.00	3.30	138.00	0.000	0.000	35.69	0.00	0.00
5	157.00	Ericsson RRUS-11 RRU	3	9.842	10.827	0.67	1.00	5.07	153.00	0.000	0.000	54.84	0.00	0.00
6	157.00	Kathrein 860 10025 RET	6	9.842	10.827	0.67	1.00	0.72	7.20	0.000	0.000	7.83	0.00	0.00
7	157.00	Powerwave LGP21901	6	9.842	10.827	0.93	1.00	9.32	186.00	0.000	0.000	100.89	0.00	0.00
8	157.00	CCI DTMABP7819VG12A	6	9.842	10.827	0.67	1.00	4.58	115.20	0.000	0.000	49.62	0.00	0.00
9	157.00	Sabre C10-857-804	3	9.842	10.827	0.56	0.75	31.27	1386.00	0.000	0.000	338.54	0.00	0.00
10	157.00	Lightning Rod	1	9.904	10.895	1.00	1.00	1.05	35.00	0.000	3.500	11.44	0.00	40.04
11	157.00	Cci HPA65R-BU8A	3	9.842	10.827	0.89	1.00	29.96	207.00	0.000	0.000	324.33	0.00	0.00
12	157.00	Andrew SBNH-1D6565C	3	9.842	10.827	0.80	1.00	27.53	182.40	0.000	0.000	298.03	0.00	0.00
13	132.00	14' LP Platform	1	9.366	10.303	1.00	1.00	25.00	1500.00	0.000	0.000	257.58	0.00	0.00
14	132.00	DB-T1-6Z-8AB-0Z	1	9.366	10.303	1.00	1.00	4.80	18.90	0.000	0.000	49.45	0.00	0.00
15	132.00	RRH2X60-PCS	3	9.366	10.303	0.71	0.80	4.70	165.00	0.000	0.000	48.42	0.00	0.00
16	132.00	RRH2X60-AWS	3	9.366	10.303	0.61	0.80	6.38	165.00	0.000	0.000	65.77	0.00	0.00
17	132.00	SBNHH-1D65B	6	9.366	10.303	0.66	0.80	32.19	243.60	0.000	0.000	331.66	0.00	0.00
18	132.00	DB844G65ZAXY	6	9.366	10.303	0.72	0.80	18.71	72.00	0.000	0.000	192.73	0.00	0.00
19	100.00	742 213	3	8.652	9.517	0.72	1.00	11.06	66.00	0.000	0.000	105.25	0.00	0.00
20	100.00	15'x2.875"mount pipe	3	8.652	9.517	1.00	1.00	12.93	261.00	0.000	0.000	123.06	0.00	0.00
							Totals:		**5,102.20**			**2,548.61**		

Total Applied Force Summary

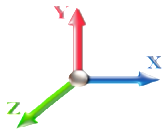
Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 49

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

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		195.88	1764.25	0.00	0.00
10.00		191.06	1724.51	0.00	0.00
11.92		71.96	650.52	0.00	0.00
15.00		115.62	1846.32	0.00	0.00
16.00		37.11	592.78	0.00	0.00
20.00		146.49	2341.59	0.00	0.00
25.00		178.78	1415.55	0.00	0.00
30.00		174.10	1381.48	0.00	0.00
30.92		31.67	249.58	0.00	0.00
35.00		144.09	1097.84	0.00	0.00
40.00		178.54	1313.36	0.00	0.00
45.00		179.23	1279.29	0.00	0.00
49.00		142.92	998.91	0.00	0.00
50.00		35.38	246.32	0.00	0.00
55.00		178.33	1211.17	0.00	0.00
60.00		176.94	1177.10	0.00	0.00
64.92		172.08	1124.27	0.00	0.00
65.00		2.91	32.38	0.00	0.00
66.00		34.89	387.26	0.00	0.00
70.00		139.45	1524.08	0.00	0.00
70.92		31.52	343.64	0.00	0.00
74.92		137.25	745.50	0.00	0.00
75.00		2.82	15.34	0.00	0.00
80.00		168.95	905.86	0.00	0.00
85.00		165.41	877.47	0.00	0.00
89.92		158.85	835.17	0.00	0.00
90.00		2.67	23.05	0.00	0.00
94.92		156.72	1334.56	0.00	0.00
95.00		2.60	11.42	0.00	0.00
100.00	(6) attachments	383.22	1000.61	0.00	0.00
105.00		150.17	619.70	0.00	0.00
109.00		116.41	479.41	0.00	0.00
109.92		26.11	107.82	0.00	0.00
110.00		2.36	9.76	0.00	0.00
115.00		139.96	574.28	0.00	0.00
120.00		134.50	551.57	0.00	0.00
125.00		128.82	528.86	0.00	0.00
130.00		122.94	506.15	0.00	0.00
132.00	(20) attachments	992.94	2360.60	0.00	0.00
135.00		69.22	246.60	0.00	0.00
140.00		110.58	392.84	0.00	0.00
145.00		104.13	370.13	0.00	0.00
150.00		97.50	347.42	0.00	0.00
155.00		90.70	324.71	0.00	0.00
157.00	(40) attachments	1408.93	2734.23	0.00	40.74

Total Applied Force Summary

Structure:	CT00252-S-SBA		**Code:**	EIA/TIA-222-G	11/30/2018
Site Name:	Prospect		**Exposure:**	B	
Height:	157.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 50

Tower Engineering Solutions

Totals:	**7,432.67**	**38,605.26**	**0.00**	**40.74**

Linear Appurtenance Segment Forces (Factored)

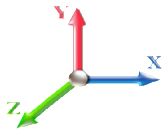
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

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	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	6.129	0.00	1.37
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.014	0.000	6.129	0.00	5.20
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	6.129	0.00	1.37
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	6.129	0.00	5.20
11.92	Safety Cable	Yes	1.92	0.000	0.38	0.06	0.00	0.015	0.000	6.129	0.00	0.52
11.92	Step bolts (ladder)	Yes	1.92	0.000	0.63	0.10	0.00	0.015	0.000	6.129	0.00	1.99
15.00	Safety Cable	Yes	3.08	0.000	0.38	0.10	0.00	0.015	0.000	6.129	0.00	0.84
15.00	Step bolts (ladder)	Yes	3.08	0.000	0.63	0.16	0.00	0.015	0.000	6.129	0.00	3.21
16.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.046	0.000	6.129	0.00	0.27
16.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.046	0.000	6.129	0.00	1.04
16.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.046	0.000	6.129	0.00	0.00
20.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.047	0.000	6.129	0.00	1.09
20.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.047	0.000	6.129	0.00	4.16
20.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.047	0.000	6.129	0.00	0.00
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.047	0.000	6.129	0.00	1.37
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.047	0.000	6.129	0.00	5.20
25.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.047	0.000	6.129	0.00	0.00
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.049	0.000	6.134	0.00	1.37
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.049	0.000	6.134	0.00	5.20
30.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.049	0.000	6.134	0.00	0.00
30.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.049	0.000	6.187	0.00	0.25
30.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.049	0.000	6.187	0.00	0.95
30.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.049	0.000	6.187	0.00	0.00
35.00	Safety Cable	Yes	4.08	0.000	0.38	0.13	0.00	0.050	0.000	6.410	0.00	1.11
35.00	Step bolts (ladder)	Yes	4.08	0.000	0.63	0.21	0.00	0.050	0.000	6.410	0.00	4.25
35.00	1" Reinforcing plate	Yes	4.08	0.000	2.00	0.68	0.00	0.050	0.000	6.410	0.00	0.00
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.051	0.000	6.659	0.00	1.37
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.051	0.000	6.659	0.00	5.20
40.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.051	0.000	6.659	0.00	0.00
45.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.053	0.000	6.887	0.00	1.37
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.053	0.000	6.887	0.00	5.20
45.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.053	0.000	6.887	0.00	0.00
49.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.054	0.000	7.057	0.00	1.09
49.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.054	0.000	7.057	0.00	4.16
49.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.054	0.000	7.057	0.00	0.00
50.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.055	0.000	7.098	0.00	0.27
50.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.055	0.000	7.098	0.00	1.04
50.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.055	0.000	7.098	0.00	0.00
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.019	0.000	7.294	0.00	1.37
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.019	0.000	7.294	0.00	5.20
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.020	0.000	7.477	0.00	1.37
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.020	0.000	7.477	0.00	5.20
64.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.020	0.000	7.647	0.00	1.34
64.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.020	0.000	7.647	0.00	5.11
65.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.021	0.000	7.650	0.00	0.02
65.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.021	0.000	7.650	0.00	0.09
66.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.062	0.000	7.684	0.00	0.27

Linear Appurtenance Segment Forces (Factored)

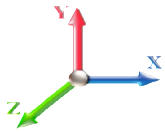
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

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)
66.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.062	0.000	7.684	0.00	1.04
66.00	1" Reinforcing plate	Yes	1.00	0.000	2.00	0.17	0.00	0.062	0.000	7.684	0.00	0.00
70.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.063	0.000	7.814	0.00	1.09
70.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.063	0.000	7.814	0.00	4.16
70.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.063	0.000	7.814	0.00	0.00
70.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.064	0.000	7.843	0.00	0.25
70.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.064	0.000	7.843	0.00	0.95
70.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.064	0.000	7.843	0.00	0.00
74.92	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.064	0.000	7.967	0.00	1.09
74.92	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.064	0.000	7.967	0.00	4.16
74.92	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.064	0.000	7.967	0.00	0.00
75.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.065	0.000	7.969	0.00	0.02
75.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.065	0.000	7.969	0.00	0.09
75.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.065	0.000	7.969	0.00	0.00
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.066	0.000	8.118	0.00	1.37
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.066	0.000	8.118	0.00	5.20
80.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.066	0.000	8.118	0.00	0.00
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.069	0.000	8.260	0.00	1.37
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.069	0.000	8.260	0.00	5.20
85.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.069	0.000	8.260	0.00	0.00
89.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.072	0.000	8.393	0.00	1.34
89.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.072	0.000	8.393	0.00	5.11
89.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	0.82	0.00	0.072	0.000	8.393	0.00	0.00
90.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.073	0.000	8.396	0.00	0.02
90.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.073	0.000	8.396	0.00	0.09
90.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.073	0.000	8.396	0.00	0.00
94.92	Safety Cable	Yes	4.92	0.000	0.38	0.16	0.00	0.075	0.000	8.524	0.00	1.34
94.92	Step bolts (ladder)	Yes	4.92	0.000	0.63	0.26	0.00	0.075	0.000	8.524	0.00	5.11
94.92	1" Reinforcing plate	Yes	4.92	0.000	2.00	0.82	0.00	0.075	0.000	8.524	0.00	0.00
95.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.075	0.000	8.526	0.00	0.02
95.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.075	0.000	8.526	0.00	0.09
95.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.075	0.000	8.526	0.00	0.00
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.077	0.000	8.652	0.00	1.37
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.077	0.000	8.652	0.00	5.20
100.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.077	0.000	8.652	0.00	0.00
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.081	0.000	8.774	0.00	1.37
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.081	0.000	8.774	0.00	5.20
105.00	1" Reinforcing plate	Yes	5.00	0.000	2.00	0.83	0.00	0.081	0.000	8.774	0.00	0.00
109.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.084	0.000	8.868	0.00	1.09
109.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.084	0.000	8.868	0.00	4.16
109.00	1" Reinforcing plate	Yes	4.00	0.000	2.00	0.67	0.00	0.084	0.000	8.868	0.00	0.00
109.92	Safety Cable	Yes	0.92	0.000	0.38	0.03	0.00	0.086	0.000	8.889	0.00	0.25
109.92	Step bolts (ladder)	Yes	0.92	0.000	0.63	0.05	0.00	0.086	0.000	8.889	0.00	0.95
109.92	1" Reinforcing plate	Yes	0.92	0.000	2.00	0.15	0.00	0.086	0.000	8.889	0.00	0.00
110.00	Safety Cable	Yes	0.08	0.000	0.38	0.00	0.00	0.087	0.000	8.891	0.00	0.02
110.00	Step bolts (ladder)	Yes	0.08	0.000	0.63	0.00	0.00	0.087	0.000	8.891	0.00	0.09
110.00	1" Reinforcing plate	Yes	0.08	0.000	2.00	0.01	0.00	0.087	0.000	8.891	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

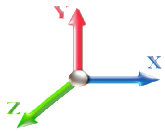
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 53	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

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)
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.030	0.000	9.005	0.00	1.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	9.005	0.00	5.20
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.031	0.000	9.115	0.00	1.37
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.031	0.000	9.115	0.00	5.20
125.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.033	0.000	9.222	0.00	1.37
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.033	0.000	9.222	0.00	5.20
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.035	0.000	9.326	0.00	1.37
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.035	0.000	9.326	0.00	5.20
132.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.037	0.000	9.366	0.00	0.55
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.037	0.000	9.366	0.00	2.08
135.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.038	0.000	9.427	0.00	0.82
135.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.038	0.000	9.427	0.00	3.12
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.040	0.000	9.525	0.00	1.37
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.040	0.000	9.525	0.00	5.20
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.043	0.000	9.621	0.00	1.37
145.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.043	0.000	9.621	0.00	5.20
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.046	0.000	9.715	0.00	1.37
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.046	0.000	9.715	0.00	5.20
155.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.050	0.000	9.806	0.00	1.37
155.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.050	0.000	9.806	0.00	5.20
157.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.053	0.000	9.842	0.00	0.55
157.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.053	0.000	9.842	0.00	2.08
										Totals:	**0.0**	**206.1**

Calculated Forces

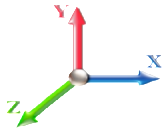
Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 54	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

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	-38.60	-7.44	0.00	-727.86	0.00	727.86	3884.21	1942.11	10879.0	5372.74	0.00	0.000	0.000	0.145
5.00	-36.84	-7.25	0.00	-690.67	0.00	690.67	3837.36	1918.68	10483.0	5177.19	0.01	-0.018	0.000	0.143
10.00	-35.11	-7.07	0.00	-654.40	0.00	654.40	3788.09	1894.04	10087.1	4981.66	0.04	-0.036	0.000	0.141
11.92	-34.46	-7.00	0.00	-640.85	0.00	640.85	3768.56	1884.28	9935.49	4906.76	0.06	-0.044	0.000	0.140
15.00	-32.61	-6.89	0.00	-619.25	0.00	619.25	3736.40	1868.20	9691.75	4786.39	0.09	-0.056	0.000	0.138
16.00	-32.02	-6.86	0.00	-612.36	0.00	612.36	3725.77	1862.88	9612.78	4747.39	0.10	-0.060	0.000	0.123
20.00	-29.68	-6.72	0.00	-584.93	0.00	584.93	2938.21	1469.11	7525.54	3716.58	0.16	-0.073	0.000	0.133
25.00	-28.26	-6.55	0.00	-551.35	0.00	551.35	2903.51	1451.76	7236.35	3573.76	0.24	-0.091	0.000	0.144
30.00	-26.88	-6.37	0.00	-518.62	0.00	518.62	2866.39	1433.19	6946.10	3430.42	0.35	-0.111	0.000	0.140
30.92	-26.63	-6.35	0.00	-512.78	0.00	512.78	2859.32	1429.66	6892.81	3404.10	0.37	-0.115	0.000	0.140
30.92	-26.63	-6.35	0.00	-512.78	0.00	512.78	2859.32	1429.66	6892.81	3404.10	0.37	-0.115	0.000	0.140
35.00	-25.53	-6.21	0.00	-486.86	0.00	486.86	2826.85	1413.42	6655.27	3286.79	0.48	-0.131	0.000	0.137
40.00	-24.21	-6.04	0.00	-455.82	0.00	455.82	2784.89	1392.44	6364.37	3143.12	0.62	-0.152	0.000	0.133
45.00	-22.93	-5.86	0.00	-425.64	0.00	425.64	2740.51	1370.25	6073.90	2999.67	0.79	-0.172	0.000	0.129
49.00	-21.93	-5.72	0.00	-402.20	0.00	402.20	2703.26	1351.63	5842.17	2885.23	0.95	-0.189	0.000	0.127
49.00	-21.93	-5.72	0.00	-402.20	0.00	402.20	2703.26	1351.63	5842.17	2885.23	0.95	-0.189	0.000	0.127
50.00	-21.68	-5.69	0.00	-396.49	0.00	396.49	2693.71	1346.86	5784.36	2856.68	0.99	-0.194	0.000	0.147
55.00	-20.47	-5.51	0.00	-368.05	0.00	368.05	2644.50	1322.25	5496.25	2714.39	1.20	-0.219	0.000	0.143
60.00	-19.29	-5.34	0.00	-340.48	0.00	340.48	2592.86	1296.43	5210.07	2573.06	1.45	-0.245	0.000	0.140
64.92	-18.17	-5.17	0.00	-314.22	0.00	314.22	2539.73	1269.86	4931.03	2435.25	1.71	-0.270	0.000	0.136
65.00	-18.13	-5.17	0.00	-313.79	0.00	313.79	2538.81	1269.40	4926.33	2432.93	1.72	-0.271	0.000	0.136
66.00	-17.75	-5.13	0.00	-308.62	0.00	308.62	2527.71	1263.85	4869.91	2405.07	1.77	-0.276	0.000	0.113
70.00	-16.22	-4.99	0.00	-288.09	0.00	288.09	2482.34	1241.17	4645.51	2294.24	2.01	-0.295	0.000	0.110
70.92	-15.88	-4.96	0.00	-283.52	0.00	283.52	1926.34	963.17	3640.67	1797.99	2.07	-0.299	0.000	0.120
74.92	-15.13	-4.82	0.00	-263.68	0.00	263.68	1896.38	948.19	3479.39	1718.34	2.33	-0.317	0.000	0.130
74.92	-15.13	-4.82	0.00	-263.68	0.00	263.68	1896.38	948.19	3479.39	1718.34	2.33	-0.317	0.000	0.130
75.00	-15.11	-4.82	0.00	-263.28	0.00	263.28	1895.74	947.87	3476.04	1716.68	2.33	-0.318	0.000	0.130
80.00	-14.21	-4.65	0.00	-239.18	0.00	239.18	1856.07	928.04	3275.27	1617.53	2.68	-0.343	0.000	0.124
85.00	-13.33	-4.49	0.00	-215.91	0.00	215.91	1813.98	906.99	3075.87	1519.05	3.05	-0.369	0.000	0.118
89.92	-12.49	-4.33	0.00	-193.85	0.00	193.85	1770.24	885.12	2881.61	1423.12	3.45	-0.395	0.000	0.112
90.00	-12.47	-4.33	0.00	-193.49	0.00	193.49	1769.48	884.74	2878.34	1421.50	3.46	-0.395	0.000	0.112
94.92	-11.14	-4.16	0.00	-172.22	0.00	172.22	1262.32	631.16	2000.52	987.98	3.88	-0.420	0.000	0.118
95.00	-11.12	-4.16	0.00	-171.87	0.00	171.87	1261.88	630.94	1998.36	986.92	3.88	-0.421	0.000	0.135
100.00	-10.12	-3.78	0.00	-151.06	0.00	151.06	1234.00	617.00	1869.08	923.07	4.34	-0.450	0.000	0.125
105.00	-9.50	-3.63	0.00	-132.17	0.00	132.17	1203.70	601.85	1740.15	859.39	4.83	-0.479	0.000	0.116
109.00	-9.02	-3.51	0.00	-117.67	0.00	117.67	1177.71	588.86	1637.59	808.75	5.24	-0.502	0.000	0.108
109.00	-9.02	-3.51	0.00	-117.67	0.00	117.67	1177.71	588.86	1637.59	808.75	5.24	-0.502	0.000	0.108
109.92	-8.92	-3.48	0.00	-114.45	0.00	114.45	1171.54	585.77	1614.20	797.19	5.34	-0.508	0.000	0.151
109.92	-8.92	-3.48	0.00	-114.45	0.00	114.45	1171.54	585.77	1614.20	797.19	5.34	-0.508	0.000	0.151
110.00	-8.91	-3.48	0.00	-114.16	0.00	114.16	1170.98	585.49	1612.07	796.14	5.34	-0.508	0.000	0.151
115.00	-8.33	-3.34	0.00	-96.75	0.00	96.75	1135.84	567.92	1485.34	733.56	5.90	-0.548	0.000	0.139
120.00	-7.78	-3.21	0.00	-80.04	0.00	80.04	1098.28	549.14	1360.47	671.88	6.49	-0.586	0.000	0.126
125.00	-7.25	-3.08	0.00	-64.00	0.00	64.00	1058.31	529.15	1237.95	611.38	7.13	-0.623	0.000	0.112
130.00	-6.74	-2.95	0.00	-48.61	0.00	48.61	1015.91	507.96	1118.28	552.28	7.80	-0.657	0.000	0.095
132.00	-4.39	-1.93	0.00	-42.70	0.00	42.70	998.40	499.20	1071.45	529.15	8.08	-0.671	0.000	0.085
135.00	-4.15	-1.86	0.00	-36.90	0.00	36.90	960.25	480.13	990.77	489.30	8.51	-0.689	0.000	0.080
140.00	-3.75	-1.75	0.00	-27.59	0.00	27.59	896.68	448.34	863.33	426.36	9.24	-0.718	0.000	0.069
145.00	-3.39	-1.64	0.00	-18.84	0.00	18.84	833.11	416.56	744.65	367.76	10.01	-0.743	0.000	0.055

Calculated Forces

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 55	

150.00	-3.04	-1.54	0.00	-10.63	0.00	10.63	769.54	384.77	634.75	313.48	10.80	-0.763	0.000	0.038
155.00	-2.71	-1.45	0.00	-2.93	0.00	2.93	705.97	352.99	533.62	263.54	11.61	-0.774	0.000	0.015
157.00	0.00	-1.41	0.00	-0.04	0.00	0.04	680.54	340.27	495.63	244.77	11.93	-0.776	0.000	0.000

Final Analysis Summary

Structure:	CT00252-S-SBA	**Code:**	EIA/TIA-222-G	11/30/2018	
Site Name:	Prospect	**Exposure:**	B		
Height:	157.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 56	

Tower Engineering Solutions

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 97 mph Wind	31.1	0.00	46.30	0.00	0.00	3051.85
0.9D + 1.6W 97 mph Wind	31.1	0.00	34.72	0.00	0.00	3038.67
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	0.00	70.09	0.00	0.00	720.63
1.2D + 1.0E	1.6	0.00	46.33	0.00	0.00	186.66
0.9D + 1.0E	1.6	0.00	34.74	0.00	0.00	185.73
1.0D + 1.0W 60 mph Wind	7.4	0.00	38.60	0.00	0.00	727.86

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 97 mph Wind	-10.20	-14.62	0.00	-480.68	0.00	-480.68	1171.54	585.77	1614.20	797.19	109.92	0.612
0.9D + 1.6W 97 mph Wind	-7.52	-14.52	0.00	-476.87	0.00	-476.87	1171.54	585.77	1614.20	797.19	109.92	0.605
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-21.23	-3.56	0.00	-120.21	0.00	-120.21	1171.54	585.77	1614.20	797.19	109.92	0.169
1.2D + 1.0E	-10.73	-1.09	0.00	-45.31	0.00	-45.31	1171.54	585.77	1614.20	797.19	109.92	0.066
0.9D + 1.0E	-8.05	-1.09	0.00	-45.01	0.00	-45.01	1171.54	585.77	1614.20	797.19	109.92	0.063
1.0D + 1.0W 60 mph Wind	-8.92	-3.48	0.00	-114.45	0.00	-114.45	1171.54	585.77	1614.20	797.19	109.92	0.151

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
16.0	49.0	(3) PLT-C6x10.5(1.5" Hole)	-80.8	-1.94	25.3	65.2	25.3	3	0	68.3	25.3	3	0	71.36	171.6	155.36	0.459
66.0	109.0	(3) PLT-C6x10.5(1.5" Hole)	-153.5	-3.68	25.3	65.7	25.3	3	0	61.8	25.3	3	0	71.85	171.6	155.36	0.462

Monopole Mat Foundation Design

				Date
				11/30/2018
	Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-G
	Site Name:		**Structure Height (Ft.):**	157
	Site Number:	CT00252-S-SBA	**Engineer Name:**	H. You
	Engr. Number:	65749	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

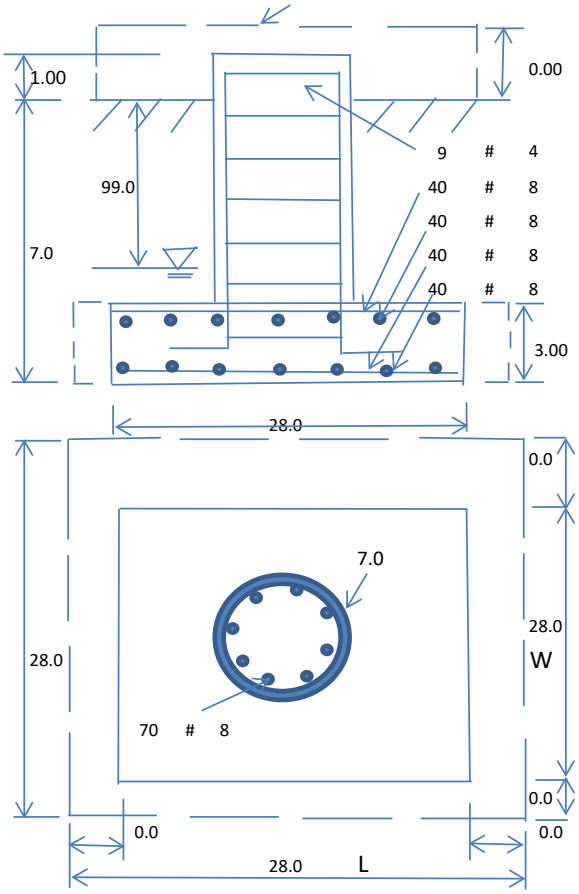
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	46.3	Shear Force (Kips):	31.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3051.9
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	7.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	28	Width of Pad (ft.):	28
Final Length of pad (ft)	28.0	Final width of pad (ft):	28.0
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	70	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	40	Qty. of Rebar in Pad (W):	40

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	40	Qty. of Rebar in Pad (W):	40
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	135.0	Soil Buoyant Weight:	37.6	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	8000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	2982.06	Total Dry Soil Weight (Kips):	402.58
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	402.58	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2544.42	Total Dry Concrete Weight (Kips):	381.66
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	381.66	Total Vertical Load on Base (Kips):	830.54

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1601	<	Allowable Factored Soil Bearing (psf): 6000	0.27	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	10529.6	>	Design Factored Momont (kips-ft): 3042	0.29	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.46	OK!			

Check the capacities of Reinforceing Concrete:

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

(1) Concrete Pier:

				Load/ Capacity Ratio	
Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	8827.9 >	Design Factored Moment (Mu, Kips-F	3207.4	0.36	OK!
Calculated Shear Capacity (Kips):	589.7 >	Design Factored Shear (Kips):	31.1	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2986.2 >	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7275.1 >	Design Factored Axial Load (Pu Kips):	46.3	0.01	OK!
Moment & Axial Strength Combination:	0.36 OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.010	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	897.2 >	One-Way Factored Shear (L-D. Kips):	211.5	0.24	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	897.2 >	One-Way Factored Shear (W-D., Kips)	211.5	0.24	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	870.9 >	One-Way Factored Shear (C-C, Kips):	188.1	0.22	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0029 OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0029		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	4464.2 >	Moment at Bottom (L-Dir. K-Ft):	1318.4	0.30	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	4464.2 >	Moment at Bottom (W-Dir. K-Ft):	1318.4	0.30	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	6265.5 >	Moment at Bottom (C-C Dir. K-Ft):	1864.5	0.30	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0029 OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0029		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	4464.2 >	Moment at the top (L-Dir K-Ft):	529.8	0.12	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	4464.2 >	Moment at the top (W-Dir K-Ft):	529.8	0.12	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	6265.5 >	Moment at the top (C-C Dir. K-Ft):	495.4	0.08	OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	1220.8	k-ft.	Max. factored shear stress v_{u_CD}:	2.8	Psi
Max. factored shear stress v_{u_AB}:	8.9	Psi	Factored shear Strength ϕv_n:	164.3	Psi
Max. factored shear stress v_u:	8.9	Psi	Check Usage of Punching Shear Capacity:	0.05	OK!

PROJECT INFORMATION

SCOPE OF WORK: TOWER: REMOVE ANTENNA IN POSITION 4, AND MOVE EXISTING ANTENNA FROM POSITION 3 TO POSITION 4. INSTALL (1) NEW 8' CCI HEX PORT ANTENNA TO POSITION 3 IN EACH SECTOR. NEED 3' SEPARATION BETWEEN ANTENNAS IN POSITIONS 3 AND 4. INSTALL (3) 4415 B25 RADIOS TO NEW HEX ANTENNA. INSTALL NEW ANTENNA MOUNTS.

EQUIPMENT SHELTER: INSTALL (3) 4478 B5 RADIOS AT GROUND LEVEL PLUMBED TO NEW HEX ANTENNA WITH (12) TSXDC-4310FM SURGE ARRESTORS. INSTALL (3) LOW BAND COMBINERS AT BOTTOM. INSTALL (1) DC/FIBER SQUID, (2) DC CABLES, (1) FIBER CABLE, AND (1) ALARM CABLE. REPLACE DUL WITH 5216. INSTALL (1) XMU AND (1) 6630.

SITE ADDRESS: 18 KLUDGE ROAD
PROSPECT, CT 06712

LATITUDE: 41° 28' 20.1" N (NAD 83)*

LONGITUDE: 72° 58' 17.2" W (NAD 83)*

*PER EXISTING AT&T PLANS

JURISDICTION: CONNECTICUT SITING COUNCIL

NAME OF APPLICANT: AT&T MOBILITY
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

TOWER OWNER: SBA

TOWER NUMBER: CT0252

DRAWING INDEX

		REV
T01	TITLE SHEET	0
G01	GENERAL NOTES	0
C01	SITE & SHELTER PLANS & ELEVATION	0
C02	ANTENNA ORIENTATION PLANS	0
C03	EQUIPMENT CONFIGURATION & CONSTRUCTION DETAILS	0
C04	EQUIPMENT PLUMBING DIAGRAM	0
E01	GROUNDING DETAILS	0

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

STRUCTURAL NOTE:

1. AS REQUIRED UNDER TIA/EIA 222G – STANDARD, CENTERLINE COMMUNICATIONS SHALL PROVIDE A STRUCTURAL ANALYSIS OF THE TOWER PREPARED BY A LICENSED CONNECTICUT STRUCTURAL ENGINEER CERTIFYING THAT, THE EXISTING TOWER AND ANY REQUIRED IMPROVEMENTS AND REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, SUPPORTS AND APPURTENANCES AND COMPLIES WITH THE CURRENT CONNECTICUT STATE BUILDING CODE AND EIA/TIA CRITERIA. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

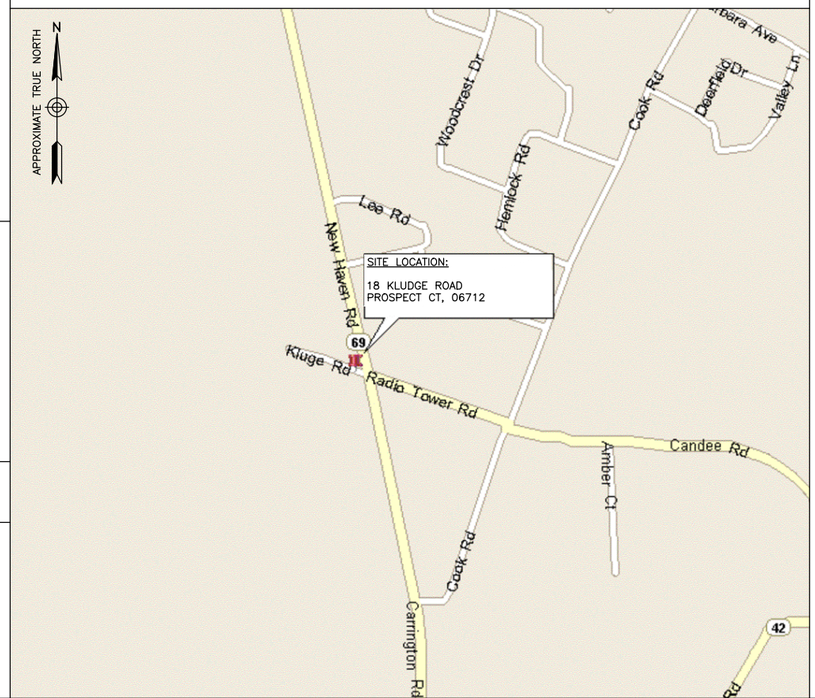
CONTACT & UTILITY INFORMATION

CONTACT	CONTACT	COMPANY	PHONE NO.
ENGINEERING:	BENJAMIN REVETTE, P.E.	DEWBERRY ENGINEERS INC.	(617) 695-3400
SAC:	DAVID FORD	CENTERLINE COMMUNICATIONS	(508) 821-6509

SITE NAME: PROSPECT
SITE NUMBER: CT2214 2C & 3C
PACE ID: MRCTB030849 (2C) & MRCTB031610 (3C)
FA NUMBER: 10035129

VICINITY MAP

DIRECTIONS FROM FRAMINGHAM: TAKE I-91 S FROM STATE HWY 411. CONTINUE ON I-91 S. TAKE I-691 W, I-84 AND CT-8 N TO US-202 W/E MAIN ST IN TORRINGTON. TAKE EXIT 44 FROM CT-8 N. CONTINUE ON E MAIN ST. DRIVE TO PROSPECT ST. SITE WILL BE ON THE RIGHT.



APPLICABLE BUILDING CODES AND STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS AND DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES AND DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:
INTERNATIONAL BUILDING CODE

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE

CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

Dewberry®
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CENTERLINE COMMUNICATIONS
750 W. MAIN STREET, SUITE 301
WEST BRIDGEWATER, MA 02767

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

PROSPECT
SITE NO. CT2214 2C & 3C

18 KLUDGE ROAD
PROSPECT, CT 06712

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/05/18	ISSUED FOR CONSTRUCTION	CDH	DAS	BBR
A	10/29/18	ISSUED FOR REVIEW	CDH	DAS	BBR

SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED PROFESSIONAL ENGINEER

AT&T MOBILITY
FRAMINGHAM, MA 01701

TITLE SHEET

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096371	T01	0

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   PROJECT MANAGEMENT – CENTERLINE COMMUNICATIONS
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
10. THE CONTRACTOR SHALL PROTECT EXISTING & PROPOSED IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
14. CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
15. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
16. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
17. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

SITE WORK GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
   A) FALL PROTECTION
   B) CONFINED SPACE
   C) ELECTRICAL SAFETY
   D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE AT&T SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
11. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE 3/4"Ø CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
3. AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
4. COMPACTED SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
5. AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
   CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, AT&T ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.
2. COORDINATION OF WORK:
   CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH PROJECT MANAGEMENT.
3. CABLE LADDER RACK:
   CONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO ANY NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
5. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
6. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
7. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
8. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
9. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
10. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
11. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL.) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
13. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
14. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
15. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
16. ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
17. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
18. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
19. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
20. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
21. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
22. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
23. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
24. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
25. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
26. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
27. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
28. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
29. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
30. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
31. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
32. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

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PROSPECT
SITE NO. CT2214 2C & 3C

18 KLUDGE ROAD
PROSPECT, CT 06712

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/05/18	ISSUED FOR CONSTRUCTION	CDH	DAS	BBR
A	10/29/18	ISSUED FOR REVIEW	CDH	DAS	BBR

SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED
PROFESSIONAL ENGINEER

AT&T MOBILITY
FRAMINGHAM, MA 01701

GENERAL NOTES

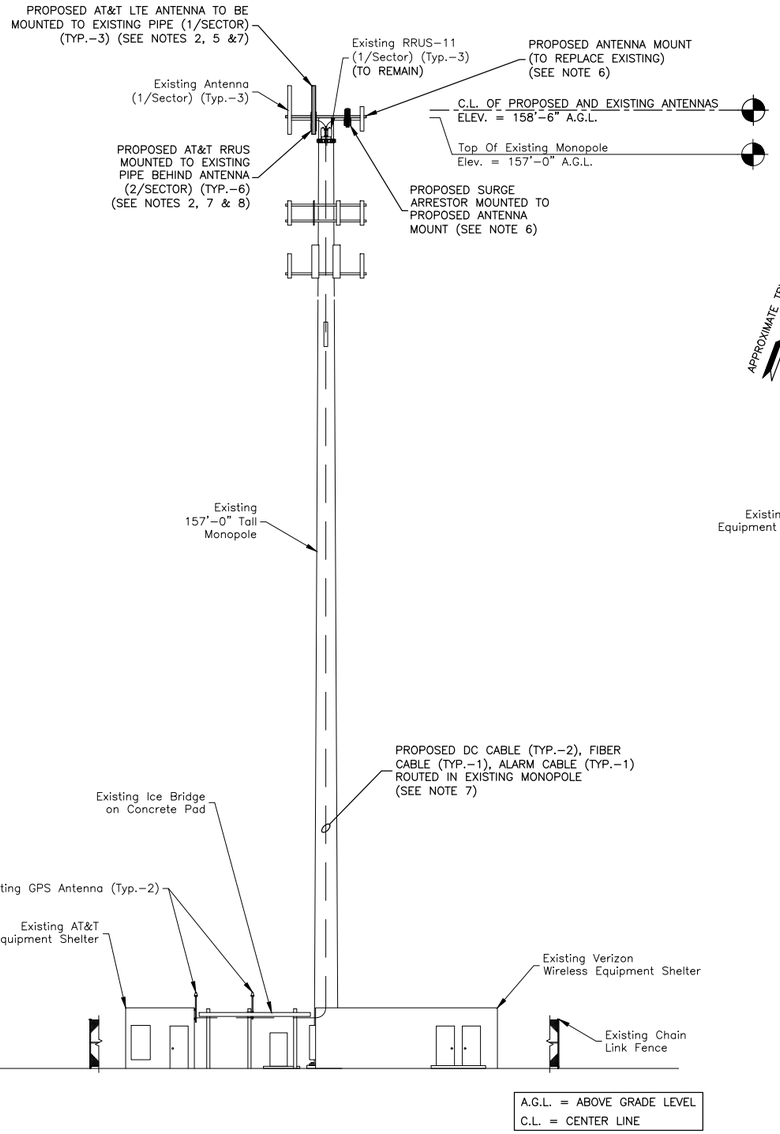
DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096371	G01	0

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A TOWER STRUCTURAL ANALYSIS FOR THIS SITE. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH A PASSING TOWER STRUCTURAL ANALYSIS. NO WORK TO BE COMPLETED WITHOUT A PASSING TOWER STRUCTURAL ANALYSIS.
3. NOT ALL INFORMATION SHOWN FOR CLARITY.
4. AZIMUTHS BASED ON TRUE NORTH.
5. PROPOSED ANTENNA TO BE INSTALLED MINIMUM 3'-0" FROM EXISTING ANTENNA IN POSITION 4.
6. ALL EQUIPMENT TO BE INSTALLED & ANTENNA MOUNTS TO BE REPLACED PER APPURTENANCE MOUNT ANALYSES REPORT BY B+T GROUP DATED 08/29/18. (3) NEW SECTOR FRAMES (SABRE P/N: C10-857-804) ARE TO REPLACE THE EXISTING ANTENNA MOUNT PER THE B+T GROUP REPORT.
7. SCOPE OF WORK:

TOWER: REMOVE ANTENNA IN POSITION 4, AND MOVE EXISTING ANTENNA FROM POSITION 3 TO POSITION 4. INSTALL (1) NEW 8' CCI HEX PORT ANTENNA TO POSITION 3 IN EACH SECTOR. NEED 3' SEPARATION BETWEEN ANTENNAS IN POSITIONS 3 AND 4. INSTALL (3) 4415 B25 RADIOS TO NEW HEX ANTENNA. INSTALL NEW ANTENNA MOUNTS.

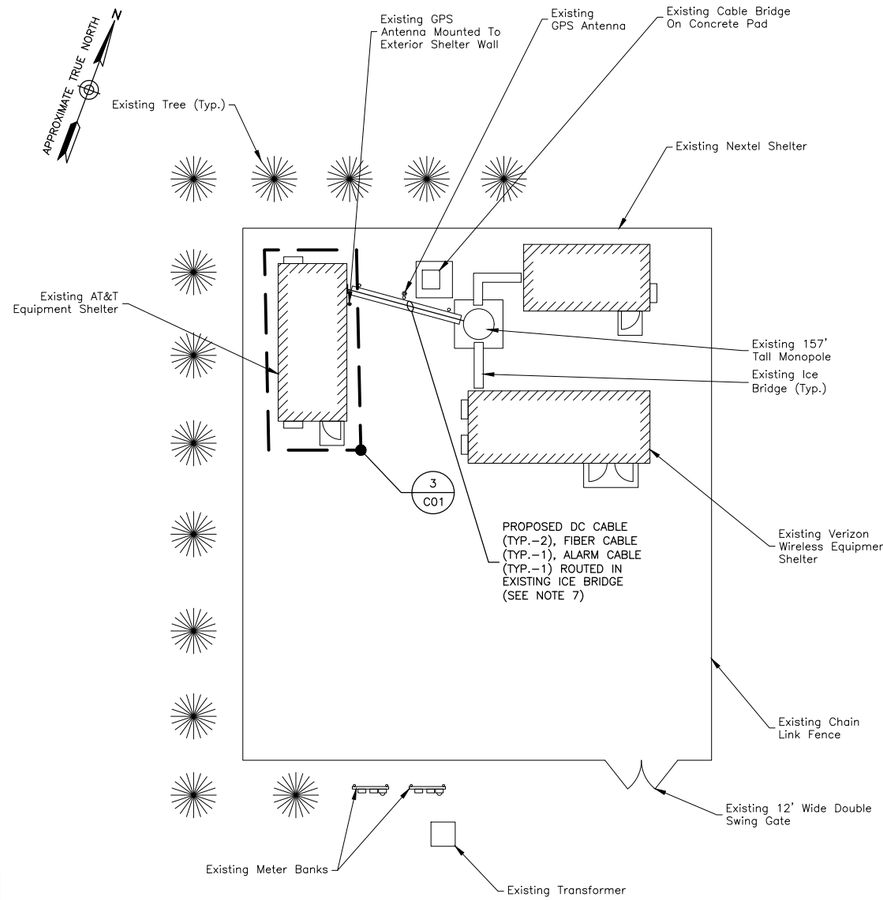
8. ALL PROPOSED REMOTE UNITS TO BE MOUNTED A MINIMUM OF 8" BEHIND ANTENNA.



ELEVATION LOOKING WEST (1)

SCALE: 1"=300' FOR 11"x17"
1"=150' FOR 22"x34"

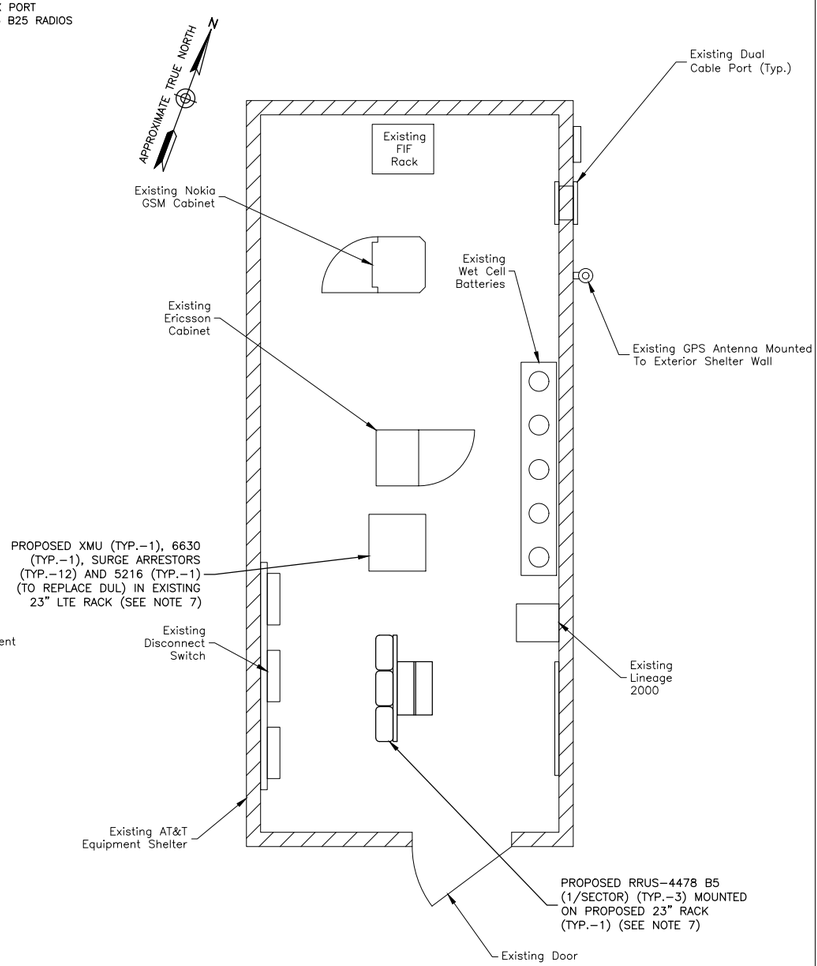
0' 5' 10'



SITE PLAN (2)

SCALE: 1"=300' FOR 11"x17"
1"=150' FOR 22"x34"

0' 2' 4' 6'



SHELTER LAYOUT DETAIL (3)

SCALE: 3/16"=1' FOR 11"x17"
3/8"=1' FOR 22"x34"

0' 2' 4' 6'

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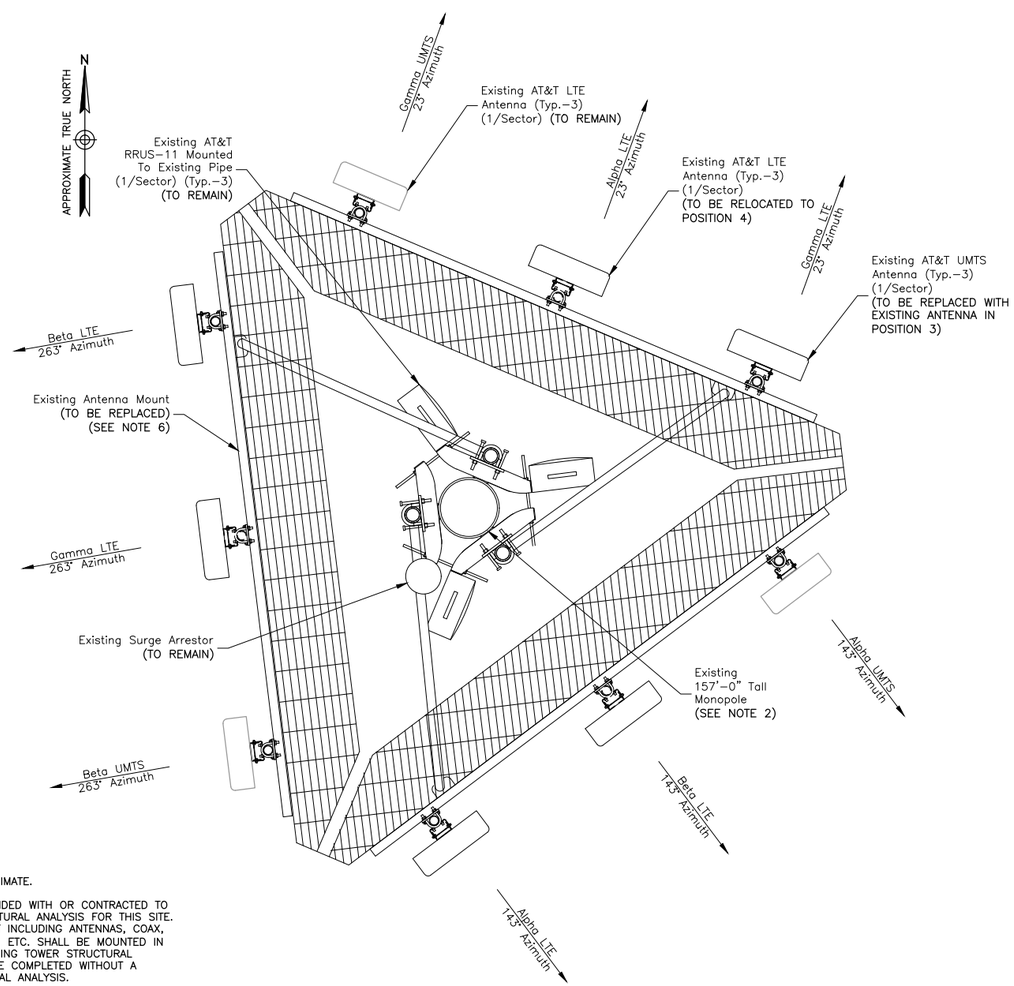
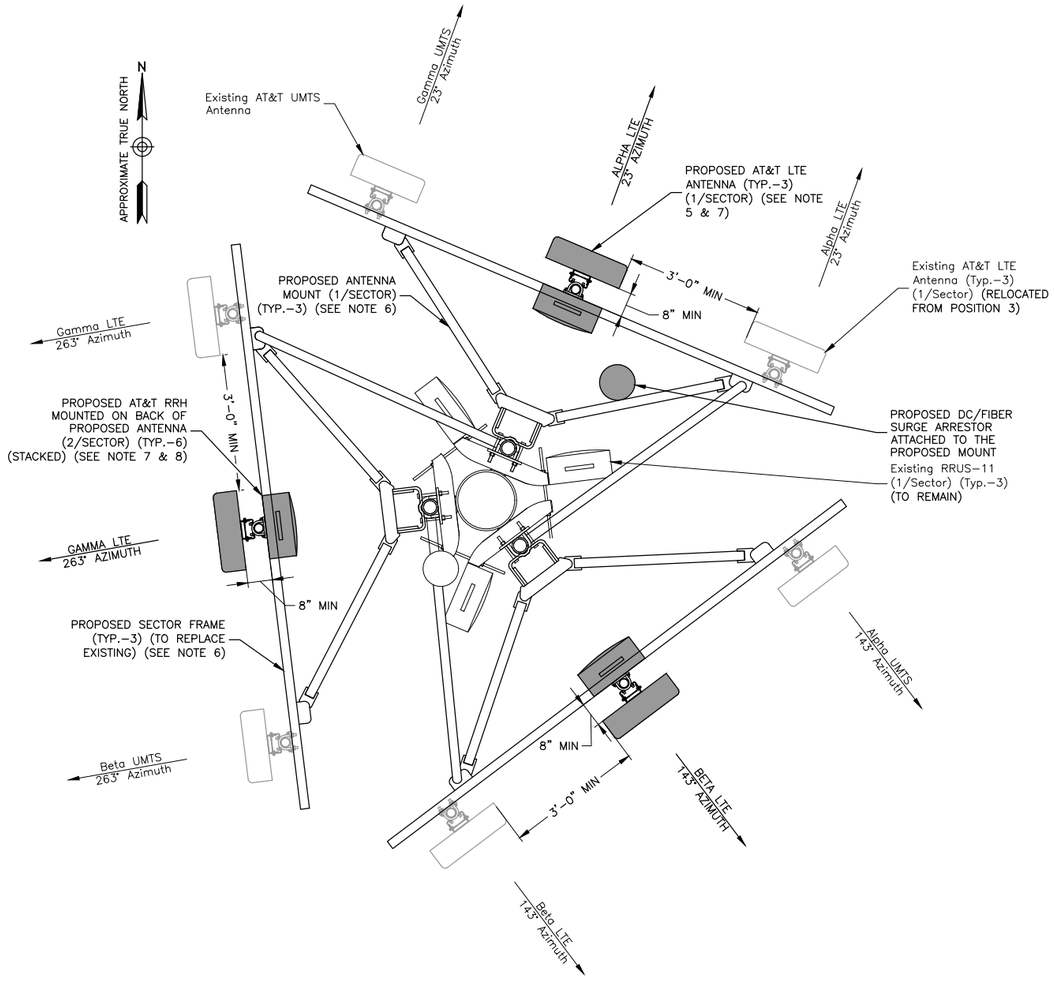
AT&T MOBILITY
FRAMINGHAM, MA 01701

SITE & SHELTER & ELEVATION PLANS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096371	C01	0



EXISTING



PROPOSED

PLATFORM ANTENNA ORIENTATION

SCALE: N.T.S.

1

NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A TOWER STRUCTURAL ANALYSIS FOR THIS SITE. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH A PASSING TOWER STRUCTURAL ANALYSIS. NO WORK TO BE COMPLETED WITHOUT A PASSING TOWER STRUCTURAL ANALYSIS.
3. NOT ALL INFORMATION SHOWN FOR CLARITY.
4. AZIMUTHS BASED ON TRUE NORTH.
5. PROPOSED ANTENNA TO BE INSTALLED MINIMUM 3'-0" FROM EXISTING ANTENNA IN POSITION 4.
6. ALL EQUIPMENT TO BE INSTALLED & ANTENNA MOUNTS TO BE REPLACED PER APPURTENANCE MOUNT ANALYSES REPORT BY B+T GROUP DATED 08/29/18. (3) NEW SECTOR FRAMES (SABRE P/N: C10-857-804) ARE TO REPLACE THE EXISTING ANTENNA MOUNT PER THE B+T GROUP REPORT.
7. SCOPE OF WORK:

TOWER: REMOVE ANTENNA IN POSITION 4, AND MOVE EXISTING ANTENNA FROM POSITION 3 TO POSITION 4. INSTALL (1) NEW 8' CCI HEX PORT ANTENNA TO POSITION 3 IN EACH SECTOR. NEED 3' SEPARATION BETWEEN ANTENNAS IN POSITIONS 3 AND 4. INSTALL (3) 4415 B25 RADIOS TO NEW HEX ANTENNA. INSTALL NEW ANTENNA MOUNTS.

8. ALL PROPOSED REMOTE UNITS TO BE MOUNTED A MINIMUM OF 8" BEHIND ANTENNA.

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FRAMINGHAM, MA 01701

PROSPECT
SITE NO. CT2214 2C & 3C

18 KLUDGE ROAD
PROSPECT, CT 06712

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/05/18	ISSUED FOR CONSTRUCTION	CDH	DAS	BBR
A	10/29/18	ISSUED FOR REVIEW	CDH	DAS	BBR

SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED
PROFESSIONAL ENGINEER

AT&T MOBILITY
FRAMINGHAM, MA 01701

ANTENNA ORIENTATION PLANS

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096371	C02	0

FINAL EQUIPMENT CONFIGURATION

SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	TMA	COMBINERS	RRU	SIZE (INCHES) (LxWxD)	FEEDERS	FIBER JUMPERS	DC JUMPERS
ALPHA	UMTS 850	(E) 800-10121	54.5x10.3x5.9	158.04'	143°	(1) DTMABP7819VG12A	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	LTE 850/PCS B14	(P) HPA-65R-BU8A	96.0x11.7x7.6	158.04'	23°	-	-	(P) RRUS 4478 B5 (850) (IN SHELTER) (P) RRUS 4415 B25 (1900)	15.0 x 13.2 x 7.4 15.0 x 13.2 x 5.4	(E) 2	(P) 1	(P) 2
	LTE 700	(E) SBNH-1D6565C	96.4x11.9x7.1	158.04'	23°	-	-	(E) RRUS-11 (700)	19.7 x 17.0 x 7.2	-	-	-
BETA	UMTS 850	(E) 800-10121	54.5x10.3x5.9	158.04'	263°	(1) DTMABP7819VG12A	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	LTE 850/PCS B14	(P) HPA-65R-BU8A	96.0x11.7x7.6	158.04'	143°	-	-	(P) RRUS 4478 B5 (850) (IN SHELTER) (P) RRUS 4415 B25 (1900)	15.0 x 13.2 x 7.4 15.0 x 13.2 x 5.4	(E) 2	(P) 1	(P) 2
	LTE 700	(E) SBNH-1D6565C	96.4x11.9x7.1	158.04'	143°	-	-	(E) RRUS-11 (700)	19.7 x 17.0 x 7.2	-	-	-
GAMMA	UMTS 850	(E) 800-10121	54.5x10.3x5.9	158.04'	23°	(1) DTMABP7819VG12A	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	LTE 850/PCS B14	(P) HPA-65R-BU8A	96.0x11.7x7.6	158.04'	263°	-	-	(P) RRUS 4478 B5 (850) (IN SHELTER) (P) RRUS 4415 B25 (1900)	15.0 x 13.2 x 7.4 15.0 x 13.2 x 5.4	(E) 2	(P) 1	(P) 2
	LTE 700	(E) SBNH-1D6565C	96.4x11.9x7.1	158.04'	263°	-	-	(E) RRUS-11 (700)	19.7 x 17.0 x 7.2	-	-	-

FINAL EQUIPMENT CONFIGURATION 1
SCALE: N.T.S.

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PROSPECT
SITE NO. CT2214 2C & 3C

18 KLUDGE ROAD
PROSPECT, CT 06712

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SCALE: AS SHOWN | DESIGNED BY: DAS | DRAWN BY: MR

STATE OF CONNECTICUT
BENJAMIN B. REVETTE
28971
REGISTERED
PROFESSIONAL ENGINEER

AT&T MOBILITY
FRAMINGHAM, MA 01701

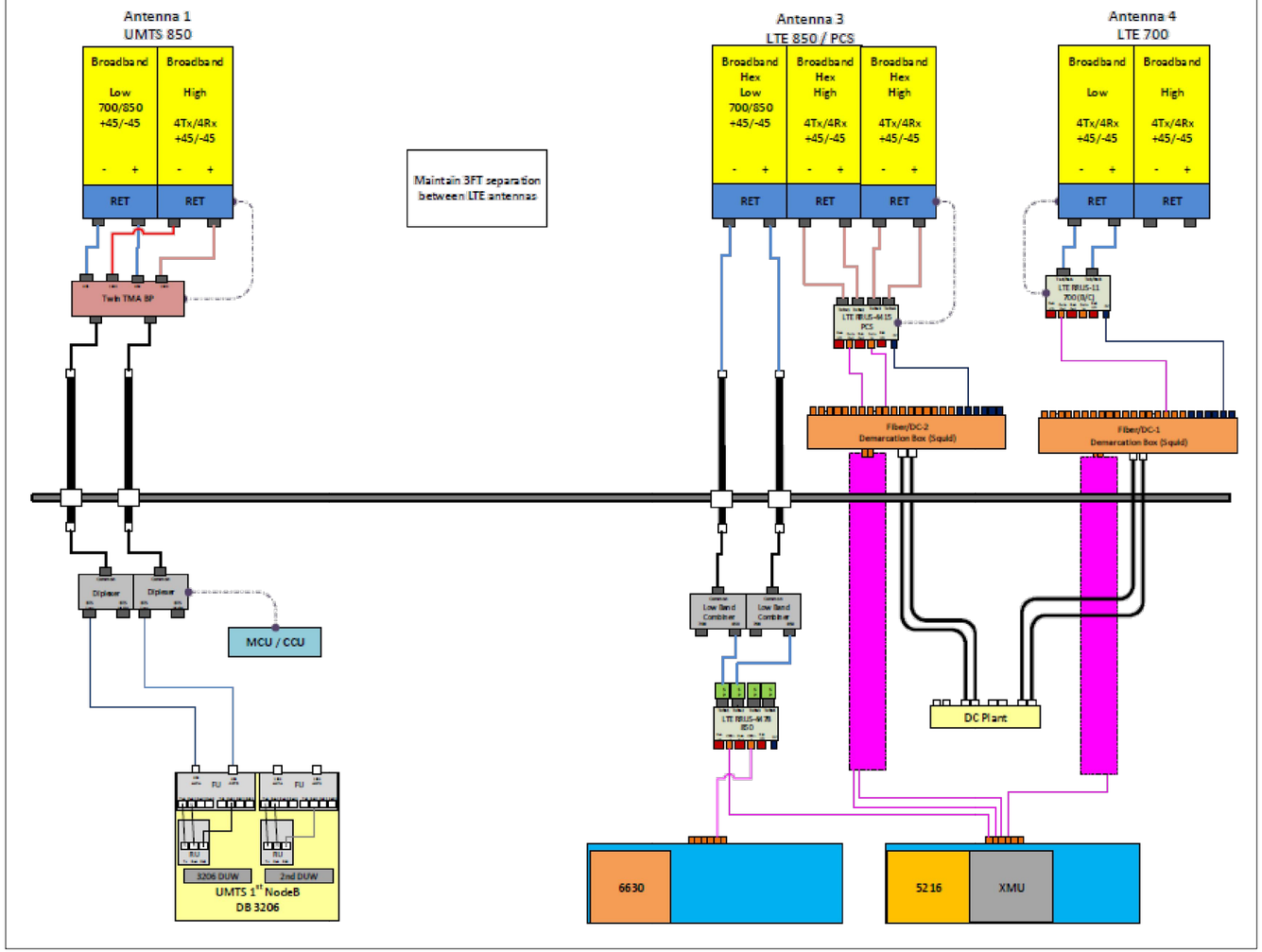
EQUIPMENT CONFIGURATION & CONSTRUCTION DETAIL

DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096371	C03	0

Diagram - Sector A | Diagram File Name - CT2214_A_B_C_LTE3C_Rev1.vsdx

Aloll Site Name - CTV2214 | Location Name - PROSPECT KLUGE RD | Market - CONNECTICUT | Market Cluster - NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson



NOTES:

1. EQUIPMENT PLUMBING DIAGRAM PER RFDS VERSION 1 DATED 08/20/18.
2. CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION AND SEPARATIONS WITH AT&T PRIOR TO CONSTRUCTION.

EQUIPMENT PLUMBING DIAGRAM 1

SCALE: N.T.S.

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STATE OF CONNECTICUT · BENJAMIN B. REVETTE · 28971 · LICENSED PROFESSIONAL ENGINEER

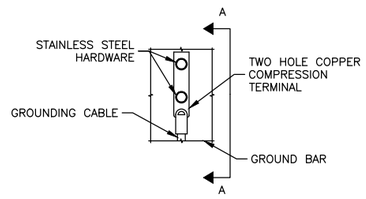
AT&T MOBILITY
FRAMINGHAM, MA 01701

EQUIPMENT PLUMBING DIAGRAM

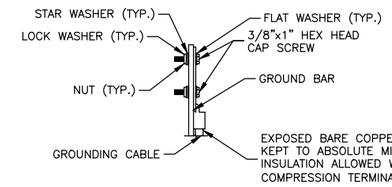
DEWBERRY NO.	DRAWING NUMBER	REV
50093723/50096371	C03	0

GROUNDING NOTES:

1. THE CONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
3. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
6. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
7. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO TRANSMISSION EQUIPMENT.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
11. EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
12. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
13. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM CENTERLINE COMMUNICATIONS COMMUNICATIONS MARKET REPRESENTATIVE.
14. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
15. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
16. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
17. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS AND STAINLESS STEEL HARDWARE.
18. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
19. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
20. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
21. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
22. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.



ELEVATION

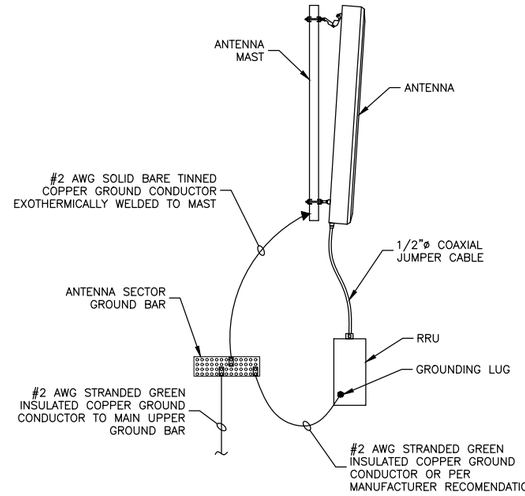


NOTES:

1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL 1

SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER AT&T STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH AT&T STANDARDS & MANUFACTURER RECOMMENDATIONS.

TYPICAL ANTENNA/RRU GROUNDING DETAIL 2

SCALE: N.T.S

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GROUNDING DETAILS

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