



Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

February 19, 2019

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

RE: Notice of Exempt Modification for AT&T Crown Site BU: 876320
AT&T Site ID: CT2083
528 Wheelers Farm Road, Milford CT 06460
Latitude: 41°14'54.35 / Longitude: -73°4'44.67"

Dear Ms. Bachman:

AT&T currently maintains 9 antennas at the 96 foot level of the existing 120-foot monopole at 528 Wheelers Farm Road. The tower is owned by Crown Castle. The property is owned by Boys Village Youth and Family Services. AT&T intends to swap (3) antennas, swap (3) RRU's, add (6) RRU's and add (3) antennas. AT&T also is proposing to add (2) DC6's, add (2) DC Power Cables, and add (1) Fiber Cable.

A request for original zoning documents was sent to the City of Milford but has not been answered.

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.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Benjamin G. Blake the Planning & Zoning Department as well as the property owner Boys Village Youth and Family Services , and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification 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 Communication 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.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,



Nesmet Badawi

Real Estate Specialist

1200 MacArthur Blvd Suite 200 Mahwah NJ 07430

201-514-7374

Nesmet.Badawi.Contractor@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes

Tab 2: Exhibit-2: Structural Modification Report

Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: The Honorable Benjamin G. Blake, Mayor
110 River Street
Milford, CT 06460

Boys Village Youth and Family Services
ATTN: Roseanne Condon
528 Wheelers Farm Road
Milford, CT 06460

Planning & Zoning
70 West River St
Milford, CT 06460

Badawi, Nesmet (Contractor)

From: TrackingUpdates@fedex.com
Sent: Tuesday, February 19, 2019 9:34 AM
To: Badawi, Nesmet (Contractor)
Subject: FedEx Shipment 774500880633 Notification

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Tracking # 774500880633

Anticipated ship date:
Tue, 2/19/2019

Nesmet Badawi

Crown Castle
MAHWAH, NJ 07430
US



Initiated

Scheduled delivery:
**Wed, 2/20/2019 by
10:30 am**

The Honorable Benjamin G.

Blake
Mayor's Office
110 River Street
MILFORD, CT 06460
US



Shipment Facts


Tracking number:	774500880633
Reference:	1766.6680
Service type:	FedEx Priority Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday

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Badawi, Nesmet (Contractor)

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Anticipated ship date:
Tue, 2/19/2019

Nesmet Badawi

Crown Castle
MAHWAH, NJ 07430
US



Initiated

Scheduled delivery:
**Wed, 2/20/2019 by
10:30 am**

Roseanne Condon

Boys Village Youth and Family
Servi
528 Wheelers Farm Road
MILFORD, CT 06460
US



Shipment Facts


Tracking number:	774500908890
Reference:	1766.6680
Service type:	FedEx Priority Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
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Badawi, Nesmet (Contractor)

From: TrackingUpdates@fedex.com
Sent: Tuesday, February 19, 2019 9:44 AM
To: Badawi, Nesmet (Contractor)
Subject: FedEx Shipment 774500956881 Notification

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Tracking # 774500956881

Anticipated ship date:
Tue, 2/19/2019

Nesmet Badawi
Crown Castle
MAHWAH, NJ 07430
US



Initiated

Scheduled delivery:
**Wed, 2/20/2019 by
10:30 am**

Planning & Zoning
70 West River St
MILFORD, CT 06460
US



Shipment Facts


Tracking number:	774500956881
Reference:	1766.6680
Service type:	FedEx Priority Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday

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Thank you for your business.

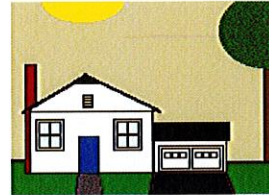


Property Information

Property Location	528 WHEELERS FARMS RD
Owner	VILLAGE FOUNDATION INC THE
Co-Owner	C/O GLOBAL SIGNAL ACQUISITIONS II
Mailing Address	PMB 331 MCMURRAY PA 15317
Land Use	434V CELL TOWER MDL-00
Land Class	I
Zoning Code	
Census Tract	

Neighborhood	GG
Acreage	0
Utilities	All Public,Public Sewer
Lot Setting/Desc	,Suburban Level
Additional Info	

Photo



Sketch

Primary Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Floors	
Total Rooms	

Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

Exterior Walls	
Interior Walls	
Heating Type	
Heating Fuel	
AC Type	
Gross Bldg Area	
Total Living Area	

**City of Milford, CT**

Property Listing Report

Map Block Lot 104 915 13 AAccount 023047**Valuation Summary** (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		
Extras	0	
Improvements		
Outbuildings	550000	385000
Land	0	0
Total	550000	385000

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Outbuilding and Extra Items

Type	Description
CEL TWR SITE	1 UNITS

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
VILLAGE FOUNDATION INC THE	00259/5630	5/15/1942	



RF EMISSIONS COMPLIANCE REPORT

Crown Castle on Behalf of AT&T Mobility, LLC

Site: 528 WHEELERS FARM RD
Crown Castle Site ID: 876320
App ID: 459071
528 Wheelers Farm Road
MILFORD, CT
1/14/2019

Report Status:

AT&T Mobility, LLC Is Compliant

Prepared By:

Sitesafe, LLC

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
MILFORD, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Sitesafe, LLC in Vienna, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle (See attached Site Summary and Carrier documents), and that AT&T Mobility, LLC's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "528 WHEELERS FARM RD" ("the site"); and

That AT&T Mobility, LLC proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by AT&T Mobility, LLC and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure and, the antennas used are highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and have not been included in this analysis; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for

licensees of AT&T Mobility, LLC's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is no more than 2.454% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 6.539% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that AT&T Mobility, LLC's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

**AT&T Mobility, LLC
528 WHEELERS FARM RD
Site Summary**

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.075 %
AT&T Mobility, LLC (Proposed)	0.832 %
AT&T Mobility, LLC (Proposed)	0.671 %
AT&T Mobility, LLC	0.697 %
AT&T Mobility, LLC	0.179 %
Clearwire	0.159 %
Sprint	0.305 %
Sprint	0.239 %
Sprint	0.462 %
T-Mobile	0.151 %
T-Mobile	0.293 %
T-Mobile	0.466 %
Verizon Wireless	0.703 %
Verizon Wireless	0.34 %
Verizon Wireless	0.569 %
Verizon Wireless	0.398 %
 Composite Site MPE:	 6.539 %

AT&T Mobility, LLC
528 WHEELERS FARM RD
Carrier Summary

Frequency: 900 MHz
 Maximum Permissible Exposure (MPE): 600 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 0.45179 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.0753 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein Scala	738 449	60	0	50	0.45179	0.075298	0.45179	0.075298

AT&T Mobility, LLC (Proposed)
528 WHEELERS FARM RD
Carrier Summary

Frequency: 2110 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 8.3154 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.83154 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10965	98	30	7114	3.409954	0.340995	7.99669	0.799669
Kathrein-Scala	800-10965	98	150	7114	3.325244	0.332524	7.99669	0.799669
Kathrein-Scala	800-10965	98	270	7114	3.409954	0.340995	7.99669	0.799669

**AT&T Mobility, LLC (Proposed)
528 WHEELERS FARM RD
Carrier Summary**

Frequency: 1930 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 6.70528 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.67053 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10965	98	30	6168	2.884452	0.288445	6.20475	0.620475
Kathrein-Scala	800-10965	98	150	6168	2.870021	0.287002	6.20475	0.620475
Kathrein-Scala	800-10965	98	270	6168	2.870021	0.287002	6.20475	0.620475

AT&T Mobility, LLC
528 WHEELERS FARM RD
Carrier Summary

Frequency: 734 MHz
Maximum Permissible Exposure (MPE): 489.33 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 3.41182 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.69724 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Quintel	QS66512-2	98	30	2239	2.402677	0.49101	3.380718	0.690882
Quintel	QS66512-2	98	150	2239	2.400738	0.490614	3.380718	0.690882
Quintel	QS66512-2	98	270	2239	2.402677	0.49101	3.380718	0.690882

AT&T Mobility, LLC
528 WHEELERS FARM RD
Carrier Summary

Frequency: 869 MHz
Maximum Permissible Exposure (MPE): 579.33 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.03649 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.17891 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Powerwave	7770	98	23	547	0.567646	0.097983	0.888854	0.153427
Powerwave	7770	98	143	547	0.56837	0.098108	0.888854	0.153427
Powerwave	7770	98	263	547	0.567646	0.097983	0.888854	0.153427

Clearwire
528 WHEELERS FARM RD
Carrier Summary

Frequency: 2500 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.59345 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.15935 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ARGUS	LPX310R	122	30	1542	0.833005	0.083301	1.500451	0.150045
ARGUS	LPX310R	122	150	1542	0.826661	0.082666	1.500451	0.150045
ARGUS	LPX310R	122	270	1542	0.826661	0.082666	1.500451	0.150045

Sprint
528 WHEELERS FARM RD
Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 3.05395 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.3054 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSPP18-C-A20	121	30	3804	1.155599	0.11556	2.380992	0.238099
RFS	APXVSPP18-C-A20	121	130	3804	1.155599	0.11556	2.380992	0.238099
RFS	APXVSPP18-C-A20	121	270	3804	1.155599	0.11556	2.380992	0.238099

Sprint
528 WHEELERS FARM RD
Carrier Summary

Frequency: 862 MHz
Maximum Permissible Exposure (MPE): 574.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.3743 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.23915 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSPP18-C-A20	121	30	2168	1.083783	0.188593	1.109976	0.193151
RFS	APXVSPP18-C-A20	121	130	2168	1.083783	0.188593	1.109976	0.193151
RFS	APXVSPP18-C-A20	121	270	2168	1.080245	0.187978	1.109976	0.193151

Sprint

528 WHEELERS FARM RD

Carrier Summary

Frequency: 2500 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.61924 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.46192 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVTM14-C-I20	121	30	6168	1.561963	0.156196	2.953247	0.295325
RFS	APXVTM14-C-I20	121	130	6168	1.561963	0.156196	2.953247	0.295325
RFS	APXVTM14-C-I20	121	270	6168	1.562529	0.156253	2.953248	0.295325

T-Mobile
528 WHEELERS FARM RD
Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.51174 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.15117 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 21 B2A B4P	107	30	2061	0.902712	0.090271	1.030922	0.103092
Ericsson	AIR 21 B2A B4P	107	150	2061	0.902385	0.090238	1.030922	0.103092
Ericsson	AIR 21 B2A B4P	107	270	2061	0.902385	0.090238	1.030922	0.103092

T-Mobile
528 WHEELERS FARM RD
Carrier Summary

Frequency: 700 MHz
Maximum Permissible Exposure (MPE): 466.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.3676 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.29306 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW	LNx-6515DS-VTM	107	30	1854	1.258542	0.269688	1.315896	0.281978
ANDREW	LNx-6515DS-VTM	107	150	1854	1.259631	0.269921	1.315896	0.281978
ANDREW	LNx-6515DS-VTM	107	270	1854	1.259631	0.269921	1.315896	0.281978

T-Mobile
528 WHEELERS FARM RD
Carrier Summary

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.65644 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.46564 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 32 B2A/B66AA	107	30	2313	4.329214	0.432921	4.346083	0.434608
Ericsson	AIR 32 B2A/B66AA	107	150	2313	4.352496	0.43525	4.352496	0.43525
Ericsson	AIR 32 B2A/B66AA	107	270	2313	4.352496	0.43525	4.352496	0.43525

**Verizon Wireless
528 WHEELERS FARM RD
Carrier Summary**

Frequency: 850 MHz
 Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 3.98294 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.70287 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW	DB846F65ZAXY	114	30	2255	1.338953	0.236286	1.460328	0.257705
ANDREW	DB846F65ZAXY	114	30	2255	1.338953	0.236286	1.460328	0.257705
Antel	LPA-80063-4CF	114	130	1596	1.381138	0.24373	1.893558	0.334157
Antel	LPA-80063-4CF	114	130	1596	1.381138	0.24373	1.893558	0.334157
Antel	LPA-80063-4CF	114	270	1596	1.382689	0.244004	1.893558	0.334157
Antel	LPA-80063-4CF	114	270	1596	1.382689	0.244004	1.893558	0.334157

**Verizon Wireless
528 WHEELERS FARM RD
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 3.39991 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.33999 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-171063-8CF	114	30	3708	1.622308	0.162231	2.36545	0.236545
Antel	BXA-171063-8CF	114	130	3708	1.622308	0.162231	2.36545	0.236545
Antel	BXA-171063-8CF	114	270	3708	1.623579	0.162358	2.365451	0.236545

Verizon Wireless
528 WHEELERS FARM RD
Carrier Summary

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 5.68608 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.56861 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW	SBNHH-1D65B	114	0	5154	3.459064	0.345906	5.391192	0.539119
ANDREW	SBNHH-1D45B	114	80	7784	2.066156	0.206616	2.794789	0.279479
ANDREW	SBNHH-1D45B	114	270	7784	2.066156	0.206616	2.794789	0.279479

**Verizon Wireless
528 WHEELERS FARM RD
Carrier Summary**

Frequency: 751 MHz
 Maximum Permissible Exposure (MPE): 500.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.99325 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.39812 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW	SBNHH-1D65B	114	0	1362	0.767086	0.153213	1.261252	0.251914
ANDREW	SBNHH-1D45B	114	80	2010	1.231216	0.245915	1.470533	0.293715
ANDREW	SBNHH-1D45B	114	270	2010	1.231717	0.246015	1.470533	0.293715

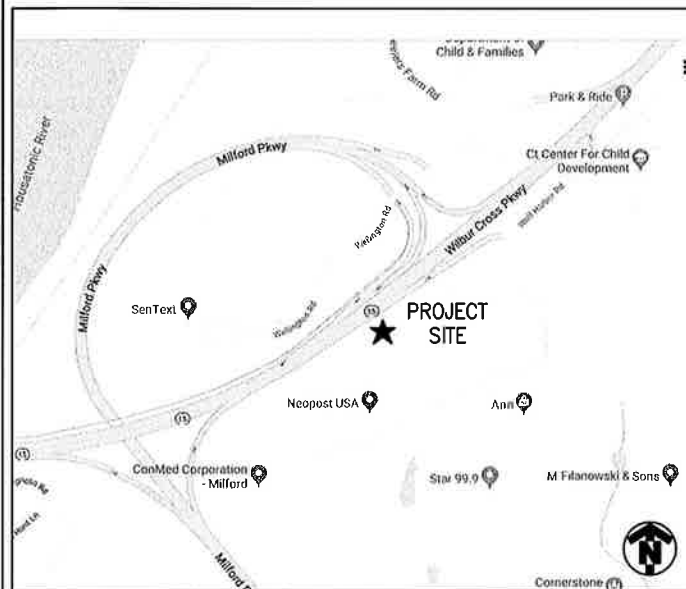
SHEET INDEX

NO.	DESCRIPTION
T1	TITLE PAGE
N1	GENERAL NOTES
C1	COMPOUND PLAN
C2	EQUIPMENT LAYOUT
C3	ELEVATION VIEW AND RF SCHEDULE
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C6	RF PLUMBING DIAGRAM
C7	GROUNDING DETAILS
S1	GENERAL NOTES
S2	MOUNT MODIFICATION

SCOPE OF WORK

- REMOVE POS. 2 ANTENNA (ALL SECTORS)
- RELOCATE POS. 4 ANTENNA TO POS. 2 (ALL SECTORS)
- INSTALL NEW 800-10965 8 PORT LTE ANTENNA IN POS. 3 & POS. 4 (2 PER SECTOR, TOTAL OF 6)
- SWAP EXISTING 700 RRU W/ NEW RRUS4449 B5/B12 ON POS. 4 (1 PER SECTOR, TOTAL OF 3)
- SWAP EXISTING 1900 RRU W/ NEW RRUS8843 B2/B66 ON POS. 2 (1 PER SECTOR, TOTAL OF 3)
- INSTALL NEW RRUS 4478 B14 ON POS. 3 (1 PER SECTOR, TOTAL OF 3)
- ADD (1) 6630
- ADD (2) SQUIDS, (2) DC TRUNKS & (1) FIBER TRUNK
- INSTALL MOUNT MODIFICATIONS

LOCATION MAP



GENERAL NOTES

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRH AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON STORMWATER DRAINAGE.
- NO SANITARY SEWER, POTABLE WATER, OR TRASH DISPOSAL SERVICE IS REQUIRED
- NO COMMERCIAL SIGNAGE IS PROPOSED

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT ADOPTED EDITIONS OF THE FOLLOWING CODES WITH ANY LOCAL AMENDMENTS BY THE LOCAL GOVERNING AUTHORITIES:

- INTERNATIONAL BUILDING CODE
- NATIONAL ELECTRICAL CODE
- NATIONAL FIRE PROTECTION ASSOCIATION 101
- NATIONAL FIRE PROTECTION ASSOCIATION 1
- LOCAL BUILDING CODES
- CITY/COUNTY ORDINANCES
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS (AISC)
- UNDERWRITERS LABORATORIES APPROVED ELECTRICAL PRODUCTS.
- ANSI EIA/TIA 222 REV. G
- TIA 607
- INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
- IEEE C2 (LATEST EDITION)
- TELCORDIA GR-1275
- ANSI T1.311



SITE NAME
528 WHEELERS FARM RD
CROWN BU
876320
FA SITE NUMBER
10035336
SITE ADDRESS
528 WHEELERS FARM ROAD
MILFORD, CT 06460
STRUCTURE TYPE
MONOPOLE

PROJECT SITE INFORMATION

SITE NAME: 528 WHEELERS FARM RD
CROWN BU: 876320
FA SITE #: 10035336
SITE ADDRESS: 528 WHEELERS FARM ROAD
 MILFORD, CT 06460
JURISDICTION: NEW HAVEN COUNTY
SITE COORDINATES:
LATITUDE: N 41° 14' 54.30" (41.248417°) (NAD 83)
LONGITUDE: W 73° 04' 44.70" (-73.079083°) (NAD 83)
APPLICANT: AT&T MOBILITY
 575 MOROSGO DRIVE
 ATLANTA, GA 30324

STRUCTURAL ANALYSIS INFORMATION

TOWER ANALYSIS
 INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING TOWER FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS FROM TOWER OWNER PRIOR TO ANY CONSTRUCTION.

ANTENNA MOUNTS
 BASED ON THE MOUNT ANALYSIS COMPLETED BY INFINIGY DATED 01/25/2019. THE EXISTING ANTENNA MOUNT IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION WITH THE FOLLOWING MODIFICATIONS:
 • CONTRACTOR TO INSTALL PROPOSED ANGLE L2 1/2X2 1/2X3/16", 4'-4" LONG IN EACH SECTOR.
 • CONTRACTOR TO INSTALL PROPOSED CHANNEL BRACKET, SITE PRO 1 PART# X-STU (TYP OF 2 PER CONNECTION).
 • CONTRACTOR TO INSTALL PROPOSED 2.375" OD SCH 40 PIPE IN EACH SECTOR.

PROJECT TEAM INFORMATION

CLIENT REPRESENTATIVE: CROWN CASTLE
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065
CLIENT REP. CONTACT: ALLISON SQUIRES
 ALLISON.SQUIRES.CONTRACTOR@CROWNCastle.COM
ENGINEER: INFINIGY SOLUTIONS
 6865 DEERPATH ROAD SUITE 152
 ELK RIDGE, MD 21075
ENGINEER CONTACT: MATT BIRTH
 MBIRTH@INFINIGY.COM
 443-567-8791

TOWER OWNER NOTIFICATION

ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE NOTICE TO PROCEED, CONTRACTOR WILL CONTACT THE CROWN CASTLE CONSTRUCTION MANAGER OF RECORD (NOTED ON THE FIRST PAGE ON THIS CONSTRUCTION DRAWING) A MINIMUM OF 48 HOURS PRIOR TO WORK START. UPON ARRIVAL TO THE JOB SITE, CONTRACTOR CREW IS REQUIRED CALL 1-800-788-7011 TO NOTIFY THE CROWN CASTLE NOC WORK HAS BEGUN.



INFINIGY
 6865 Deerpath Road Suite 152
 Elkridge, MD 21075
 Office # (443) 562-3143
 http://www.infinigy.com



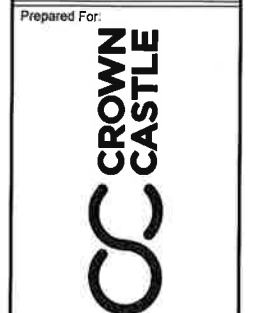
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No.	Submittal / Revision	App'd.	Date
0	ISSUED FOR CONSTRUCTION	BMS	2/05/19
A	ISSUED FOR CLIENT REVIEW	HAM	12/19/18

Drawn: RCD
 Designed: JRL
 Checked: AD

Project Number: 499-002

Project Title:
528 WHEELERS FARM RD
CROWN BU: 876320
FA # 10035336
 528 WHEELERS FARM ROAD
 MILFORD, CT 06460



Drawing Title
TITLE PAGE

Drawing Number
T1

GENERAL NOTES

PART 1 - GENERAL REQUIREMENTS

- 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
 - B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
 - C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE - "NEC"), AND NFPA 101 (LIFE SAFETY CODE).
 - D. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
 - E. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).
- 1.2 DEFINITIONS:
- A: WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
 - B: COMPANY: AT&T CORPORATION
 - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
 - D: CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
 - E: THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- 1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.
- 1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
- A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
- 1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.7 NOTICE TO PROCEED:
- A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
 - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE AT&T WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 - EXECUTION

- 2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

- 2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY AT&T TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.
- 2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.
- 2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 - RECEIPT OF MATERIAL & EQUIPMENT

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR AT&T PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
- A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
 - B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
 - C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
 - D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO AT&T OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
 - E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
 - F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 - GENERAL REQUIREMENTS FOR CONSTRUCTION

- 4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
- 4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
- 4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
- A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
 - B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
- 4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.
- 4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 - TESTS AND INSPECTIONS

- 5.1 TESTS AND INSPECTIONS:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
 - B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
 - C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
 - D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
 - E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.

- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 - TRENCHING AND BACKFILLING

- 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.
- A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.
 - B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.
 - C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
 - D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.
 - E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.
 - F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.
 - G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
	TRANSFORMER
	KILOWATT HOUR METER
	JUNCTION BOX
	PULL BOX TO NEC/TELCO STANDARDS
	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
	GROUND ROD
	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
	DC POWER CABLES
	REPRESENTS DETAIL NUMBER
	REF. DRAWING NUMBER

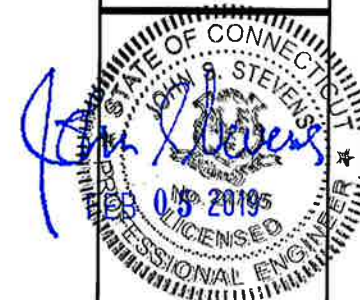
ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL



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ISSUED FOR CLIENT REVIEW HAM 12/19/19

No. Submittal / Revision Appl'd Date

Drawn: RED

Designed: MBL

Checked: AD

Project Number:

499-002

Project Title:

528 WHEELERS FARM RD

CROWN BU: 876320

FA # 10035336

528 WHEELERS FARM ROAD

MILFORD, CT 06460

Prepared For:

CROWN CASTLE

Drawing Title:

GENERAL NOTES

Drawing Number:

N1



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Drawn: RCD
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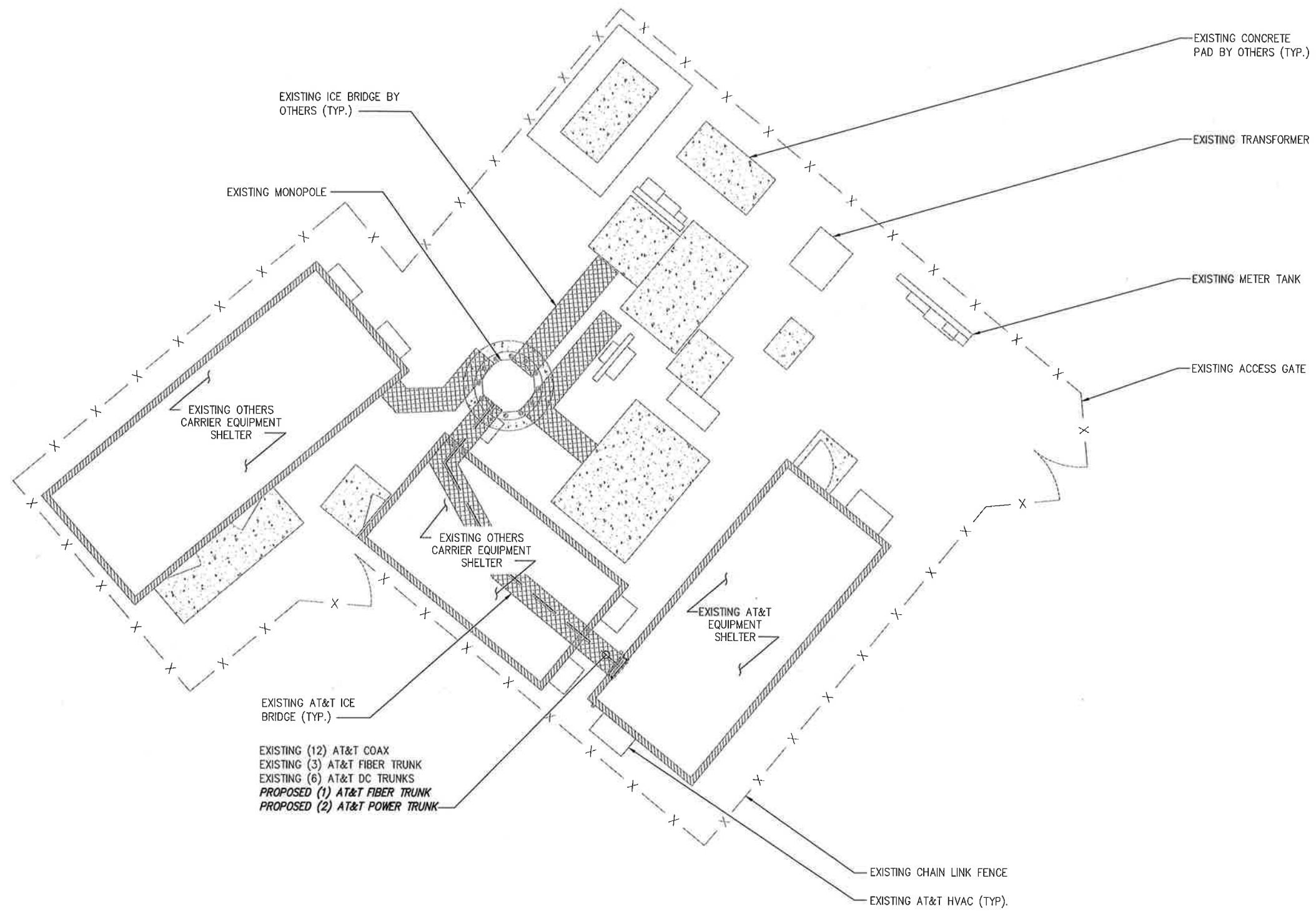
Project Number: 489-002

Project Title:
528 WHEELERS FARM RD
CROWN BU: 876320
FA # 10035336
528 WHEELERS FARM ROAD
MILFORD, CT 06460

Prepared For:
CROWN CASTLE

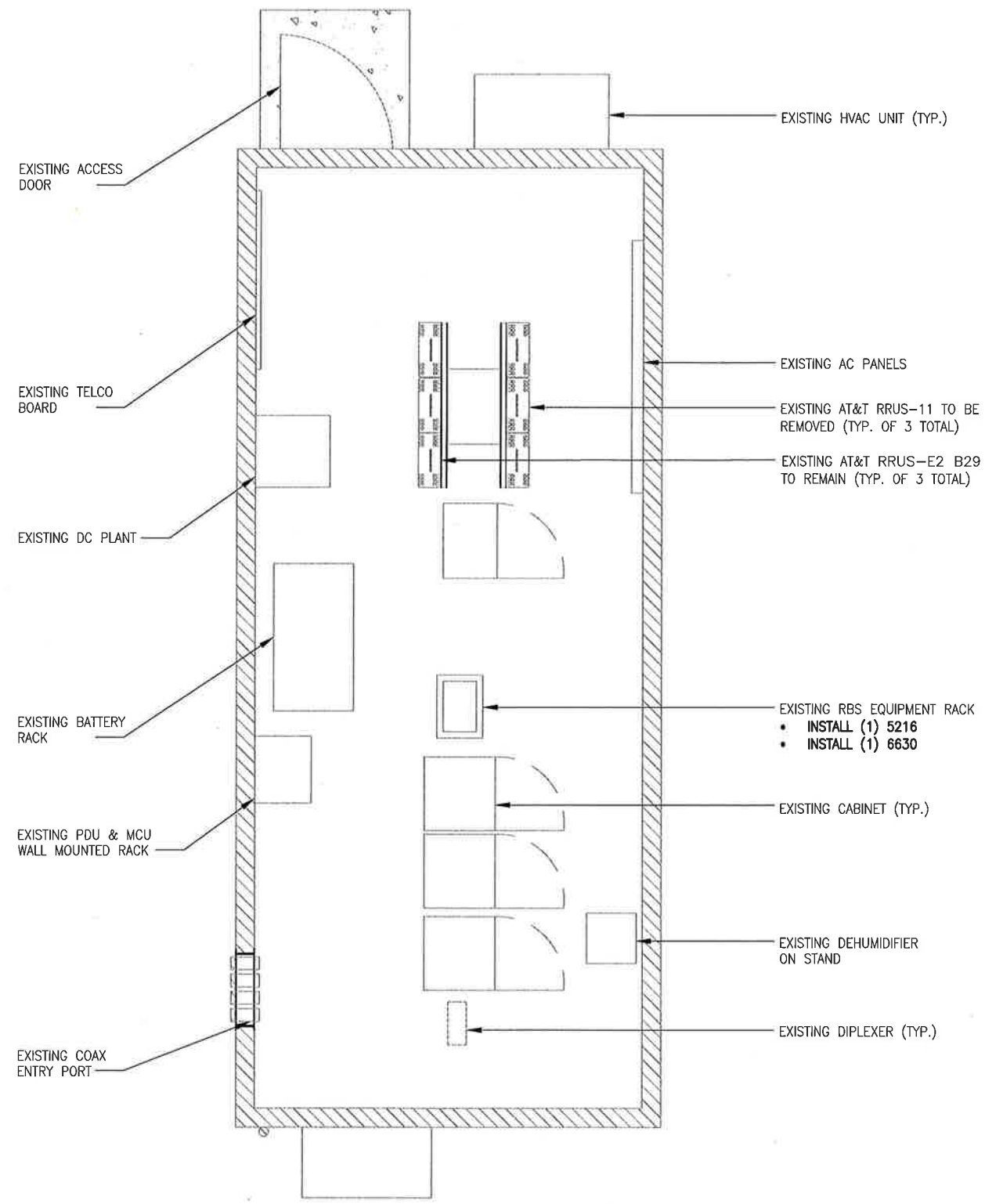
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COMPOUND PLAN

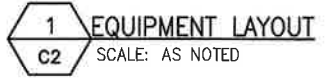
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C1

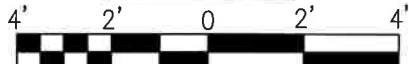


1 COMPOUND PLAN
SCALE: AS NOTED

GRAPHIC SCALE:
10' 5' 0' 5' 10'
SCALE (11x17): 1" = 10'-0"
SCALE (22x34): 1" = 5'-0"

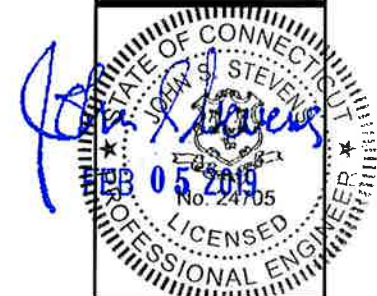


 NORTH


GRAPHIC SCALE:

 SCALE (11x17): 1" = 4'-0"
 SCALE (22x34): 1" = 2'-0"



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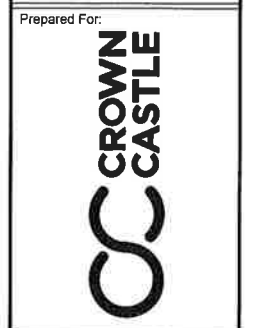
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 Checked: AJD

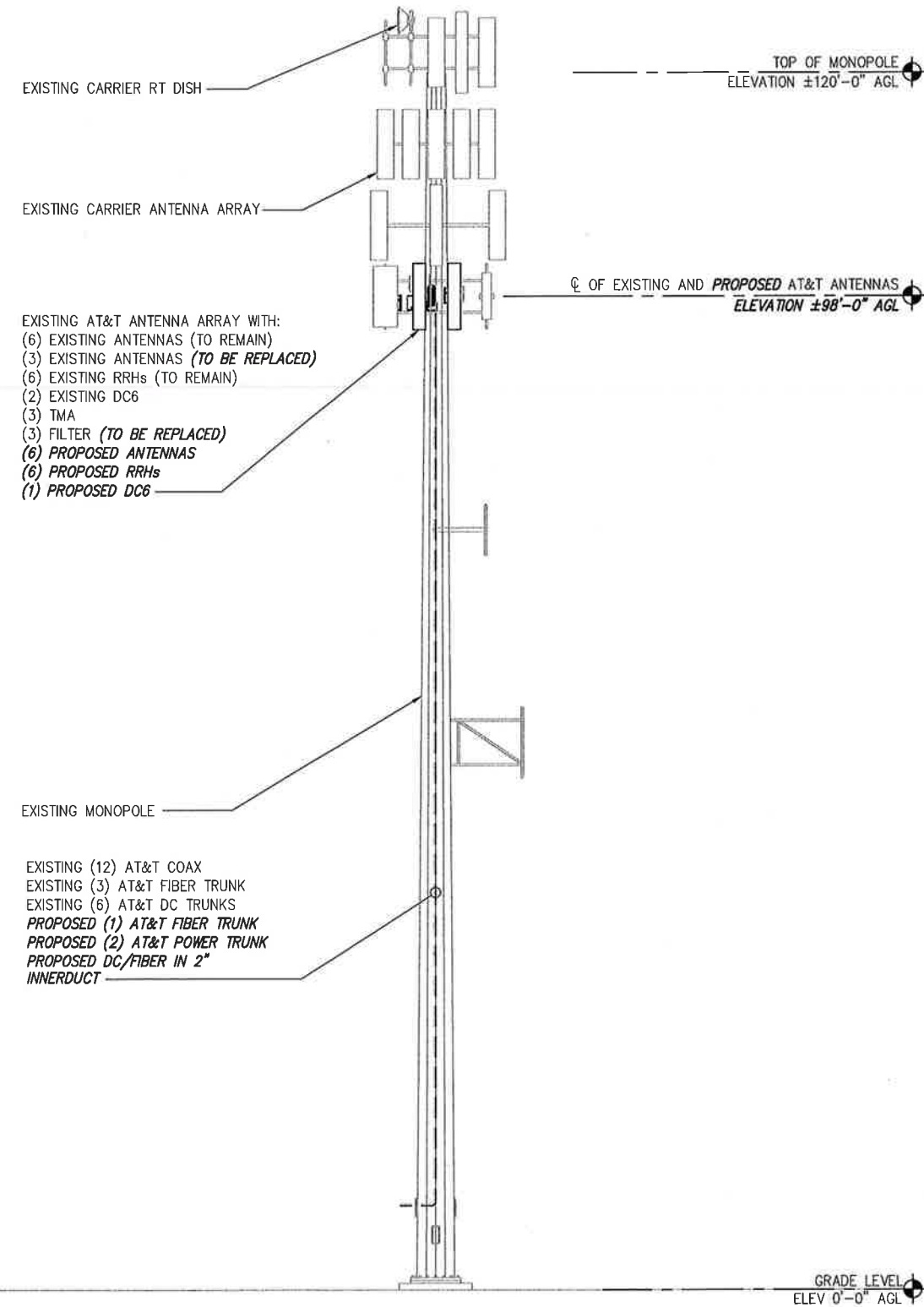
Project Number: 499-002

Project Title:
528 WHEELERS FARM RD
CROWN BU: 876320
FA # 10035336
 528 WHEELERS FARM ROAD
 MILFORD, CT 06460



Drawing Title:
EQUIPMENT LAYOUT

Drawing Number:
C2



1 ELEVATION VIEW
C3 SCALE: NOT TO SCALE

ANTENNA AND RRH SCHEDULE									
SECTOR	ANTENNA POSITION	ANTENNA MAKE	ANTENNA MODEL	RAD CTR. FT. AGL	AZIMUTH	RRH/TMA QTY/MAKE/MODEL	FILTER/DIPLEXER QTY/MAKE/MODEL	E-TILT	M-TILT
A	#1	POWERWAVE	7770	98'-0"	143°	(2) POWERWAVE LGP 21401	(2) KATHREIN 782-10250	6' (UMTS 850)	0°
	#2	QUINTEL	QS66512-2	98'-0"	30°	(1) RRUS-E2 B29 (AT GROUND) (1) B2/B66A 8843	(2) DBC0061F1V51-2	3' (LTE 700) 6' (LTE 1900) 6' (LTE 1900)	0°
	#3	KATHRIEN	800-10965	98'-0"	30°	(1) B14 4478	-	5' (LTE 700) 3' (LTE AWS)	0°
	#4	KATHRIEN	800-10965	98'-0"	30°	(1) RRUS-32 (1) B5/B12 4449	-	5' (LTE 700) 3' (LTE WCS) 5' (LTE 850) 5' (5G 850)	0°
B	#5	POWERWAVE	7770	98'-0"	263°	(2) POWERWAVE LGP 21401	(2) KATHREIN 782-10250	4' (UMTS 850)	0°
	#6	QUINTEL	QS66512-2	98'-0"	150°	(1) RRUS-E2 B29 (AT GROUND) (1) B2/B66A 8843	(2) DBC0061F1V51-2	3' (LTE 700) 4' (LTE 1900) 4' (LTE 1900)	0°
	#7	KATHRIEN	800-10965	98'-0"	150°	(1) B14 4478	-	4' (LTE 700) 4' (LTE AWS)	0°
	#8	KATHRIEN	800-10965	98'-0"	150°	(1) RRUS-32 (1) B5/B12 4449	-	4' (LTE 700) 3' (LTE WCS) 4' (LTE 850) 4' (5G 850)	0°
C	#9	POWERWAVE	7770	23'-0"	143°	(2) POWERWAVE LGP 21401	(2) KATHREIN 782-10250	4' (UMTS 850)	0°
	#10	QUINTEL	QS66512-2	98'-0"	270°	(1) RRUS-E2 B29 (AT GROUND) (1) B2/B66A 8843	(2) DBC0061F1V51-2 (1) WCS-IMFQ-AMT	3' (LTE 700) 2' (LTE 1900) 2' (LTE 1900)	0°
	#11	KATHRIEN	800-10965	98'-0"	270°	(1) B14 4478	-	2' (LTE 700) 4' (LTE AWS)	0°
	#12	KATHRIEN	800-10965	98'-0"	270°	(1) RRUS-32 (1) B5/B12 4449	-	2' (LTE 700) 3' (LTE WCS) 2' (LTE 850) 2' (5G 850)	0°

KEY:
EXISTING
PROPOSED

CABLE SCHEDULE			
SYSTEM	TYPE	QTY	LENGTH
UMTS	1-1/4" COAX	2	148'±
LTE	1-1/4" COAX	10	148'±
LTE	DC TRUNK	2	148'±
LTE	FIBER TRUNK	2	148'±
LTE	FIBER TRUNK	1	148'±
LTE	6/C DC TRUNK	2	148'±
LTE	POWER TRUNK	2	148'±

SURGE PROTECTION DEVICE SCHEDULE		
TYPE	LOCATION	QTY
DC6	SECTOR LEVEL	2
DC6	SECTOR LEVEL	1

RF DESIGN NOTE:
THIS ANTENNA AND CABLE SCHEDULE HAS BEEN CREATED USING THE FOLLOWING AT&T RFDS DATED: 07/06/18 REVISION: 2.00 ALL ANTENNA DESIGN, ZONING, STRUCTURAL ANALYSIS PERMITS AND COMPLIANCE SUBMISSIONS ARE COORDINATED WITH THE AFOREMENTIONED DOCUMENT.

2 RF SCHEDULE
C3 NOT TO SCALE



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Designed: MBL
Checked: AD

Project Number: 499-002

Project Title:
528 WHEELERS FARM RD
CROWN BU: 876320
FA # 10035336
528 WHEELERS FARM ROAD
MILFORD, CT 06480

Prepared For:



Drawing Title:
ELEVATION AND RF SCHEDULE

Drawing Number:

C3



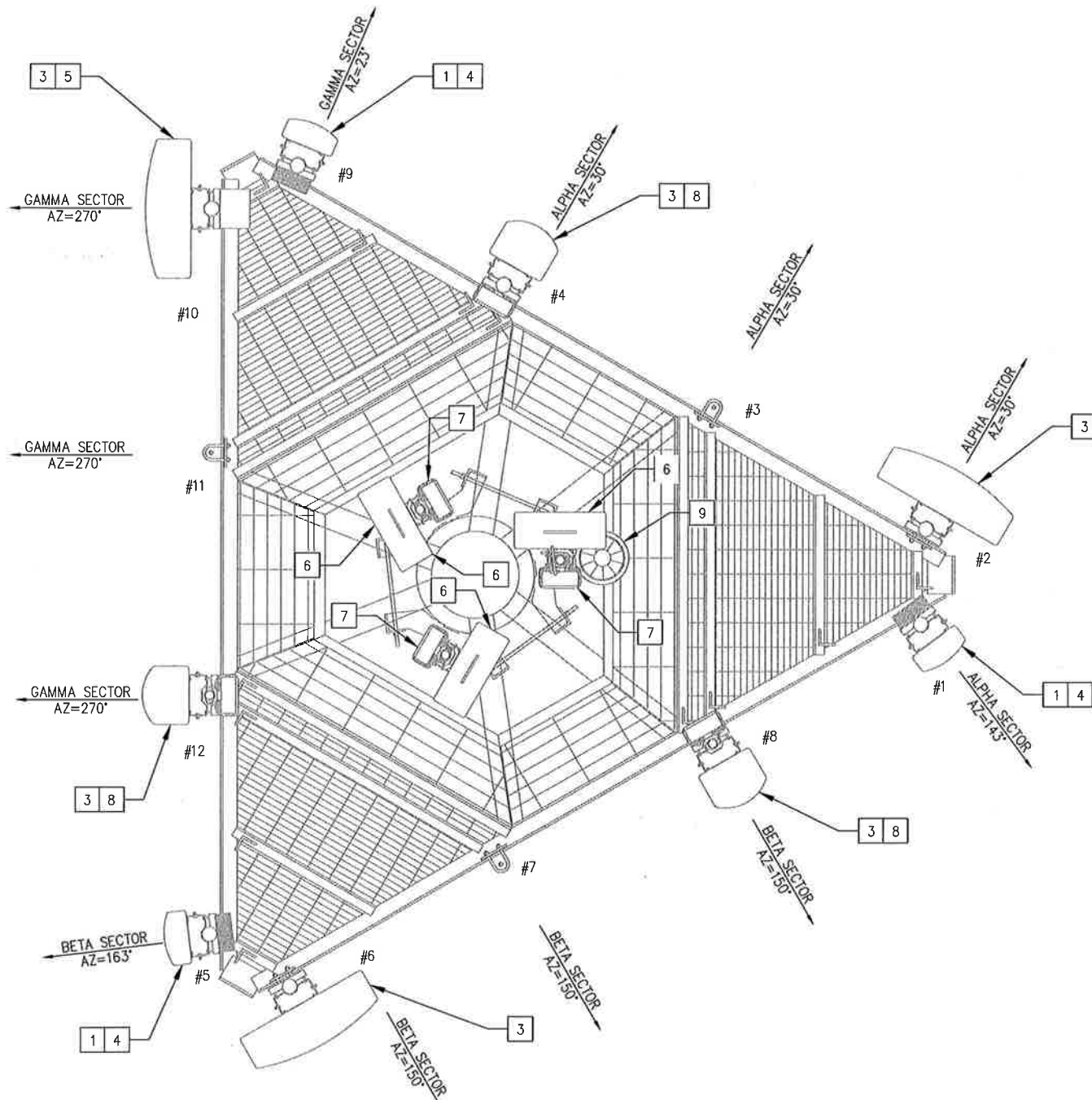
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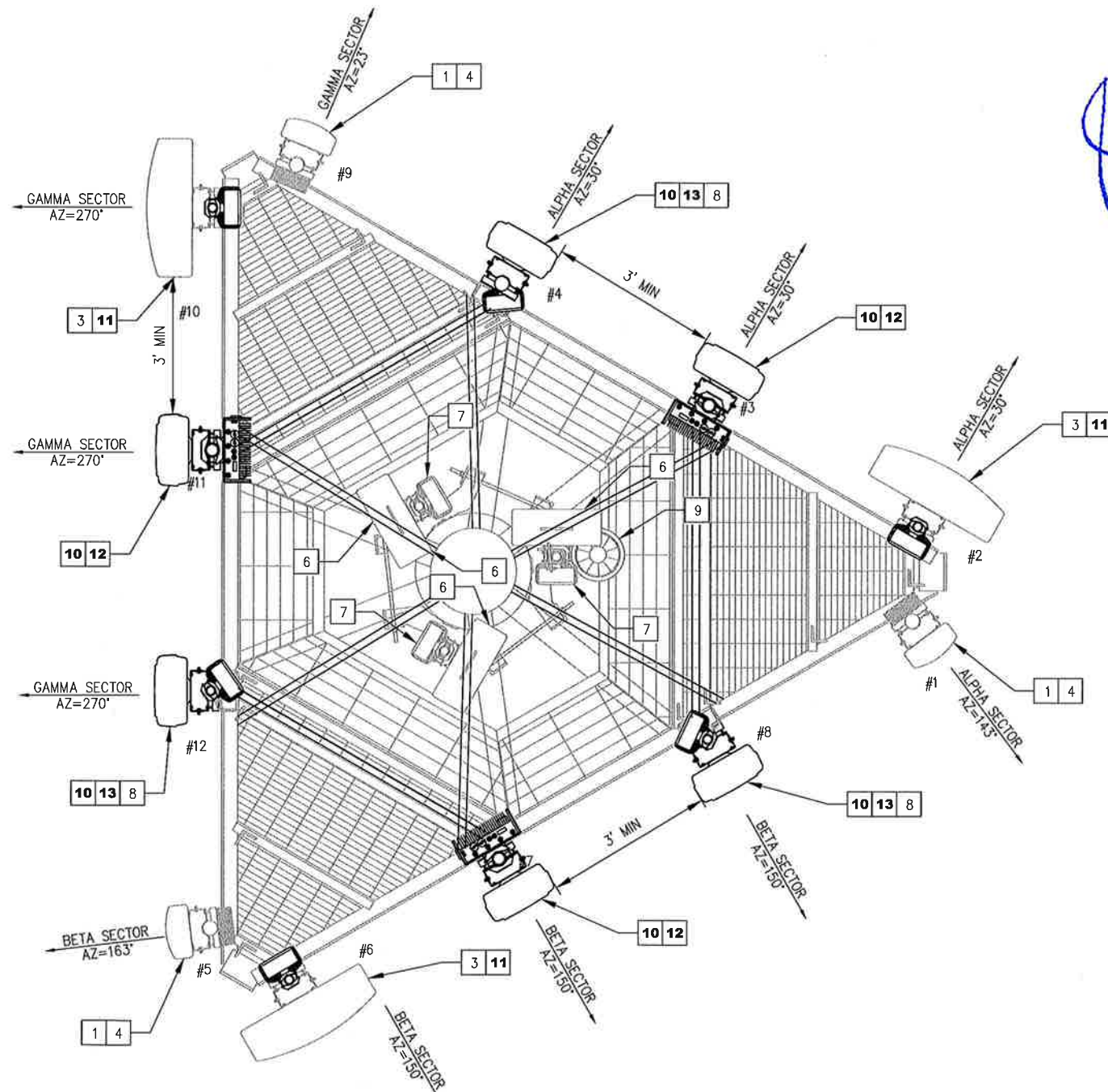
ORIENTATION PLAN KEY				
KEY	DESCRIPTION	TYPE	QTY	STATUS
1	7770	ANTENNA	3	REMAIN
2	QS66512-2	ANTENNA	3	REMAIN
3	QS66512-2	ANTENNA	3	REMOVED
4	POWERWAVE LGP 21401	TMA	6	REMAIN
5	WCS-IMFQ-AMT	FILTER	1	REMOVED
6	RRUS-12	RRH	3	REMAIN
7	RRUS-32	RRH	3	REMAIN
8	RRUS-32 B2	RRH	3	REMAIN
9	DC6	DC/FIBER MGMT	2	REMAIN
10	800-10965	ANTENNA	6	PROPOSED
11	B2/B66A 8843	RRH	3	PROPOSED
12	B14 4478	RRH	3	PROPOSED
13	B5/B12 4449	RRH	3	PROPOSED

NOTE:

- LAYOUT SHOWN BASED ON AVAILABLE INFORMATION FROM AUDIT PHOTOS. GC TO FIELD ADJUST LAYOUT AS NECESSARY FOR MINIMUM REQUIRED CLEARANCES OF EQUIPMENT.
- NO EXISTING OR PROPOSED UNISTRUT TO EXCEED A SPAN OF 4' BETWEEN SUPPORTS. REMOVE AND REPLACE EXISTING UNISTRUT AS NECESSARY FOR MAX. 4' SPAN WHEN UTILIZED FOR MOUNTING RRHs AND SLACK BOXES.
- SEE SHEETS C4 AND C5 FOR PROPOSED EQUIPMENT MOUNTING DETAILS.



1 ANTENNA ORIENTATION PLAN (EXISTING)
C4 NOT TO SCALE



2 ANTENNA ORIENTATION PLAN (PROPOSED)
C4 NOT TO SCALE



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Project Number:
499-002

Project Title:
528 WHEELERS FARM RD
CROWN BU: 876320
FA # 10035336
528 WHEELERS FARM ROAD
MILFORD, CT 06460

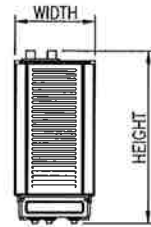
Prepared For:



Drawing Title
ANTENNA ORIENTATION PLAN

Drawing Number
C4

REMOTE RADIO HEAD (RRH)
aka
REMOTE RADIO UNIT (RRU)



SIZE AND WEIGHT TABLE

RRH MODEL	HEIGHT x WIDTH x DEPTH	WEIGHT
ERICSSON B14 4478	16.5"x13.4"x7.70"	59.9 LBS
ERICSSON B5/B12 4449	14.96"x13.19"x10.43"	73.0 LBS
ERICSSON B2/B66A 8843	14.96"x13.19"x11.10"	75.00 LBS

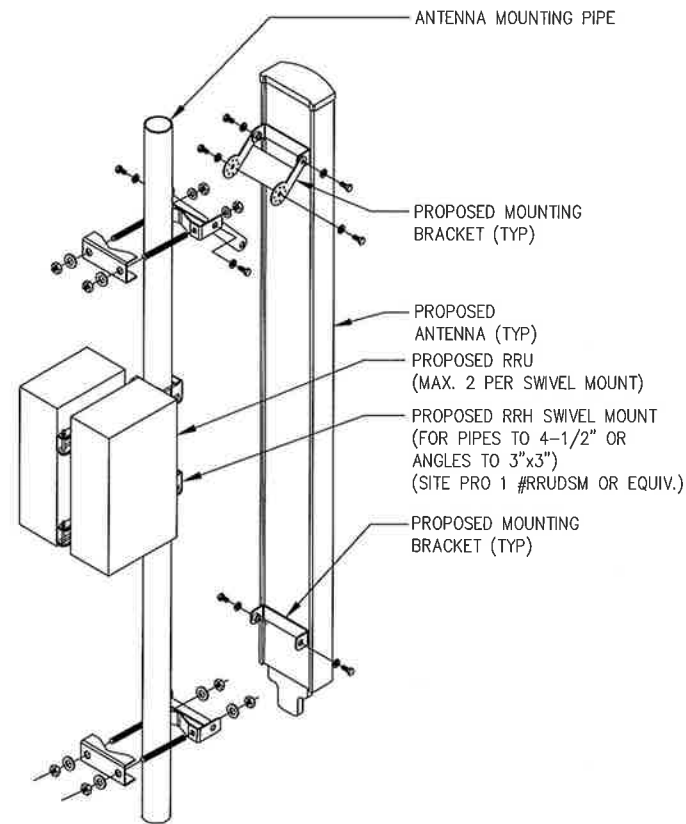
CLEARANCE TABLE

	CLEARANCE REQ'D
FRONT	36" FOR INSTALLATION ACCESS
REAR	2" (0" WITH SUPPLIED MOUNTING BRACKETS)
RIGHT	4" FOR AIR FLOW
LEFT	4" FOR AIR FLOW
TOP	12" FOR AIR FLOW
BOTTOM	12" FOR CONDUIT ROUTING

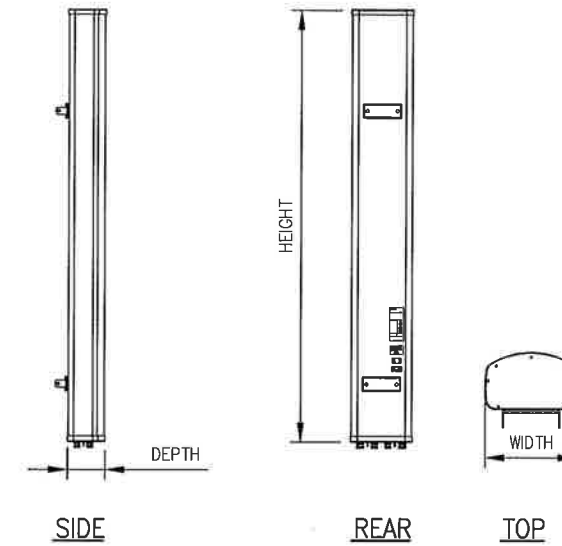
NOTES:

- AT&T SUPPLIES RRH AND RRH MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY UNISTRUT AND INSTALL RRHs AND ALL MOUNTING HARDWARE INCLUDING ERICSSON RRH WALL MOUNTING BRACKET IF NECESSARY. ERICSSON MAKES CABLE TERMINATIONS.
- DIMENSIONS AND WEIGHTS ARE FOR RRH WITHOUT MOUNTING BRACKET
- RRH BANDS (E.G. 4478 B14) DENOTE OPERATING FREQUENCY ONLY AND DO NOT CONSTITUTE A CHANGE IN SIZE OR WEIGHT.

1 RRH DETAIL
C5 SCALE: NTS

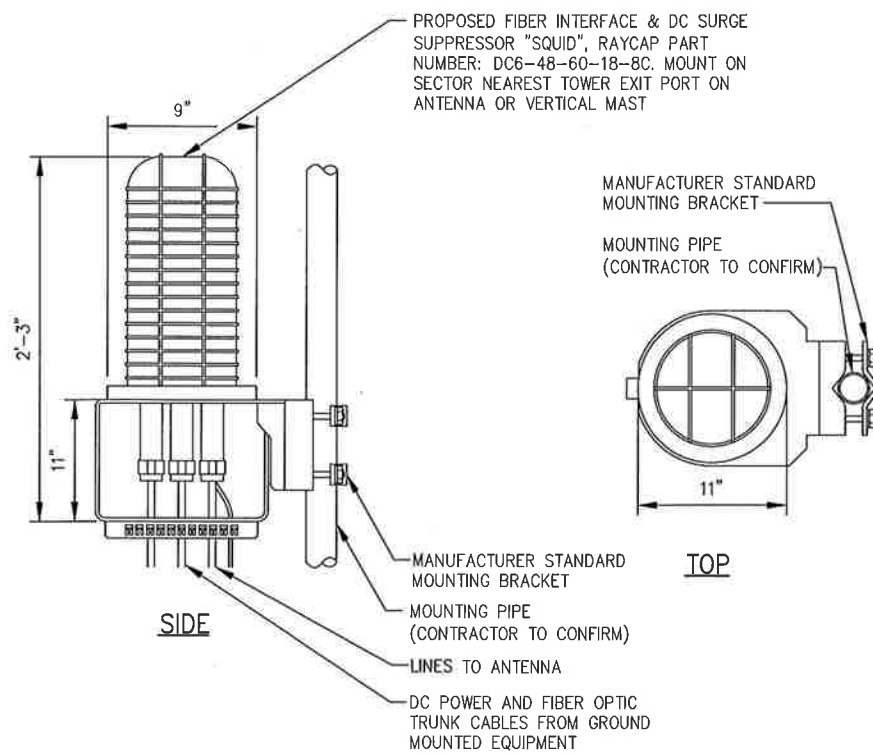


2 ANTENNA/RRU MOUNTING DETAIL
C5 SCALE: NOT TO SCALE

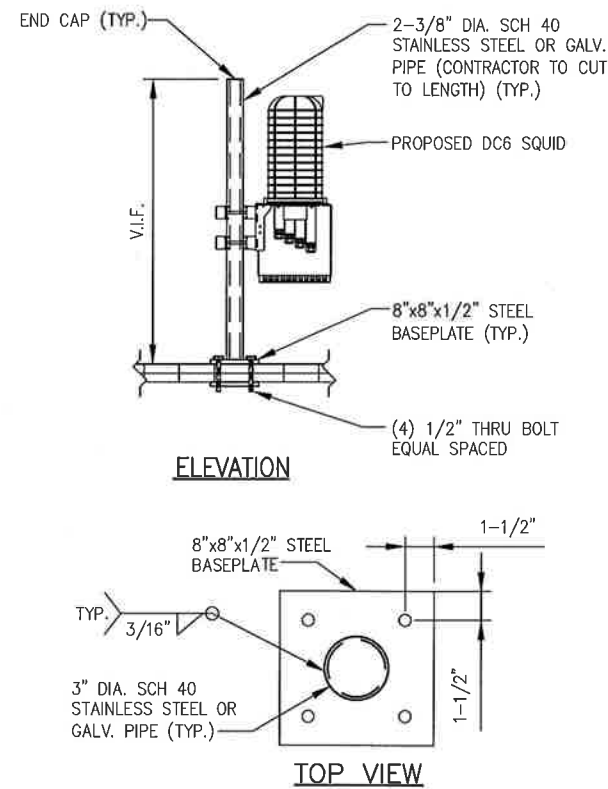


KATHRIEN MODEL NO.:	800-10965
DIMENSIONS, HxWxD:	78.7"x20.0"x6.9"
WEIGHT:	108.6LBS

3 ANTENNA DETAIL
C5 NOT TO SCALE



4 DC6 DETAIL
C5 NOT TO SCALE



5 DC6 MOUNTING DETAIL
C5 SCALE: NTS



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Project Number: 489-002

Project Title:

528 WHEELERS FARM RD

CROWN BU: 876320

FA # 10035336

528 WHEELERS FARM ROAD
MILFORD, CT 06460

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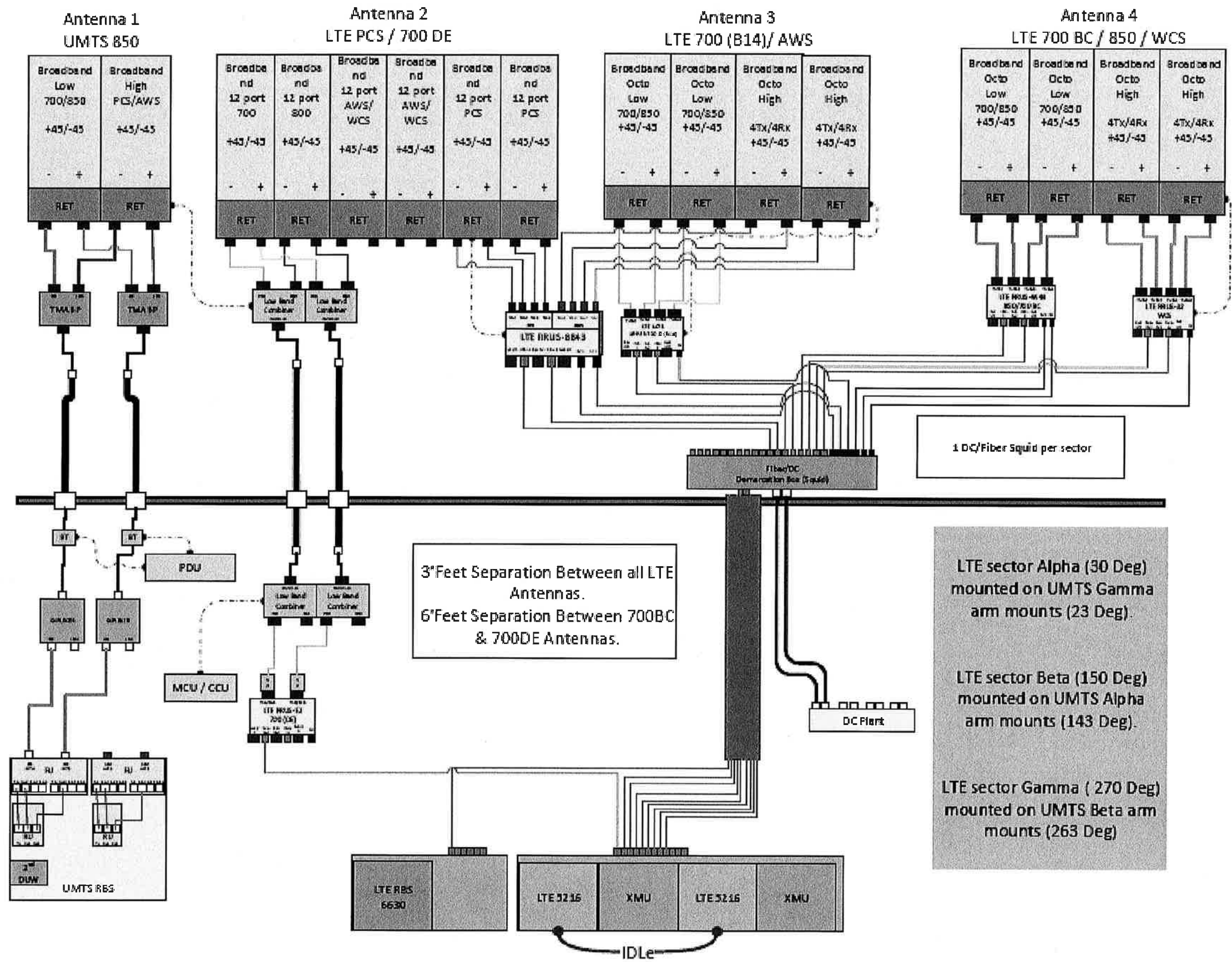


Drawing Title

EQUIPMENT
DETAILS

Drawing Number

C5



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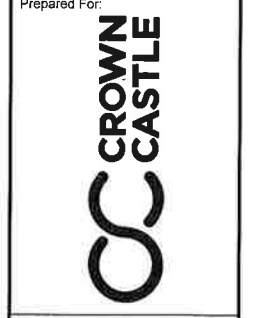
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Project Number: 499-002

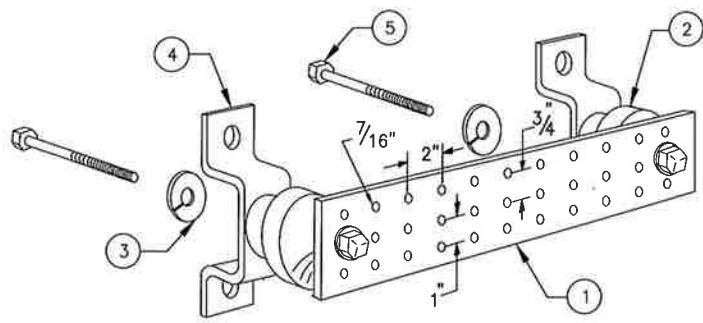
Project Title:
528 WHEELERS FARM RD
CROWN BU: 876320
FA # 10035336
528 WHEELERS FARM ROAD
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Drawing Title:
RF PLUMBING DIAGRAM

Drawing Number:
C6

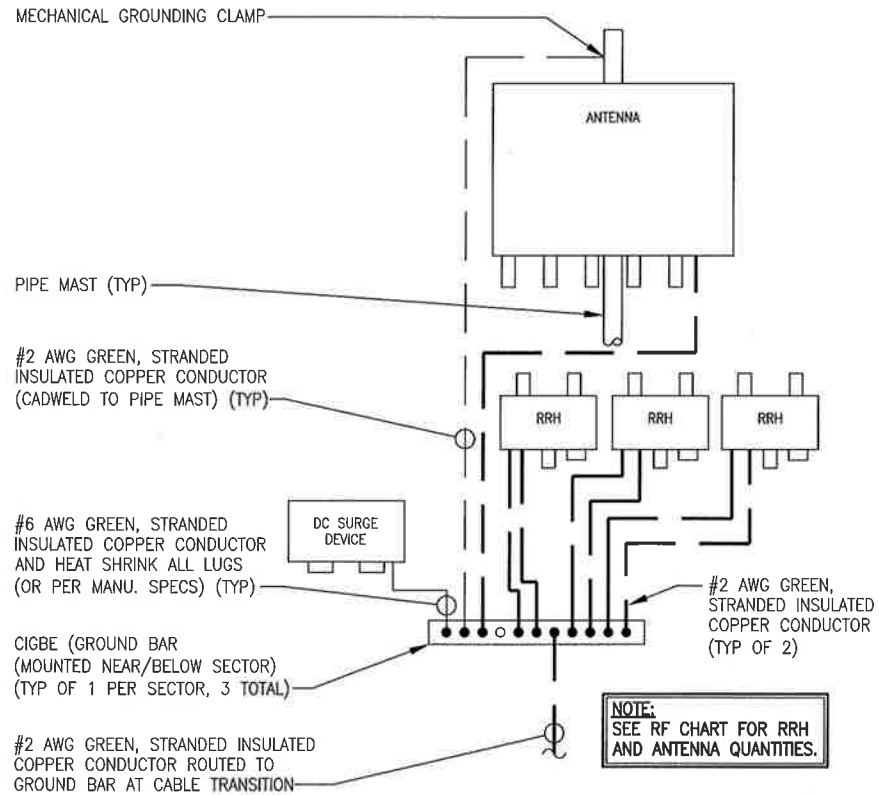
1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
C6 NOT TO SCALE



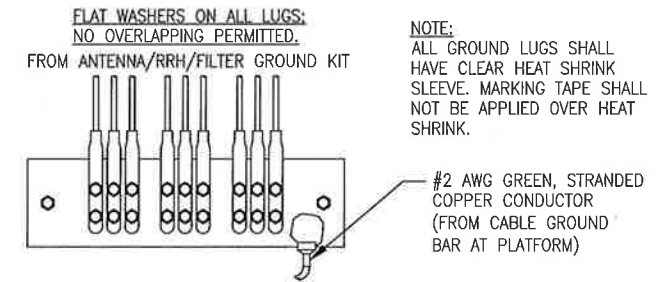
LEGEND

- 1 - SOLID TINNED COPPER GROUND BAR, 1/4"x 4"x 20" MIN., NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
- 2 - INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
- 3 - 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
- 4 - WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056
- 5 - 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
- 6 - GROUND BAR SHALL BE SIZED TO ACCOMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
- 7 - GROUND BARS SHALL NEITHER BE FIELD FABRICATED NOR NEW HOLES DRILLED
- 8 - GROUND LUGS SHALL MATCH THE HOLE SPACING ON THE BAR
- 9 - HARDWARE DIAMETER SHALL BE MINIMUM 3/8"

1 GROUND BAR
C6 NOT TO SCALE



2 CONNECTION OF SECTOR EQUIPMENT TO GROUNDING BAR DETAIL
C7 SCALE: NTS



3 INSTALLATION OF GROUND WIRE TO GROUND BAR DETAIL
C7 SCALE: NTS



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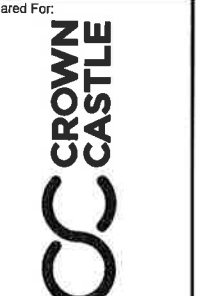
CROWN BU: 876320

FA # 10035336

528 WHEELERS FARM ROAD

MILFORD, CT 06460

Prepared For:



Drawing Title

GROUNDING DETAILS

Drawing Number

C7

Date: January 29, 2019

Charles McGuirt
Crown Castle
3 Corporate Dr., St 101
Clifton Park, NY 12065

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1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject: Mount Modification Report

Carrier Designation: AT&T Mount Modification
Carrier Site Number: 10035336
Carrier Site Name: CT2083

Crown Castle Designation: Crown Castle BU Number: 876320
Crown Castle Site Name: 528 Wheelers Farm Rd
Crown Castle JDE Job Number: 531063
Crown Castle Order Number: 459071, Rev 0

Engineering Firm Designation: Infinigy Report Designation: 1039-A0002-B

Site Data: 528 Wheelers Farm Rd, Milford, New Haven County, CT, 06460
Latitude 41°14'54.35" Longitude -73°04'44.67"

Structure Information: Tower Height & Type: 120 ft Monopole
Mount Elevation: 96 ft
Mount Type: 13 ft Platform

Dear Charles McGuirt,

Infinigy is pleased to submit this "Mount Modification Analysis Report" to determine the structural integrity of AT&T's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform (typical)

Sufficient

The analysis has been performed in accordance with the TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 124 mph from the 2015 International Building Code and the 2018 Connecticut State Building Code. Exposure Category C with a maximum topographic factor, Kzt, of 1.0 and Risk Category II was/were used in this analysis.

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

Mount analysis prepared by: Christopher Kudlacik
Respectfully Submitted by:

Joe Johnston, P.E.
VP Structural Engineering / Principal



TABLE OF CONTENTS

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Mount Modification Design Drawings

1) INTRODUCTION

This mount is a existing 13 ft Platform mapped in TIA Inspection. This mount is installed at the 96 ft elevation on 3 sector(s) of the 120 ft Monopole.

2) ANALYSIS CRITERIA

Building Code: 2015 IBC
TIA-222 Revision: TIA-222-H
Risk Category: II
Ultimate Wind Speed: 124 mph
Exposure Category: C
Topographic Factor at Base: 1.0
Topographic Factor at Mount: 1.0
Ice Thickness: 1.28 in
Wind Speed with Ice: 50 mph
Live Loading Wind Speed: 30 mph
Man Live Load at Mid/End-Points: 250 lb
Man Live Load at Mount Pipes: 500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
96.0	98.0	6	Kathrein	80010965	Platform
		6	Kaelus	DBC0061F1V51-2	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS-32	
		3	Ericsson	RRUS 4478 B14	
		3	Ericsson	RRUS 8843 B2/B66A	
		3	Powerwave Technologies	7770.00	
		3	Quintel Technology	QS66512-2	
		6	Powerwave Technologies	LGP21401	
		1	Commscope	WCS-IMFQ-ATM	
		3	Raycap	DC6-48-60-18-8F	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T Application	459071	CCI Sites
Tower Analysis Report	Tower Engineering Professionals	7998467	CCI Sites
Site Photos	Photos, dated 3/8/2018	-	CCI Sites
TIA Inspection	June 9, 2013	876320	CCI Sites

3.1) Analysis Method

RISA-3D (Version 17.0.2), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

This analysis was performed in accordance with Crown Castle’s ENG-SOW-10208 *Tower Mount Analysis* (Revision B).

3.2) Assumptions

- 1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer’s specifications.
- 2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
- 4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A53 (GR 35)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, Tycpial)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Frame Rail	M1	96.0	55.8%	Pass
	Hand Rail	M32		85.6%	Pass
	Arm	M7		47.5%	Pass
	Mount Pipe	M25		43.7%	Pass
	Bracing	M63		67.3%	Pass
	Bolt Check	--		33.7%	Pass

Structure Rating (max from all components) =	85.6%
---	--------------

Notes:

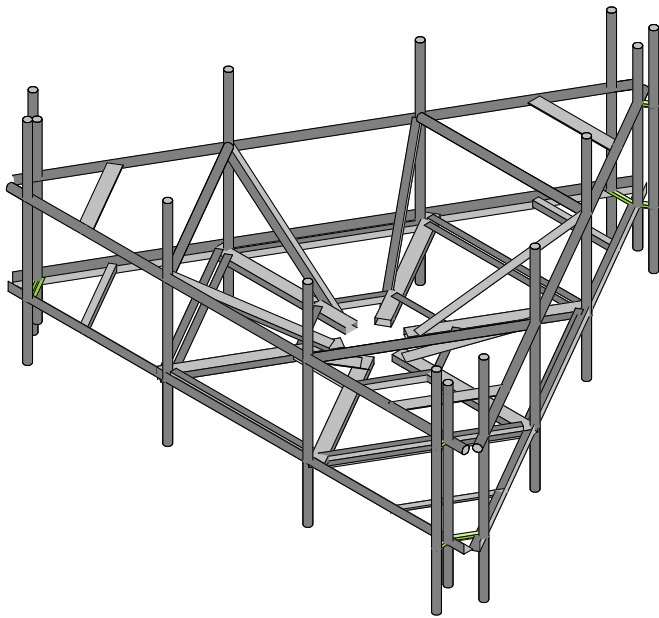
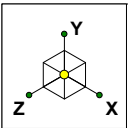
- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) All sectors are typical

4.1) Recommendations

The mount has sufficient capacity to support the proposed loading after the following is installed:

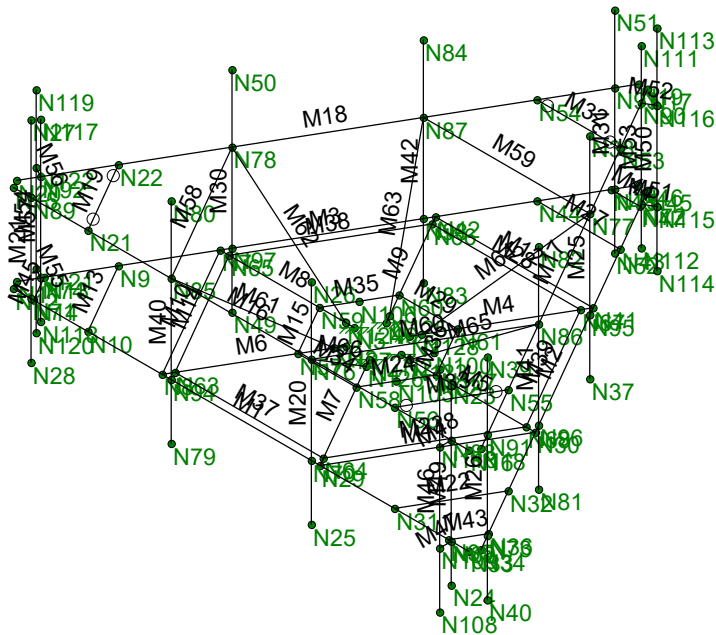
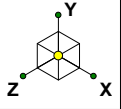
- Install (3) 2.375 OD Sch 40 Pipes onto the existing handrail with (6) sitepro1 PUCK
- Install (6) L2 ½x 2 ½ x 3/16 Angles. Attach to standoff and handrail with custom T-Plate and Sitepro1 Part # X-STU

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Final Configuration
CLK		Jan 25, 2019 at 3:27 PM
1039-A0002B		876320_MOD.r3d



Envelope Only Solution

Infinigy Engineering, LLC

CLK

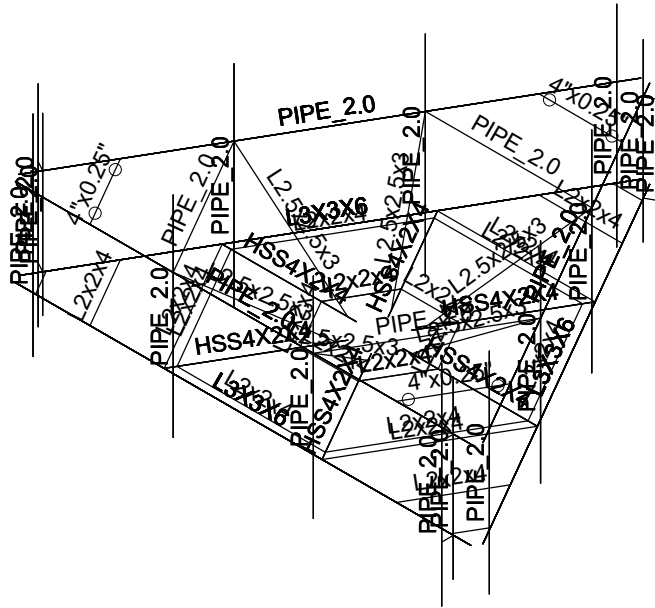
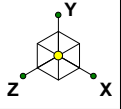
1039-A0002B

528 Wheelers Farm Rd

Wireframe

Jan 25, 2019 at 3:27 PM

876320_MOD.r3d



Envelope Only Solution

Infinigy Engineering, LLC

CLK

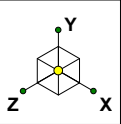
1039-A0002B

528 Wheelers Farm Rd

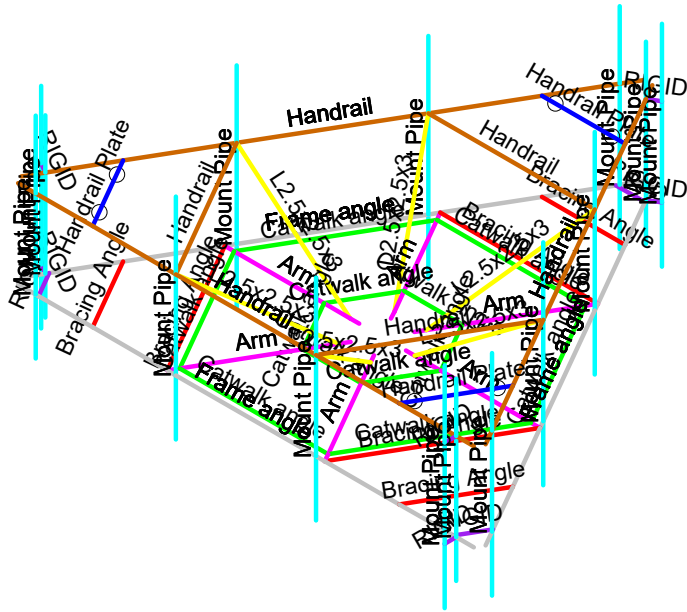
Member Shapes

Jan 25, 2019 at 3:27 PM

876320_MOD.r3d

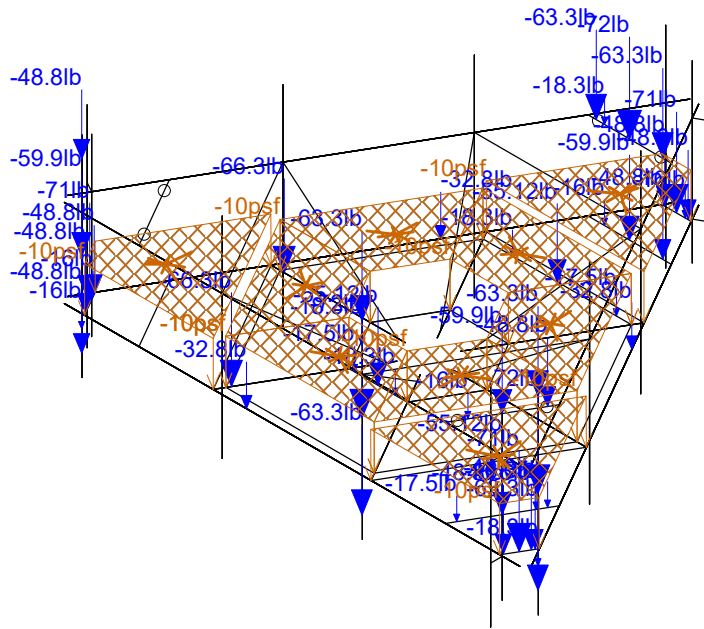
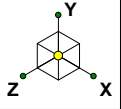


Section Sets	
■	Handrail Plate
■	Catwalk angle
■	Bracing Angle
■	Frame angle
■	Arm
■	Mount Pipe
■	Handrail
■	L2.5x2.5x3
■	RIGID



Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Section Sets
CLK		Jan 25, 2019 at 3:28 PM
1039-A0002B		876320_MOD.r3d



Loads: BLC 1, Self Weight
Envelope Only Solution

Infinigy Engineering, LLC

CLK

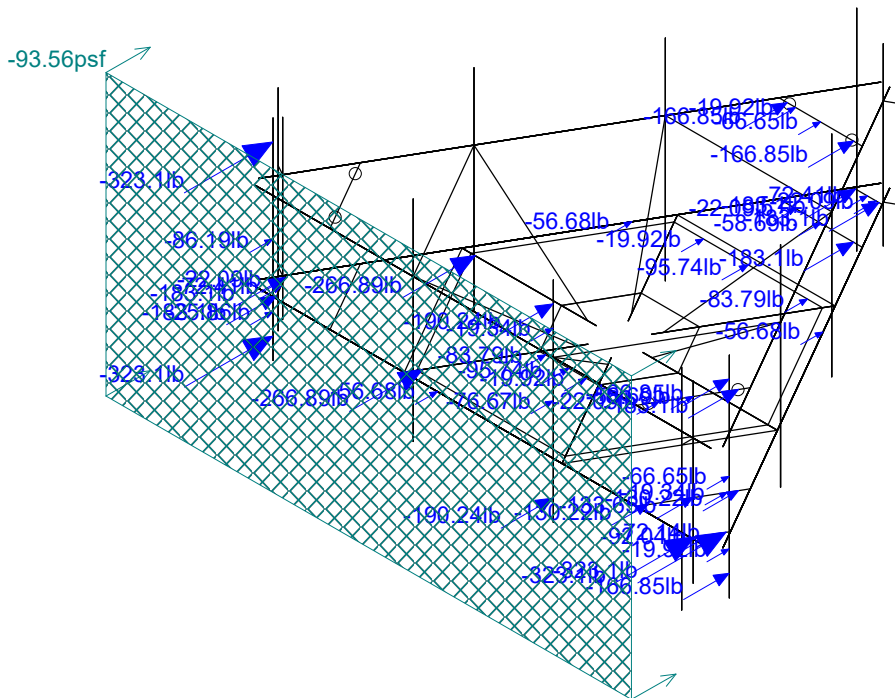
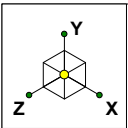
1039-A0002B

528 Wheelers Farm Rd

Dead load

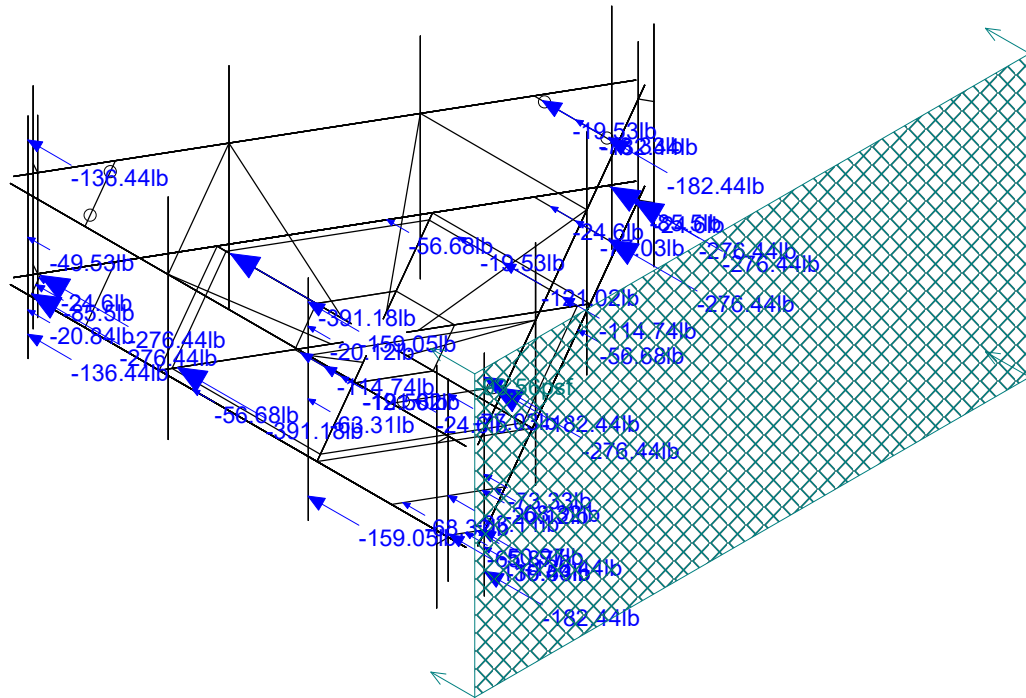
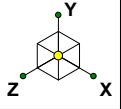
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876320_MOD.r3d



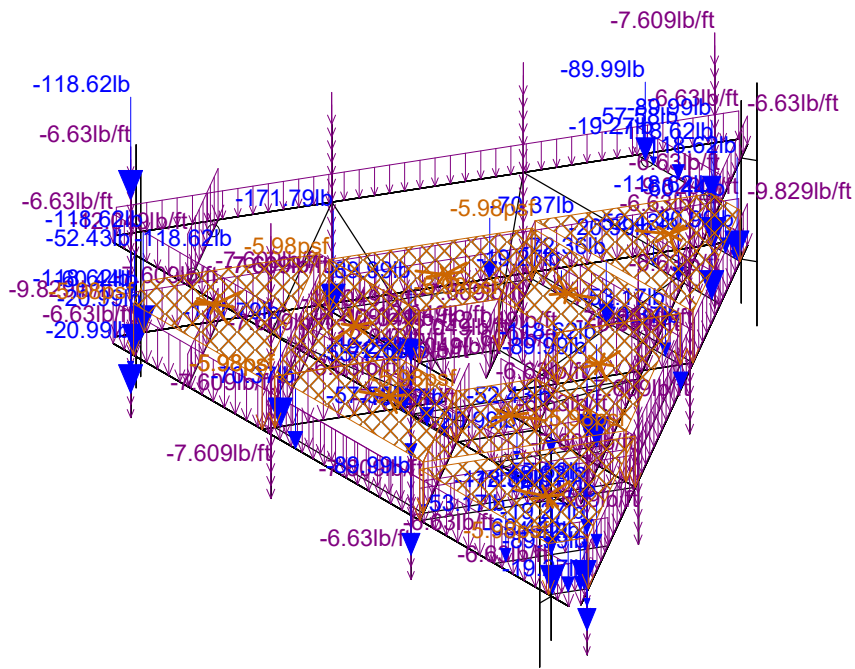
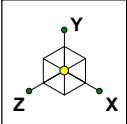
Loads: BLC 2, Wind Load AZI 000
Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Wind load 000
CLK		Jan 25, 2019 at 3:28 PM
1039-A0002B		876320_MOD.r3d



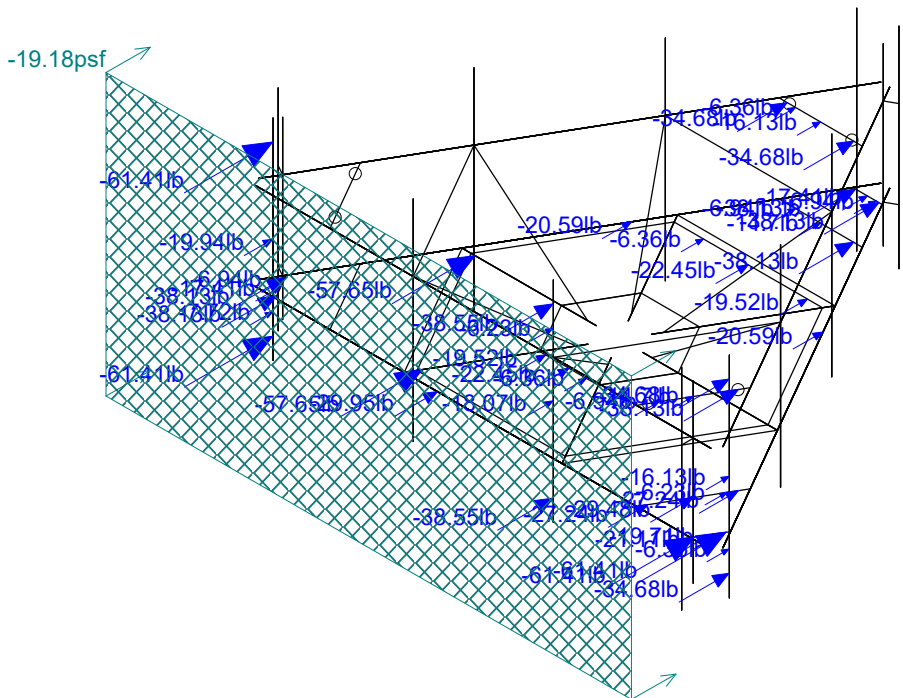
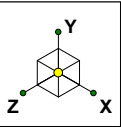
Loads: BLC 3, Wind Load AZI 090
Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Wind load 090
CLK		Jan 25, 2019 at 3:28 PM
1039-A0002B		876320_MOD.r3d



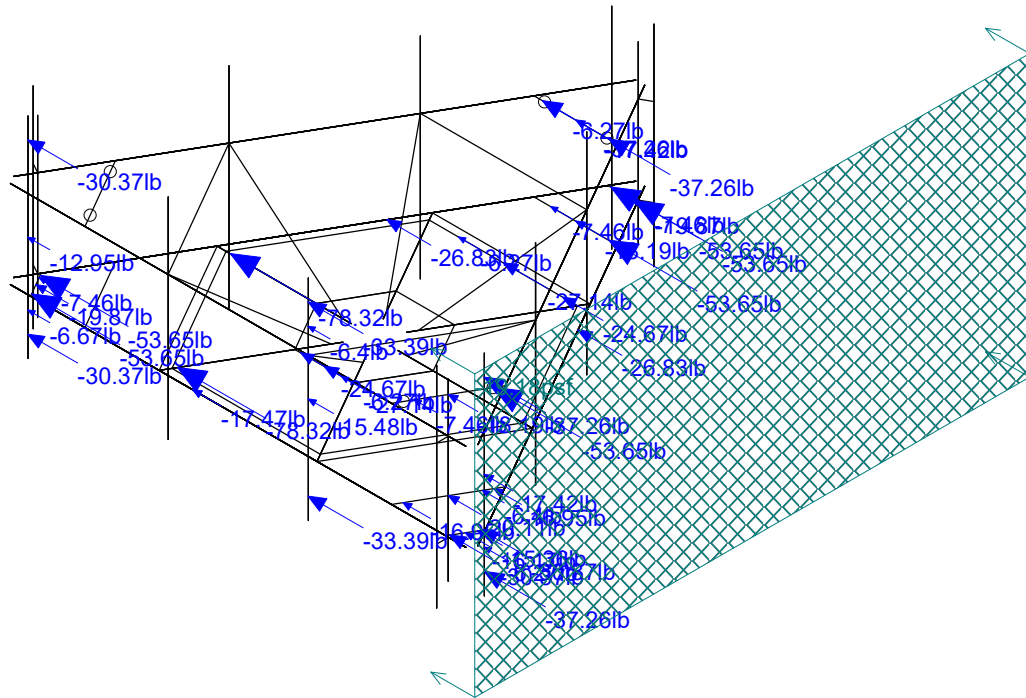
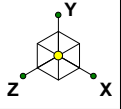
Loads: BLC 4, Ice Weight
Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Ice Load
CLK		Jan 25, 2019 at 3:31 PM
1039-A0002B		876320_MOD.r3d



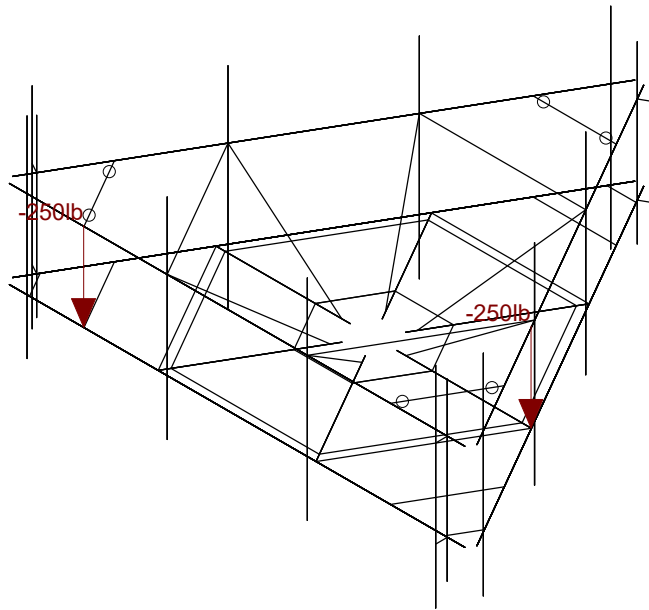
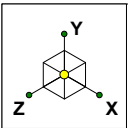
Loads: BLC 5, Wind + Ice Load AZI 000
Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Wind + Ice Load 000
CLK		Jan 25, 2019 at 3:29 PM
1039-A0002B		876320_MOD.r3d



Loads: BLC 6, Wind + Ice Load AZI 090
Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Wind + Ice Load 090
CLK		Jan 25, 2019 at 3:29 PM
1039-A0002B		876320_MOD.r3d



Loads: BLC 7, Service Live 1
Envelope Only Solution

Infinigy Engineering, LLC	528 Wheelers Farm Rd	Service Load
CLK		Jan 25, 2019 at 3:29 PM
1039-A0002B		876320_MOD.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS

Site Name: 528 Wheelers Farm Rd
 Client: Crown Castle
 Carrier: AT&T
 Engineer: CLK
 Date: 12/10/2018



INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:
 Adopted Building Code: 2015 IBC
 Structure Load Standard: TIA-222-H
 Antenna Load Standard: TIA-222-H
 Structure Risk Category: II
 Structure Type: Mount - Platform
 Number of Sectors: 3
 Structure Shape 1: Flat

Rooftop Inputs:
 Rooftop Wind Speed-Up?: No

Wind Loading Inputs:
 Design Wind Velocity: 124 mph (ultimate 3-second gust)
 Wind Centerline 1 (z₁): 98.0 ft
 Side Face Angle (θ): 60 degrees
 Exposure Category: C
 Topographic Category: 1

Wind with No Ice		
q _z (psf)	G _h	F _{ST} (psf)
46.78	1.00	93.56

Wind with Ice		
q _z (psf)	G _h	F _{ST} (psf)
7.61	1.00	19.18

Ice Loading Inputs:
 Is Ice Loading Needed?: Yes
 Ice Wind Velocity: 50 mph (ultimate 3-second gust)
 Base Ice Thickness: 1.28 in

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	K _a	Front Shape	Side Shape	q _z (psf)	EPA (ft ²)	F _z (lbs)	F _x (lbs)	F _z (60) (lbs)	F _x (30) (lbs)
Kathrein 80010965	98.0	3	1.00	Flat	Flat	46.78	13.81	646.20	272.88	366.21	552.87
Powerwave 7770.00	98.0	3	1.00	Flat	Flat	46.78	5.57	260.44	136.63	167.58	229.48
Kathrein 80010965	98.0	3	1.00	Flat	Flat	46.78	13.81	646.20	272.88	366.21	552.87
Quintel QS66512-2	98.0	3	1.00	Flat	Flat	46.78	8.13	380.47	318.10	333.69	364.88
Kaelus DBC0061F1V51-2	98.0	3	1.00	Flat	Flat	46.78	0.41	19.34	20.12	19.92	19.53
Kaelus DBC0061F1V51-2	98.0	3	1.00	Flat	Flat	46.78	0.41	19.34	20.12	19.92	19.53
Commscope WCS-IMFQ-ATM	98.0	1	1.00	Flat	Flat	46.78	0.99	46.28	30.13	34.16	42.24
Ericsson RRUS-32	98.0	3	1.00	Flat	Flat	46.78	2.86	133.65	83.11	95.74	121.02
Ericsson RRUS 4449 B5/B12	98.0	3	1.00	Flat	Flat	46.78	1.97	92.04	65.87	72.41	85.50
Ericsson RRUS 4478 B14	98.0	3	1.00	Flat	Flat	46.78	1.84	86.19	49.53	58.69	77.03
Ericsson RRUS 8843 B2/B66A	98.0	3	1.00	Flat	Flat	46.78	1.64	76.67	63.31	66.65	73.33
Powerwave LGP21401	98.0	3	1.00	Flat	Flat	46.78	0.55	25.86	20.84	22.09	24.60
Powerwave LGP21401	98.0	3	1.00	Flat	Flat	46.78	0.55	25.86	20.84	22.09	24.60
Raycap DC6-48-60-18-8F	98.0	3	1.00	Round	Round	46.78	1.21	56.68	56.68	56.68	56.68

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N12	N33		270	Frame angle	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N45	N34			Frame angle	Beam	Single Angle	A36 Gr.36	Typical
3	M3	N46	N11		270	Frame angle	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N1	N41		90	Arm	Beam	Tube	A500 Gr.B...	Typical
5	M5	N2	N30		90	Arm	Beam	Tube	A500 Gr.B...	Typical
6	M6	N3	N8		90	Arm	Beam	Tube	A500 Gr.B...	Typical
7	M7	N4	N29		90	Arm	Beam	Tube	A500 Gr.B...	Typical
8	M8	N5	N7		90	Arm	Beam	Tube	A500 Gr.B...	Typical
9	M9	N6	N42		90	Arm	Beam	Tube	A500 Gr.B...	Typical
10	M10	N7	N8		180	Bracing Angle	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N30	N29		180	Bracing Angle	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N41	N42		180	Bracing Angle	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N9	N10		90	Bracing Angle	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N65	N63		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N59	N57		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
16	M16	N15	N16		90	Handrail	Beam	Pipe	A53 Gr.B	Typical
17	M17	N17	N18		90	Handrail	Beam	Pipe	A53 Gr.B	Typical
18	M18	N19	N20		90	Handrail	Beam	Pipe	A53 Gr.B	Typical
19	M19	N21	N22		90	Handrail Plate	Beam	BAR	A36 Gr.36	Typical
20	M20	N25	N26		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
21	M21	N27	N28		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
22	M22	N31	N32		90	Bracing Angle	Beam	Single Angle	A36 Gr.36	Typical
23	M23	N64	N68		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
24	M24	N58	N62		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
25	M25	N37	N38		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
26	M26	N39	N40		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
27	M27	N43	N44		90	Bracing Angle	Beam	Single Angle	A36 Gr.36	Typical
28	M28	N67	N66		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N61	N60		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
30	M30	N49	N50		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
31	M31	N51	N52		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
32	M32	N53	N54		90	Handrail Plate	Beam	BAR	A36 Gr.36	Typical
33	M33	N55	N56		90	Handrail Plate	Beam	BAR	A36 Gr.36	Typical
34	M34	N57	N58		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
35	M35	N59	N60		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
36	M36	N61	N62		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
37	M37	N63	N64		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
38	M38	N65	N66		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
39	M39	N67	N68		180	Catwalk angle	Beam	Single Angle	A36 Gr.36	Typical
40	M40	N79	N80		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
41	M41	N81	N82		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
42	M42	N83	N84		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
43	M43	N35	N36			RIGID	None	None	RIGID	Typical
44	M44	N48	N47			RIGID	None	None	RIGID	Typical
45	M45	N14	N13			RIGID	None	None	RIGID	Typical
46	M46	N107	N108		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
47	M47	N109	N69			RIGID	None	None	RIGID	Typical
48	M48	N110	N88			RIGID	None	None	RIGID	Typical
49	M49	N24	N23			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
50	M50	N113	N114		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
51	M51	N115	N72			RIGID	None	None	RIGID	Typical
52	M52	N116	N90			RIGID	None	None	RIGID	Typical
53	M53	N112	N111			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
54	M54	N119	N120		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
55	M55	N121	N74			RIGID	None	None	RIGID	Typical
56	M56	N122	N92			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	M57	N118	N117			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
58	M58	N85	N78			Handrail	Beam	Pipe	A53 Gr.B	Typical
59	M59	N87	N77			Handrail	Beam	Pipe	A53 Gr.B	Typical
60	M60	N86	N76			Handrail	Beam	Pipe	A53 Gr.B	Typical
61	M61	N85	N127			L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
62	M62	N78	N124			L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
63	M63	N87	N125			L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
64	M64	N77	N128			L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
65	M65	N86	N123			L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
66	M66	N76	N126			L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		9	53.8	0
3	Total General		9	53.8	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	4"x0.25"	3	85.5	0
7	A36 Gr.36	L2.5x2.5x3	6	307.6	0
8	A36 Gr.36	L2x2x4	18	672.6	.2
9	A36 Gr.36	L3X3X6	3	468	.3
10	A500 Gr.B Rect	HSS4X2X4	6	276	.2
11	A53 Gr.B	PIPE 2.0	21	1683	.5
12	Total HR Steel		57	3492.7	1.3

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...)	Surface(P...)
1	Self Weight	DL		-1			52	9	
2	Wind Load AZI 000	WLZ					52	1	
3	Wind Load AZI 090	WLX					52	1	
4	Ice Weight	OL1					52	45	9
5	Wind + Ice Load AZI ...	OL2					52	1	
6	Wind + Ice Load AZI ...	OL3					52	1	
7	Service Live 1	LL				2			
8	BLC 1 Transient Area...	None						46	
9	BLC 2 Transient Area...	None						64	
10	BLC 3 Transient Area...	None						53	
11	BLC 4 Transient Area...	None						46	
12	BLC 5 Transient Area...	None						64	
13	BLC 6 Transient Area...	None						53	

Load Combinations

	Description	S... PD... S...	BLC Factor	BLC Factor	BLC Factor	BLC F...	B... Fa...	F...	F...	F...	F...
1	1.4D	Yes Y	DL 1.4								
2	1.2D + 1W AZI 000	Yes Y	DL 1.2	WLZ 1							
3	1.2D + 1W AZI 030	Yes Y	DL 1.2	WLZ .866	WLX .5						
4	1.2D + 1W AZI 060	Yes Y	DL 1.2	WLZ .5	WLX .866						
5	1.2D + 1W AZI 090	Yes Y	DL 1.2		WLX 1						
6	1.2D + 1W AZI 120	Yes Y	DL 1.2	WLZ -.5	WLX .866						
7	1.2D + 1W AZI 150	Yes Y	DL 1.2	WLZ -.866	WLX .5						
8	1.2D + 1W AZI 180	Yes Y	DL 1.2	WLZ -1							

Load Combinations (Continued)

	Description	S...	PD...	S...	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC F...	B...Fa.....	F.....	F.....	F.....	F.....
9	1.2D + 1W AZI 210	Yes	Y		DL 1.2	WLZ -.866	WLX	-.5						
10	1.2D + 1W AZI 240	Yes	Y		DL 1.2	WLZ -.5	WLX	-.866						
11	1.2D + 1W AZI 270	Yes	Y		DL 1.2		WLX	-.1						
12	1.2D + 1W AZI 300	Yes	Y		DL 1.2	WLZ .5	WLX	-.866						
13	1.2D + 1W AZI 330	Yes	Y		DL 1.2	WLZ .866	WLX	-.5						
14	0.9D + 1W AZI 000	Yes	Y		DL .9	WLZ 1								
15	0.9D + 1W AZI 030	Yes	Y		DL .9	WLZ .866	WLX	.5						
16	0.9D + 1W AZI 060	Yes	Y		DL .9	WLZ .5	WLX	.866						
17	0.9D + 1W AZI 090	Yes	Y		DL .9		WLX	1						
18	0.9D + 1W AZI 120	Yes	Y		DL .9	WLZ -.5	WLX	.866						
19	0.9D + 1W AZI 150	Yes	Y		DL .9	WLZ -.866	WLX	.5						
20	0.9D + 1W AZI 180	Yes	Y		DL .9	WLZ -.1								
21	0.9D + 1W AZI 210	Yes	Y		DL .9	WLZ -.866	WLX	-.5						
22	0.9D + 1W AZI 240	Yes	Y		DL .9	WLZ -.5	WLX	-.866						
23	0.9D + 1W AZI 270	Yes	Y		DL .9		WLX	-.1						
24	0.9D + 1W AZI 300	Yes	Y		DL .9	WLZ .5	WLX	-.866						
25	0.9D + 1W AZI 330	Yes	Y		DL .9	WLZ .866	WLX	-.5						
26	1.2D + 1.0Di	Yes	Y		DL 1.2	OL1 1								
27	1.2D + 1.0Di + 1.0Wi AZI 000	Yes	Y		DL 1.2	OL1 1	OL2 1							
28	1.2D + 1.0Di + 1.0Wi AZI 030	Yes	Y		DL 1.2	OL1 1	OL2 .866	OL3 .5						
29	1.2D + 1.0Di + 1.0Wi AZI 060	Yes	Y		DL 1.2	OL1 1	OL2 .5	OL3 .8...						
30	1.2D + 1.0Di + 1.0Wi AZI 090	Yes	Y		DL 1.2	OL1 1		OL3 1						
31	1.2D + 1.0Di + 1.0Wi AZI 120	Yes	Y		DL 1.2	OL1 1	OL2 -.5	OL3 .8...						
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y		DL 1.2	OL1 1	OL2 -.866	OL3 .5						
33	1.2D + 1.0Di + 1.0Wi AZI 180	Yes	Y		DL 1.2	OL1 1	OL2 -.1							
34	1.2D + 1.0Di + 1.0Wi AZI 210	Yes	Y		DL 1.2	OL1 1	OL2 -.866	OL3 -.5						
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y		DL 1.2	OL1 1	OL2 -.5	OL3 -----						
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y		DL 1.2	OL1 1		OL3 -.1						
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y		DL 1.2	OL1 1	OL2 .5	OL3 -----						
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y		DL 1.2	OL1 1	OL2 .866	OL3 -.5						
39	1.2D + 1.5L + 1.0WL (30 mph) AZI 000	Yes	Y		DL 1.2	LL 1.5	WLZ .059							
40	1.2D + 1.5L + 1.0WL (30 mph) AZI 030	Yes	Y		DL 1.2	LL 1.5	WLZ .051	W... .0...						
41	1.2D + 1.5L + 1.0WL (30 mph) AZI 060	Yes	Y		DL 1.2	LL 1.5	WLZ .029	W... .0...						
42	1.2D + 1.5L + 1.0WL (30 mph) AZI 090	Yes	Y		DL 1.2	LL 1.5		W... .0...						
43	1.2D + 1.5L + 1.0WL (30 mph) AZI 120	Yes	Y		DL 1.2	LL 1.5	WLZ -.029	W... .0...						
44	1.2D + 1.5L + 1.0WL (30 mph) AZI 150	Yes	Y		DL 1.2	LL 1.5	WLZ -.051	W... .0...						
45	1.2D + 1.5L + 1.0WL (30 mph) AZI 180	Yes	Y		DL 1.2	LL 1.5	WLZ -.059							
46	1.2D + 1.5L + 1.0WL (30 mph) AZI 210	Yes	Y		DL 1.2	LL 1.5	WLZ -.051	W... -----						
47	1.2D + 1.5L + 1.0WL (30 mph) AZI 240	Yes	Y		DL 1.2	LL 1.5	WLZ -.029	W... -----						
48	1.2D + 1.5L + 1.0WL (30 mph) AZI 270	Yes	Y		DL 1.2	LL 1.5		W... -----						
49	1.2D + 1.5L + 1.0WL (30 mph) AZI 300	Yes	Y		DL 1.2	LL 1.5	WLZ .029	W... -----						
50	1.2D + 1.5L + 1.0WL (30 mph) AZI 330	Yes	Y		DL 1.2	LL 1.5	WLZ .051	W... -----						

Envelope Joint Reactions

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
1	N1	max	2010.066	7	1775.187	38	2232.509	25	1978.478	13	686.16	8	1195.09	12
2		min	-995.693	25	260.434	19	-3647.117	7	-1667.343	19	-648.287	14	-921.495	18
3	N6	max	1152.461	15	1502.575	28	1929.778	15	1595.226	15	475.636	9	1481.146	10
4		min	-2194.022	9	284.204	21	-3523.646	9	-1578.618	21	-406.268	15	-1124.737	16
5	N3	max	1418.075	19	1984.193	33	3747.459	13	1586.173	14	193.845	19	899.32	24
6		min	-2217.972	13	327.288	14	-2084.274	19	-2045.247	7	-252.747	13	-954.679	6
7	N4	max	1948.768	4	2210.321	34	3988.148	3	1254.019	15	413.071	19	1669.115	10
8		min	-1104.504	22	508.219	15	-2325.66	21	-2300.932	9	-524.374	13	-725.943	16
9	N2	max	4134.338	5	2007.901	35	227.791	14	563.592	14	654.733	8	2577.985	11
10		min	-2258.596	23	520.446	16	-432.477	9	-788.055	7	-652.982	2	-1460.632	17

Envelope Joint Reactions (Continued)

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
11	N5	max	2362.193	17	1468.065	29	73.092	20	510.714	14	246.738	10	2098.207	11
12		min	-4250.127	11	95.577	22	-186.301	2	-662.238	8	-229.778	16	-1736.875	17
13	Totals:	max	9700.554	5	10602.162	28	9984.808	2						
14		min	-9700.542	23	3673.472	21	-9984.806	20						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

Member	Shape	Code Ch...	Loc[in]	LC	Shear Check	Loc.....	LC	phi*Pnc [lb]	phi*Pn...	phi*M...	phi*M...	Eqn		
1	M1	L3X3X6	.461	149.5	37	.699	149.5	y	13	67981.253	68364	2307.3..5322.3..1	H2-1	
2	M2	L3X3X6	.514	105.625	37	.558	6.5	z	5	67981.253	68364	2307.3..5322.3..1	H2-1	
3	M3	L3X3X6	.343	149.5	33	.658	149.5	y	9	67981.253	68364	2307.3..5322.3..1	H2-1	
4	M4	HSS4X2X4	.425	0	13	.160	0	z	10	79886.922	101016	6175.5	10143	2..H1-1b
5	M5	HSS4X2X4	.436	0	12	.200	0	z	33	79886.922	101016	6175.5	10143	2..H1-1b
6	M6	HSS4X2X4	.387	0	7	.179	0	z	34	79886.922	101016	6175.5	10143	2..H1-1b
7	M7	HSS4X2X4	.475	0	9	.209	0	z	37	79886.922	101016	6175.5	10143	2..H1-1b
8	M8	HSS4X2X4	.397	2.875	11	.149	0	z	32	79886.922	101016	6175.5	10143	3..H1-1b
9	M9	HSS4X2X4	.416	2.875	9	.167	0	z	37	79886.922	101016	6175.5	10143	2..H1-1b
10	M10	L2x2x4	.178	23.062	12	.010	54	y	9	18509.564	30585.6	690.934	1463.6..1..	H2-1
11	M11	L2x2x4	.192	54	10	.011	54	y	7	18509.564	30585.6	690.934	1454.4..1..	H2-1
12	M12	L2x2x4	.184	28.687	8	.010	0	y	11	18509.564	30585.6	690.934	1452.1..1..	H2-1
13	M13	L2x2x4	.139	0	9	.018	28.5	y	9	26592.541	30585.6	690.934	1576.8..2..	H2-1
14	M14	L2x2x4	.187	21.715	12	.012	50....	y	9	12327.197	30585.6	690.934	1471.6..1..	H2-1
15	M15	L2x2x4	.215	0	10	.045	20	y	9	26573.88	30585.6	690.934	1576.8..1..	H2-1
16	M16	PIPE_2.0	.358	102.375	31	.189	24....		2	5820.472	32130	1871.6..1871.6..2..	H1-1b	
17	M17	PIPE_2.0	.441	102.375	28	.150	102....		6	5820.472	32130	1871.6..1871.6..3..	H1-1b	
18	M18	PIPE_2.0	.308	53.625	30	.099	102....		2	5820.472	32130	1871.6..1871.6..2..	H1-1b	
19	M19	4"x0.25"	.271	14.547	14	.037	0	y	8	1448.519	32400	168.75	1716.3..1..	H1-1a
20	M20	PIPE_2.0	.297	19.5	6	.083	19.5		7	20866.733	32130	1871.6..1871.6..1..	H1-1b	
21	M21	PIPE_2.0	.378	52.5	2	.200	52.5		8	20866.733	32130	1871.6..1871.6..1..	H1-1b	
22	M22	L2x2x4	.225	28.5	8	.030	28.5	y	2	26592.541	30585.6	690.934	1576.8..2..	H2-1
23	M23	L2x2x4	.180	50.845	10	.014	50....	y	7	12327.197	30585.6	690.934	1530.1..1..	H2-1
24	M24	L2x2x4	.238	20	11	.038	0	y	7	26573.88	30585.6	690.934	1576.8..1..	H2-1
25	M25	PIPE_2.0	.364	19.5	35	.086	19.5		10	20866.733	32130	1871.6..1871.6..4..	H1-1b	
26	M26	PIPE_2.0	.437	52.5	31	.168	52.5		12	20866.733	32130	1871.6..1871.6..4..	H1-1b	
27	M27	L2x2x4	.212	28.5	12	.032	0	y	9	26592.541	30585.6	690.934	1576.8..1..	H2-1
28	M28	L2x2x4	.280	0	8	.023	0	y	36	12327.197	30585.6	690.934	1515.69	1..H2-1
29	M29	L2x2x4	.249	20	9	.042	0	y	11	26573.88	30585.6	690.934	1576.8..1..	H2-1
30	M30	PIPE_2.0	.217	19.5	2	.070	19.5		2	20866.733	32130	1871.6..1871.6..4..	H1-1b	
31	M31	PIPE_2.0	.262	52.5	36	.083	52.5		5	20866.733	32130	1871.6..1871.6..4..	H1-1b	
32	M32	4"x0.25"	.856	14.25	27	.034	28.5	y	10	1448.519	32400	168.75	1714.3..1..	H1-1b
33	M33	4"x0.25"	.677	14.25	35	.047	0	y	12	1448.519	32400	168.75	1751	1..H1-1b
34	M34	L2x2x4	.269	20	9	.048	20	y	11	26573.88	30585.6	690.934	1576.8..1..	H2-1
35	M35	L2x2x4	.189	0	11	.033	20	y	13	26573.88	30585.6	690.934	1576.8..1..	H2-1
36	M36	L2x2x4	.239	20	10	.045	20	y	9	26573.88	30585.6	690.934	1576.8..1..	H2-1
37	M37	L2x2x4	.196	0	33	.021	0	y	11	12327.197	30585.6	690.934	1524.6..1..	H2-1
38	M38	L2x2x4	.158	0	4	.016	50....	y	13	12327.197	30585.6	690.934	1504.0..1..	H2-1
39	M39	L2x2x4	.227	50.845	37	.021	50....	y	9	12327.197	30585.6	690.934	1521.6..1..	H2-1
40	M40	PIPE_2.0	.344	19.5	35	.069	19.5		9	20866.733	32130	1871.6..1871.6..2..	H1-1b	
41	M41	PIPE_2.0	.356	19.5	27	.095	19.5		13	20866.733	32130	1871.6..1871.6..4..	H1-1b	
42	M42	PIPE_2.0	.274	19.5	6	.078	19.5		5	20866.733	32130	1871.6..1871.6..4..	H1-1b	
43	M46	PIPE_2.0	.270	52.5	37	.073	52.5		13	20866.733	32130	1871.6..1871.6..4..	H1-1b	
44	M49	PIPE_2.0	.287	13.125	38	.078	42.5		13	23808.54	32130	1871.6..1871.6..2..	H1-1b	
45	M50	PIPE_2.0	.226	52.5	32	.066	52.5		11	20866.733	32130	1871.6..1871.6..4..	H1-1b	
46	M53	PIPE_2.0	.237	13.125	31	.067	13....		6	23808.54	32130	1871.6..1871.6..2..	H1-1b	
47	M54	PIPE_2.0	.202	52.5	33	.057	52.5		3	20866.733	32130	1871.6..1871.6..3..	H1-1b	
48	M57	PIPE_2.0	.213	13.125	34	.059	13....		9	23808.54	32130	1871.6..1871.6..2..	H1-1b	

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

Member	Shape	Code Ch...	Loc[in]	LC	Shear Check	Loc.....	LC	phi*Pnc [lb]	phi*Pn...	phi*M...	phi*M...	Eqn
49	M58	PIPE_2.0	.179	0	9	.035	0	24514.646	32130	1871.6...	1871.6...	H1-1b
50	M59	PIPE_2.0	.184	0	11	.028	0	24514.646	32130	1871.6...	1871.6...	H1-1b
51	M60	PIPE_2.0	.212	57	13	.046	57	24514.646	32130	1871.6...	1871.6...	H1-1b
52	M61	L2.5x2.5x3	.566	51.274	13	.031	51.... z	15983.345	29192.4	872.574	1876.0...	H2-1
53	M62	L2.5x2.5x3	.638	51.274	11	.027	51.... z	15983.345	29192.4	872.574	1949.3...	H2-1
54	M63	L2.5x2.5x3	.673	51.274	9	.028	51.... z	15983.345	29192.4	872.574	1939.0...	H2-1
55	M64	L2.5x2.5x3	.610	51.274	7	.035	51.... z	15983.345	29192.4	872.574	1948.6...	H2-1
56	M65	L2.5x2.5x3	.542	51.274	11	.029	51.... z	15983.345	29192.4	872.574	1925.5...	H2-1
57	M66	L2.5x2.5x3	.569	51.274	9	.031	51.... z	15983.345	29192.4	872.574	1934.9...	H2-1

Hot Rolled Steel Section Sets

Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]	
1	Handrail Plate	4"x0.25"	Beam	BAR	A36 Gr.36	Typical	1	.005	1.333	.02
2	Catwalk angle	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021
3	Bracing Angle	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021
4	Frame angle	L3X3X6	Beam	Single Angle	A36 Gr.36	Typical	2.11	1.75	1.75	.101
5	Arm	HSS4X2X4	Beam	Tube	A500 Gr.B Rect	Typical	2.44	1.48	4.49	3.82
6	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Handrail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	L2.5x2.5x3	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011

Joint Boundary Conditions

Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1	Reaction	Reaction	Reaction	Reaction	Reaction
2	N6	Reaction	Reaction	Reaction	Reaction	Reaction
3	N3	Reaction	Reaction	Reaction	Reaction	Reaction
4	N4	Reaction	Reaction	Reaction	Reaction	Reaction
5	N2	Reaction	Reaction	Reaction	Reaction	Reaction
6	N5	Reaction	Reaction	Reaction	Reaction	Reaction
7	N123					
8	N124					
9	N125					
10	N126					
11	N127					
12	N128					

Member Advanced Data

Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1					Yes				None
2	M2					Yes				None
3	M3					Yes				None
4	M4					Yes				None
5	M5					Yes				None
6	M6					Yes				None
7	M7					Yes				None
8	M8					Yes				None
9	M9					Yes				None
10	M10					Yes				None
11	M11					Yes				None
12	M12					Yes				None
13	M13					Yes				None
14	M14					Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None
18	M18						Yes				None
19	M19	BenPIN	BenPIN				Yes				None
20	M20						Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes	** NA **			None
26	M26						Yes	** NA **			None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32	BenPIN	BenPIN				Yes				None
33	M33	BenPIN	BenPIN				Yes				None
34	M34						Yes				None
35	M35						Yes				None
36	M36						Yes				None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45						Yes	** NA **			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49						Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes	** NA **			None
52	M52						Yes	** NA **			None
53	M53						Yes	** NA **			None
54	M54						Yes	** NA **			None
55	M55						Yes	** NA **			None
56	M56						Yes	** NA **			None
57	M57						Yes	** NA **			None
58	M58						Yes				None
59	M59						Yes				None
60	M60						Yes				None
61	M61						Yes				None
62	M62						Yes				None
63	M63						Yes				None
64	M64						Yes				None
65	M65						Yes				None
66	M66						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Frame angle	156	6	6	6	6					Lateral
2	M2	Frame angle	156	6	6	6	6					Lateral
3	M3	Frame angle	156	6	6	6	6					Lateral
4	M4	Arm	46			Lbyy						Lateral
5	M5	Arm	46			Lbyy						Lateral
6	M6	Arm	46			Lbyy						Lateral
7	M7	Arm	46			Lbyy						Lateral
8	M8	Arm	46			Lbyy						Lateral
9	M9	Arm	46			Lbyy						Lateral
10	M10	Bracing Ang...	54			Lbyy			.7	.7		Lateral
11	M11	Bracing Ang...	54			Lbyy			.7	.7		Lateral
12	M12	Bracing Ang...	54			Lbyy			.7	.7		Lateral
13	M13	Bracing Ang...	28.5			Lbyy			.7	.7		Lateral
14	M14	Catwalk ang...	50.845			Lbyy						Lateral
15	M15	Catwalk ang...	20			Lbyy						Lateral
16	M16	Handrail	156			Lbyy						Lateral
17	M17	Handrail	156			Lbyy						Lateral
18	M18	Handrail	156			Lbyy						Lateral
19	M19	Handrail Pla...	28.5			Lbyy						Lateral
20	M20	Mount Pipe	72			Lbyy						Lateral
21	M21	Mount Pipe	72			Lbyy						Lateral
22	M22	Bracing Ang...	28.5			Lbyy			.7	.7		Lateral
23	M23	Catwalk ang...	50.845			Lbyy						Lateral
24	M24	Catwalk ang...	20			Lbyy						Lateral
25	M25	Mount Pipe	72			Lbyy						Lateral
26	M26	Mount Pipe	72			Lbyy						Lateral
27	M27	Bracing Ang...	28.5			Lbyy			.7	.7		Lateral
28	M28	Catwalk ang...	50.845			Lbyy						Lateral
29	M29	Catwalk ang...	20			Lbyy						Lateral
30	M30	Mount Pipe	72			Lbyy						Lateral
31	M31	Mount Pipe	72			Lbyy						Lateral
32	M32	Handrail Pla...	28.5			Lbyy						Lateral
33	M33	Handrail Pla...	28.5			Lbyy						Lateral
34	M34	Catwalk ang...	20			Lbyy						Lateral
35	M35	Catwalk ang...	20			Lbyy						Lateral
36	M36	Catwalk ang...	20			Lbyy						Lateral
37	M37	Catwalk ang...	50.845			Lbyy						Lateral
38	M38	Catwalk ang...	50.845			Lbyy						Lateral
39	M39	Catwalk ang...	50.845			Lbyy						Lateral
40	M40	Mount Pipe	72			Lbyy						Lateral
41	M41	Mount Pipe	72			Lbyy						Lateral
42	M42	Mount Pipe	72			Lbyy						Lateral
43	M46	Mount Pipe	72			Lbyy						Lateral
44	M49	Mount Pipe	60									Lateral
45	M50	Mount Pipe	72			Lbyy						Lateral
46	M53	Mount Pipe	60									Lateral
47	M54	Mount Pipe	72			Lbyy						Lateral
48	M57	Mount Pipe	60									Lateral
49	M58	Handrail	57			Lbyy						Lateral
50	M59	Handrail	57			Lbyy						Lateral
51	M60	Handrail	57			Lbyy						Lateral
52	M61	L2.5x2.5x3	51.274			Lbyy						Lateral
53	M62	L2.5x2.5x3	51.274			Lbyy						Lateral
54	M63	L2.5x2.5x3	51.274			Lbyy						Lateral
55	M64	L2.5x2.5x3	51.274			Lbyy						Lateral
56	M65	L2.5x2.5x3	51.274			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
57	M66	L2.5x2.5x3	51.274			Lbyy						Lateral

Joint Loads and Enforced Displacements (BLC 7 : Service Live 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N10	L	Y	-250
2	N30	L	Y	-250

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[(lb,lb-ft)	Location[in,%]
1	M43	Y	-48.8	%10
2	M22	Y	-17.5	%10
3	M21	Y	-48.8	%10
4	M20	Y	-63.3	%10
5	M22	Y	-18.3	%80
6	M20	Y	-18.3	%80
7	M43	Y	-29.5	%80
8	M22	Y	-55.12	%50
9	M43	Y	-71	%50
10	M21	Y	-59.9	%50
11	M20	Y	-72	%50
12	M43	Y	-16	%80
13	M21	Y	-16	%80
14	M1	Y	-32.8	%40
15	M43	Y	-48.8	%90
16	M22	Y	-17.5	%90
17	M21	Y	-48.8	%90
18	M20	Y	-63.3	%90
19	M45	Y	-48.8	%10
20	M34	Y	-17.5	%10
21	M33	Y	-48.8	%10
22	M32	Y	-63.3	%10
23	M34	Y	-18.3	%80
24	M32	Y	-18.3	%80
25	M34	Y	-55.12	%50
26	M45	Y	-71	%50
27	M33	Y	-59.9	%50
28	M32	Y	-72	%50
29	M45	Y	-16	%80
30	M33	Y	-16	%80
31	M3	Y	-32.8	%40
32	M45	Y	-48.8	%90
33	M8	Y	-17.5	%90
34	M8	Y	-48.8	%90
35	M32	Y	-63.3	%90
36	M44	Y	-48.8	%10
37	M28	Y	-17.5	%10
38	M27	Y	-48.8	%10
39	M26	Y	-63.3	%10
40	M28	Y	-18.3	%80
41	M26	Y	-18.3	%80
42	M28	Y	-55.12	%50
43	M44	Y	-71	%50
44	M27	Y	-59.9	%50
45	M26	Y	-72	%50

Member Point Loads (BLC 1 : Self Weight) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in,%]
46	M44	Y	-16	%80
47	M27	Y	-16	%80
48	M2	Y	-32.8	%40
49	M44	Y	-48.8	%90
50	M6	Y	-17.5	%90
51	M6	Y	-48.8	%90
52	M26	Y	-63.3	%90

Member Point Loads (BLC 2 : Wind Load AZI 000)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in,%]
1	M43	Z	-323.1	%10
2	M22	Z	-130.22	%10
3	M21	Z	-323.1	%10
4	M20	Z	-190.24	%10
5	M22	Z	-19.34	%80
6	M20	Z	-19.34	%80
7	M43	Z	-46.28	%80
8	M22	Z	-133.65	%50
9	M43	Z	-92.04	%50
10	M21	Z	-86.19	%50
11	M20	Z	-76.67	%50
12	M43	Z	-25.86	%80
13	M21	Z	-25.86	%80
14	M1	Z	-56.68	%40
15	M43	Z	-323.1	%90
16	M22	Z	-130.22	%90
17	M21	Z	-323.1	%90
18	M20	Z	-190.24	%90
19	M45	Z	-183.1	%10
20	M34	Z	-83.79	%10
21	M33	Z	-183.1	%10
22	M32	Z	-166.85	%10
23	M34	Z	-19.92	%80
24	M32	Z	-19.92	%80
25	M34	Z	-95.74	%50
26	M45	Z	-72.41	%50
27	M33	Z	-58.69	%50
28	M32	Z	-66.65	%50
29	M45	Z	-22.09	%80
30	M33	Z	-22.09	%80
31	M3	Z	-56.68	%40
32	M45	Z	-183.1	%90
33	M8	Z	-83.79	%90
34	M8	Z	-183.1	%90
35	M32	Z	-166.85	%90
36	M44	Z	-183.1	%10
37	M28	Z	-83.79	%10
38	M27	Z	-183.1	%10
39	M26	Z	-166.85	%10
40	M28	Z	-19.92	%80
41	M26	Z	-19.92	%80
42	M28	Z	-95.74	%50
43	M44	Z	-72.41	%50
44	M27	Z	-58.69	%50
45	M26	Z	-66.65	%50
46	M44	Z	-22.09	%80

Member Point Loads (BLC 2 : Wind Load AZI 000) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
47	M27	Z	-22.09	%80
48	M2	Z	-56.68	%40
49	M44	Z	-183.1	%90
50	M6	Z	-83.79	%90
51	M6	Z	-183.1	%90
52	M26	Z	-166.85	%90

Member Point Loads (BLC 3 : Wind Load AZI 090)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	M43	X	-136.44	%10
2	M22	X	-68.32	%10
3	M21	X	-136.44	%10
4	M20	X	-159.05	%10
5	M22	X	-20.12	%80
6	M20	X	-20.12	%80
7	M43	X	-30.13	%80
8	M22	X	-83.11	%50
9	M43	X	-65.87	%50
10	M21	X	-49.53	%50
11	M20	X	-63.31	%50
12	M43	X	-20.84	%80
13	M21	X	-20.84	%80
14	M1	X	-56.68	%40
15	M43	X	-136.44	%90
16	M22	X	-68.32	%90
17	M21	X	-136.44	%90
18	M20	X	-159.05	%90
19	M45	X	-276.44	%10
20	M34	X	-114.74	%10
21	M33	X	-276.44	%10
22	M32	X	-182.44	%10
23	M34	X	-19.53	%80
24	M32	X	-19.53	%80
25	M34	X	-121.02	%50
26	M45	X	-85.5	%50
27	M33	X	-77.03	%50
28	M32	X	-73.33	%50
29	M45	X	-24.6	%80
30	M33	X	-24.6	%80
31	M3	X	-56.68	%40
32	M45	X	-276.44	%90
33	M8	X	-114.74	%90
34	M8	X	-276.44	%90
35	M32	X	-182.44	%90
36	M44	X	-276.44	%10
37	M28	X	-114.74	%10
38	M27	X	-276.44	%10
39	M26	X	-182.44	%10
40	M28	X	-19.53	%80
41	M26	X	-19.53	%80
42	M28	X	-121.02	%50
43	M44	X	-85.5	%50
44	M27	X	-77.03	%50
45	M26	X	-73.33	%50
46	M44	X	-24.6	%80
47	M27	X	-24.6	%80

Member Point Loads (BLC 3 : Wind Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in,%]
48	M2	X	-56.68	%40
49	M44	X	-276.44	%90
50	M6	X	-114.74	%90
51	M6	X	-276.44	%90
52	M26	X	-182.44	%90

Member Point Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in,%]
1	M43	Y	-118.62	%10
2	M22	Y	-53.17	%10
3	M21	Y	-118.62	%10
4	M20	Y	-89.99	%10
5	M22	Y	-19.27	%80
6	M20	Y	-19.27	%80
7	M43	Y	-33.23	%80
8	M22	Y	-72.36	%50
9	M43	Y	-60.44	%50
10	M21	Y	-52.43	%50
11	M20	Y	-57.58	%50
12	M43	Y	-20.99	%80
13	M21	Y	-20.99	%80
14	M1	Y	-70.37	%40
15	M43	Y	-118.62	%90
16	M22	Y	-53.17	%90
17	M21	Y	-118.62	%90
18	M20	Y	-89.99	%90
19	M45	Y	-118.62	%10
20	M34	Y	-53.17	%10
21	M33	Y	-118.62	%10
22	M32	Y	-89.99	%10
23	M34	Y	-19.27	%80
24	M32	Y	-19.27	%80
25	M34	Y	-72.36	%50
26	M45	Y	-60.44	%50
27	M33	Y	-52.43	%50
28	M32	Y	-57.58	%50
29	M45	Y	-20.99	%80
30	M33	Y	-20.99	%80
31	M3	Y	-70.37	%40
32	M45	Y	-118.62	%90
33	M8	Y	-53.17	%90
34	M8	Y	-118.62	%90
35	M32	Y	-89.99	%90
36	M44	Y	-118.62	%10
37	M28	Y	-53.17	%10
38	M27	Y	-118.62	%10
39	M26	Y	-89.99	%10
40	M28	Y	-19.27	%80
41	M26	Y	-19.27	%80
42	M28	Y	-72.36	%50
43	M44	Y	-60.44	%50
44	M27	Y	-52.43	%50
45	M26	Y	-57.58	%50
46	M44	Y	-20.99	%80
47	M27	Y	-20.99	%80
48	M2	Y	-70.37	%40

Member Point Loads (BLC 4 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
49	M44	Y	-118.62	%90
50	M6	Y	-53.17	%90
51	M6	Y	-118.62	%90
52	M26	Y	-89.99	%90

Member Point Loads (BLC 5 : Wind + Ice Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	M43	Z	-61.41	%10
2	M22	Z	-27.24	%10
3	M21	Z	-61.41	%10
4	M20	Z	-38.55	%10
5	M22	Z	-6.23	%80
6	M20	Z	-6.23	%80
7	M43	Z	-11.99	%80
8	M22	Z	-29.48	%50
9	M43	Z	-21.11	%50
10	M21	Z	-19.94	%50
11	M20	Z	-18.07	%50
12	M43	Z	-7.72	%80
13	M21	Z	-7.72	%80
14	M1	Z	-29.95	%40
15	M43	Z	-61.41	%90
16	M22	Z	-27.24	%90
17	M21	Z	-61.41	%90
18	M20	Z	-38.55	%90
19	M45	Z	-38.13	%10
20	M34	Z	-19.52	%10
21	M33	Z	-38.13	%10
22	M32	Z	-34.68	%10
23	M34	Z	-6.36	%80
24	M32	Z	-6.36	%80
25	M34	Z	-22.45	%50
26	M45	Z	-17.41	%50
27	M33	Z	-14.7	%50
28	M32	Z	-16.13	%50
29	M45	Z	-6.94	%80
30	M33	Z	-6.94	%80
31	M3	Z	-20.59	%40
32	M45	Z	-38.13	%90
33	M8	Z	-19.52	%90
34	M8	Z	-38.13	%90
35	M32	Z	-34.68	%90
36	M44	Z	-38.13	%10
37	M28	Z	-19.52	%10
38	M27	Z	-38.13	%10
39	M26	Z	-34.68	%10
40	M28	Z	-6.36	%80
41	M26	Z	-6.36	%80
42	M28	Z	-22.45	%50
43	M44	Z	-17.41	%50
44	M27	Z	-14.7	%50
45	M26	Z	-16.13	%50
46	M44	Z	-6.94	%80
47	M27	Z	-6.94	%80
48	M2	Z	-20.59	%40
49	M44	Z	-38.13	%90

Member Point Loads (BLC 5 : Wind + Ice Load AZI 000) (Continued)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in,%]
50	M6	Z	-19.52	%90
51	M6	Z	-38.13	%90
52	M26	Z	-34.68	%90

Member Point Loads (BLC 6 : Wind + Ice Load AZI 090)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in,%]
1	M43	X	-30.37	%10
2	M22	X	-16.95	%10
3	M21	X	-30.37	%10
4	M20	X	-33.39	%10
5	M22	X	-6.4	%80
6	M20	X	-6.4	%80
7	M43	X	-8.69	%80
8	M22	X	-20.11	%50
9	M43	X	-16.17	%50
10	M21	X	-12.95	%50
11	M20	X	-15.48	%50
12	M43	X	-6.67	%80
13	M21	X	-6.67	%80
14	M1	X	-17.47	%40
15	M43	X	-30.37	%90
16	M22	X	-16.95	%90
17	M21	X	-30.37	%90
18	M20	X	-33.39	%90
19	M45	X	-53.65	%10
20	M34	X	-24.67	%10
21	M33	X	-53.65	%10
22	M32	X	-37.26	%10
23	M34	X	-6.27	%80
24	M32	X	-6.27	%80
25	M34	X	-27.14	%50
26	M45	X	-19.87	%50
27	M33	X	-18.19	%50
28	M32	X	-17.42	%50
29	M45	X	-7.46	%80
30	M33	X	-7.46	%80
31	M3	X	-26.83	%40
32	M45	X	-53.65	%90
33	M8	X	-24.67	%90
34	M8	X	-53.65	%90
35	M32	X	-37.26	%90
36	M44	X	-53.65	%10
37	M28	X	-24.67	%10
38	M27	X	-53.65	%10
39	M26	X	-37.26	%10
40	M28	X	-6.27	%80
41	M26	X	-6.27	%80
42	M28	X	-27.14	%50
43	M44	X	-19.87	%50
44	M27	X	-18.19	%50
45	M26	X	-17.42	%50
46	M44	X	-7.46	%80
47	M27	X	-7.46	%80
48	M2	X	-26.83	%40
49	M44	X	-53.65	%90
50	M6	X	-24.67	%90

Member Point Loads (BLC 6 : Wind + Ice Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
51	M6	X	-53.65	%90
52	M26	X	-37.26	%90

Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,F.psf]	End Magnitude[lb/ft,F.psf]	Start Location[in..	End Location[in....
1	M1	Y	-9.829	-9.829	0	%100
2	M2	Y	-9.829	-9.829	0	%100
3	M3	Y	-9.829	-9.829	0	%100
4	M4	Y	-12.049	-12.049	0	%100
5	M5	Y	-12.049	-12.049	0	%100
6	M6	Y	-12.049	-12.049	0	%100
7	M7	Y	-12.049	-12.049	0	%100
8	M8	Y	-12.049	-12.049	0	%100
9	M9	Y	-12.049	-12.049	0	%100
10	M10	Y	-7.609	-7.609	0	%100
11	M11	Y	-7.609	-7.609	0	%100
12	M12	Y	-7.609	-7.609	0	%100
13	M13	Y	-7.609	-7.609	0	%100
14	M14	Y	-7.609	-7.609	0	%100
15	M15	Y	-7.609	-7.609	0	%100
16	M16	Y	-6.63	-6.63	0	%100
17	M17	Y	-6.63	-6.63	0	%100
18	M18	Y	-6.63	-6.63	0	%100
19	M19	Y	-12.049	-12.049	0	%100
20	M20	Y	-6.63	-6.63	0	%100
21	M21	Y	-6.63	-6.63	0	%100
22	M22	Y	-6.63	-6.63	0	%100
23	M23	Y	-7.609	-7.609	0	%100
24	M24	Y	-7.609	-7.609	0	%100
25	M25	Y	-7.609	-7.609	0	%100
26	M26	Y	-6.63	-6.63	0	%100
27	M27	Y	-6.63	-6.63	0	%100
28	M28	Y	-6.63	-6.63	0	%100
29	M29	Y	-7.609	-7.609	0	%100
30	M30	Y	-7.609	-7.609	0	%100
31	M31	Y	-7.609	-7.609	0	%100
32	M32	Y	-6.63	-6.63	0	%100
33	M33	Y	-6.63	-6.63	0	%100
34	M34	Y	-6.63	-6.63	0	%100
35	M35	Y	-12.049	-12.049	0	%100
36	M36	Y	-12.049	-12.049	0	%100
37	M37	Y	-7.609	-7.609	0	%100
38	M38	Y	-7.609	-7.609	0	%100
39	M39	Y	-7.609	-7.609	0	%100
40	M40	Y	-7.609	-7.609	0	%100
41	M41	Y	-7.609	-7.609	0	%100
42	M42	Y	-7.609	-7.609	0	%100
43	M43	Y	-6.63	-6.63	0	%100
44	M44	Y	-6.63	-6.63	0	%100
45	M45	Y	-6.63	-6.63	0	%100

Member Distributed Loads (BLC 8 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F.psf]	End Magnitude[lb/ft,F.psf]	Start Location[in..	End Location[in....
1	M1	Y	-5.032	-4.113	0	31.2
2	M1	Y	-4.113	-3.195	31.2	62.4

Member Distributed Loads (BLC 8 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in..	End Location[in...
3	M3	Y	-3.095	-4.408	93.6	124.8
4	M3	Y	-4.408	-5.722	124.8	156
5	M10	Y	-9.279	-9.279	15.385	38.952
6	M13	Y	-10.99	-9.929	2.85	14.25
7	M13	Y	-9.929	-8.868	14.25	25.65
8	M45	Y	-4.012	-4.012	0	9.928
9	M1	Y	-3.195	-4.113	93.6	124.8
10	M1	Y	-4.113	-5.032	124.8	156
11	M2	Y	-3.095	-4.408	93.6	124.8
12	M2	Y	-4.408	-5.722	124.8	156
13	M11	Y	-9.279	-9.279	15.385	38.952
14	M22	Y	-8.868	-9.929	2.85	14.25
15	M22	Y	-9.929	-10.99	14.25	25.65
16	M43	Y	-4.012	-4.012	0	9.928
17	M2	Y	-5.814	-4.375	0	31.2
18	M2	Y	-4.375	-2.935	31.2	62.4
19	M3	Y	-5.796	-4.433	0	31.2
20	M3	Y	-4.433	-3.069	31.2	62.4
21	M12	Y	-9.28	-9.28	15.05	38.617
22	M27	Y	-9.26	-9.288	2.85	14.25
23	M27	Y	-9.288	-9.316	14.25	25.65
24	M44	Y	-3.688	-3.688	0	9.928
25	M6	Y	-8.388	-8.388	9.416	39.584
26	M8	Y	-17.779	-17.779	16.866	39.268
27	M14	Y	-9.507	-9.507	12.891	34.623
28	M15	Y	-10.812	-10.812	2.09	14.09
29	M9	Y	-8.388	-8.388	9.416	39.584
30	M35	Y	-10.813	-10.813	2.09	14.09
31	M38	Y	-9.506	-9.506	12.891	34.623
32	M6	Y	-8.492	-8.492	10.037	40.205
33	M7	Y	-8.492	-8.492	10.037	40.204
34	M34	Y	-9.447	-9.447	4	16
35	M37	Y	-8.141	-8.141	15.425	35.421
36	M5	Y	-17.779	-17.779	16.866	39.268
37	M7	Y	-8.388	-8.388	9.416	39.584
38	M23	Y	-9.507	-9.507	16.222	37.954
39	M24	Y	-10.812	-10.812	5.91	17.91
40	M4	Y	-8.388	-8.388	9.416	39.584
41	M36	Y	-10.813	-10.813	5.91	17.91
42	M39	Y	-9.506	-9.506	16.222	37.954
43	M4	Y	-8.492	-8.492	10.037	40.205
44	M9	Y	-8.492	-8.492	10.037	40.204
45	M28	Y	-8.141	-8.141	15.425	35.421
46	M29	Y	-9.447	-9.447	4	16

Member Distributed Loads (BLC 9 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in..	End Location[in...
1	M1	Z	-23.39	-23.39	0	156
2	M2	Z	-11.695	-11.695	0	156
3	M3	Z	-11.695	-11.695	0	156
4	M4	Z	-7.797	-7.797	0	46
5	M5	Z	-15.593	-15.593	0	46
6	M6	Z	-7.797	-7.797	0	46
7	M7	Z	-7.797	-7.797	0	46
8	M8	Z	-15.593	-15.593	0	46
9	M9	Z	-7.797	-7.797	0	46

Member Distributed Loads (BLC 9 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in..	End Location[in...
10	M10	Z	-7.797	-7.797	0	54
11	M11	Z	-7.797	-7.797	0	54
12	M12	Z	-15.593	-15.593	0	54
13	M13	Z	-7.797	-7.797	0	28.5
14	M14	Z	-7.797	-7.797	0	50.845
15	M15	Z	-7.797	-7.797	0	20
16	M16	Z	-18.517	-18.517	0	156
17	M17	Z	-9.259	-9.259	0	156
18	M18	Z	-9.259	-9.259	0	156
19	M19	Z	-.975	-.975	0	28.5
20	M20	Z	-18.517	-18.517	0	72
21	M21	Z	-18.517	-18.517	0	72
22	M22	Z	-7.797	-7.797	0	28.5
23	M23	Z	-7.797	-7.797	0	50.845
24	M24	Z	-7.797	-7.797	0	20
25	M25	Z	-18.517	-18.517	0	72
26	M26	Z	-18.517	-18.517	0	72
27	M27	Z	-15.593	-15.593	0	28.5
28	M28	Z	-15.593	-15.593	0	50.845
29	M29	Z	-15.593	-15.593	0	20
30	M30	Z	-18.517	-18.517	0	72
31	M31	Z	-18.517	-18.517	0	72
32	M32	Z	-1.949	-1.949	0	28.5
33	M33	Z	-.975	-.975	0	28.5
34	M34	Z	-15.593	-15.593	0	20
35	M35	Z	-7.797	-7.797	0	20
36	M36	Z	-7.797	-7.797	0	20
37	M37	Z	-15.593	-15.593	0	50.845
38	M38	Z	-7.797	-7.797	0	50.845
39	M39	Z	-7.797	-7.797	0	50.845
40	M40	Z	-18.517	-18.517	0	72
41	M41	Z	-18.517	-18.517	0	72
42	M42	Z	-18.517	-18.517	0	72
43	M43	Z	0	0	0	9.928
44	M44	Z	0	0	0	9.928
45	M45	Z	0	0	0	9.928
46	M46	Z	-18.517	-18.517	0	72
47	M49	Z	-18.517	-18.517	0	60
48	M50	Z	-18.517	-18.517	0	72
49	M51	Z	0	0	0	4
50	M52	Z	0	0	0	4
51	M53	Z	-18.517	-18.517	0	60
52	M54	Z	-18.517	-18.517	0	72
53	M55	Z	0	0	0	4
54	M56	Z	0	0	0	4
55	M57	Z	-18.517	-18.517	0	60
56	M58	Z	-9.259	-9.259	0	57
57	M59	Z	-18.517	-18.517	0	57
58	M60	Z	-9.259	-9.259	0	57
59	M61	Z	-10.214	-10.214	0	51.274
60	M62	Z	-20.166	-20.166	0	51.274
61	M63	Z	-20.282	-20.282	0	51.274
62	M64	Z	-10.781	-10.781	0	51.274
63	M65	Z	-19.454	-19.454	0	51.274
64	M66	Z	-18.886	-18.886	0	51.274

Member Distributed Loads (BLC 10 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in..	End Location[in...
1	M2	X	-20.256	-20.256	0	156
2	M3	X	-20.256	-20.256	0	156
3	M4	X	-13.504	-13.504	0	46
4	M6	X	-13.504	-13.504	0	46
5	M7	X	-13.504	-13.504	0	46
6	M9	X	-13.504	-13.504	0	46
7	M10	X	-13.504	-13.504	0	54
8	M11	X	-13.504	-13.504	0	54
9	M13	X	-13.504	-13.504	0	28.5
10	M14	X	-13.504	-13.504	0	50.845
11	M15	X	-13.504	-13.504	0	20
12	M17	X	-16.036	-16.036	0	156
13	M18	X	-16.036	-16.036	0	156
14	M19	X	-1.688	-1.688	0	28.5
15	M20	X	-18.517	-18.517	0	72
16	M21	X	-18.517	-18.517	0	72
17	M22	X	-13.504	-13.504	0	28.5
18	M23	X	-13.504	-13.504	0	50.845
19	M24	X	-13.504	-13.504	0	20
20	M25	X	-18.517	-18.517	0	72
21	M26	X	-18.517	-18.517	0	72
22	M30	X	-18.517	-18.517	0	72
23	M31	X	-18.517	-18.517	0	72
24	M33	X	-1.688	-1.688	0	28.5
25	M35	X	-13.504	-13.504	0	20
26	M36	X	-13.504	-13.504	0	20
27	M38	X	-13.504	-13.504	0	50.845
28	M39	X	-13.504	-13.504	0	50.845
29	M40	X	-18.517	-18.517	0	72
30	M41	X	-18.517	-18.517	0	72
31	M42	X	-18.517	-18.517	0	72
32	M43	X	0	0	0	9.928
33	M45	X	0	0	0	9.928
34	M46	X	-18.517	-18.517	0	72
35	M47	X	0	0	0	4
36	M48	X	0	0	0	4
37	M49	X	-18.517	-18.517	0	60
38	M50	X	-18.517	-18.517	0	72
39	M51	X	0	0	0	4
40	M52	X	0	0	0	4
41	M53	X	-18.517	-18.517	0	60
42	M54	X	-18.517	-18.517	0	72
43	M55	X	0	0	0	4
44	M56	X	0	0	0	4
45	M57	X	-18.517	-18.517	0	60
46	M58	X	-16.036	-16.036	0	57
47	M60	X	-16.036	-16.036	0	57
48	M61	X	-22.53	-22.53	0	51.274
49	M62	X	-11.382	-11.382	0	51.274
50	M63	X	-16.238	-16.238	0	51.274
51	M64	X	-22.547	-22.547	0	51.274
52	M65	X	-12.6	-12.6	0	51.274
53	M66	X	-17.456	-17.456	0	51.274

Member Distributed Loads (BLC 11 : BLC 4 Transient Area Loads)

Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in..	End Location[in,...
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Member Distributed Loads (BLC 11 : BLC 4 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in..	End Location[in...
1	M1	Y	-3.009	-2.46	0	31.2
2	M1	Y	-2.46	-1.911	31.2	62.4
3	M3	Y	-1.851	-2.636	93.6	124.8
4	M3	Y	-2.636	-3.422	124.8	156
5	M10	Y	-5.549	-5.549	15.385	38.952
6	M13	Y	-6.572	-5.937	2.85	14.25
7	M13	Y	-5.937	-5.303	14.25	25.65
8	M45	Y	-2.399	-2.399	0	9.928
9	M1	Y	-1.911	-2.46	93.6	124.8
10	M1	Y	-2.46	-3.009	124.8	156
11	M2	Y	-1.851	-2.636	93.6	124.8
12	M2	Y	-2.636	-3.422	124.8	156
13	M11	Y	-5.549	-5.549	15.385	38.952
14	M22	Y	-5.303	-5.937	2.85	14.25
15	M22	Y	-5.937	-6.572	14.25	25.65
16	M43	Y	-2.399	-2.399	0	9.928
17	M2	Y	-3.477	-2.616	0	31.2
18	M2	Y	-2.616	-1.755	31.2	62.4
19	M3	Y	-3.466	-2.651	0	31.2
20	M3	Y	-2.651	-1.835	31.2	62.4
21	M12	Y	-5.549	-5.549	15.05	38.617
22	M27	Y	-5.537	-5.554	2.85	14.25
23	M27	Y	-5.554	-5.571	14.25	25.65
24	M44	Y	-2.205	-2.205	0	9.928
25	M6	Y	-5.016	-5.016	9.416	39.584
26	M8	Y	-10.632	-10.632	16.866	39.268
27	M14	Y	-5.685	-5.685	12.891	34.623
28	M15	Y	-6.466	-6.466	2.09	14.09
29	M9	Y	-5.016	-5.016	9.416	39.584
30	M35	Y	-6.466	-6.466	2.09	14.09
31	M38	Y	-5.685	-5.685	12.891	34.623
32	M6	Y	-5.078	-5.078	10.037	40.205
33	M7	Y	-5.078	-5.078	10.037	40.204
34	M34	Y	-5.649	-5.649	4	16
35	M37	Y	-4.868	-4.868	15.425	35.421
36	M5	Y	-10.632	-10.632	16.866	39.268
37	M7	Y	-5.016	-5.016	9.416	39.584
38	M23	Y	-5.685	-5.685	16.222	37.954
39	M24	Y	-6.466	-6.466	5.91	17.91
40	M4	Y	-5.016	-5.016	9.416	39.584
41	M36	Y	-6.466	-6.466	5.91	17.91
42	M39	Y	-5.685	-5.685	16.222	37.954
43	M4	Y	-5.078	-5.078	10.037	40.205
44	M9	Y	-5.078	-5.078	10.037	40.204
45	M28	Y	-4.868	-4.868	15.425	35.421
46	M29	Y	-5.649	-5.649	4	16

Member Distributed Loads (BLC 12 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in..	End Location[in...
1	M1	Z	-4.795	-4.795	0	156
2	M2	Z	-2.397	-2.397	0	156
3	M3	Z	-2.397	-2.397	0	156
4	M4	Z	-1.598	-1.598	0	46
5	M5	Z	-3.197	-3.197	0	46
6	M6	Z	-1.598	-1.598	0	46
7	M7	Z	-1.598	-1.598	0	46

Member Distributed Loads (BLC 12 : BLC 5 Transient Area Loads) (Continued)

Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in..	End Location[in...
8	M8	Z	-3.197	0	46
9	M9	Z	-1.598	0	46
10	M10	Z	-1.598	0	54
11	M11	Z	-1.598	0	54
12	M12	Z	-3.197	0	54
13	M13	Z	-1.598	0	28.5
14	M14	Z	-1.598	0	50.845
15	M15	Z	-1.598	0	20
16	M16	Z	-3.796	0	156
17	M17	Z	-1.898	0	156
18	M18	Z	-1.898	0	156
19	M19	Z	-2	0	28.5
20	M20	Z	-3.796	0	72
21	M21	Z	-3.796	0	72
22	M22	Z	-1.598	0	28.5
23	M23	Z	-1.598	0	50.845
24	M24	Z	-1.598	0	20
25	M25	Z	-3.796	0	72
26	M26	Z	-3.796	0	72
27	M27	Z	-3.197	0	28.5
28	M28	Z	-3.197	0	50.845
29	M29	Z	-3.197	0	20
30	M30	Z	-3.796	0	72
31	M31	Z	-3.796	0	72
32	M32	Z	-4	0	28.5
33	M33	Z	-2	0	28.5
34	M34	Z	-3.197	0	20
35	M35	Z	-1.598	0	20
36	M36	Z	-1.598	0	20
37	M37	Z	-3.197	0	50.845
38	M38	Z	-1.598	0	50.845
39	M39	Z	-1.598	0	50.845
40	M40	Z	-3.796	0	72
41	M41	Z	-3.796	0	72
42	M42	Z	-3.796	0	72
43	M43	Z	0	0	9.928
44	M44	Z	0	0	9.928
45	M45	Z	0	0	9.928
46	M46	Z	-3.796	0	72
47	M49	Z	-3.796	0	60
48	M50	Z	-3.796	0	72
49	M51	Z	0	0	4
50	M52	Z	0	0	4
51	M53	Z	-3.796	0	60
52	M54	Z	-3.796	0	72
53	M55	Z	0	0	4
54	M56	Z	0	0	4
55	M57	Z	-3.796	0	60
56	M58	Z	-1.898	0	57
57	M59	Z	-3.796	0	57
58	M60	Z	-1.898	0	57
59	M61	Z	-2.094	0	51.274
60	M62	Z	-4.134	0	51.274
61	M63	Z	-4.158	0	51.274
62	M64	Z	-2.21	0	51.274
63	M65	Z	-3.988	0	51.274
64	M66	Z	-3.872	0	51.274

Member Distributed Loads (BLC 13 : BLC 6 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in..	End Location[in...
1	M2	X	-4.153	-4.153	0	156
2	M3	X	-4.153	-4.153	0	156
3	M4	X	-2.768	-2.768	0	46
4	M6	X	-2.768	-2.768	0	46
5	M7	X	-2.768	-2.768	0	46
6	M9	X	-2.768	-2.768	0	46
7	M10	X	-2.768	-2.768	0	54
8	M11	X	-2.768	-2.768	0	54
9	M13	X	-2.768	-2.768	0	28.5
10	M14	X	-2.768	-2.768	0	50.845
11	M15	X	-2.768	-2.768	0	20
12	M17	X	-3.287	-3.287	0	156
13	M18	X	-3.287	-3.287	0	156
14	M19	X	-.346	-.346	0	28.5
15	M20	X	-3.796	-3.796	0	72
16	M21	X	-3.796	-3.796	0	72
17	M22	X	-2.768	-2.768	0	28.5
18	M23	X	-2.768	-2.768	0	50.845
19	M24	X	-2.768	-2.768	0	20
20	M25	X	-3.796	-3.796	0	72
21	M26	X	-3.796	-3.796	0	72
22	M30	X	-3.796	-3.796	0	72
23	M31	X	-3.796	-3.796	0	72
24	M33	X	-.346	-.346	0	28.5
25	M35	X	-2.768	-2.768	0	20
26	M36	X	-2.768	-2.768	0	20
27	M38	X	-2.768	-2.768	0	50.845
28	M39	X	-2.768	-2.768	0	50.845
29	M40	X	-3.796	-3.796	0	72
30	M41	X	-3.796	-3.796	0	72
31	M42	X	-3.796	-3.796	0	72
32	M43	X	0	0	0	9.928
33	M45	X	0	0	0	9.928
34	M46	X	-3.796	-3.796	0	72
35	M47	X	0	0	0	4
36	M48	X	0	0	0	4
37	M49	X	-3.796	-3.796	0	60
38	M50	X	-3.796	-3.796	0	72
39	M51	X	0	0	0	4
40	M52	X	0	0	0	4
41	M53	X	-3.796	-3.796	0	60
42	M54	X	-3.796	-3.796	0	72
43	M55	X	0	0	0	4
44	M56	X	0	0	0	4
45	M57	X	-3.796	-3.796	0	60
46	M58	X	-3.287	-3.287	0	57
47	M60	X	-3.287	-3.287	0	57
48	M61	X	-4.619	-4.619	0	51.274
49	M62	X	-2.333	-2.333	0	51.274
50	M63	X	-3.329	-3.329	0	51.274
51	M64	X	-4.622	-4.622	0	51.274
52	M65	X	-2.583	-2.583	0	51.274
53	M66	X	-3.579	-3.579	0	51.274

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N14	N13	N7	N8	Y	Two Way	-10
2	N35	N36	N30	N29	Y	Two Way	-10
3	N42	N41	N47	N48	Y	Two Way	-10
4	N63	N65	N59	N57	Y	Two Way	-10
5	N65	N66	N60	N59	Y	Two Way	-10
6	N63	N64	N58	N57	Y	Two Way	-10
7	N58	N64	N68	N62	Y	Two Way	-10
8	N68	N67	N61	N62	Y	Two Way	-10
9	N60	N61	N67	N66	Y	Two Way	-10

Member Area Loads (BLC 2 : Wind Load AZI 000)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N99	N100	N102	N101	Z	Open Structure	-93.56

Member Area Loads (BLC 3 : Wind Load AZI 090)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N100	N103	N104	N102	X	Open Structure	-93.56

Member Area Loads (BLC 4 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N14	N13	N7	N8	Y	Two Way	-5.98
2	N35	N36	N30	N29	Y	Two Way	-5.98
3	N42	N41	N47	N48	Y	Two Way	-5.98
4	N63	N65	N59	N57	Y	Two Way	-5.98
5	N65	N66	N60	N59	Y	Two Way	-5.98
6	N63	N64	N58	N57	Y	Two Way	-5.98
7	N58	N64	N68	N62	Y	Two Way	-5.98
8	N68	N67	N61	N62	Y	Two Way	-5.98
9	N60	N61	N67	N66	Y	Two Way	-5.98

Member Area Loads (BLC 5 : Wind + Ice Load AZI 000)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N99	N100	N102	N101	Z	Open Structure	-19.18

Member Area Loads (BLC 6 : Wind + Ice Load AZI 090)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N100	N103	N104	N102	X	Open Structure	-19.18

APPENDIX D
ADDITIONAL CALCUATIONS

Date: 1/29/2019
 Client: Crown Castle
 Carrier: AT&T
 Engineer: CLK
 Site: 876320
 Job #: 1039-A0002-B

Code: LRFD
 Axial: 2210.00 lbs
 Shear: 4250.00 lbs

Bolt Capacity (1/2" A307 Bolt)				
	Ult Load / Bolt	Factored Load ($\phi=0.75$)	# of Bolts	Factor Joint Capacity
Axial (lb)	8226.7	6170.0	2	12340
Shear(lb)	5133.3	3850.0	2	7700

Interaction Check	
$T / \phi T_n$	17.9%
$V / \phi V_n$	55.2%
≤ 1.0	33.7%
	OK

APPENDIX E

MOUNT MODIFICATION DESIGN DRAWINGS (MDD) / SUPPLEMENTAL DRAWINGS

GENERAL NOTES:

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVALITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
 - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
 - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
 - RECTANGULAR HSS TO BE A500, GRADE B. Fy=46 KSI, U.N.O.
 - ROUND HSS TO BE A500, GRADE B. Fy=42 KSI, U.N.O.
 - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
 - BOLTS TO BE A307. Fu=120 KSI, U.N.O.
 - U-BOLTS AND LAG SCREWS TO BE A307 GR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
 - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
 - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
 - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
 - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.

CONCRETE CONSTRUCTION NOTES:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE Fy = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

	RANGE	RECOMMENDED
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
 - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
 - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
 - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
 - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
 - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

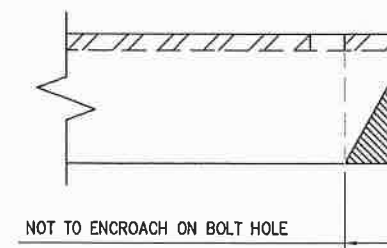
TOWER PLUMB & TENSION NOTES:

1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

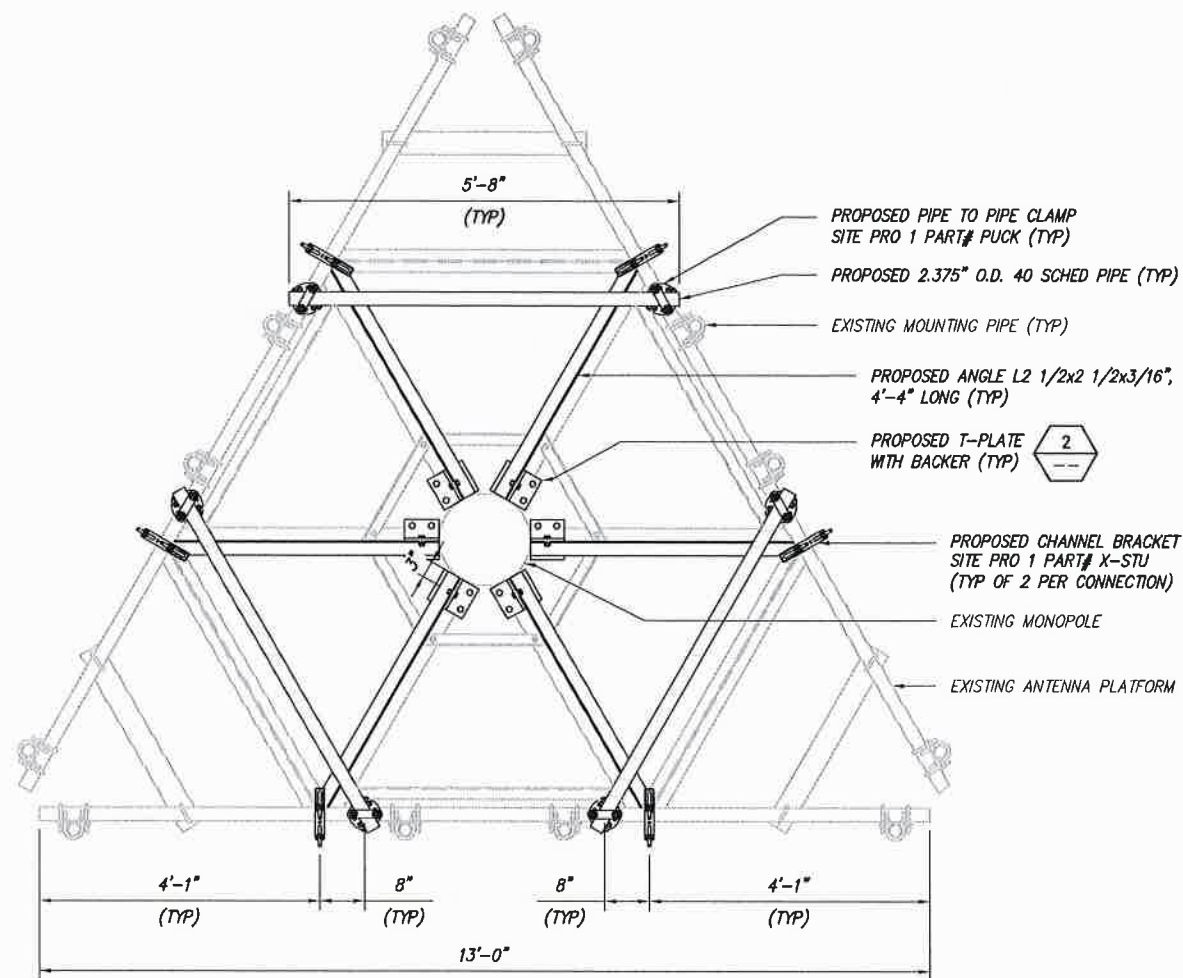
1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
 - a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
 - b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
 - c. MECHANICAL AND EPOXIED ANCHORAGES.
 - d. FIBER REINFORCED POLYMER.
 - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
 - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
 - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP



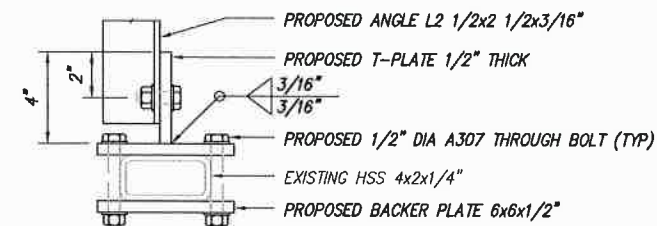
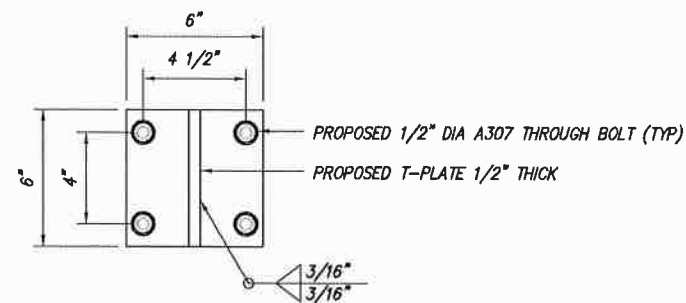
INFINIGY
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0 ISSUED FOR REVIEW	JRL	01/25/19		
No. Submittal / Revision	Appr.	Date		
Drawn: BE	Date: 01/25/19			
Designed: CK	Date: 01/25/19			
Checked: NRO	Date: 01/25/19			
Project Number: 1039-A0002-B				
Project Title: BU# 876320				
CT2083				
528 WHEELERS FARM ROAD MILFORD, CT 06460				
Prepared For: CROWN CASTLE 3 Corporate Park, Suite 101 Clifton Park, NY 12085				
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Drawing Scale: AS NOTED		Date: 01/25/19		
Drawing Title GENERAL NOTES				
Drawing Number S-1				



1 PLAN VIEW
SCALE: NOT TO SCALE

- PROPOSED PIPE TO PIPE CLAMP
SITE PRO 1 PART# PUCK (TYP)
- PROPOSED 2.375" O.D. 40 SCHED PIPE (TYP)
- EXISTING MOUNTING PIPE (TYP)
- PROPOSED ANGLE L2 1/2x2 1/2x3/16",
4'-4" LONG (TYP)
- PROPOSED T-PLATE WITH BACKER (TYP)
- PROPOSED CHANNEL BRACKET
SITE PRO 1 PART# X-STU
(TYP OF 2 PER CONNECTION)
- EXISTING MONOPOLE
- EXISTING ANTENNA PLATFORM



2 T-PLATE DETAIL
SCALE: NOT TO SCALE

INFINIGY

1033 Wheelers Farm Road
Alden, NY 12205
Office # (518) 660-0750
Fax # (518) 660-0795



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No.	Submitted / Revision	App'd	Date

ISSUED FOR REVIEW: JRL 01/25/19
 Drawn: BE Date: 01/25/19
 Designed: OK Date: 01/25/19
 Checked: NRO Date: 01/25/19

Project Number:
1039-A0002-B

Project Title:
BU# 876320

CT2083

528 WHEELERS FARM ROAD
MILFORD, CT 06460

Prepared For:

CROWN CASTLE
 3 Corporate Park, Suite 101
 Chilton Park, NY 12065
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Drawing Scale:
AS NOTED
 Date:
01/25/19

Drawing Title
MOUNT MODIFICATION

Drawing Number
S-2

Date: **January 29, 2019**

Steve Tuttle
Crown Castle
8 Parkmeadow Drive
Pittsford, NY 14534



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: CT2083
Carrier Site Name: Milford Wheelers Farm Road

Crown Castle Designation: **Crown Castle BU Number:** 876320
Crown Castle Site Name: 528 Wheelers Farm Rd
Crown Castle JDE Job Number: 477812
Crown Castle Work Order Number: 1686687
Crown Castle Order Number: 420940 Rev. 4

Engineering Firm Designation: **TEP Project Number:** 25570.213629

Site Data: **528 Wheelers Farm Road, Milford, New Haven County, CT 06460**
Latitude 41° 14' 54.35", Longitude -73° 4' 44.67"
120 Foot - Monopole Tower

Dear Steve Tuttle,

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

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

LC5: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Matthew Fry, E.I.T. / TLI

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

01/29/2019

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1) INTRODUCTION

This tower is a 120-ft monopole tower designed by Paul J. Ford and Company. The tower has been modified multiple times in the past to accommodate additional loading. Shaft reinforcement designed by Semaan Engineering in February of 2004 was considered ineffective. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	
97.0	97.0	3	Ericsson	RRUS 32 B30	-	-	
		2	Raycap	DC6-48-60-18-8F			
		1	Tower Mounts	Side Arm Mount [SO 102-3]			
96.0	98.0	3	CCI Antennas	OPA-65R-LCUU-H6 w/ Mount Pipe	2 4 12	3/8 3/4 1-1/4	
		1	Commscope	WCS-IMFQ-AMT			
		3	Ericsson	RRUS 11 B12			
		3	Ericsson	RRUS 32 B2			
		3	Kaelus	DBC0061F1V51-2			
		3	Powerwave Technologies	7770.00 w/ Mount Pipe			
	96.0	96.0	3	Quintel Technology			QS66512-2 w/ Mount Pipe
			1	Tower Mounts			Miscellaneous [NA 507-1]
			1	Tower Mounts			Platform Mount [LP 712-1]

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
122.0	125.0	2	Andrew	VHLP2-11	6 1 3 4	5/16 1/8 7983A 1-1/4
	123.0	1	MTI Wireless Edge	MT-485025		
		1	Andrew	PX2F-52		
	122.0	3	Argus Technologies	LLPX310R w/ Mount Pipe		
		3	Samsung Telecommunications	FDD_R6_RRH		
		1	Tower Mounts	Miscellaneous [NA 507-1]		
		1	Tower Mounts	Platform Mount [LP 712-1]		
	121.0	3	RFS Celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
		3	RFS Celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		2	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
		1	Alcatel Lucent	800MHZ RRH		
		3	Alcatel Lucent	TD-RRH8x20-25		
	120.0	9	RFS Celwave	ACU-A20-N		
		1	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
		2	Alcatel Lucent	800MHZ RRH		
3		Alcatel Lucent	800 External Notch Filter			
113.0	116.0	1	Trimble	ACUTIME 2000	14	1-5/8
	114.0	2	Commscope	SBNHH-1D65B w/ Mount Pipe		
		4	Commscope	SBNHH-1D45B w/ Mount Pipe		
		3	Antel	BXA-171063/8CF w/ Mount Pipe		
		2	Andrew	DB846F65ZAXY w/ Mount Pipe		
		4	Antel	LPA-80063/4CF w/ Mount Pipe		
		2	RFS Celwave	DB-T1-6Z-8AB-0Z		
		3	Alcatel Lucent	RRH2X60-1900		
		3	Alcatel Lucent	RRH2x60-700		
		3	Alcatel Lucent	AWS-3 RRH4x45		
	6	RFS Celwave	FD9R6004/2C-3L			
113.0	1	Tower Mounts	Platform Mount [LP 305-1]			
105.0	107.0	3	Ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	7	1-5/8
		3	Ericsson	AIR 21 B2A B4P w/ Mount Pipe		
		3	Commscope	LNx-6515DS-VTM w/ Mount Pipe		
		1	Ericsson	KRY 112 144/1		
	3	Ericsson	RRUS 11 B12			
	105.0	2	Ericsson	KRY 112 144/1		
1		Tower Mounts	Platform Mount [LP 1201-1]			
82.0	82.0	-	-	-	12	7/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
75.0	76.0	1	Trimble	ACUTIME 2000	1	1/2
	75.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Supplemental Geotechnical Report	FDH, Inc.	1613534	CCISites
Tower Foundation Drawings	Paul J. Ford and Co.	1614583	CCISites
Tower Manufacturer Drawings	Paul J. Ford and Co.	1614557	CCISites
Tower Reinforcement Drawings	Semaan Engineering Solutions	1613579	CCISites
Post Modification Inspection	Semaan Engineering Solutions	3350209	CCISites
Tower Reinforcement Drawings	B&T Engineering	2460630	CCISites
Post Modification Inspection	B&T Engineering	2460628	CCISites
Tower Reinforcement Drawings	B&T Engineering	3349207	CCISites
Post Modification Inspection	B&T Engineering	3349204	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	3338935	CCISites
Post Modification Inspection	Tower Engineering Professionals	3753892	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	4961357	CCISites
Post Modification Inspection	SGS, Inc.	5760332	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	5873963	CCISites
Post Modification Inspection	FDH Velocitel	6112300	CCISites

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

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

3.2) Assumptions

- 1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
- 3) All tower components are in sufficient condition to carry their full design capacity.
- 4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.
- 6) The existing base plate grout was not considered in this analysis.
- 7) The shaft modifications designed by Semaan Engineering in February of 2004 were determined to be ineffective and not considered structurally in this analysis.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)^{1,2}

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP23.01x22x0.25	Pole	8.4%	Pass
115 - 110	Pole	TP24.02x23.01x0.25	Pole	18.4%	Pass
110 - 105	Pole	TP25.031x24.02x0.25	Pole	28.4%	Pass
105 - 100	Pole	TP26.041x25.031x0.25	Pole	41.8%	Pass
100 - 99.25	Pole	TP26.193x26.041x0.25	Pole	43.5%	Pass
99.25 - 99	Pole + Reinf.	TP26.243x26.193x0.3625	Reinf. 14 Tension Rupture	40.4%	Pass
99 - 94	Pole + Reinf.	TP27.253x26.243x0.3563	Reinf. 14 Tension Rupture	52.9%	Pass
94 - 90.08	Pole + Reinf.	TP28.045x27.253x0.35	Reinf. 14 Tension Rupture	62.7%	Pass
90.08 - 89.83	Pole + Reinf.	TP28.096x28.045x0.5125	Reinf. 11 Tension Rupture	51.9%	Pass
89.83 - 89.5	Pole + Reinf.	TP28.162x28.096x0.5125	Reinf. 11 Tension Rupture	52.5%	Pass
89.5 - 89.25	Pole + Reinf.	TP28.213x28.162x0.725	Reinf. 15 Tension Rupture	40.6%	Pass
89.25 - 84.25	Pole + Reinf.	TP29.223x28.213x0.7	Reinf. 15 Tension Rupture	48.4%	Pass
84.25 - 81.75	Pole + Reinf.	TP30.486x29.223x0.7	Reinf. 15 Tension Rupture	52.1%	Pass
81.75 - 77	Pole + Reinf.	TP30.188x29.228x0.8625	Reinf. 17 Tension Rupture	46.8%	Pass
77 - 76.75	Pole + Reinf.	TP30.239x30.188x0.8625	Reinf. 17 Tension Rupture	47.1%	Pass
76.75 - 76.5	Pole + Reinf.	TP30.289x30.239x0.9625	Reinf. 14 Tension Rupture	44.2%	Pass
76.5 - 75.5	Pole + Reinf.	TP30.491x30.289x0.9625	Reinf. 14 Tension Rupture	45.3%	Pass
75.5 - 75.25	Pole + Reinf.	TP30.542x30.491x0.7625	Reinf. 17 Tension Rupture	52.1%	Pass
75.25 - 74.5	Pole + Reinf.	TP30.693x30.542x0.7625	Reinf. 17 Tension Rupture	52.9%	Pass
74.5 - 74.25	Pole + Reinf.	TP30.744x30.693x0.8375	Reinf. 17 Tension Rupture	55.8%	Pass
74.25 - 72	Pole + Reinf.	TP31.198x30.744x0.825	Reinf. 17 Tension Rupture	58.4%	Pass
72 - 71.75	Pole + Reinf.	TP31.249x31.198x0.7625	Reinf. 17 Tension Rupture	56.0%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
71.75 - 70.5	Pole + Reinf.	TP31.501x31.249x0.7625	Reinf. 17 Tension Rupture	57.4%	Pass
70.5 - 70.25	Pole + Reinf.	TP31.552x31.501x0.7875	Reinf. 17 Tension Rupture	57.4%	Pass
70.25 - 70	Pole + Reinf.	TP31.602x31.552x0.7875	Reinf. 17 Tension Rupture	57.7%	Pass
70 - 69.75	Pole + Reinf.	TP31.653x31.602x0.725	Reinf. 17 Tension Rupture	59.8%	Pass
69.75 - 69.5	Pole + Reinf.	TP31.703x31.653x0.875	Reinf. 4 Tension Rupture	50.8%	Pass
69.5 - 69.25	Pole + Reinf.	TP31.754x31.703x0.75	Reinf. 4 Tension Rupture	56.8%	Pass
69.25 - 64.25	Pole + Reinf.	TP32.764x31.754x0.7375	Reinf. 4 Tension Rupture	61.8%	Pass
64.25 - 59.25	Pole + Reinf.	TP33.774x32.764x0.7125	Reinf. 4 Tension Rupture	66.7%	Pass
59.25 - 56	Pole + Reinf.	TP34.431x33.774x0.7125	Reinf. 4 Tension Rupture	69.7%	Pass
56 - 55.75	Pole + Reinf.	TP34.481x34.431x0.8125	Reinf. 7 Tension Rupture	67.0%	Pass
55.75 - 55.5	Pole + Reinf.	TP34.532x34.481x0.8125	Reinf. 7 Tension Rupture	67.3%	Pass
55.5 - 55.25	Pole + Reinf.	TP34.582x34.532x0.8875	Reinf. 7 Tension Rupture	60.6%	Pass
55.25 - 54	Pole + Reinf.	TP34.835x34.582x0.875	Reinf. 7 Tension Rupture	61.6%	Pass
54 - 53.75	Pole + Reinf.	TP34.885x34.835x0.75	Reinf. 7 Tension Rupture	70.7%	Pass
53.75 - 53.5	Pole + Reinf.	TP34.936x34.885x0.7375	Reinf. 7 Tension Rupture	70.9%	Pass
53.5 - 53.25	Pole + Reinf.	TP34.986x34.936x0.6625	Reinf. 4 Tension Rupture	76.1%	Pass
53.25 - 53	Pole + Reinf.	TP35.037x34.986x0.6	Reinf. 12 Tension Rupture	78.7%	Pass
53 - 48	Pole + Reinf.	TP36.047x35.037x0.5875	Reinf. 12 Tension Rupture	83.5%	Pass
48 - 44.5	Pole + Reinf.	TP37.714x36.047x0.5875	Reinf. 12 Tension Rupture	86.7%	Pass
44.5 - 38.75	Pole + Reinf.	TP37.291x36.129x0.6625	Reinf. 4 Tension Rupture	84.7%	Pass
38.75 - 34.75	Pole + Reinf.	TP38.099x37.291x0.6625	Reinf. 4 Tension Rupture	87.5%	Pass
34.75 - 34.5	Pole + Reinf.	TP38.15x38.099x0.825	Reinf. 3 Tension Rupture	70.2%	Pass
34.5 - 33.75	Pole + Reinf.	TP38.301x38.15x0.825	Reinf. 3 Tension Rupture	70.6%	Pass
33.75 - 33.5	Pole + Reinf.	TP38.352x38.301x0.625	Reinf. 6 Tension Rupture	86.9%	Pass
33.5 - 28.5	Pole + Reinf.	TP39.362x38.352x0.6125	Reinf. 6 Tension Rupture	90.0%	Pass
28.5 - 24	Pole + Reinf.	TP40.271x39.362x0.6625	Reinf. 3 Tension Rupture	92.9%	Pass
24 - 23.75	Pole + Reinf.	TP40.322x40.271x0.7	Reinf. 3 Tension Rupture	88.8%	Pass
23.75 - 18.75	Pole + Reinf.	TP41.332x40.322x0.6875	Reinf. 3 Tension Rupture	91.7%	Pass
18.75 - 14.25	Pole + Reinf.	TP42.241x41.332x0.675	Reinf. 3 Tension Rupture	94.2%	Pass
14.25 - 14	Pole + Reinf.	TP42.291x42.241x0.775	Reinf. 3 Tension Rupture	81.7%	Pass
14 - 9	Pole + Reinf.	TP43.302x42.291x0.7625	Reinf. 3 Tension Rupture	84.1%	Pass
9 - 4.75	Pole + Reinf.	TP44.16x43.302x0.75	Reinf. 3 Tension Rupture	86.1%	Pass
4.75 - 4.5	Pole + Reinf.	TP44.211x44.16x0.6625	Reinf. 5 Tension Rupture	94.0%	Pass
4.5 - 0	Pole + Reinf.	TP45.12x44.211x0.65	Reinf. 5 Tension Rupture	96.0%	Pass
				Summary	
			Pole	78.8%	Pass
			Reinforcement	96.0%	Pass
			Overall	96.0%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	70.1	Pass
1,2	Base Plate	-	52.9	Pass
1,2	Base Foundation Soil Interaction	-	62.4	Pass
1,2	Base Foundation Structural	-	54.0	Pass
Structure Rating (max from all components) =				96.0%

Notes:

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

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

tnxTower Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job 528 Wheelers Farm Rd (BU 876320)	Page 1 of 58
	Project TEP No. 25570.213629	Date 08:53:11 01/29/19
	Client Crown Castle	Designed by mfry

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Tower base elevation above sea level: 213.000 ft.

Basic wind speed of 125 mph.

Risk Category II.

Exposure Category C.

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

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56.00 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.05.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used: $K_{cs}(F_w) = 0.95$, $K_{cs}(t_i) = 0.85$.

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

Options

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination √ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs 	<ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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Tapered Pole Section Geometry

<p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job	528 Wheelers Farm Rd (BU 876320)	Page	2 of 58
	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	120.000-115.000	5.000	0.00	12	22.0000	23.0103	0.2500	1.0000	A607-60 (60 ksi)
L2	115.000-110.000	5.000	0.00	12	23.0103	24.0205	0.2500	1.0000	A607-60 (60 ksi)
L3	110.000-105.000	5.000	0.00	12	24.0205	25.0307	0.2500	1.0000	A607-60 (60 ksi)
L4	105.000-100.000	5.000	0.00	12	25.0307	26.0410	0.2500	1.0000	A607-60 (60 ksi)
L5	100.000-99.250	0.750	0.00	12	26.0410	26.1925	0.2500	1.0000	A607-60 (60 ksi)
L6	99.250-99.000	0.250	0.00	12	26.1925	26.2430	0.3625	1.4500	A607-60 (60 ksi)
L7	99.000-94.000	5.000	0.00	12	26.2430	27.2532	0.3563	1.4250	A607-60 (60 ksi)
L8	94.000-90.080	3.920	0.00	12	27.2532	28.0453	0.3500	1.4000	A607-60 (60 ksi)
L9	90.080-89.830	0.250	0.00	12	28.0453	28.0958	0.5125	2.0500	A607-60 (60 ksi)
L10	89.830-89.500	0.330	0.00	12	28.0958	28.1625	0.5125	2.0500	A607-60 (60 ksi)
L11	89.500-89.250	0.250	0.00	12	28.1625	28.2130	0.7250	2.9000	A607-60 (60 ksi)
L12	89.250-84.250	5.000	0.00	12	28.2130	29.2232	0.7000	2.8000	A607-60 (60 ksi)
L13	84.250-78.000	6.250	3.75	12	29.2232	30.4860	0.7000	2.8000	A607-60 (60 ksi)
L14	78.000-77.000	4.750	0.00	12	29.2283	30.1880	0.8625	3.4500	A607-60 (60 ksi)
L15	77.000-76.750	0.250	0.00	12	30.1880	30.2385	0.8625	3.4500	A607-60 (60 ksi)
L16	76.750-76.500	0.250	0.00	12	30.2385	30.2890	0.9625	3.8500	A607-60 (60 ksi)
L17	76.500-75.500	1.000	0.00	12	30.2890	30.4911	0.9625	3.8500	A607-60 (60 ksi)
L18	75.500-75.250	0.250	0.00	12	30.4911	30.5416	0.7625	3.0500	A607-60 (60 ksi)
L19	75.250-74.500	0.750	0.00	12	30.5416	30.6931	0.7625	3.0500	A607-60 (60 ksi)
L20	74.500-74.250	0.250	0.00	12	30.6931	30.7436	0.8375	3.3500	A607-60 (60 ksi)
L21	74.250-72.000	2.250	0.00	12	30.7436	31.1982	0.8250	3.3000	A607-60 (60 ksi)
L22	72.000-71.750	0.250	0.00	12	31.1982	31.2487	0.7625	3.0500	A607-60 (60 ksi)
L23	71.750-70.500	1.250	0.00	12	31.2487	31.5013	0.7625	3.0500	A607-60 (60 ksi)
L24	70.500-70.250	0.250	0.00	12	31.5013	31.5518	0.7875	3.1500	A607-60 (60 ksi)
L25	70.250-70.000	0.250	0.00	12	31.5518	31.6023	0.7875	3.1500	A607-60 (60 ksi)
L26	70.000-69.750	0.250	0.00	12	31.6023	31.6528	0.7250	2.9000	A607-60 (60 ksi)
L27	69.750-69.500	0.250	0.00	12	31.6528	31.7033	0.8750	3.5000	A607-60 (60 ksi)
L28	69.500-69.250	0.250	0.00	12	31.7033	31.7538	0.7500	3.0000	A607-60 (60 ksi)
L29	69.250-64.250	5.000	0.00	12	31.7538	32.7640	0.7375	2.9500	A607-60 (60 ksi)
L30	64.250-59.250	5.000	0.00	12	32.7640	33.7742	0.7125	2.8500	A607-60 (60 ksi)

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	528 Wheelers Farm Rd (BU 876320)	Page	3 of 58
	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

<i>Section</i>	<i>Elevation</i>	<i>Section Length</i>	<i>Splice Length</i>	<i>Number of Sides</i>	<i>Top Diameter</i>	<i>Bottom Diameter</i>	<i>Wall Thickness</i>	<i>Bend Radius</i>	<i>Pole Grade</i>
	<i>ft</i>	<i>ft</i>	<i>ft</i>		<i>in</i>	<i>in</i>	<i>in</i>	<i>in</i>	
L31	59.250-56.000	3.250	0.00	12	33.7742	34.4309	0.7125	2.8500	A607-60 (60 ksi)
L32	56.000-55.750	0.250	0.00	12	34.4309	34.4814	0.8125	3.2500	A607-60 (60 ksi)
L33	55.750-55.500	0.250	0.00	12	34.4814	34.5319	0.8125	3.2500	A607-60 (60 ksi)
L34	55.500-55.250	0.250	0.00	12	34.5319	34.5824	0.8875	3.5500	A607-60 (60 ksi)
L35	55.250-54.000	1.250	0.00	12	34.5824	34.8349	0.8750	3.5000	A607-60 (60 ksi)
L36	54.000-53.750	0.250	0.00	12	34.8349	34.8854	0.7500	3.0000	A607-60 (60 ksi)
L37	53.750-53.500	0.250	0.00	12	34.8854	34.9360	0.7375	2.9500	A607-60 (60 ksi)
L38	53.500-53.250	0.250	0.00	12	34.9360	34.9865	0.6625	2.6500	A607-60 (60 ksi)
L39	53.250-53.000	0.250	0.00	12	34.9865	35.0370	0.6000	2.4000	A607-60 (60 ksi)
L40	53.000-48.000	5.000	0.00	12	35.0370	36.0472	0.5875	2.3500	A607-60 (60 ksi)
L41	48.000-39.750	8.250	4.75	12	36.0472	37.7140	0.5875	2.3500	A607-60 (60 ksi)
L42	39.750-38.750	5.750	0.00	12	36.1293	37.2910	0.6625	2.6500	A607-60 (60 ksi)
L43	38.750-34.750	4.000	0.00	12	37.2910	38.0992	0.6625	2.6500	A607-60 (60 ksi)
L44	34.750-34.500	0.250	0.00	12	38.0992	38.1497	0.8250	3.3000	A607-60 (60 ksi)
L45	34.500-33.750	0.750	0.00	12	38.1497	38.3012	0.8250	3.3000	A607-60 (60 ksi)
L46	33.750-33.500	0.250	0.00	12	38.3012	38.3517	0.6250	2.5000	A607-60 (60 ksi)
L47	33.500-28.500	5.000	0.00	12	38.3517	39.3619	0.6125	2.4500	A607-60 (60 ksi)
L48	28.500-24.000	4.500	0.00	12	39.3619	40.2711	0.6625	2.6500	A607-60 (60 ksi)
L49	24.000-23.750	0.250	0.00	12	40.2711	40.3216	0.7000	2.8000	A607-60 (60 ksi)
L50	23.750-18.750	5.000	0.00	12	40.3216	41.3318	0.6875	2.7500	A607-60 (60 ksi)
L51	18.750-14.250	4.500	0.00	12	41.3318	42.2410	0.6750	2.7000	A607-60 (60 ksi)
L52	14.250-14.000	0.250	0.00	12	42.2410	42.2915	0.7750	3.1000	A607-60 (60 ksi)
L53	14.000-9.000	5.000	0.00	12	42.2915	43.3017	0.7625	3.0500	A607-60 (60 ksi)
L54	9.000-4.750	4.250	0.00	12	43.3017	44.1603	0.7500	3.0000	A607-60 (60 ksi)
L55	4.750-4.500	0.250	0.00	12	44.1603	44.2108	0.6625	2.6500	A607-60 (60 ksi)
L56	4.500-0.000	4.500		12	44.2108	45.1200	0.6500	2.6000	A607-60 (60 ksi)

Tapered Pole Properties

tnxTower Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	528 Wheelers Farm Rd (BU 876320)	Page	4 of 58
	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	m fry

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	22.6879	17.5088	1057.2104	7.7865	11.3960	92.7702	2142.1948	8.6173	5.2260	20.904
	23.7338	18.3220	1211.4730	8.1482	11.9193	101.6395	2454.7728	9.0175	5.4968	21.987
L2	23.7338	18.3220	1211.4730	8.1482	11.9193	101.6395	2454.7728	9.0175	5.4968	21.987
	24.7797	19.1353	1380.0561	8.5098	12.4426	110.9136	2796.3677	9.4178	5.7675	23.07
L3	24.7797	19.1353	1380.0561	8.5098	12.4426	110.9136	2796.3677	9.4178	5.7675	23.07
	25.8255	19.9485	1563.5951	8.8715	12.9659	120.5927	3168.2676	9.8180	6.0382	24.153
L4	25.8255	19.9485	1563.5951	8.8715	12.9659	120.5927	3168.2676	9.8180	6.0382	24.153
	26.8714	20.7617	1762.7258	9.2332	13.4892	130.6766	3571.7604	10.2183	6.3090	25.236
L5	26.8714	20.7617	1762.7258	9.2332	13.4892	130.6766	3571.7604	10.2183	6.3090	25.236
	27.0283	20.8837	1793.9795	9.2874	13.5677	132.2241	3635.0888	10.2783	6.3496	25.398
L6	26.9886	30.1501	2567.5755	9.2471	13.5677	189.2415	5202.6040	14.8389	6.0481	16.684
	27.0409	30.2090	2582.6680	9.2652	13.5939	189.9875	5233.1855	14.8680	6.0616	16.722
L7	27.0431	29.6954	2539.9785	9.2675	13.5939	186.8472	5146.6850	14.6152	6.0784	17.062
	28.0890	30.8542	2849.1033	9.6291	14.1172	201.8181	5773.0558	15.1855	6.3491	17.822
L8	28.0912	30.3200	2801.0708	9.6314	14.1172	198.4157	5675.7288	14.9226	6.3659	18.188
	28.9111	31.2126	3055.8134	9.9149	14.5275	210.3475	6191.9065	15.3619	6.5781	18.795
L9	28.8538	45.4360	4396.2823	9.8567	14.5275	302.6190	8908.0598	22.3622	6.1426	11.986
	28.9061	45.5193	4420.5230	9.8748	14.5536	303.7405	8957.1781	22.4032	6.1562	12.012
L10	28.9061	45.5193	4420.5230	9.8748	14.5536	303.7405	8957.1781	22.4032	6.1562	12.012
	28.9751	45.6293	4452.6570	9.8987	14.5882	305.2241	9022.2903	22.4574	6.1740	12.047
L11	28.9002	64.0528	6154.7663	9.8226	14.5882	421.9016	12471.2252	31.5248	5.6045	7.73
	28.9525	64.1707	6188.8213	9.8407	14.6143	423.4765	12540.2298	31.5829	5.6181	7.749
L12	28.9613	62.0142	5991.7322	9.8496	14.6143	409.9905	12140.8739	30.5215	5.6851	8.122
	30.0072	64.2913	6676.2857	10.2113	15.1376	441.0393	13527.9649	31.6422	5.9558	8.508
L13	30.0072	64.2913	6676.2857	10.2113	15.1376	441.0393	13527.9649	31.6422	5.9558	8.508
	31.3145	67.1376	7602.8499	10.6634	15.7917	481.4445	15405.4352	33.0431	6.2942	8.992
L14	30.7395	78.7790	8090.7195	10.1550	15.1403	534.3840	16393.9911	38.7726	5.5217	6.402
	30.9487	81.4443	8940.0060	10.4985	15.6374	571.7070	18114.8758	40.0844	5.7789	6.7
L15	30.9487	81.4443	8940.0060	10.4985	15.6374	571.7070	18114.8758	40.0844	5.7789	6.7
	31.0010	81.5846	8986.2801	10.5166	15.6636	573.7063	18208.6398	40.1534	5.7924	6.716
L16	30.9657	90.7337	9926.1041	10.4808	15.6636	633.7070	20112.9781	44.6564	5.5244	5.74
	31.0180	90.8903	9977.5694	10.4989	15.6897	635.9304	20217.2606	44.7334	5.5380	5.754
L17	31.0180	90.8903	9977.5694	10.4989	15.6897	635.9304	20217.2606	44.7334	5.5380	5.754
	31.2271	91.5164	10185.2094	10.5712	15.7944	644.8630	20637.9955	45.0416	5.5921	5.81
L18	31.2977	72.9911	8233.8676	10.6428	15.7944	521.3164	16684.0481	35.9240	6.1281	8.037
	31.3500	73.1151	8275.9079	10.6609	15.8205	523.1116	16769.2332	35.9850	6.1416	8.055
L19	31.3500	73.1151	8275.9079	10.6609	15.8205	523.1116	16769.2332	35.9850	6.1416	8.055
	31.5069	73.4871	8402.8870	10.7152	15.8990	528.5156	17026.5271	36.1681	6.1823	8.108
L20	31.4804	80.5131	9160.1932	10.6883	15.8990	576.1478	18561.0348	39.6261	5.9813	7.142
	31.5327	80.6493	9206.7638	10.7064	15.9252	578.1256	18655.3994	39.6932	5.9948	7.158
L21	31.5371	79.4788	9080.7264	10.7109	15.9252	570.2112	18400.0136	39.1171	6.0283	7.307
	32.0077	80.6864	9500.9708	10.8736	16.1607	587.9068	19251.5427	39.7114	6.1501	7.455
L22	32.0298	74.7273	8835.5201	10.8960	16.1607	546.7297	17903.1591	36.7785	6.3176	8.285
	32.0821	74.8513	8879.5824	10.9141	16.1868	548.5680	17992.4413	36.8395	6.3312	8.303
L23	32.0821	74.8513	8879.5824	10.9141	16.1868	548.5680	17992.4413	36.8395	6.3312	8.303
	32.3435	75.4714	9102.0927	11.0045	16.3177	557.8063	18443.3075	37.1447	6.3988	8.392
L24	32.3347	77.8824	9377.6041	10.9955	16.3177	574.6905	19001.5684	38.3314	6.3318	8.04
	32.3870	78.0105	9423.9457	11.0136	16.3438	576.6059	19095.4690	38.3944	6.3454	8.058
L25	32.3870	78.0105	9423.9457	11.0136	16.3438	576.6059	19095.4690	38.3944	6.3454	8.058
	32.4393	78.1386	9470.4398	11.0317	16.3700	578.5245	19189.6785	38.4574	6.3589	8.075
L26	32.4613	72.0830	8771.9770	11.0541	16.3700	535.8573	17774.4036	35.4771	6.5264	9.002
	32.5136	72.2010	8815.0958	11.0722	16.3962	537.6320	17861.7740	35.5351	6.5400	9.021
L27	32.4607	86.7165	10484.8620	11.0185	16.3962	639.4709	21245.1730	42.6792	6.1380	7.015
	32.5130	86.8588	10536.5674	11.0365	16.4223	641.6006	21349.9422	42.7492	6.1515	7.03
L28	32.5571	74.7523	9141.6481	11.0813	16.4223	556.6601	18523.4575	36.7908	6.4865	8.649
	32.6094	74.8742	9186.4735	11.0994	16.4485	558.4998	18614.2859	36.8508	6.5000	8.667
L29	32.6138	73.6560	9044.2961	11.1038	16.4485	549.8560	18326.1960	36.2512	6.5335	8.859
	33.6597	76.0550	9957.1075	11.4655	16.9718	586.6867	20175.7993	37.4319	6.8043	9.226
L30	33.6685	73.5342	9642.1232	11.4744	16.9718	568.1274	19537.5558	36.1913	6.8713	9.644
	34.7143	75.8519	10582.8611	11.8361	17.4950	604.9061	21443.7458	37.3320	7.1420	10.024
L31	34.7143	75.8519	10582.8611	11.8361	17.4950	604.9061	21443.7458	37.3320	7.1420	10.024
	35.3941	77.3583	11226.0170	12.0712	17.8352	629.4311	22746.9539	38.0734	7.3180	10.271

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	Client Crown Castle	Designed by mfry

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
00									
L3				1	1	1			
110.000-105.000									
L4				1	1	1			
105.000-100.000									
L5				1	1	1			
100.000-99.250									
L6				1	1	1.18991			
99.250-99.000									
L7				1	1	1.19138			
99.000-94.000									
L8				1	1	1.19813			
94.000-90.080									
L9				1	1	1.02045			
90.080-89.830									
L10				1	1	1.01917			
89.830-89.500									
L11				1	1	0.912595			
89.500-89.250									
L12				1	1	0.923531			
89.250-84.250									
L13				1	1	0.913676			
84.250-78.000									
L14				1	1	0.996207			
78.000-77.000									
L15				1	1	0.995117			
77.000-76.750									
L16				1	1	0.948882			
76.750-76.500									
L17				1	1	0.944611			
76.500-75.500									
L18				1	1	1.04608			
75.500-75.250									
L19				1	1	1.04286			
75.250-74.500									
L20				1	1	0.888787			
74.500-74.250									
L21				1	1	0.894048			
74.250-72.000									
L22				1	1	1.07313			
72.000-71.750									
L23				1	1	1.06768			
71.750-70.500									
L24				1	1	1.09135			
70.500-70.250									
L25				1	1	1.09021			
70.250-70.000									
L26				1	1	1.11122			
70.000-69.750									
L27				1	1	0.981926			
69.750-69.500									
L28				1	1	0.979276			
69.500-69.250									
L29				1	1	0.977438			
69.250-64.250									
L30				1	1	0.993457			

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	Client Crown Castle	Designed by mfry

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
64.250-59.250									
L31				1	1	0.982651			
59.250-56.000									
L32				1	1	1.01703			
56.000-55.750									
L33				1	1	1.01608			
55.750-55.500									
L34				1	1	0.978222			
55.500-55.250									
L35				1	1	0.987109			
55.250-54.000									
L36				1	1	1.03699			
54.000-53.750									
L37				1	1	1.05325			
53.750-53.500									
L38				1	1	1.10735			
53.500-53.250									
L39				1	1	1.09715			
53.250-53.000									
L40				1	1	1.10333			
53.000-48.000									
L41				1	1	1.09216			
48.000-39.750									
L42				1	1	0.976499			
39.750-38.750									
L43				1	1	0.967639			
38.750-34.750									
L44				1	1	0.981987			
34.750-34.500									
L45				1	1	0.979855			
34.500-33.750									
L46				1	1	1.02183			
33.750-33.500									
L47				1	1	1.03112			
33.500-28.500									
L48				1	1	0.945617			
28.500-24.000									
L49				1	1	0.949621			
24.000-23.750									
L50				1	1	0.956115			
23.750-18.750									
L51				1	1	0.964379			
18.750-14.250									
L52				1	1	0.954431			
14.250-14.000									
L53				1	1	0.958435			
14.000-9.000									
L54				1	1	0.964744			
9.000-4.750									
L55				1	1	1.03546			
4.750-4.500									
L56				1	1	1.04529			
4.500-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
3" Flexible Conduit	B	No	Surface Ar (CaAa)	120.000 - 0.000	2	2	0.250 0.250	3.0000		1.04
HB114-1-0813U4-M5J(1-1/4)	B	No	Surface Ar (CaAa)	120.000 - 0.000	4	4	0.250 0.250	1.5400		1.20
LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	113.000 - 0.000	14	7	-0.250 -0.250	1.9800		0.82

LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	105.000 - 0.000	7	6	0.500 0.500	1.9800		0.82

Safety Line 3/8	C	No	Surface Ar (CaAa)	120.000 - 0.000	1	1	0.000 0.000	0.3750		0.22
Existing Mods										
(Area) Aero MP3-04	A	No	Surface Af (CaAa)	25.500 - 0.000	1	1	-0.250 -0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04	A	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.500 0.500	4.7800	9.5600	0.00
(Area) Aero MP3-04	B	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.250 0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04	C	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.000 0.000	4.7800	9.5600	0.00
*										
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	45.500 - 25.500	1	1	-0.250 -0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	45.500 - 25.500	1	1	0.500 0.500	4.0600	8.1200	0.00
(Area) Aero MP3-03	B	No	Surface Af (CaAa)	45.500 - 25.500	1	1	0.250 0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	C	No	Surface Af (CaAa)	45.500 - 25.500	1	1	0.000 0.000	4.0600	8.1200	0.00
*										
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	56.000 - 45.500	1	1	-0.250 -0.250	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	57.250 - 56.000	1	1	-0.250 -0.250	4.5000	11.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	56.000 - 45.500	1	1	0.500 0.500	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	57.250 - 56.000	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-045100	B	No	Surface Af (CaAa)	50.500 - 45.500	1	1	0.250 0.250	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	C	No	Surface Af (CaAa)	56.000 - 45.500	1	1	0.000 0.000	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	C	No	Surface Af (CaAa)	57.250 - 56.000	1	1	0.000 0.000	4.5000	11.0000	0.00
*										
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	68.250 - 57.250	1	1	-0.250 -0.250	4.5000	11.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	68.250 - 57.250	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-065125	B	No	Surface Af (CaAa)	56.000 - 50.500	1	1	0.250 0.250	6.5000	13.0000	0.00
(Area) CCI-65FP-065125	B	No	Surface Af (CaAa)	74.750 - 56.000	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-045100	C	No	Surface Af (CaAa)	68.250 - 57.250	1	1	0.000 0.000	4.5000	11.0000	0.00
*										
(Area) CCI-65FP-045125	A	No	Surface Af (CaAa)	78.250 - 68.250	1	1	-0.250 -0.250	4.0000	10.5000	0.00

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Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
(Area) CCI-65FP-045125	A	No	Surface Af (CaAa)	80.000 - 68.250	1	1	0.500 0.500	4.0000	10.5000	0.00
(Area) CCI-65FP-045125	B	No	Surface Af (CaAa)	80.000 - 74.750	1	1	0.250 0.250	4.0000	10.5000	0.00
(Area) CCI-65FP-045125	C	No	Surface Af (CaAa)	80.000 - 68.250	1	1	0.000 0.000	4.0000	10.5000	0.00
*										
(Area) CCI-65FP-045125	A	No	Surface Af (CaAa)	100.750 - 78.250	1	1	-0.250 -0.250	4.0000	10.5000	0.00
(Area) CCI-65FP-045125	A	No	Surface Af (CaAa)	100.750 - 80.000	1	1	0.500 0.500	4.0000	10.5000	0.00
*										
(Area) CCI-65FP-060100	B	No	Surface Af (CaAa)	92.080 - 80.000	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100	C	No	Surface Af (CaAa)	92.080 - 80.000	1	1	0.000 0.000	6.0000	14.0000	0.00
Proposed Mods										
**										
PL 1 x 5	A	No	Surface Af (CaAa)	72.000 - 2.500	1	1	-0.250 -0.250	5.0000	10.0000	0.00
PL 1 x 5	A	No	Surface Af (CaAa)	72.000 - 2.500	1	1	0.500 0.500	5.0000	10.0000	0.00
PL 1 x 5	B	No	Surface Af (CaAa)	72.000 - 2.500	1	1	0.250 0.250	5.0000	10.0000	0.00
PL 1 x 5	C	No	Surface Af (CaAa)	72.000 - 2.500	1	1	0.000 0.000	5.0000	10.0000	0.00
**										
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	16.500 - 0.000	1	1	-0.250 -0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	16.500 - 0.000	1	1	0.500 0.500	4.0600	8.1200	0.00
(Area) Aero MP3-03	B	No	Surface Af (CaAa)	16.500 - 0.000	1	1	0.250 0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	C	No	Surface Af (CaAa)	16.500 - 0.000	1	1	0.000 0.000	4.0600	8.1200	0.00
**										
C6x10.5	A	No	Surface Af (CaAa)	56.000 - 0.000	1	1	-0.250 -0.250	6.0000	16.0600	10.50
C6x10.5	A	No	Surface Af (CaAa)	56.000 - 0.000	1	1	0.500 0.500	6.0000	16.0600	10.50
C6x10.5	B	No	Surface Af (CaAa)	56.000 - 0.000	1	1	0.250 0.250	6.0000	16.0600	10.50
C6x10.5	C	No	Surface Af (CaAa)	56.000 - 0.000	1	1	0.000 0.000	6.0000	16.0600	10.50

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf

1266A(1/8)	B	No	No	CaAa (Out Of Face)	120.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.01 0.41 1.41 5.25
7983A(ELLIPTICA)	B	No	No	CaAa (Out	120.000 - 0.000	3	No Ice	0.000	0.08

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
L)				Of Face)			1/2" Ice	0.000	0.74
							1" Ice	0.000	2.01
							2" Ice	0.000	6.37
9207(5/16)	B	No	No	Inside Pole	120.000 - 0.000	6	No Ice	0.000	0.06
							1/2" Ice	0.000	0.06
							1" Ice	0.000	0.06
							2" Ice	0.000	0.06

LDF6-50A(1 1/4")	C	No	No	Inside Pole	96.000 - 0.000	12	No Ice	0.000	0.66
							1/2" Ice	0.000	0.66
							1" Ice	0.000	0.66
							2" Ice	0.000	0.66
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	96.000 - 0.000	2	No Ice	0.000	0.06
							1/2" Ice	0.000	0.06
							1" Ice	0.000	0.06
							2" Ice	0.000	0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	96.000 - 0.000	4	No Ice	0.000	0.58
							1/2" Ice	0.000	0.58
							1" Ice	0.000	0.58
							2" Ice	0.000	0.58
2" Flexible Conduit	C	No	No	Inside Pole	96.000 - 0.000	2	No Ice	0.000	0.34
							1/2" Ice	0.000	0.34
							1" Ice	0.000	0.34
							2" Ice	0.000	0.34

LDF5-50A(7/8)	C	No	No	Inside Pole	82.000 - 0.000	12	No Ice	0.000	0.33
							1/2" Ice	0.000	0.33
							1" Ice	0.000	0.33
							2" Ice	0.000	0.33

LDF4-50A(1/2)	C	No	No	Inside Pole	75.000 - 0.000	1	No Ice	0.000	0.15
							1/2" Ice	0.000	0.15
							1" Ice	0.000	0.15
							2" Ice	0.000	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	120.000-115.000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00
L2	115.000-110.000	A	0.000	0.000	4.158	0.000	0.03
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00
L3	110.000-105.000	A	0.000	0.000	6.930	0.000	0.06
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00
L4	105.000-100.000	A	0.000	0.000	13.870	0.000	0.09
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L5	100.000-99.250	A	0.000	0.000	2.930	0.000	0.01
		B	0.000	0.000	0.912	0.000	0.01
		C	0.000	0.000	0.028	0.000	0.00
L6	99.250-99.000	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.304	0.000	0.00
		C	0.000	0.000	0.009	0.000	0.00
L7	99.000-94.000	A	0.000	0.000	19.537	0.000	0.09
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.02
L8	94.000-90.080	A	0.000	0.000	15.317	0.000	0.07
		B	0.000	0.000	6.728	0.000	0.03
		C	0.000	0.000	2.108	0.000	0.04
L9	90.080-89.830	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.549	0.000	0.00
		C	0.000	0.000	0.255	0.000	0.00
L10	89.830-89.500	A	0.000	0.000	1.289	0.000	0.01
		B	0.000	0.000	0.725	0.000	0.00
		C	0.000	0.000	0.336	0.000	0.00
L11	89.500-89.250	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.549	0.000	0.00
		C	0.000	0.000	0.255	0.000	0.00
L12	89.250-84.250	A	0.000	0.000	19.537	0.000	0.09
		B	0.000	0.000	10.983	0.000	0.04
		C	0.000	0.000	5.090	0.000	0.06
L13	84.250-78.000	A	0.000	0.000	24.421	0.000	0.11
		B	0.000	0.000	12.879	0.000	0.05
		C	0.000	0.000	5.735	0.000	0.09
L14	78.000-77.000	A	0.000	0.000	3.907	0.000	0.02
		B	0.000	0.000	1.772	0.000	0.01
		C	0.000	0.000	0.704	0.000	0.02
L15	77.000-76.750	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.443	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L16	76.750-76.500	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.443	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L17	76.500-75.500	A	0.000	0.000	3.907	0.000	0.02
		B	0.000	0.000	1.772	0.000	0.01
		C	0.000	0.000	0.704	0.000	0.02
L18	75.500-75.250	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.443	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L19	75.250-74.500	A	0.000	0.000	2.930	0.000	0.01
		B	0.000	0.000	1.461	0.000	0.01
		C	0.000	0.000	0.528	0.000	0.01
L20	74.500-74.250	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.575	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L21	74.250-72.000	A	0.000	0.000	8.791	0.000	0.04
		B	0.000	0.000	5.173	0.000	0.02
		C	0.000	0.000	1.584	0.000	0.03
L22	72.000-71.750	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L23	71.750-70.500	A	0.000	0.000	6.967	0.000	0.02
		B	0.000	0.000	3.916	0.000	0.01
		C	0.000	0.000	1.922	0.000	0.02
L24	70.500-70.250	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L25	70.250-70.000	A	0.000	0.000	1.394	0.000	0.00

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	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L26	70.000-69.750	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L27	69.750-69.500	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L28	69.500-69.250	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L29	69.250-64.250	A	0.000	0.000	28.537	0.000	0.09
		B	0.000	0.000	15.663	0.000	0.04
		C	0.000	0.000	8.021	0.000	0.08
L30	64.250-59.250	A	0.000	0.000	28.703	0.000	0.09
		B	0.000	0.000	15.663	0.000	0.04
		C	0.000	0.000	8.104	0.000	0.08
L31	59.250-56.000	A	0.000	0.000	17.939	0.000	0.06
		B	0.000	0.000	10.181	0.000	0.02
		C	0.000	0.000	4.908	0.000	0.05
L32	56.000-55.750	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L33	55.750-55.500	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L34	55.500-55.250	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L35	55.250-54.000	A	0.000	0.000	9.676	0.000	0.05
		B	0.000	0.000	4.831	0.000	0.02
		C	0.000	0.000	3.276	0.000	0.03
L36	54.000-53.750	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L37	53.750-53.500	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L38	53.500-53.250	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L39	53.250-53.000	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L40	53.000-48.000	A	0.000	0.000	38.703	0.000	0.19
		B	0.000	0.000	18.795	0.000	0.09
		C	0.000	0.000	13.104	0.000	0.13
L41	48.000-39.750	A	0.000	0.000	63.017	0.000	0.32
		B	0.000	0.000	30.558	0.000	0.15
		C	0.000	0.000	21.200	0.000	0.21
L42	39.750-38.750	A	0.000	0.000	7.594	0.000	0.04
		B	0.000	0.000	3.726	0.000	0.02
		C	0.000	0.000	2.547	0.000	0.03
L43	38.750-34.750	A	0.000	0.000	30.376	0.000	0.15
		B	0.000	0.000	14.904	0.000	0.07
		C	0.000	0.000	10.190	0.000	0.10
L44	34.750-34.500	A	0.000	0.000	1.899	0.000	0.01
		B	0.000	0.000	0.931	0.000	0.00
		C	0.000	0.000	0.637	0.000	0.01
L45	34.500-33.750	A	0.000	0.000	5.696	0.000	0.03
		B	0.000	0.000	2.795	0.000	0.01

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	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L46	33.750-33.500	C	0.000	0.000	1.911	0.000	0.02
		A	0.000	0.000	1.899	0.000	0.01
		B	0.000	0.000	0.931	0.000	0.00
L47	33.500-28.500	C	0.000	0.000	0.637	0.000	0.01
		A	0.000	0.000	37.970	0.000	0.19
		B	0.000	0.000	18.630	0.000	0.09
L48	28.500-24.000	C	0.000	0.000	12.738	0.000	0.13
		A	0.000	0.000	34.533	0.000	0.17
		B	0.000	0.000	16.947	0.000	0.08
L49	24.000-23.750	C	0.000	0.000	11.644	0.000	0.12
		A	0.000	0.000	1.958	0.000	0.01
		B	0.000	0.000	0.961	0.000	0.00
L50	23.750-18.750	C	0.000	0.000	0.667	0.000	0.01
		A	0.000	0.000	39.170	0.000	0.19
		B	0.000	0.000	19.230	0.000	0.09
L51	18.750-14.250	C	0.000	0.000	13.338	0.000	0.13
		A	0.000	0.000	38.298	0.000	0.17
		B	0.000	0.000	18.829	0.000	0.08
L52	14.250-14.000	C	0.000	0.000	13.526	0.000	0.12
		A	0.000	0.000	2.297	0.000	0.01
		B	0.000	0.000	1.131	0.000	0.00
L53	14.000-9.000	C	0.000	0.000	0.836	0.000	0.01
		A	0.000	0.000	45.937	0.000	0.19
		B	0.000	0.000	22.613	0.000	0.09
L54	9.000-4.750	C	0.000	0.000	16.721	0.000	0.13
		A	0.000	0.000	39.046	0.000	0.16
		B	0.000	0.000	19.221	0.000	0.08
L55	4.750-4.500	C	0.000	0.000	14.213	0.000	0.11
		A	0.000	0.000	2.297	0.000	0.01
		B	0.000	0.000	1.131	0.000	0.00
L56	4.500-0.000	C	0.000	0.000	0.836	0.000	0.01
		A	0.000	0.000	37.176	0.000	0.17
		B	0.000	0.000	18.269	0.000	0.08
		C	0.000	0.000	12.965	0.000	0.12

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	120.000-115.000	A	1.448	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	11.219	0.000	0.23
		C		0.000	0.000	1.635	0.000	0.02
L2	115.000-110.000	A	1.441	0.000	0.000	6.279	0.000	0.11
		B		0.000	0.000	11.203	0.000	0.23
		C		0.000	0.000	1.629	0.000	0.02
L3	110.000-105.000	A	1.435	0.000	0.000	10.456	0.000	0.19
		B		0.000	0.000	11.187	0.000	0.22
		C		0.000	0.000	1.622	0.000	0.02
L4	105.000-100.000	A	1.428	0.000	0.000	21.086	0.000	0.33
		B		0.000	0.000	11.170	0.000	0.22
		C		0.000	0.000	1.615	0.000	0.02
L5	100.000-99.250	A	1.424	0.000	0.000	4.374	0.000	0.06
		B		0.000	0.000	1.674	0.000	0.03
		C		0.000	0.000	0.242	0.000	0.00
L6	99.250-99.000	A	1.423	0.000	0.000	1.458	0.000	0.02
		B		0.000	0.000	0.558	0.000	0.01
		C		0.000	0.000	0.081	0.000	0.00

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	Client Crown Castle	Designed by mfry

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L7	99.000-94.000	A	1.419	0.000	0.000	29.141	0.000	0.40
		B		0.000	0.000	11.148	0.000	0.22
		C		0.000	0.000	1.607	0.000	0.04
L8	94.000-90.080	A	1.413	0.000	0.000	22.823	0.000	0.32
		B		0.000	0.000	10.985	0.000	0.19
		C		0.000	0.000	3.513	0.000	0.08
L9	90.080-89.830	A	1.409	0.000	0.000	1.455	0.000	0.02
		B		0.000	0.000	0.838	0.000	0.01
		C		0.000	0.000	0.362	0.000	0.01
L10	89.830-89.500	A	1.409	0.000	0.000	1.920	0.000	0.03
		B		0.000	0.000	1.107	0.000	0.02
		C		0.000	0.000	0.478	0.000	0.01
L11	89.500-89.250	A	1.409	0.000	0.000	1.455	0.000	0.02
		B		0.000	0.000	0.838	0.000	0.01
		C		0.000	0.000	0.362	0.000	0.01
L12	89.250-84.250	A	1.404	0.000	0.000	29.074	0.000	0.40
		B		0.000	0.000	16.752	0.000	0.27
		C		0.000	0.000	7.233	0.000	0.12
L13	84.250-78.000	A	1.395	0.000	0.000	36.190	0.000	0.50
		B		0.000	0.000	20.063	0.000	0.33
		C		0.000	0.000	8.584	0.000	0.17
L14	78.000-77.000	A	1.389	0.000	0.000	5.677	0.000	0.08
		B		0.000	0.000	2.924	0.000	0.05
		C		0.000	0.000	1.225	0.000	0.03
L15	77.000-76.750	A	1.388	0.000	0.000	1.418	0.000	0.02
		B		0.000	0.000	0.730	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L16	76.750-76.500	A	1.387	0.000	0.000	1.418	0.000	0.02
		B		0.000	0.000	0.730	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L17	76.500-75.500	A	1.386	0.000	0.000	5.670	0.000	0.08
		B		0.000	0.000	2.919	0.000	0.05
		C		0.000	0.000	1.221	0.000	0.03
L18	75.500-75.250	A	1.385	0.000	0.000	1.417	0.000	0.02
		B		0.000	0.000	0.729	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L19	75.250-74.500	A	1.384	0.000	0.000	4.251	0.000	0.06
		B		0.000	0.000	2.351	0.000	0.04
		C		0.000	0.000	0.915	0.000	0.02
L20	74.500-74.250	A	1.383	0.000	0.000	1.417	0.000	0.02
		B		0.000	0.000	0.892	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L21	74.250-72.000	A	1.381	0.000	0.000	12.748	0.000	0.18
		B		0.000	0.000	8.024	0.000	0.12
		C		0.000	0.000	2.744	0.000	0.06
L22	72.000-71.750	A	1.378	0.000	0.000	1.971	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.582	0.000	0.01
L23	71.750-70.500	A	1.377	0.000	0.000	9.851	0.000	0.12
		B		0.000	0.000	5.840	0.000	0.08
		C		0.000	0.000	2.909	0.000	0.04
L24	70.500-70.250	A	1.375	0.000	0.000	1.970	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.582	0.000	0.01
L25	70.250-70.000	A	1.375	0.000	0.000	1.970	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.582	0.000	0.01
L26	70.000-69.750	A	1.374	0.000	0.000	1.969	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.581	0.000	0.01
L27	69.750-69.500	A	1.374	0.000	0.000	1.969	0.000	0.02

<p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job	528 Wheelers Farm Rd (BU 876320)	Page	15 of 58
	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
		B		0.000	0.000	1.167	0.000	0.02
		C		0.000	0.000	0.581	0.000	0.01
L28	69.500-69.250	A	1.373	0.000	0.000	1.969	0.000	0.02
		B		0.000	0.000	1.167	0.000	0.02
		C		0.000	0.000	0.581	0.000	0.01
L29	69.250-64.250	A	1.368	0.000	0.000	39.831	0.000	0.47
		B		0.000	0.000	23.323	0.000	0.31
		C		0.000	0.000	11.745	0.000	0.17
L30	64.250-59.250	A	1.357	0.000	0.000	39.892	0.000	0.47
		B		0.000	0.000	23.277	0.000	0.31
		C		0.000	0.000	11.751	0.000	0.17
L31	59.250-56.000	A	1.348	0.000	0.000	25.081	0.000	0.30
		B		0.000	0.000	15.103	0.000	0.20
		C		0.000	0.000	7.215	0.000	0.11
L32	56.000-55.750	A	1.344	0.000	0.000	2.620	0.000	0.03
		B		0.000	0.000	1.381	0.000	0.02
		C		0.000	0.000	0.901	0.000	0.01
L33	55.750-55.500	A	1.343	0.000	0.000	2.620	0.000	0.03
		B		0.000	0.000	1.381	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L34	55.500-55.250	A	1.343	0.000	0.000	2.620	0.000	0.03
		B		0.000	0.000	1.381	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L35	55.250-54.000	A	1.341	0.000	0.000	13.096	0.000	0.17
		B		0.000	0.000	6.901	0.000	0.10
		C		0.000	0.000	4.500	0.000	0.07
L36	54.000-53.750	A	1.339	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.380	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L37	53.750-53.500	A	1.338	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.380	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L38	53.500-53.250	A	1.338	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.379	0.000	0.02
		C		0.000	0.000	0.899	0.000	0.01
L39	53.250-53.000	A	1.337	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.379	0.000	0.02
		C		0.000	0.000	0.899	0.000	0.01
L40	53.000-48.000	A	1.330	0.000	0.000	52.303	0.000	0.67
		B		0.000	0.000	27.019	0.000	0.39
		C		0.000	0.000	17.963	0.000	0.27
L41	48.000-39.750	A	1.312	0.000	0.000	86.270	0.000	1.08
		B		0.000	0.000	44.666	0.000	0.63
		C		0.000	0.000	29.631	0.000	0.44
L42	39.750-38.750	A	1.297	0.000	0.000	10.467	0.000	0.13
		B		0.000	0.000	5.473	0.000	0.08
		C		0.000	0.000	3.597	0.000	0.05
L43	38.750-34.750	A	1.289	0.000	0.000	41.714	0.000	0.52
		B		0.000	0.000	21.791	0.000	0.30
		C		0.000	0.000	14.314	0.000	0.21
L44	34.750-34.500	A	1.281	0.000	0.000	2.604	0.000	0.03
		B		0.000	0.000	1.360	0.000	0.02
		C		0.000	0.000	0.893	0.000	0.01
L45	34.500-33.750	A	1.279	0.000	0.000	7.809	0.000	0.10
		B		0.000	0.000	4.078	0.000	0.06
		C		0.000	0.000	2.678	0.000	0.04
L46	33.750-33.500	A	1.277	0.000	0.000	2.602	0.000	0.03
		B		0.000	0.000	1.359	0.000	0.02
		C		0.000	0.000	0.892	0.000	0.01
L47	33.500-28.500	A	1.267	0.000	0.000	51.957	0.000	0.64
		B		0.000	0.000	27.119	0.000	0.37

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	Client	Crown Castle	Designed by	mfry

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L48	28.500-24.000	C		0.000	0.000	17.806	0.000	0.26
		A	1.246	0.000	0.000	46.962	0.000	0.57
		B		0.000	0.000	24.483	0.000	0.33
		C		0.000	0.000	16.130	0.000	0.23
L49	24.000-23.750	A	1.234	0.000	0.000	2.644	0.000	0.03
		B		0.000	0.000	1.377	0.000	0.02
		C		0.000	0.000	0.914	0.000	0.01
L50	23.750-18.750	A	1.220	0.000	0.000	52.758	0.000	0.62
		B		0.000	0.000	27.460	0.000	0.36
		C		0.000	0.000	18.218	0.000	0.26
L51	18.750-14.250	A	1.190	0.000	0.000	51.364	0.000	0.58
		B		0.000	0.000	26.621	0.000	0.33
		C		0.000	0.000	18.344	0.000	0.24
L52	14.250-14.000	A	1.171	0.000	0.000	3.073	0.000	0.03
		B		0.000	0.000	1.587	0.000	0.02
		C		0.000	0.000	1.129	0.000	0.01
L53	14.000-9.000	A	1.147	0.000	0.000	61.201	0.000	0.65
		B		0.000	0.000	31.591	0.000	0.36
		C		0.000	0.000	22.458	0.000	0.28
L54	9.000-4.750	A	1.090	0.000	0.000	51.507	0.000	0.53
		B		0.000	0.000	26.534	0.000	0.29
		C		0.000	0.000	18.844	0.000	0.23
L55	4.750-4.500	A	1.048	0.000	0.000	3.008	0.000	0.03
		B		0.000	0.000	1.547	0.000	0.02
		C		0.000	0.000	1.098	0.000	0.01
L56	4.500-0.000	A	0.974	0.000	0.000	48.306	0.000	0.49
		B		0.000	0.000	24.850	0.000	0.27
		C		0.000	0.000	16.863	0.000	0.21

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	120.000-115.000	4.2124	0.1200	4.2931	0.5780
L2	115.000-110.000	0.9230	0.0993	1.4048	0.4752
L3	110.000-105.000	-0.6682	0.0903	0.0197	0.4315
L4	105.000-100.000	-0.5408	-2.6637	0.0120	-1.9693
L5	100.000-99.250	-0.5100	-2.8181	-0.0238	-2.1817
L6	99.250-99.000	-0.5107	-2.8253	-0.0235	-2.1882
L7	99.000-94.000	-0.5128	-2.8553	-0.0216	-2.2185
L8	94.000-90.080	0.3415	-1.3958	0.5321	-1.2826
L9	90.080-89.830	1.0063	-0.2451	0.9936	-0.4797
L10	89.830-89.500	1.0081	-0.2450	0.9955	-0.4801
L11	89.500-89.250	1.0106	-0.2450	0.9978	-0.4807
L12	89.250-84.250	1.0266	-0.2441	1.0147	-0.4843
L13	84.250-78.000	0.8742	-0.5064	0.9284	-0.6171
L14	78.000-77.000	0.4612	-1.1044	0.7537	-0.9368
L15	77.000-76.750	0.4631	-1.1065	0.7549	-0.9409
L16	76.750-76.500	0.4641	-1.1078	0.7562	-0.9420
L17	76.500-75.500	0.4660	-1.1098	0.7589	-0.9445
L18	75.500-75.250	0.4676	-1.1110	0.7613	-0.9464
L19	75.250-74.500	0.7498	-0.9536	0.9710	-0.8307
L20	74.500-74.250	1.2840	-0.6536	1.3725	-0.6064
L21	74.250-72.000	1.2920	-0.6554	1.3818	-0.6090
L22	72.000-71.750	1.9333	0.4703	1.9184	0.3496
L23	71.750-70.500	1.9410	0.4729	1.9265	0.3516

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Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L24	70.500-70.250	1.9488	0.4755	1.9346	0.3537
L25	70.250-70.000	1.9513	0.4764	1.9373	0.3544
L26	70.000-69.750	1.9535	0.4772	1.9398	0.3551
L27	69.750-69.500	1.9568	0.4782	1.9429	0.3559
L28	69.500-69.250	1.9588	0.4790	1.9452	0.3565
L29	69.250-64.250	1.9572	0.5195	1.9297	0.3880
L30	64.250-59.250	1.9996	0.5449	1.9702	0.4082
L31	59.250-56.000	2.0930	0.5041	2.0512	0.3757
L32	56.000-55.750	2.2927	1.2704	2.2187	1.0515
L33	55.750-55.500	2.2955	1.2721	2.2216	1.0530
L34	55.500-55.250	2.2987	1.2740	2.2246	1.0546
L35	55.250-54.000	2.3071	1.2790	2.2331	1.0590
L36	54.000-53.750	2.3151	1.2839	2.2413	1.0633
L37	53.750-53.500	2.3179	1.2855	2.2441	1.0647
L38	53.500-53.250	2.3204	1.2870	2.2467	1.0661
L39	53.250-53.000	2.3230	1.2886	2.2494	1.0675
L40	53.000-48.000	2.2616	1.2616	2.2152	1.0507
L41	48.000-39.750	2.3058	1.2663	2.3036	1.1006
L42	39.750-38.750	2.3509	1.2794	2.3559	1.1292
L43	38.750-34.750	2.3774	1.2950	2.3803	1.1404
L44	34.750-34.500	2.4005	1.3086	2.4034	1.1520
L45	34.500-33.750	2.4058	1.3117	2.4087	1.1547
L46	33.750-33.500	2.4101	1.3143	2.4134	1.1570
L47	33.500-28.500	2.4375	1.3305	2.4409	1.1708
L48	28.500-24.000	2.5080	1.3910	2.5047	1.2179
L49	24.000-23.750	2.5733	1.4664	2.5574	1.2747
L50	23.750-18.750	2.6009	1.4833	2.5842	1.2883
L51	18.750-14.250	2.8158	1.7581	2.7933	1.5614
L52	14.250-14.000	2.9846	1.9871	2.9583	1.7926
L53	14.000-9.000	3.0157	2.0086	2.9865	1.8092
L54	9.000-4.750	3.0700	2.0463	3.0324	1.8350
L55	4.750-4.500	3.0960	2.0642	3.0511	1.8443
L56	4.500-0.000	2.9076	1.7668	2.8603	1.5372

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	6	3" Flexible Conduit	115.00 - 120.00	1.0000	1.0000
L1	8	HB114-1-0813U4-M5J(1-1/4)	115.00 - 120.00	1.0000	1.0000
L1	32	Safety Line 3/8	115.00 - 120.00	1.0000	1.0000
L2	6	3" Flexible Conduit	110.00 - 115.00	1.0000	1.0000
L2	8	HB114-1-0813U4-M5J(1-1/4)	110.00 - 115.00	1.0000	1.0000
L2	12	LDF7-50A(1-5/8)	110.00 - 113.00	1.0000	1.0000
L2	32	Safety Line 3/8	110.00 - 115.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L3	6	3" Flexible Conduit	105.00 - 110.00	1.0000	1.0000
L3	8	HB114-1-0813U4-M5J(1-1/4)	105.00 - 110.00	1.0000	1.0000
L3	12	LDF7-50A(1-5/8)	105.00 - 110.00	1.0000	1.0000
L3	32	Safety Line 3/8	105.00 - 110.00	1.0000	1.0000
L4	6	3" Flexible Conduit	100.00 - 105.00	1.0000	1.0000
L4	8	HB114-1-0813U4-M5J(1-1/4)	100.00 - 105.00	1.0000	1.0000
L4	12	LDF7-50A(1-5/8)	100.00 - 105.00	1.0000	1.0000
L4	15	LDF7-50A(1-5/8)	100.00 - 105.00	1.0000	1.0000
L4	32	Safety Line 3/8	100.00 - 105.00	1.0000	1.0000
L4	64	(Area) CCI-65FP-045125	100.00 - 100.75	1.0000	1.0000
L4	65	(Area) CCI-65FP-045125	100.00 - 100.75	1.0000	1.0000
L5	6	3" Flexible Conduit	99.25 - 100.00	1.0000	1.0000
L5	8	HB114-1-0813U4-M5J(1-1/4)	99.25 - 100.00	1.0000	1.0000
L5	12	LDF7-50A(1-5/8)	99.25 - 100.00	1.0000	1.0000
L5	15	LDF7-50A(1-5/8)	99.25 - 100.00	1.0000	1.0000
L5	32	Safety Line 3/8	99.25 - 100.00	1.0000	1.0000
L5	64	(Area) CCI-65FP-045125	99.25 - 100.00	1.0000	1.0000
L5	65	(Area) CCI-65FP-045125	99.25 - 100.00	1.0000	1.0000
L6	6	3" Flexible Conduit	99.00 - 99.25	1.0000	1.0000
L6	8	HB114-1-0813U4-M5J(1-1/4)	99.00 - 99.25	1.0000	1.0000
L6	12	LDF7-50A(1-5/8)	99.00 - 99.25	1.0000	1.0000
L6	15	LDF7-50A(1-5/8)	99.00 - 99.25	1.0000	1.0000
L6	32	Safety Line 3/8	99.00 - 99.25	1.0000	1.0000
L6	64	(Area) CCI-65FP-045125	99.00 - 99.25	1.0000	1.0000
L6	65	(Area) CCI-65FP-045125	99.00 - 99.25	1.0000	1.0000
L7	6	3" Flexible Conduit	94.00 - 99.00	1.0000	1.0000
L7	8	HB114-1-0813U4-M5J(1-1/4)	94.00 - 99.00	1.0000	1.0000
L7	12	LDF7-50A(1-5/8)	94.00 - 99.00	1.0000	1.0000
L7	15	LDF7-50A(1-5/8)	94.00 - 99.00	1.0000	1.0000
L7	32	Safety Line 3/8	94.00 - 99.00	1.0000	1.0000
L7	64	(Area) CCI-65FP-045125	94.00 - 99.00	1.0000	1.0000
L7	65	(Area) CCI-65FP-045125	94.00 - 99.00	1.0000	1.0000
L8	6	3" Flexible Conduit	90.08 - 94.00	1.0000	1.0000
L8	8	HB114-1-0813U4-M5J(1-1/4)	90.08 - 94.00	1.0000	1.0000
L8	12	LDF7-50A(1-5/8)	90.08 - 94.00	1.0000	1.0000
L8	15	LDF7-50A(1-5/8)	90.08 - 94.00	1.0000	1.0000
L8	32	Safety Line 3/8	90.08 - 94.00	1.0000	1.0000
L8	64	(Area) CCI-65FP-045125	90.08 - 94.00	1.0000	1.0000
L8	65	(Area) CCI-65FP-045125	90.08 - 94.00	1.0000	1.0000
L8	67	(Area) CCI-65FP-060100	90.08 - 92.08	1.0000	1.0000
L8	68	(Area) CCI-65FP-060100	90.08 - 92.08	1.0000	1.0000
L9	6	3" Flexible Conduit	89.83 - 90.08	1.0000	1.0000
L9	8	HB114-1-0813U4-M5J(1-1/4)	89.83 - 90.08	1.0000	1.0000
L9	12	LDF7-50A(1-5/8)	89.83 - 90.08	1.0000	1.0000
L9	15	LDF7-50A(1-5/8)	89.83 - 90.08	1.0000	1.0000
L9	32	Safety Line 3/8	89.83 - 90.08	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L9	64	(Area) CCI-65FP-045125	89.83 - 90.08	1.0000	1.0000
L9	65	(Area) CCI-65FP-045125	89.83 - 90.08	1.0000	1.0000
L9	67	(Area) CCI-65FP-060100	89.83 - 90.08	1.0000	1.0000
L9	68	(Area) CCI-65FP-060100	89.83 - 90.08	1.0000	1.0000
L10	6	3" Flexible Conduit	89.50 - 89.83	1.0000	1.0000
L10	8	HB114-1-0813U4-M5J(1-1/4)	89.50 - 89.83	1.0000	1.0000
L10	12	LDF7-50A(1-5/8)	89.50 - 89.83	1.0000	1.0000
L10	15	LDF7-50A(1-5/8)	89.50 - 89.83	1.0000	1.0000
L10	32	Safety Line 3/8	89.50 - 89.83	1.0000	1.0000
L10	64	(Area) CCI-65FP-045125	89.50 - 89.83	1.0000	1.0000
L10	65	(Area) CCI-65FP-045125	89.50 - 89.83	1.0000	1.0000
L10	67	(Area) CCI-65FP-060100	89.50 - 89.83	1.0000	1.0000
L10	68	(Area) CCI-65FP-060100	89.50 - 89.83	1.0000	1.0000
L11	6	3" Flexible Conduit	89.25 - 89.50	1.0000	1.0000
L11	8	HB114-1-0813U4-M5J(1-1/4)	89.25 - 89.50	1.0000	1.0000
L11	12	LDF7-50A(1-5/8)	89.25 - 89.50	1.0000	1.0000
L11	15	LDF7-50A(1-5/8)	89.25 - 89.50	1.0000	1.0000
L11	32	Safety Line 3/8	89.25 - 89.50	1.0000	1.0000
L11	64	(Area) CCI-65FP-045125	89.25 - 89.50	1.0000	1.0000
L11	65	(Area) CCI-65FP-045125	89.25 - 89.50	1.0000	1.0000
L11	67	(Area) CCI-65FP-060100	89.25 - 89.50	1.0000	1.0000
L11	68	(Area) CCI-65FP-060100	89.25 - 89.50	1.0000	1.0000
L12	6	3" Flexible Conduit	84.25 - 89.25	1.0000	1.0000
L12	8	HB114-1-0813U4-M5J(1-1/4)	84.25 - 89.25	1.0000	1.0000
L12	12	LDF7-50A(1-5/8)	84.25 - 89.25	1.0000	1.0000
L12	15	LDF7-50A(1-5/8)	84.25 - 89.25	1.0000	1.0000
L12	32	Safety Line 3/8	84.25 - 89.25	1.0000	1.0000
L12	64	(Area) CCI-65FP-045125	84.25 - 89.25	1.0000	1.0000
L12	65	(Area) CCI-65FP-045125	84.25 - 89.25	1.0000	1.0000
L12	67	(Area) CCI-65FP-060100	84.25 - 89.25	1.0000	1.0000
L12	68	(Area) CCI-65FP-060100	84.25 - 89.25	1.0000	1.0000
L13	6	3" Flexible Conduit	78.00 - 84.25	1.0000	1.0000
L13	8	HB114-1-0813U4-M5J(1-1/4)	78.00 - 84.25	1.0000	1.0000
L13	12	LDF7-50A(1-5/8)	78.00 - 84.25	1.0000	1.0000
L13	15	LDF7-50A(1-5/8)	78.00 - 84.25	1.0000	1.0000
L13	32	Safety Line 3/8	78.00 - 84.25	1.0000	1.0000
L13	59	(Area) CCI-65FP-045125	78.00 - 78.25	1.0000	1.0000
L13	60	(Area) CCI-65FP-045125	78.00 - 80.00	1.0000	1.0000
L13	61	(Area) CCI-65FP-045125	78.00 - 80.00	1.0000	1.0000
L13	62	(Area) CCI-65FP-045125	78.00 - 80.00	1.0000	1.0000
L13	64	(Area) CCI-65FP-045125	78.25 - 84.25	1.0000	1.0000
L13	65	(Area) CCI-65FP-045125	80.00 - 84.25	1.0000	1.0000
L13	67	(Area) CCI-65FP-060100	80.00 - 84.25	1.0000	1.0000
L13	68	(Area) CCI-65FP-060100	80.00 - 84.25	1.0000	1.0000
L15	6	3" Flexible Conduit	76.75 - 77.00	1.0000	1.0000
L15	8	HB114-1-0813U4-M5J(1-1/4)	76.75 - 77.00	1.0000	1.0000
L15	12	LDF7-50A(1-5/8)	76.75 - 77.00	1.0000	1.0000
L15	15	LDF7-50A(1-5/8)	76.75 - 77.00	1.0000	1.0000
L15	32	Safety Line 3/8	76.75 - 77.00	1.0000	1.0000
L15	59	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L15	60	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L15	61	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L15	62	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L16	6	3" Flexible Conduit	76.50 - 76.75	1.0000	1.0000
L16	8	HB114-1-0813U4-M5J(1-1/4)	76.50 - 76.75	1.0000	1.0000
L16	12	LDF7-50A(1-5/8)	76.50 - 76.75	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L16	15	LDF7-50A(1-5/8)	76.50 - 76.75	1.0000	1.0000
L16	32	Safety Line 3/8	76.50 - 76.75	1.0000	1.0000
L16	59	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L16	60	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L16	61	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L16	62	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L17	6	3" Flexible Conduit	75.50 - 76.50	1.0000	1.0000
L17	8	HB114-1-0813U4-M5J(1-1/4)	75.50 - 76.50	1.0000	1.0000
L17	12	LDF7-50A(1-5/8)	75.50 - 76.50	1.0000	1.0000
L17	15	LDF7-50A(1-5/8)	75.50 - 76.50	1.0000	1.0000
L17	32	Safety Line 3/8	75.50 - 76.50	1.0000	1.0000
L17	59	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L17	60	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L17	61	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L17	62	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L18	6	3" Flexible Conduit	75.25 - 75.50	1.0000	1.0000
L18	8	HB114-1-0813U4-M5J(1-1/4)	75.25 - 75.50	1.0000	1.0000
L18	12	LDF7-50A(1-5/8)	75.25 - 75.50	1.0000	1.0000
L18	15	LDF7-50A(1-5/8)	75.25 - 75.50	1.0000	1.0000
L18	32	Safety Line 3/8	75.25 - 75.50	1.0000	1.0000
L18	59	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L18	60	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L18	61	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L18	62	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L19	6	3" Flexible Conduit	74.50 - 75.25	1.0000	1.0000
L19	8	HB114-1-0813U4-M5J(1-1/4)	74.50 - 75.25	1.0000	1.0000
L19	12	LDF7-50A(1-5/8)	74.50 - 75.25	1.0000	1.0000
L19	15	LDF7-50A(1-5/8)	74.50 - 75.25	1.0000	1.0000
L19	32	Safety Line 3/8	74.50 - 75.25	1.0000	1.0000
L19	56	(Area) CCI-65FP-065125	74.50 - 74.75	1.0000	1.0000
L19	59	(Area) CCI-65FP-045125	74.50 - 75.25	1.0000	1.0000
L19	60	(Area) CCI-65FP-045125	74.50 - 75.25	1.0000	1.0000
L19	61	(Area) CCI-65FP-045125	74.75 - 75.25	1.0000	1.0000
L19	62	(Area) CCI-65FP-045125	74.50 - 75.25	1.0000	1.0000
L20	6	3" Flexible Conduit	74.25 - 74.50	1.0000	1.0000
L20	8	HB114-1-0813U4-M5J(1-1/4)	74.25 - 74.50	1.0000	1.0000
L20	12	LDF7-50A(1-5/8)	74.25 - 74.50	1.0000	1.0000
L20	15	LDF7-50A(1-5/8)	74.25 - 74.50	1.0000	1.0000
L20	32	Safety Line 3/8	74.25 - 74.50	1.0000	1.0000
L20	56	(Area) CCI-65FP-065125	74.25 - 74.50	1.0000	1.0000
L20	59	(Area) CCI-65FP-045125	74.25 - 74.50	1.0000	1.0000
L20	60	(Area) CCI-65FP-045125	74.25 - 74.50	1.0000	1.0000
L20	62	(Area) CCI-65FP-045125	74.25 - 74.50	1.0000	1.0000
L21	6	3" Flexible Conduit	72.00 - 74.25	1.0000	1.0000
L21	8	HB114-1-0813U4-M5J(1-1/4)	72.00 - 74.25	1.0000	1.0000
L21	12	LDF7-50A(1-5/8)	72.00 - 74.25	1.0000	1.0000
L21	15	LDF7-50A(1-5/8)	72.00 - 74.25	1.0000	1.0000
L21	32	Safety Line 3/8	72.00 - 74.25	1.0000	1.0000
L21	56	(Area) CCI-65FP-065125	72.00 - 74.25	1.0000	1.0000
L21	59	(Area) CCI-65FP-045125	72.00 - 74.25	1.0000	1.0000
L21	60	(Area) CCI-65FP-045125	72.00 - 74.25	1.0000	1.0000
L21	62	(Area) CCI-65FP-045125	72.00 - 74.25	1.0000	1.0000
L22	6	3" Flexible Conduit	71.75 - 72.00	1.0000	1.0000
L22	8	HB114-1-0813U4-M5J(1-1/4)	71.75 - 72.00	1.0000	1.0000
L22	12	LDF7-50A(1-5/8)	71.75 - 72.00	1.0000	1.0000
L22	15	LDF7-50A(1-5/8)	71.75 - 72.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L22	32	Safety Line 3/8	71.75 - 72.00	1.0000	1.0000
L22	56	(Area) CCI-65FP-065125	71.75 - 72.00	1.0000	1.0000
L22	59	(Area) CCI-65FP-045125	71.75 - 72.00	1.0000	1.0000
L22	60	(Area) CCI-65FP-045125	71.75 - 72.00	1.0000	1.0000
L22	62	(Area) CCI-65FP-045125	71.75 - 72.00	1.0000	1.0000
L22	75	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L22	76	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L22	77	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L22	78	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L23	6	3" Flexible Conduit	70.50 - 71.75	1.0000	1.0000
L23	8	HB114-1-0813U4-M5J(1-1/4)	70.50 - 71.75	1.0000	1.0000
L23	12	LDF7-50A(1-5/8)	70.50 - 71.75	1.0000	1.0000
L23	15	LDF7-50A(1-5/8)	70.50 - 71.75	1.0000	1.0000
L23	32	Safety Line 3/8	70.50 - 71.75	1.0000	1.0000
L23	56	(Area) CCI-65FP-065125	70.50 - 71.75	1.0000	1.0000
L23	59	(Area) CCI-65FP-045125	70.50 - 71.75	1.0000	1.0000
L23	60	(Area) CCI-65FP-045125	70.50 - 71.75	1.0000	1.0000
L23	62	(Area) CCI-65FP-045125	70.50 - 71.75	1.0000	1.0000
L23	75	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L23	76	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L23	77	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L23	78	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L24	6	3" Flexible Conduit	70.25 - 70.50	1.0000	1.0000
L24	8	HB114-1-0813U4-M5J(1-1/4)	70.25 - 70.50	1.0000	1.0000
L24	12	LDF7-50A(1-5/8)	70.25 - 70.50	1.0000	1.0000
L24	15	LDF7-50A(1-5/8)	70.25 - 70.50	1.0000	1.0000
L24	32	Safety Line 3/8	70.25 - 70.50	1.0000	1.0000
L24	56	(Area) CCI-65FP-065125	70.25 - 70.50	1.0000	1.0000
L24	59	(Area) CCI-65FP-045125	70.25 - 70.50	1.0000	1.0000
L24	60	(Area) CCI-65FP-045125	70.25 - 70.50	1.0000	1.0000
L24	62	(Area) CCI-65FP-045125	70.25 - 70.50	1.0000	1.0000
L24	75	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L24	76	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L24	77	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L24	78	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L25	6	3" Flexible Conduit	70.00 - 70.25	1.0000	1.0000
L25	8	HB114-1-0813U4-M5J(1-1/4)	70.00 - 70.25	1.0000	1.0000
L25	12	LDF7-50A(1-5/8)	70.00 - 70.25	1.0000	1.0000
L25	15	LDF7-50A(1-5/8)	70.00 - 70.25	1.0000	1.0000
L25	32	Safety Line 3/8	70.00 - 70.25	1.0000	1.0000
L25	56	(Area) CCI-65FP-065125	70.00 - 70.25	1.0000	1.0000
L25	59	(Area) CCI-65FP-045125	70.00 - 70.25	1.0000	1.0000
L25	60	(Area) CCI-65FP-045125	70.00 - 70.25	1.0000	1.0000
L25	62	(Area) CCI-65FP-045125	70.00 - 70.25	1.0000	1.0000
L25	75	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L25	76	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L25	77	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L25	78	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L26	6	3" Flexible Conduit	69.75 - 70.00	1.0000	1.0000
L26	8	HB114-1-0813U4-M5J(1-1/4)	69.75 - 70.00	1.0000	1.0000
L26	12	LDF7-50A(1-5/8)	69.75 - 70.00	1.0000	1.0000
L26	15	LDF7-50A(1-5/8)	69.75 - 70.00	1.0000	1.0000
L26	32	Safety Line 3/8	69.75 - 70.00	1.0000	1.0000
L26	56	(Area) CCI-65FP-065125	69.75 - 70.00	1.0000	1.0000
L26	59	(Area) CCI-65FP-045125	69.75 - 70.00	1.0000	1.0000
L26	60	(Area) CCI-65FP-045125	69.75 - 70.00	1.0000	1.0000
L26	62	(Area) CCI-65FP-045125	69.75 - 70.00	1.0000	1.0000
L26	75	PL 1 x 5	69.75 - 70.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L26	76	PL 1 x 5	69.75 - 70.00	1.0000	1.0000
L26	77	PL 1 x 5	69.75 - 70.00	1.0000	1.0000
L26	78	PL 1 x 5	69.75 - 70.00	1.0000	1.0000
L27	6	3" Flexible Conduit	69.50 - 69.75	1.0000	1.0000
L27	8	HB114-1-0813U4-M5J(1-1/4)	69.50 - 69.75	1.0000	1.0000
L27	12	LDF7-50A(1-5/8)	69.50 - 69.75	1.0000	1.0000
L27	15	LDF7-50A(1-5/8)	69.50 - 69.75	1.0000	1.0000
L27	32	Safety Line 3/8	69.50 - 69.75	1.0000	1.0000
L27	56	(Area) CCI-65FP-065125	69.50 - 69.75	1.0000	1.0000
L27	59	(Area) CCI-65FP-045125	69.50 - 69.75	1.0000	1.0000
L27	60	(Area) CCI-65FP-045125	69.50 - 69.75	1.0000	1.0000
L27	62	(Area) CCI-65FP-045125	69.50 - 69.75	1.0000	1.0000
L27	75	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L27	76	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L27	77	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L27	78	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L28	6	3" Flexible Conduit	69.25 - 69.50	1.0000	1.0000
L28	8	HB114-1-0813U4-M5J(1-1/4)	69.25 - 69.50	1.0000	1.0000
L28	12	LDF7-50A(1-5/8)	69.25 - 69.50	1.0000	1.0000
L28	15	LDF7-50A(1-5/8)	69.25 - 69.50	1.0000	1.0000
L28	32	Safety Line 3/8	69.25 - 69.50	1.0000	1.0000
L28	56	(Area) CCI-65FP-065125	69.25 - 69.50	1.0000	1.0000
L28	59	(Area) CCI-65FP-045125	69.25 - 69.50	1.0000	1.0000
L28	60	(Area) CCI-65FP-045125	69.25 - 69.50	1.0000	1.0000
L28	62	(Area) CCI-65FP-045125	69.25 - 69.50	1.0000	1.0000
L28	75	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L28	76	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L28	77	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L28	78	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L29	6	3" Flexible Conduit	64.25 - 69.25	1.0000	1.0000
L29	8	HB114-1-0813U4-M5J(1-1/4)	64.25 - 69.25	1.0000	1.0000
L29	12	LDF7-50A(1-5/8)	64.25 - 69.25	1.0000	1.0000
L29	15	LDF7-50A(1-5/8)	64.25 - 69.25	1.0000	1.0000
L29	32	Safety Line 3/8	64.25 - 69.25	1.0000	1.0000
L29	53	(Area) CCI-65FP-045100	64.25 - 68.25	1.0000	1.0000
L29	54	(Area) CCI-65FP-045100	64.25 - 68.25	1.0000	1.0000
L29	56	(Area) CCI-65FP-065125	64.25 - 69.25	1.0000	1.0000
L29	57	(Area) CCI-65FP-045100	64.25 - 68.25	1.0000	1.0000
L29	59	(Area) CCI-65FP-045125	68.25 - 69.25	1.0000	1.0000
L29	60	(Area) CCI-65FP-045125	68.25 - 69.25	1.0000	1.0000
L29	62	(Area) CCI-65FP-045125	68.25 - 69.25	1.0000	1.0000
L29	75	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L29	76	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L29	77	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L29	78	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L30	6	3" Flexible Conduit	59.25 - 64.25	1.0000	1.0000
L30	8	HB114-1-0813U4-M5J(1-1/4)	59.25 - 64.25	1.0000	1.0000
L30	12	LDF7-50A(1-5/8)	59.25 - 64.25	1.0000	1.0000
L30	15	LDF7-50A(1-5/8)	59.25 - 64.25	1.0000	1.0000
L30	32	Safety Line 3/8	59.25 - 64.25	1.0000	1.0000
L30	53	(Area) CCI-65FP-045100	59.25 - 64.25	1.0000	1.0000
L30	54	(Area) CCI-65FP-045100	59.25 - 64.25	1.0000	1.0000
L30	56	(Area) CCI-65FP-065125	59.25 - 64.25	1.0000	1.0000
L30	57	(Area) CCI-65FP-045100	59.25 - 64.25	1.0000	1.0000
L30	75	PL 1 x 5	59.25 - 64.25	1.0000	1.0000
L30	76	PL 1 x 5	59.25 - 64.25	1.0000	1.0000
L30	77	PL 1 x 5	59.25 - 64.25	1.0000	1.0000
L30	78	PL 1 x 5	59.25 - 64.25	1.0000	1.0000

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Project

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L31	6	3" Flexible Conduit	56.00 - 59.25	1.0000	1.0000
L31	8	HB114-1-0813U4-M5J(1-1/4)	56.00 - 59.25	1.0000	1.0000
L31	12	LDF7-50A(1-5/8)	56.00 - 59.25	1.0000	1.0000
L31	15	LDF7-50A(1-5/8)	56.00 - 59.25	1.0000	1.0000
L31	32	Safety Line 3/8	56.00 - 59.25	1.0000	1.0000
L31	46	(Area) CCI-65FP-045100	56.00 - 57.25	1.0000	1.0000
L31	48	(Area) CCI-65FP-045100	56.00 - 57.25	1.0000	1.0000
L31	51	(Area) CCI-65FP-045100	56.00 - 57.25	1.0000	1.0000
L31	53	(Area) CCI-65FP-045100	57.25 - 59.25	1.0000	1.0000
L31	54	(Area) CCI-65FP-045100	57.25 - 59.25	1.0000	1.0000
L31	56	(Area) CCI-65FP-065125	56.00 - 59.25	1.0000	1.0000
L31	57	(Area) CCI-65FP-045100	57.25 - 59.25	1.0000	1.0000
L31	75	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L31	76	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L31	77	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L31	78	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L32	6	3" Flexible Conduit	55.75 - 56.00	1.0000	1.0000
L32	8	HB114-1-0813U4-M5J(1-1/4)	55.75 - 56.00	1.0000	1.0000
L32	12	LDF7-50A(1-5/8)	55.75 - 56.00	1.0000	1.0000
L32	15	LDF7-50A(1-5/8)	55.75 - 56.00	1.0000	1.0000
L32	32	Safety Line 3/8	55.75 - 56.00	1.0000	1.0000
L32	45	(Area) CCI-65FP-045100	55.75 - 56.00	1.0000	1.0000
L32	47	(Area) CCI-65FP-045100	55.75 - 56.00	1.0000	1.0000
L32	50	(Area) CCI-65FP-045100	55.75 - 56.00	1.0000	1.0000
L32	55	(Area) CCI-65FP-065125	55.75 - 56.00	1.0000	1.0000
L32	75	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	76	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	77	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	78	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	85	C6x10.5	55.75 - 56.00	1.0000	1.0000
L32	86	C6x10.5	55.75 - 56.00	1.0000	1.0000
L32	87	C6x10.5	55.75 - 56.00	1.0000	1.0000
L32	88	C6x10.5	55.75 - 56.00	1.0000	1.0000
L33	6	3" Flexible Conduit	55.50 - 55.75	1.0000	1.0000
L33	8	HB114-1-0813U4-M5J(1-1/4)	55.50 - 55.75	1.0000	1.0000
L33	12	LDF7-50A(1-5/8)	55.50 - 55.75	1.0000	1.0000
L33	15	LDF7-50A(1-5/8)	55.50 - 55.75	1.0000	1.0000
L33	32	Safety Line 3/8	55.50 - 55.75	1.0000	1.0000
L33	45	(Area) CCI-65FP-045100	55.50 - 55.75	1.0000	1.0000
L33	47	(Area) CCI-65FP-045100	55.50 - 55.75	1.0000	1.0000
L33	50	(Area) CCI-65FP-045100	55.50 - 55.75	1.0000	1.0000
L33	55	(Area) CCI-65FP-065125	55.50 - 55.75	1.0000	1.0000
L33	75	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	76	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	77	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	78	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	85	C6x10.5	55.50 - 55.75	1.0000	1.0000
L33	86	C6x10.5	55.50 - 55.75	1.0000	1.0000
L33	87	C6x10.5	55.50 - 55.75	1.0000	1.0000
L33	88	C6x10.5	55.50 - 55.75	1.0000	1.0000
L34	6	3" Flexible Conduit	55.25 - 55.50	1.0000	1.0000
L34	8	HB114-1-0813U4-M5J(1-1/4)	55.25 - 55.50	1.0000	1.0000
L34	12	LDF7-50A(1-5/8)	55.25 - 55.50	1.0000	1.0000
L34	15	LDF7-50A(1-5/8)	55.25 - 55.50	1.0000	1.0000
L34	32	Safety Line 3/8	55.25 - 55.50	1.0000	1.0000
L34	45	(Area) CCI-65FP-045100	55.25 - 55.50	1.0000	1.0000
L34	47	(Area) CCI-65FP-045100	55.25 - 55.50	1.0000	1.0000
L34	50	(Area) CCI-65FP-045100	55.25 - 55.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L34	55	(Area) CCI-65FP-065125	55.25 - 55.50	1.0000	1.0000
L34	75	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	76	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	77	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	78	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	85	C6x10.5	55.25 - 55.50	1.0000	1.0000
L34	86	C6x10.5	55.25 - 55.50	1.0000	1.0000
L34	87	C6x10.5	55.25 - 55.50	1.0000	1.0000
L34	88	C6x10.5	55.25 - 55.50	1.0000	1.0000
L35	6	3" Flexible Conduit	54.00 - 55.25	1.0000	1.0000
L35	8	HB114-1-0813U4-M5J(1-1/4)	54.00 - 55.25	1.0000	1.0000
L35	12	LDF7-50A(1-5/8)	54.00 - 55.25	1.0000	1.0000
L35	15	LDF7-50A(1-5/8)	54.00 - 55.25	1.0000	1.0000
L35	32	Safety Line 3/8	54.00 - 55.25	1.0000	1.0000
L35	45	(Area) CCI-65FP-045100	54.00 - 55.25	1.0000	1.0000
L35	47	(Area) CCI-65FP-045100	54.00 - 55.25	1.0000	1.0000
L35	50	(Area) CCI-65FP-045100	54.00 - 55.25	1.0000	1.0000
L35	55	(Area) CCI-65FP-065125	54.00 - 55.25	1.0000	1.0000
L35	75	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	76	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	77	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	78	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	85	C6x10.5	54.00 - 55.25	1.0000	1.0000
L35	86	C6x10.5	54.00 - 55.25	1.0000	1.0000
L35	87	C6x10.5	54.00 - 55.25	1.0000	1.0000
L35	88	C6x10.5	54.00 - 55.25	1.0000	1.0000
L36	6	3" Flexible Conduit	53.75 - 54.00	1.0000	1.0000
L36	8	HB114-1-0813U4-M5J(1-1/4)	53.75 - 54.00	1.0000	1.0000
L36	12	LDF7-50A(1-5/8)	53.75 - 54.00	1.0000	1.0000
L36	15	LDF7-50A(1-5/8)	53.75 - 54.00	1.0000	1.0000
L36	32	Safety Line 3/8	53.75 - 54.00	1.0000	1.0000
L36	45	(Area) CCI-65FP-045100	53.75 - 54.00	1.0000	1.0000
L36	47	(Area) CCI-65FP-045100	53.75 - 54.00	1.0000	1.0000
L36	50	(Area) CCI-65FP-045100	53.75 - 54.00	1.0000	1.0000
L36	55	(Area) CCI-65FP-065125	53.75 - 54.00	1.0000	1.0000
L36	75	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	76	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	77	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	78	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	85	C6x10.5	53.75 - 54.00	1.0000	1.0000
L36	86	C6x10.5	53.75 - 54.00	1.0000	1.0000
L36	87	C6x10.5	53.75 - 54.00	1.0000	1.0000
L36	88	C6x10.5	53.75 - 54.00	1.0000	1.0000
L37	6	3" Flexible Conduit	53.50 - 53.75	1.0000	1.0000
L37	8	HB114-1-0813U4-M5J(1-1/4)	53.50 - 53.75	1.0000	1.0000
L37	12	LDF7-50A(1-5/8)	53.50 - 53.75	1.0000	1.0000
L37	15	LDF7-50A(1-5/8)	53.50 - 53.75	1.0000	1.0000
L37	32	Safety Line 3/8	53.50 - 53.75	1.0000	1.0000
L37	45	(Area) CCI-65FP-045100	53.50 - 53.75	1.0000	1.0000
L37	47	(Area) CCI-65FP-045100	53.50 - 53.75	1.0000	1.0000
L37	50	(Area) CCI-65FP-045100	53.50 - 53.75	1.0000	1.0000
L37	55	(Area) CCI-65FP-065125	53.50 - 53.75	1.0000	1.0000
L37	75	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	76	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	77	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	78	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	85	C6x10.5	53.50 - 53.75	1.0000	1.0000
L37	86	C6x10.5	53.50 - 53.75	1.0000	1.0000
L37	87	C6x10.5	53.50 - 53.75	1.0000	1.0000

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<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>mfry</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L37	88	C6x10.5	53.50 - 53.75	1.0000	1.0000
L38	6	3" Flexible Conduit	53.25 - 53.50	1.0000	1.0000
L38	8	HB114-1-0813U4-M5J(1-1/4)	53.25 - 53.50	1.0000	1.0000
L38	12	LDF7-50A(1-5/8)	53.25 - 53.50	1.0000	1.0000
L38	15	LDF7-50A(1-5/8)	53.25 - 53.50	1.0000	1.0000
L38	32	Safety Line 3/8	53.25 - 53.50	1.0000	1.0000
L38	45	(Area) CCI-65FP-045100	53.25 - 53.50	1.0000	1.0000
L38	47	(Area) CCI-65FP-045100	53.25 - 53.50	1.0000	1.0000
L38	50	(Area) CCI-65FP-045100	53.25 - 53.50	1.0000	1.0000
L38	55	(Area) CCI-65FP-065125	53.25 - 53.50	1.0000	1.0000
L38	75	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	76	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	77	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	78	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	85	C6x10.5	53.25 - 53.50	1.0000	1.0000
L38	86	C6x10.5	53.25 - 53.50	1.0000	1.0000
L38	87	C6x10.5	53.25 - 53.50	1.0000	1.0000
L38	88	C6x10.5	53.25 - 53.50	1.0000	1.0000
L39	6	3" Flexible Conduit	53.00 - 53.25	1.0000	1.0000
L39	8	HB114-1-0813U4-M5J(1-1/4)	53.00 - 53.25	1.0000	1.0000
L39	12	LDF7-50A(1-5/8)	53.00 - 53.25	1.0000	1.0000
L39	15	LDF7-50A(1-5/8)	53.00 - 53.25	1.0000	1.0000
L39	32	Safety Line 3/8	53.00 - 53.25	1.0000	1.0000
L39	45	(Area) CCI-65FP-045100	53.00 - 53.25	1.0000	1.0000
L39	47	(Area) CCI-65FP-045100	53.00 - 53.25	1.0000	1.0000
L39	50	(Area) CCI-65FP-045100	53.00 - 53.25	1.0000	1.0000
L39	55	(Area) CCI-65FP-065125	53.00 - 53.25	1.0000	1.0000
L39	75	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	76	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	77	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	78	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	85	C6x10.5	53.00 - 53.25	1.0000	1.0000
L39	86	C6x10.5	53.00 - 53.25	1.0000	1.0000
L39	87	C6x10.5	53.00 - 53.25	1.0000	1.0000
L39	88	C6x10.5	53.00 - 53.25	1.0000	1.0000
L40	6	3" Flexible Conduit	48.00 - 53.00	1.0000	1.0000
L40	8	HB114-1-0813U4-M5J(1-1/4)	48.00 - 53.00	1.0000	1.0000
L40	12	LDF7-50A(1-5/8)	48.00 - 53.00	1.0000	1.0000
L40	15	LDF7-50A(1-5/8)	48.00 - 53.00	1.0000	1.0000
L40	32	Safety Line 3/8	48.00 - 53.00	1.0000	1.0000
L40	45	(Area) CCI-65FP-045100	48.00 - 53.00	1.0000	1.0000
L40	47	(Area) CCI-65FP-045100	48.00 - 53.00	1.0000	1.0000
L40	49	(Area) CCI-65FP-045100	48.00 - 50.50	1.0000	1.0000
L40	50	(Area) CCI-65FP-045100	48.00 - 53.00	1.0000	1.0000
L40	55	(Area) CCI-65FP-065125	50.50 - 53.00	1.0000	1.0000
L40	75	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	76	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	77	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	78	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	85	C6x10.5	48.00 - 53.00	1.0000	1.0000
L40	86	C6x10.5	48.00 - 53.00	1.0000	1.0000
L40	87	C6x10.5	48.00 - 53.00	1.0000	1.0000
L40	88	C6x10.5	48.00 - 53.00	1.0000	1.0000
L41	6	3" Flexible Conduit	39.75 - 48.00	1.0000	1.0000
L41	8	HB114-1-0813U4-M5J(1-1/4)	39.75 - 48.00	1.0000	1.0000
L41	12	LDF7-50A(1-5/8)	39.75 - 48.00	1.0000	1.0000
L41	15	LDF7-50A(1-5/8)	39.75 - 48.00	1.0000	1.0000
L41	32	Safety Line 3/8	39.75 - 48.00	1.0000	1.0000

tnxTower Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job 528 Wheelers Farm Rd (BU 876320)	Page 26 of 58
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L41	40	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	41	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	42	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	43	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	45	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	47	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	49	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	50	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	75	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	76	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	77	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	78	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	85	C6x10.5	39.75 - 48.00	1.0000	1.0000
L41	86	C6x10.5	39.75 - 48.00	1.0000	1.0000
L41	87	C6x10.5	39.75 - 48.00	1.0000	1.0000
L41	88	C6x10.5	39.75 - 48.00	1.0000	1.0000
L43	6	3" Flexible Conduit	34.75 - 38.75	1.0000	1.0000
L43	8	HB114-1-0813U4-M5J(1-1/4)	34.75 - 38.75	1.0000	1.0000
L43	12	LDF7-50A(1-5/8)	34.75 - 38.75	1.0000	1.0000
L43	15	LDF7-50A(1-5/8)	34.75 - 38.75	1.0000	1.0000
L43	32	Safety Line 3/8	34.75 - 38.75	1.0000	1.0000
L43	40	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	41	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	42	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	43	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	75	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	76	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	77	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	78	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	85	C6x10.5	34.75 - 38.75	1.0000	1.0000
L43	86	C6x10.5	34.75 - 38.75	1.0000	1.0000
L43	87	C6x10.5	34.75 - 38.75	1.0000	1.0000
L43	88	C6x10.5	34.75 - 38.75	1.0000	1.0000
L44	6	3" Flexible Conduit	34.50 - 34.75	1.0000	1.0000
L44	8	HB114-1-0813U4-M5J(1-1/4)	34.50 - 34.75	1.0000	1.0000
L44	12	LDF7-50A(1-5/8)	34.50 - 34.75	1.0000	1.0000
L44	15	LDF7-50A(1-5/8)	34.50 - 34.75	1.0000	1.0000
L44	32	Safety Line 3/8	34.50 - 34.75	1.0000	1.0000
L44	40	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	41	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	42	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	43	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	75	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	76	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	77	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	78	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	85	C6x10.5	34.50 - 34.75	1.0000	1.0000
L44	86	C6x10.5	34.50 - 34.75	1.0000	1.0000
L44	87	C6x10.5	34.50 - 34.75	1.0000	1.0000
L44	88	C6x10.5	34.50 - 34.75	1.0000	1.0000
L45	6	3" Flexible Conduit	33.75 - 34.50	1.0000	1.0000
L45	8	HB114-1-0813U4-M5J(1-1/4)	33.75 - 34.50	1.0000	1.0000
L45	12	LDF7-50A(1-5/8)	33.75 - 34.50	1.0000	1.0000
L45	15	LDF7-50A(1-5/8)	33.75 - 34.50	1.0000	1.0000
L45	32	Safety Line 3/8	33.75 - 34.50	1.0000	1.0000
L45	40	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000
L45	41	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000
L45	42	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000
L45	43	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L45	75	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	76	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	77	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	78	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	85	C6x10.5	33.75 - 34.50	1.0000	1.0000
L45	86	C6x10.5	33.75 - 34.50	1.0000	1.0000
L45	87	C6x10.5	33.75 - 34.50	1.0000	1.0000
L45	88	C6x10.5	33.75 - 34.50	1.0000	1.0000
L46	6	3" Flexible Conduit	33.50 - 33.75	1.0000	1.0000
L46	8	HB114-1-0813U4-M5J(1-1/4)	33.50 - 33.75	1.0000	1.0000
L46	12	LDF7-50A(1-5/8)	33.50 - 33.75	1.0000	1.0000
L46	15	LDF7-50A(1-5/8)	33.50 - 33.75	1.0000	1.0000
L46	32	Safety Line 3/8	33.50 - 33.75	1.0000	1.0000
L46	40	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	41	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	42	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	43	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	75	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	76	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	77	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	78	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	85	C6x10.5	33.50 - 33.75	1.0000	1.0000
L46	86	C6x10.5	33.50 - 33.75	1.0000	1.0000
L46	87	C6x10.5	33.50 - 33.75	1.0000	1.0000
L46	88	C6x10.5	33.50 - 33.75	1.0000	1.0000
L47	6	3" Flexible Conduit	28.50 - 33.50	1.0000	1.0000
L47	8	HB114-1-0813U4-M5J(1-1/4)	28.50 - 33.50	1.0000	1.0000
L47	12	LDF7-50A(1-5/8)	28.50 - 33.50	1.0000	1.0000
L47	15	LDF7-50A(1-5/8)	28.50 - 33.50	1.0000	1.0000
L47	32	Safety Line 3/8	28.50 - 33.50	1.0000	1.0000
L47	40	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	41	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	42	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	43	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	75	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	76	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	77	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	78	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	85	C6x10.5	28.50 - 33.50	1.0000	1.0000
L47	86	C6x10.5	28.50 - 33.50	1.0000	1.0000
L47	87	C6x10.5	28.50 - 33.50	1.0000	1.0000
L47	88	C6x10.5	28.50 - 33.50	1.0000	1.0000
L48	6	3" Flexible Conduit	24.00 - 28.50	1.0000	1.0000
L48	8	HB114-1-0813U4-M5J(1-1/4)	24.00 - 28.50	1.0000	1.0000
L48	12	LDF7-50A(1-5/8)	24.00 - 28.50	1.0000	1.0000
L48	15	LDF7-50A(1-5/8)	24.00 - 28.50	1.0000	1.0000
L48	32	Safety Line 3/8	24.00 - 28.50	1.0000	1.0000
L48	35	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	36	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	37	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	38	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	40	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	41	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	42	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	43	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	75	PL 1 x 5	24.00 - 28.50	1.0000	1.0000
L48	76	PL 1 x 5	24.00 - 28.50	1.0000	1.0000
L48	77	PL 1 x 5	24.00 - 28.50	1.0000	1.0000
L48	78	PL 1 x 5	24.00 - 28.50	1.0000	1.0000

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Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L48	85	C6x10.5	24.00 - 28.50	1.0000	1.0000
L48	86	C6x10.5	24.00 - 28.50	1.0000	1.0000
L48	87	C6x10.5	24.00 - 28.50	1.0000	1.0000
L48	88	C6x10.5	24.00 - 28.50	1.0000	1.0000
L49	6	3" Flexible Conduit	23.75 - 24.00	1.0000	1.0000
L49	8	HB114-1-0813U4-M5J(1-1/4)	23.75 - 24.00	1.0000	1.0000
L49	12	LDF7-50A(1-5/8)	23.75 - 24.00	1.0000	1.0000
L49	15	LDF7-50A(1-5/8)	23.75 - 24.00	1.0000	1.0000
L49	32	Safety Line 3/8	23.75 - 24.00	1.0000	1.0000
L49	35	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	36	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	37	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	38	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	75	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	76	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	77	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	78	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	85	C6x10.5	23.75 - 24.00	1.0000	1.0000
L49	86	C6x10.5	23.75 - 24.00	1.0000	1.0000
L49	87	C6x10.5	23.75 - 24.00	1.0000	1.0000
L49	88	C6x10.5	23.75 - 24.00	1.0000	1.0000
L50	6	3" Flexible Conduit	18.75 - 23.75	1.0000	1.0000
L50	8	HB114-1-0813U4-M5J(1-1/4)	18.75 - 23.75	1.0000	1.0000
L50	12	LDF7-50A(1-5/8)	18.75 - 23.75	1.0000	1.0000
L50	15	LDF7-50A(1-5/8)	18.75 - 23.75	1.0000	1.0000
L50	32	Safety Line 3/8	18.75 - 23.75	1.0000	1.0000
L50	35	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	36	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	37	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	38	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	75	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	76	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	77	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	78	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	85	C6x10.5	18.75 - 23.75	1.0000	1.0000
L50	86	C6x10.5	18.75 - 23.75	1.0000	1.0000
L50	87	C6x10.5	18.75 - 23.75	1.0000	1.0000
L50	88	C6x10.5	18.75 - 23.75	1.0000	1.0000
L51	6	3" Flexible Conduit	14.25 - 18.75	1.0000	1.0000
L51	8	HB114-1-0813U4-M5J(1-1/4)	14.25 - 18.75	1.0000	1.0000
L51	12	LDF7-50A(1-5/8)	14.25 - 18.75	1.0000	1.0000
L51	15	LDF7-50A(1-5/8)	14.25 - 18.75	1.0000	1.0000
L51	32	Safety Line 3/8	14.25 - 18.75	1.0000	1.0000
L51	35	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	36	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	37	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	38	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	75	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	76	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	77	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	78	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	80	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	81	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	82	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	83	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	85	C6x10.5	14.25 - 18.75	1.0000	1.0000
L51	86	C6x10.5	14.25 - 18.75	1.0000	1.0000
L51	87	C6x10.5	14.25 - 18.75	1.0000	1.0000
L51	88	C6x10.5	14.25 - 18.75	1.0000	1.0000

tnxTower**Tower Engineering
Professionals**326 Tryon Rd.
Raleigh, NC 27603
Phone: (919) 661-6351
FAX: (919) 661-6350**Job**

528 Wheelers Farm Rd (BU 876320)

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Project

TEP No. 25570.213629

Date

08:53:11 01/29/19

Client

Crown Castle

Designed by

mfry

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L52	6	3" Flexible Conduit	14.00 - 14.25	1.0000	1.0000
L52	8	HB114-1-0813U4-M5J(1-1/4)	14.00 - 14.25	1.0000	1.0000
L52	12	LDF7-50A(1-5/8)	14.00 - 14.25	1.0000	1.0000
L52	15	LDF7-50A(1-5/8)	14.00 - 14.25	1.0000	1.0000
L52	32	Safety Line 3/8	14.00 - 14.25	1.0000	1.0000
L52	35	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	36	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	37	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	38	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	75	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	76	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	77	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	78	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	80	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	81	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	82	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	83	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	85	C6x10.5	14.00 - 14.25	1.0000	1.0000
L52	86	C6x10.5	14.00 - 14.25	1.0000	1.0000
L52	87	C6x10.5	14.00 - 14.25	1.0000	1.0000
L52	88	C6x10.5	14.00 - 14.25	1.0000	1.0000
L53	6	3" Flexible Conduit	9.00 - 14.00	1.0000	1.0000
L53	8	HB114-1-0813U4-M5J(1-1/4)	9.00 - 14.00	1.0000	1.0000
L53	12	LDF7-50A(1-5/8)	9.00 - 14.00	1.0000	1.0000
L53	15	LDF7-50A(1-5/8)	9.00 - 14.00	1.0000	1.0000
L53	32	Safety Line 3/8	9.00 - 14.00	1.0000	1.0000
L53	35	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	36	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	37	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	38	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	75	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	76	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	77	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	78	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	80	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	81	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	82	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	83	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	85	C6x10.5	9.00 - 14.00	1.0000	1.0000
L53	86	C6x10.5	9.00 - 14.00	1.0000	1.0000
L53	87	C6x10.5	9.00 - 14.00	1.0000	1.0000
L53	88	C6x10.5	9.00 - 14.00	1.0000	1.0000
L54	6	3" Flexible Conduit	4.75 - 9.00	1.0000	1.0000
L54	8	HB114-1-0813U4-M5J(1-1/4)	4.75 - 9.00	1.0000	1.0000
L54	12	LDF7-50A(1-5/8)	4.75 - 9.00	1.0000	1.0000
L54	15	LDF7-50A(1-5/8)	4.75 - 9.00	1.0000	1.0000
L54	32	Safety Line 3/8	4.75 - 9.00	1.0000	1.0000
L54	35	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	36	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	37	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	38	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	75	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	76	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	77	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	78	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	80	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000
L54	81	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000
L54	82	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000
L54	83	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000

tnxTower Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job 528 Wheelers Farm Rd (BU 876320)	Page 30 of 58
	Project TEP No. 25570.213629	Date 08:53:11 01/29/19
	Client Crown Castle	Designed by mfry

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L54	85	C6x10.5	4.75 - 9.00	1.0000	1.0000
L54	86	C6x10.5	4.75 - 9.00	1.0000	1.0000
L54	87	C6x10.5	4.75 - 9.00	1.0000	1.0000
L54	88	C6x10.5	4.75 - 9.00	1.0000	1.0000
L55	6	3" Flexible Conduit	4.50 - 4.75	1.0000	1.0000
L55	8	HB114-1-0813U4-M5J(1-1/4)	4.50 - 4.75	1.0000	1.0000
L55	12	LDF7-50A(1-5/8)	4.50 - 4.75	1.0000	1.0000
L55	15	LDF7-50A(1-5/8)	4.50 - 4.75	1.0000	1.0000
L55	32	Safety Line 3/8	4.50 - 4.75	1.0000	1.0000
L55	35	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	36	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	37	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	38	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	75	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	76	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	77	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	78	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	80	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	81	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	82	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	83	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	85	C6x10.5	4.50 - 4.75	1.0000	1.0000
L55	86	C6x10.5	4.50 - 4.75	1.0000	1.0000
L55	87	C6x10.5	4.50 - 4.75	1.0000	1.0000
L55	88	C6x10.5	4.50 - 4.75	1.0000	1.0000
L56	6	3" Flexible Conduit	0.00 - 4.50	1.0000	1.0000
L56	8	HB114-1-0813U4-M5J(1-1/4)	0.00 - 4.50	1.0000	1.0000
L56	12	LDF7-50A(1-5/8)	0.00 - 4.50	1.0000	1.0000
L56	15	LDF7-50A(1-5/8)	0.00 - 4.50	1.0000	1.0000
L56	32	Safety Line 3/8	0.00 - 4.50	1.0000	1.0000
L56	35	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	36	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	37	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	38	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	75	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	76	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	77	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	78	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	80	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	81	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	82	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	83	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	85	C6x10.5	0.00 - 4.50	1.0000	1.0000
L56	86	C6x10.5	0.00 - 4.50	1.0000	1.0000
L56	87	C6x10.5	0.00 - 4.50	1.0000	1.0000
L56	88	C6x10.5	0.00 - 4.50	1.0000	1.0000

Discrete Tower Loads

tnxTower Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	528 Wheelers Farm Rd (BU 876320)	Page	31 of 58
	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			ft ft ft	°	ft	ft ²	ft ²	K

Pipe 6" x 10'	C	From Leg	0.00 0.00 5.00	0.00	120.000	No Ice 3.232 1/2" Ice 6.050 1" Ice 6.665 2" Ice 7.922	3.232 6.050 6.665 7.922	0.19 0.23 0.28 0.40
122								
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Centroid-Le g	4.000 -6.00 -1.00	30.00	122.000	No Ice 6.580 1/2" Ice 7.031 1" Ice 7.473 2" Ice 8.385	4.959 5.754 6.472 7.941	0.08 0.13 0.19 0.34
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Centroid-Le g	4.000 -6.00 -1.00	10.00	122.000	No Ice 6.580 1/2" Ice 7.031 1" Ice 7.473 2" Ice 8.385	4.959 5.754 6.472 7.941	0.08 0.13 0.19 0.34
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Centroid-Le g	4.000 2.00 -1.00	30.00	122.000	No Ice 6.580 1/2" Ice 7.031 1" Ice 7.473 2" Ice 8.385	4.959 5.754 6.472 7.941	0.08 0.13 0.19 0.34
APXVSPP18-C-A20 w/ Mount Pipe	A	From Centroid-Le g	4.000 -2.00 -1.00	30.00	122.000	No Ice 8.262 1/2" Ice 8.822 1" Ice 9.346 2" Ice 10.418	6.946 8.127 9.021 10.844	0.08 0.15 0.23 0.41
APXVSPP18-C-A20 w/ Mount Pipe	B	From Centroid-Le g	4.000 -2.00 -1.00	10.00	122.000	No Ice 8.262 1/2" Ice 8.822 1" Ice 9.346 2" Ice 10.418	6.946 8.127 9.021 10.844	0.08 0.15 0.23 0.41
APXVSPP18-C-A20 w/ Mount Pipe	C	From Centroid-Le g	4.000 -2.00 -1.00	30.00	122.000	No Ice 8.262 1/2" Ice 8.822 1" Ice 9.346 2" Ice 10.418	6.946 8.127 9.021 10.844	0.08 0.15 0.23 0.41
LLPX310R w/ Mount Pipe	A	From Centroid-Le g	4.000 0.00 0.00	30.00	122.000	No Ice 4.455 1/2" Ice 4.787 1" Ice 5.129 2" Ice 5.837	2.874 3.398 3.937 5.048	0.04 0.08 0.12 0.23
LLPX310R w/ Mount Pipe	B	From Centroid-Le g	4.000 0.00 0.00	30.00	122.000	No Ice 4.455 1/2" Ice 4.787 1" Ice 5.129 2" Ice 5.837	2.874 3.398 3.937 5.048	0.04 0.08 0.12 0.23
LLPX310R w/ Mount Pipe	C	From Centroid-Le g	4.000 0.00 0.00	30.00	122.000	No Ice 4.455 1/2" Ice 4.787 1" Ice 5.129 2" Ice 5.837	2.874 3.398 3.937 5.048	0.04 0.08 0.12 0.23
MT-485025	C	From Centroid-Le g	4.000 -6.00 1.00	30.00	122.000	No Ice 2.075 1/2" Ice 2.269 1" Ice 2.471 2" Ice 2.902	0.236 0.333 0.451 0.712	0.01 0.01 0.03 0.06
(3) ACU-A20-N	A	From Centroid-Le g	4.000 -2.00 -2.00	30.00	122.000	No Ice 0.067 1/2" Ice 0.104 1" Ice 0.148 2" Ice 0.259	0.117 0.162 0.215 0.343	0.00 0.00 0.00 0.01
(3) ACU-A20-N	B	From Centroid-Le g	4.000 -2.00 -2.00	10.00	122.000	No Ice 0.067 1/2" Ice 0.104 1" Ice 0.148 2" Ice 0.259	0.117 0.162 0.215 0.343	0.00 0.00 0.00 0.01
(3) ACU-A20-N	C	From Centroid-Le g	4.000 -2.00 -2.00	30.00	122.000	No Ice 0.067 1/2" Ice 0.104 1" Ice 0.148	0.117 0.162 0.215	0.00 0.00 0.00

tnxTower Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	528 Wheelers Farm Rd (BU 876320)	Page	32 of 58
	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
PCS 1900MHz 4x45W-65MHz	A	From Centroid-Le g	4.000	30.00	122.000	2" Ice	0.259	0.343	0.01
			-2.00			No Ice	2.322	2.238	0.06
			-1.00			1/2" Ice	2.527	2.441	0.08
						1" Ice	2.739	2.651	0.11
						2" Ice	3.185	3.093	0.17
PCS 1900MHz 4x45W-65MHz	B	From Centroid-Le g	4.000	10.00	122.000	No Ice	2.322	2.238	0.06
			-2.00			1/2" Ice	2.527	2.441	0.08
			-2.00			1" Ice	2.739	2.651	0.11
						2" Ice	3.185	3.093	0.17
						No Ice	2.322	2.238	0.06
PCS 1900MHz 4x45W-65MHz	C	From Centroid-Le g	4.000	30.00	122.000	1/2" Ice	2.527	2.441	0.08
			-2.00			1" Ice	2.739	2.651	0.11
			-1.00			2" Ice	3.185	3.093	0.17
						No Ice	2.322	2.238	0.06
						1/2" Ice	2.527	2.441	0.08
800MHZ RRH	A	From Centroid-Le g	4.000	30.00	122.000	1" Ice	2.739	2.651	0.11
			-2.00			2" Ice	3.185	3.093	0.17
			-2.00			No Ice	2.134	1.773	0.05
						1/2" Ice	2.320	1.946	0.07
						1" Ice	2.512	2.127	0.10
800MHZ RRH	B	From Centroid-Le g	4.000	10.00	122.000	2" Ice	2.920	2.510	0.16
			-2.00			No Ice	2.134	1.773	0.05
			-1.00			1/2" Ice	2.320	1.946	0.07
						1" Ice	2.512	2.127	0.10
						2" Ice	2.920	2.510	0.16
800MHZ RRH	C	From Centroid-Le g	4.000	30.00	122.000	No Ice	2.134	1.773	0.05
			-2.00			1/2" Ice	2.320	1.946	0.07
			-2.00			1" Ice	2.512	2.127	0.10
						2" Ice	2.920	2.510	0.16
						No Ice	0.660	0.321	0.01
800 EXTERNAL NOTCH FILTER	A	From Centroid-Le g	4.000	30.00	122.000	1/2" Ice	0.763	0.398	0.02
			-2.00			1" Ice	0.873	0.483	0.02
			-2.00			2" Ice	1.115	0.674	0.04
						No Ice	0.660	0.321	0.01
						1/2" Ice	0.763	0.398	0.02
800 EXTERNAL NOTCH FILTER	B	From Centroid-Le g	4.000	10.00	122.000	1" Ice	0.873	0.483	0.02
			-2.00			2" Ice	1.115	0.674	0.04
			-2.00			No Ice	0.660	0.321	0.01
						1/2" Ice	0.763	0.398	0.02
						1" Ice	0.873	0.483	0.02
800 EXTERNAL NOTCH FILTER	C	From Centroid-Le g	4.000	30.00	122.000	2" Ice	1.115	0.674	0.04
			-2.00			No Ice	0.660	0.321	0.01
			-2.00			1/2" Ice	0.763	0.398	0.02
						1" Ice	0.873	0.483	0.02
						2" Ice	1.115	0.674	0.04
FDD_R6_RRH	A	From Centroid-Le g	4.000	25.00	122.000	No Ice	1.533	0.684	0.03
			0.00			1/2" Ice	1.690	0.800	0.04
			0.00			1" Ice	1.854	0.923	0.06
						2" Ice	2.204	1.193	0.09
						No Ice	1.533	0.684	0.03
FDD_R6_RRH	B	From Centroid-Le g	4.000	10.00	122.000	1/2" Ice	1.690	0.800	0.04
			0.00			1" Ice	1.854	0.923	0.06
			0.00			2" Ice	2.204	1.193	0.09
						No Ice	1.533	0.684	0.03
						1/2" Ice	1.690	0.800	0.04
FDD_R6_RRH	C	From Centroid-Le g	4.000	30.00	122.000	1" Ice	1.854	0.923	0.06
			0.00			2" Ice	2.204	1.193	0.09
			0.00			No Ice	1.533	0.684	0.03
						1/2" Ice	1.690	0.800	0.04
						1" Ice	1.854	0.923	0.06
TD-RRH8x20-25	A	From Centroid-Le g	4.000	37.00	122.000	2" Ice	2.204	1.193	0.09
			2.00			No Ice	3.704	1.294	0.07
			-1.00			1/2" Ice	3.946	1.465	0.09
						1" Ice	4.196	1.642	0.12
						2" Ice	4.717	2.019	0.18
TD-RRH8x20-25	B	From Centroid-Le g	4.000	30.00	122.000	No Ice	3.704	1.294	0.07
			2.00			1/2" Ice	3.946	1.465	0.09
			-1.00			1" Ice	4.196	1.642	0.12
						2" Ice	4.717	2.019	0.18
						No Ice	3.704	1.294	0.07

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	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
Platform Mount [LP 305-1]	C	Centroid- Le g	3.00			1/2" Ice	3.345	3.878	0.11	
			1.00			1" Ice	3.595	4.139	0.15	
						2" Ice	4.117	4.684	0.24	
			None		0.00	113.000	No Ice	18.010	18.010	1.12
							1/2" Ice	23.330	23.330	1.35
							1" Ice	28.650	28.650	1.58
							2" Ice	39.290	39.290	2.05
105										
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Centroid- Le g	4.000		30.00	105.000	No Ice	6.329	5.642	0.11
			6.00				1/2" Ice	6.775	6.426	0.17
			2.00				1" Ice	7.214	7.131	0.23
							2" Ice	8.117	8.591	0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Centroid- Le g	4.000		30.00	105.000	No Ice	6.329	5.642	0.11
			6.00				1/2" Ice	6.775	6.426	0.17
			2.00				1" Ice	7.214	7.131	0.23
							2" Ice	8.117	8.591	0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Centroid- Le g	4.000		30.00	105.000	No Ice	6.329	5.642	0.11
			6.00				1/2" Ice	6.775	6.426	0.17
			2.00				1" Ice	7.214	7.131	0.23
							2" Ice	8.117	8.591	0.38
AIR 32 B2a/B66Aa w/ Mount Pipe	A	From Centroid- Le g	4.000		30.00	105.000	No Ice	6.747	6.070	0.15
			-6.00				1/2" Ice	7.202	6.867	0.21
			2.00				1" Ice	7.648	7.583	0.28
							2" Ice	8.565	9.063	0.44
AIR 32 B2a/B66Aa w/ Mount Pipe	B	From Centroid- Le g	4.000		30.00	105.000	No Ice	6.747	6.070	0.15
			-6.00				1/2" Ice	7.202	6.867	0.21
			2.00				1" Ice	7.648	7.583	0.28
							2" Ice	8.565	9.063	0.44
AIR 32 B2a/B66Aa w/ Mount Pipe	C	From Centroid- Le g	4.000		30.00	105.000	No Ice	6.747	6.070	0.15
			-6.00				1/2" Ice	7.202	6.867	0.21
			2.00				1" Ice	7.648	7.583	0.28
							2" Ice	8.565	9.063	0.44
KRY 112 144/1	A	From Centroid- Le g	4.000		30.00	105.000	No Ice	0.352	0.162	0.01
			6.00				1/2" Ice	0.428	0.219	0.01
			0.00				1" Ice	0.512	0.285	0.02
							2" Ice	0.701	0.437	0.03
KRY 112 144/1	B	From Centroid- Le g	4.000		30.00	105.000	No Ice	0.352	0.162	0.01
			6.00				1/2" Ice	0.428	0.219	0.01
			0.00				1" Ice	0.512	0.285	0.02
							2" Ice	0.701	0.437	0.03
KRY 112 144/1	C	From Centroid- Le g	4.000		30.00	105.000	No Ice	0.352	0.162	0.01
			6.00				1/2" Ice	0.428	0.219	0.01
			2.00				1" Ice	0.512	0.285	0.02
							2" Ice	0.701	0.437	0.03
LNX-6515DS-VTM w/ Mount Pipe	A	From Centroid- Le g	4.000		30.00	105.000	No Ice	11.683	9.842	0.08
			0.00				1/2" Ice	12.404	11.366	0.17
			2.00				1" Ice	13.135	12.914	0.27
							2" Ice	14.512	15.267	0.51
LNX-6515DS-VTM w/ Mount Pipe	B	From Centroid- Le g	4.000		30.00	105.000	No Ice	11.683	9.842	0.08
			0.00				1/2" Ice	12.404	11.366	0.17
			2.00				1" Ice	13.135	12.914	0.27
							2" Ice	14.512	15.267	0.51
LNX-6515DS-VTM w/ Mount Pipe	C	From Centroid- Le g	4.000		30.00	105.000	No Ice	11.683	9.842	0.08
			0.00				1/2" Ice	12.404	11.366	0.17
			2.00				1" Ice	13.135	12.914	0.27
							2" Ice	14.512	15.267	0.51
RRUS 11 B12	A	From	4.000		30.00	105.000	No Ice	2.791	1.192	0.05

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	Client	Crown Castle	Designed by	mfry

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
RRUS 11 B12	B	Centroid-LEG	0.00			1/2" Ice	2.998	1.340	0.07
			2.00			1" Ice	3.213	1.496	0.10
						2" Ice	3.666	1.839	0.15
		From Centroid-LEG	4.000	30.00	105.000	No Ice	2.791	1.192	0.05
RRUS 11 B12	C		0.00			1/2" Ice	2.998	1.340	0.07
			2.00			1" Ice	3.213	1.496	0.10
						2" Ice	3.666	1.839	0.15
		From Centroid-LEG	4.000	30.00	105.000	No Ice	2.791	1.192	0.05
Platform Mount [LP 1201-1]	C		0.00	0.00	105.000	1/2" Ice	2.998	1.340	0.07
						1" Ice	3.213	1.496	0.10
						2" Ice	3.666	1.839	0.15
		None				No Ice	23.100	23.100	2.10
97 DC6-48-60-18-8F	A		0.00			1/2" Ice	26.800	26.800	2.50
			0.00			1" Ice	30.500	30.500	2.90
						2" Ice	37.900	37.900	3.70
		From Leg	2.000	30.00	97.000	No Ice	1.212	1.212	0.03
DC6-48-60-18-8F	B		0.00			1/2" Ice	1.892	1.892	0.05
			0.00			1" Ice	2.105	2.105	0.08
						2" Ice	2.570	2.570	0.14
		From Leg	2.000	30.00	97.000	No Ice	1.212	1.212	0.03
RRUS 32 B30	A		0.00			1/2" Ice	1.892	1.892	0.05
			0.00			1" Ice	2.105	2.105	0.08
						2" Ice	2.570	2.570	0.14
		From Leg	2.000	30.00	97.000	No Ice	2.743	1.668	0.05
RRUS 32 B30	B		0.00			1/2" Ice	2.965	1.855	0.07
			0.00			1" Ice	3.194	2.049	0.10
						2" Ice	3.675	2.458	0.16
		From Leg	2.000	30.00	97.000	No Ice	2.743	1.668	0.05
RRUS 32 B30	C		0.00			1/2" Ice	2.965	1.855	0.07
			0.00			1" Ice	3.194	2.049	0.10
						2" Ice	3.675	2.458	0.16
		From Leg	2.000	30.00	97.000	No Ice	2.743	1.668	0.05
2.4" Dia. x 5-ft Pipe	A		0.00	0.00	97.000	1/2" Ice	2.965	1.855	0.07
			0.00			1" Ice	3.194	2.049	0.10
						2" Ice	3.675	2.458	0.16
		From Leg	2.000	0.00	97.000	No Ice	1.200	1.200	0.02
2.4" Dia. x 5-ft Pipe	B		0.00			1/2" Ice	1.502	1.502	0.03
			0.00			1" Ice	1.814	1.814	0.04
						2" Ice	2.465	2.465	0.08
		From Leg	2.000	0.00	97.000	No Ice	1.200	1.200	0.02
2.4" Dia. x 5-ft Pipe	C		0.00			1/2" Ice	1.502	1.502	0.03
			0.00			1" Ice	1.814	1.814	0.04
						2" Ice	2.465	2.465	0.08
		From Leg	2.000	0.00	97.000	No Ice	1.200	1.200	0.02
Side Arm Mount [SO 102-3]	C		0.00	0.00	97.000	1/2" Ice	1.502	1.502	0.03
						1" Ice	1.814	1.814	0.04
						2" Ice	2.465	2.465	0.08
		None				No Ice	3.000	3.000	0.08
96 7770.00 w/ Mount Pipe	A		0.00			1/2" Ice	3.480	3.480	0.11
						1" Ice	3.960	3.960	0.14
						2" Ice	4.920	4.920	0.20
		From Centroid-LEG	4.000	23.00	96.000	No Ice	5.746	4.254	0.06
				1/2" Ice	6.179	5.014	0.10		
				1" Ice	6.607	5.711	0.16		
				2" Ice	7.488	7.155	0.29		

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	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C_{AA} Front</i> <i>ft²</i>	<i>C_{AA} Side</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
7770.00 w/ Mount Pipe	B	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 5.746 1/2" Ice 6.179 1" Ice 6.607 2" Ice 7.488	4.254 5.014 5.711 7.155	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	C	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 5.746 1/2" Ice 6.179 1" Ice 6.607 2" Ice 7.488	4.254 5.014 5.711 7.155	0.06 0.10 0.16 0.29
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Centroid-Le g	4.000 -2.000 2.000	30.00	96.000	No Ice 9.895 1/2" Ice 10.470 1" Ice 11.010 2" Ice 12.112	7.179 8.362 9.259 11.086	0.10 0.18 0.26 0.46
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Centroid-Le g	4.000 -2.000 2.000	30.00	96.000	No Ice 9.895 1/2" Ice 10.470 1" Ice 11.010 2" Ice 12.112	7.179 8.362 9.259 11.086	0.10 0.18 0.26 0.46
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Centroid-Le g	4.000 -2.000 2.000	30.00	96.000	No Ice 9.895 1/2" Ice 10.470 1" Ice 11.010 2" Ice 12.112	7.179 8.362 9.259 11.086	0.10 0.18 0.26 0.46
QS66512-2 w/ Mount Pipe	A	From Centroid-Le g	4.000 6.000 2.000	30.00	96.000	No Ice 8.371 1/2" Ice 8.931 1" Ice 9.457 2" Ice 10.531	8.463 9.657 10.548 12.352	0.14 0.21 0.30 0.49
QS66512-2 w/ Mount Pipe	B	From Centroid-Le g	4.000 6.000 2.000	30.00	96.000	No Ice 8.371 1/2" Ice 8.931 1" Ice 9.457 2" Ice 10.531	8.463 9.657 10.548 12.352	0.14 0.21 0.30 0.49
QS66512-2 w/ Mount Pipe	C	From Centroid-Le g	4.000 6.000 2.000	30.00	96.000	No Ice 8.371 1/2" Ice 8.931 1" Ice 9.457 2" Ice 10.531	8.463 9.657 10.548 12.352	0.14 0.21 0.30 0.49
RRUS 11 B12	A	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 2.791 1/2" Ice 2.998 1" Ice 3.213 2" Ice 3.666	1.192 1.340 1.496 1.839	0.05 0.07 0.10 0.15
RRUS 11 B12	B	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 2.791 1/2" Ice 2.998 1" Ice 3.213 2" Ice 3.666	1.192 1.340 1.496 1.839	0.05 0.07 0.10 0.15
RRUS 11 B12	C	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 2.791 1/2" Ice 2.998 1" Ice 3.213 2" Ice 3.666	1.192 1.340 1.496 1.839	0.05 0.07 0.10 0.15
RRUS 32 B2	A	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 2.731 1/2" Ice 2.953 1" Ice 3.182 2" Ice 3.663	1.668 1.855 2.049 2.458	0.05 0.07 0.10 0.16
RRUS 32 B2	B	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 2.731 1/2" Ice 2.953 1" Ice 3.182 2" Ice 3.663	1.668 1.855 2.049 2.458	0.05 0.07 0.10 0.16
RRUS 32 B2	C	From Centroid-Le g	4.000 -6.000 2.000	23.00	96.000	No Ice 2.731 1/2" Ice 2.953 1" Ice 3.182 2" Ice 3.663	1.668 1.855 2.049 2.458	0.05 0.07 0.10 0.16
DBC0061F1V51-2	A	From	4.000	30.00	96.000	No Ice 0.430	0.413	0.03

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	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	mfry

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			Lateral		°	ft	ft ²	ft ²	K
		Centroid-Le	-2.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
DBC0061F1V51-2	A	From	4.000	30.00	96.000	No Ice	0.430	0.413	0.03
		Centroid-Le	-2.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
DBC0061F1V51-2	B	From	4.000	30.00	96.000	No Ice	0.430	0.413	0.03
		Centroid-Le	-2.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
WCS-IMFQ-AMT	C	From	4.000	30.00	96.000	No Ice	0.989	0.644	0.03
		Centroid-Le	-2.00			1/2" Ice	1.114	0.748	0.04
		g	2.00			1" Ice	1.246	0.860	0.05
						2" Ice	1.533	1.105	0.08
2.4" Dia x 6-ft Pipe	A	From	4.000	0.00	96.000	No Ice	1.428	1.428	0.02
		Centroid-Le	2.00			1/2" Ice	1.927	1.927	0.03
		g	0.00			1" Ice	2.296	2.296	0.05
						2" Ice	3.061	3.061	0.09
2.4" Dia x 6-ft Pipe	B	From	4.000	0.00	96.000	No Ice	1.428	1.428	0.02
		Centroid-Le	2.00			1/2" Ice	1.927	1.927	0.03
		g	0.00			1" Ice	2.296	2.296	0.05
						2" Ice	3.061	3.061	0.09
2.4" Dia x 6-ft Pipe	C	From	4.000	0.00	96.000	No Ice	1.428	1.428	0.02
		Centroid-Le	2.00			1/2" Ice	1.927	1.927	0.03
		g	0.00			1" Ice	2.296	2.296	0.05
						2" Ice	3.061	3.061	0.09
Miscellaneous [NA 507-1]	C	None		0.00	96.000	No Ice	4.800	4.800	0.25
						1/2" Ice	6.700	6.700	0.29
						1" Ice	8.600	8.600	0.34
						2" Ice	12.400	12.400	0.44
Platform Mount [LP 712-1]	C	None		0.00	96.000	No Ice	24.530	24.530	1.34
						1/2" Ice	29.940	29.940	1.65
						1" Ice	35.350	35.350	1.96
						2" Ice	46.170	46.170	2.58
75									
ACUTIME 2000	A	From Leg	3.000	0.00	75.000	No Ice	0.255	0.255	0.00
			0.00			1/2" Ice	0.320	0.320	0.00
			1.00			1" Ice	0.393	0.393	0.01
						2" Ice	0.561	0.561	0.02
Side Arm Mount [SO 701-1]	A	From Leg	0.500	0.00	75.000	No Ice	0.850	1.670	0.07
			0.00			1/2" Ice	1.140	2.340	0.08
			0.00			1" Ice	1.430	3.010	0.09
						2" Ice	2.010	4.350	0.12

Dishes

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	Project	TEP No. 25570.213629	Date	08:53:11 01/29/19
	Client	Crown Castle	Designed by	m fry

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K	
PX2F-52	A	Paraboloid w/Radome	From	4.000	25.00		122.000	2.092	No Ice	3.440	0.02
			Centroid	0.00					1/2" Ice	3.720	0.04
			-Leg	1.00					1" Ice	3.990	0.06
									2" Ice	4.550	0.09
VHLP2-11	A	Paraboloid w/Shroud (HP)	From	4.000	37.00		122.000	2.000	No Ice	3.720	0.03
			Centroid	2.00					1/2" Ice	4.010	0.05
			-Leg	3.00					1" Ice	4.300	0.07
									2" Ice	4.880	0.11
VHLP2-11	B	Paraboloid w/Shroud (HP)	From	4.000	10.00		122.000	2.000	No Ice	3.720	0.03
			Centroid	0.00					1/2" Ice	4.010	0.05
			-Leg	3.00					1" Ice	4.300	0.07
									2" Ice	4.880	0.11

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service

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Comb. No.	Description
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 115	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-8.90	0.83	2.20
			Max. Mx	20	-3.73	48.13	0.28
			Max. My	2	-3.74	0.83	46.81
			Max. Vy	20	-7.49	48.13	0.28
			Max. Vx	14	7.38	0.30	-45.75
			Max. Torque	18			-3.08
L2	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.89	1.77	4.79
			Max. Mx	20	-6.80	114.35	1.53
			Max. My	2	-6.82	1.84	110.91
			Max. Vy	20	-15.03	114.35	1.53
			Max. Vx	14	14.56	0.45	-107.67
			Max. Torque	18			-5.15
L3	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.97	1.78	4.99
			Max. Mx	20	-7.31	190.84	1.81
			Max. My	2	-7.30	2.53	185.76
			Max. Vy	20	-15.56	190.84	1.81
			Max. Vx	14	15.49	0.14	-182.69
			Max. Torque	18			-5.15
L4	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.63	1.95	5.31
			Max. Mx	20	-11.53	299.06	2.13
			Max. My	2	-11.49	3.26	294.08
			Max. Vy	20	-20.72	299.06	2.13
			Max. Vx	14	20.95	-0.14	-291.13
			Max. Torque	18			-5.15
L5	100 - 99.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.83	1.98	5.36
			Max. Mx	20	-11.63	314.66	2.17
			Max. My	2	-11.58	3.37	309.82
			Max. Vy	20	-20.85	314.66	2.17
			Max. Vx	14	21.10	-0.19	-306.88
			Max. Torque	18			-5.14
L6	99.25 - 99	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.91	1.99	5.38
			Max. Mx	20	-11.68	319.88	2.19
			Max. My	2	-11.63	3.41	315.09
			Max. Vy	20	-20.89	319.88	2.19
			Max. Vx	14	21.15	-0.20	-312.16
			Max. Torque	18			-5.14

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L7	99 - 94	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.70	2.09	6.08
			Max. Mx	20	-16.20	445.08	2.69
			Max. My	2	-16.13	4.12	441.81
			Max. Vy	20	-27.49	445.08	2.69
			Max. Vx	14	27.87	-0.50	-438.59
			Max. Torque	18			-5.15
L8	94 - 90.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.10	2.25	6.37
			Max. Mx	20	-17.00	554.23	2.93
			Max. My	2	-16.93	4.70	552.42
			Max. Vy	20	-28.18	554.23	2.93
			Max. Vx	14	28.66	-0.72	-549.29
			Max. Torque	18			-5.15
L9	90.08 - 89.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.20	2.26	6.38
			Max. Mx	20	-17.07	561.28	2.95
			Max. My	2	-17.00	4.74	559.58
			Max. Vy	20	-28.22	561.28	2.95
			Max. Vx	14	28.71	-0.73	-556.46
			Max. Torque	18			-5.15
L10	89.83 - 89.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.34	2.27	6.40
			Max. Mx	20	-17.15	570.61	2.97
			Max. My	2	-17.08	4.79	569.05
			Max. Vy	20	-28.28	570.61	2.97
			Max. Vx	14	28.78	-0.75	-565.94
			Max. Torque	18			-5.15
L11	89.5 - 89.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.45	2.28	6.42
			Max. Mx	20	-17.22	577.69	2.99
			Max. My	2	-17.15	4.83	576.24
			Max. Vy	20	-28.33	577.69	2.99
			Max. Vx	14	28.83	-0.76	-573.13
			Max. Torque	18			-5.15
L12	89.25 - 84.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.74	2.46	6.76
			Max. Mx	20	-18.64	721.77	3.30
			Max. My	2	-18.56	5.57	722.88
			Max. Vy	20	-29.29	721.77	3.30
			Max. Vx	14	29.91	-1.04	-719.87
			Max. Torque	18			-5.15
L13	84.25 - 78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.90	2.56	6.94
			Max. Mx	20	-19.37	795.61	3.46
			Max. My	2	-19.28	5.94	798.23
			Max. Vy	20	-29.76	795.61	3.46
			Max. Vx	14	30.45	-1.17	-795.26
			Max. Torque	18			-5.15
L14	78 - 77	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.63	2.74	7.28
			Max. Mx	20	-22.06	939.46	3.76
			Max. My	2	-21.97	6.65	945.40
			Max. Vy	20	-30.77	939.46	3.76
			Max. Vx	14	31.59	-1.44	-942.52
			Max. Torque	18			-5.15
L15	77 - 76.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.77	2.75	7.30
			Max. Mx	20	-22.16	947.16	3.77
			Max. My	2	-22.07	6.69	953.29
			Max. Vy	20	-30.82	947.16	3.77

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L16	76.75 - 76.5	Pole	Max. Vx	14	31.64	-1.45	-950.42
			Max. Torque	18			-5.15
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.91	2.76	7.32
			Max. Mx	20	-22.26	954.87	3.79
			Max. My	2	-22.17	6.73	961.19
			Max. Vy	20	-30.87	954.87	3.79
L17	76.5 - 75.5	Pole	Max. Vx	14	31.69	-1.46	-958.33
			Max. Torque	18			-5.15
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.49	2.80	7.39
			Max. Mx	20	-22.66	985.85	3.85
			Max. My	2	-22.56	6.88	992.96
			Max. Vy	20	-31.07	985.85	3.85
L18	75.5 - 75.25	Pole	Max. Vx	14	31.92	-1.52	-990.11
			Max. Torque	18			-5.15
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.62	2.81	7.41
			Max. Mx	20	-22.75	993.63	3.87
			Max. My	2	-22.66	6.92	1000.94
			Max. Vy	20	-31.11	993.63	3.87
L19	75.25 - 74.5	Pole	Max. Vx	14	31.97	-1.53	-998.09
			Max. Torque	18			-5.15
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.15	2.84	7.74
			Max. Mx	20	-23.10	1017.09	4.04
			Max. My	2	-23.01	7.03	1025.13
			Max. Vy	20	-31.36	1017.09	4.04
L20	74.5 - 74.25	Pole	Max. Vx	14	32.19	-1.57	-1022.01
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.28	2.85	7.76
			Max. Mx	20	-23.19	1024.94	4.06
			Max. My	2	-23.10	7.07	1033.17
			Max. Vy	20	-31.40	1024.94	4.06
L21	74.25 - 72	Pole	Max. Vx	14	32.25	-1.59	-1030.06
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.44	2.93	7.92
			Max. Mx	20	-23.96	1096.12	4.20
			Max. My	2	-23.87	7.40	1106.19
			Max. Vy	20	-31.84	1096.12	4.20
L22	72 - 71.75	Pole	Max. Vx	14	32.74	-1.71	-1103.12
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.59	2.94	7.95
			Max. Mx	20	-24.07	1104.08	4.22
			Max. My	2	-23.97	7.44	1114.37
			Max. Vy	20	-31.89	1104.08	4.22
L23	71.75 - 70.5	Pole	Max. Vx	14	32.79	-1.72	-1111.30
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.32	2.99	8.05
			Max. Mx	20	-24.54	1144.12	4.30
			Max. My	2	-24.44	7.63	1155.49
			Max. Vy	20	-32.15	1144.12	4.30
L24	70.5 - 70.25	Pole	Max. Vx	14	33.08	-1.79	-1152.44
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.47	3.00	8.07
			Max. Mx	20	-24.65	1152.17	4.31

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L25	70.25 - 70	Pole	Max. My	2	-24.55	7.67	1163.75
			Max. Vy	20	-32.19	1152.17	4.31
			Max. Vx	14	33.13	-1.81	-1160.71
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.62	3.01	8.09
			Max. Mx	20	-24.75	1160.22	4.33
			Max. My	2	-24.66	7.71	1172.03
			Max. Vy	20	-32.24	1160.22	4.33
			Max. Vx	14	33.18	-1.82	-1168.99
L26	70 - 69.75	Pole	Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.77	3.02	8.11
			Max. Mx	20	-24.85	1168.29	4.35
			Max. My	2	-24.75	7.74	1180.32
			Max. Vy	20	-32.29	1168.29	4.35
			Max. Vx	14	33.24	-1.83	-1177.29
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.92	3.03	8.13
L27	69.75 - 69.5	Pole	Max. Mx	20	-24.95	1176.38	4.36
			Max. My	2	-24.85	7.78	1188.63
			Max. Vy	20	-32.34	1176.38	4.36
			Max. Vx	14	33.29	-1.85	-1185.60
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.06	3.04	8.15
			Max. Mx	20	-25.04	1184.47	4.38
			Max. My	2	-24.94	7.82	1196.95
			Max. Vy	20	-32.39	1184.47	4.38
L28	69.5 - 69.25	Pole	Max. Vx	14	33.35	-1.86	-1193.93
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.84	3.25	8.55
			Max. Mx	20	-26.83	1348.49	4.70
			Max. My	2	-26.72	8.57	1366.22
			Max. Vy	20	-33.19	1348.49	4.70
			Max. Vx	14	34.45	-2.13	-1363.27
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
L29	69.25 - 64.25	Pole	Max. Compression	26	-56.64	3.47	8.97
			Max. Mx	20	-28.66	1516.47	5.01
			Max. My	2	-28.54	9.33	1540.91
			Max. Vy	20	-33.98	1516.47	5.01
			Max. Vx	14	35.53	-2.40	-1538.04
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.47	3.61	9.24
			Max. Mx	20	-29.87	1627.77	5.22
			Max. My	2	-29.75	9.82	1657.35
L30	64.25 - 59.25	Pole	Max. Vy	20	-34.49	1627.77	5.22
			Max. Vx	14	36.22	-2.58	-1654.52
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.65	3.62	9.26
			Max. Mx	20	-30.00	1636.40	5.24
			Max. My	2	-29.88	9.86	1666.40
			Max. Vy	20	-34.54	1636.40	5.24
			Max. Vx	14	36.27	-2.59	-1663.57
			Max. Torque	18			-5.31
L31	59.25 - 56	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.47	3.61	9.24
L32	56 - 55.75	Pole	Max. Mx	20	-29.87	1627.77	5.22
			Max. My	2	-29.75	9.82	1657.35
			Max. Vy	20	-34.49	1627.77	5.22
			Max. Vx	14	36.22	-2.58	-1654.52
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.65	3.62	9.26
			Max. Mx	20	-30.00	1636.40	5.24
			Max. My	2	-29.88	9.86	1666.40
			Max. Vy	20	-34.54	1636.40	5.24
L33	55.75 - 55.5	Pole	Max. Vx	14	36.27	-2.59	-1663.57
			Max. Torque	18			-5.31
L33	55.75 - 55.5	Pole	Max Tension	1	0.00	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L34	55.5 - 55.25	Pole	Max. Compression	26	-58.82	3.64	9.29
			Max. Mx	20	-30.12	1645.05	5.26
			Max. My	2	-30.00	9.90	1675.47
			Max. Vy	20	-34.59	1645.05	5.26
			Max. Vx	14	36.33	-2.60	-1672.64
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.01	3.65	9.31
			Max. Mx	20	-30.24	1653.71	5.28
			Max. My	2	-30.12	9.93	1684.55
L35	55.25 - 54	Pole	Max. Vy	20	-34.65	1653.71	5.28
			Max. Vx	14	36.39	-2.61	-1681.72
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.92	3.72	9.44
			Max. Mx	20	-30.85	1697.22	5.37
			Max. My	2	-30.73	10.13	1730.19
			Max. Vy	20	-34.93	1697.22	5.37
			Max. Vx	14	36.70	-2.67	-1727.35
			Max. Torque	18			-5.31
L36	54 - 53.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.09	3.74	9.47
			Max. Mx	20	-30.97	1705.96	5.39
			Max. My	2	-30.85	10.17	1739.36
			Max. Vy	20	-34.98	1705.96	5.39
			Max. Vx	14	36.75	-2.68	-1736.52
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.27	3.75	9.49
			Max. Mx	20	-31.09	1714.72	5.40
L37	53.75 - 53.5	Pole	Max. My	2	-30.97	10.21	1748.55
			Max. Vy	20	-35.03	1714.72	5.40
			Max. Vx	14	36.81	-2.69	-1745.71
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.44	3.77	9.52
			Max. Mx	20	-31.20	1723.49	5.42
			Max. My	2	-31.08	10.25	1757.75
			Max. Vy	20	-35.08	1723.49	5.42
			Max. Vx	14	36.87	-2.70	-1754.91
L38	53.5 - 53.25	Pole	Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.60	3.78	9.54
			Max. Mx	20	-31.31	1732.27	5.44
			Max. My	2	-31.19	10.29	1766.97
			Max. Vy	20	-35.13	1732.27	5.44
			Max. Vx	14	36.92	-2.71	-1764.12
			Max. Torque	18			-5.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.81	4.08	10.05
L39	53.25 - 53	Pole	Max. Mx	20	-33.39	1910.58	5.81
			Max. My	2	-33.27	11.09	1954.24
			Max. Vy	20	-36.16	1910.58	5.81
			Max. Vx	14	38.05	-2.94	-1951.35
			Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.06	4.30	10.41
			Max. Mx	20	-34.87	2038.37	6.07
			Max. My	2	-34.76	11.64	2088.61
			Max. Vy	20	-36.84	2038.37	6.07
L40	53 - 48	Pole	Max. Vx	14	38.81	-3.10	-2085.69
			Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.06	4.30	10.41
			Max. Mx	20	-34.87	2038.37	6.07
			Max. My	2	-34.76	11.64	2088.61
L41	48 - 39.75	Pole	Max. Vy	20	-36.84	2038.37	6.07
			Max. Vx	14	38.81	-3.10	-2085.69
			Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.06	4.30	10.41
			Max. Mx	20	-34.87	2038.37	6.07

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L42	39.75 - 38.75	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.54	4.67	11.00
			Max. Mx	20	-38.74	2253.94	6.50
			Max. My	2	-38.63	12.56	2315.57
			Max. Vy	20	-38.09	2253.94	6.50
			Max. Vx	14	40.19	-3.36	-2312.59
L43	38.75 - 34.75	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.14	4.92	11.41
			Max. Mx	20	-40.49	2407.83	6.80
			Max. My	2	-40.39	13.19	2477.81
			Max. Vy	20	-38.84	2407.83	6.80
			Max. Vx	14	41.02	-3.54	-2474.79
L44	34.75 - 34.5	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.32	4.94	11.44
			Max. Mx	20	-40.63	2417.55	6.81
			Max. My	2	-40.53	13.23	2488.06
			Max. Vy	20	-38.87	2417.55	6.81
			Max. Vx	14	41.06	-3.55	-2485.04
L45	34.5 - 33.75	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.87	4.98	11.52
			Max. Mx	20	-41.01	2446.78	6.87
			Max. My	2	-40.91	13.35	2518.90
			Max. Vy	20	-39.02	2446.78	6.87
			Max. Vx	14	41.22	-3.58	-2515.86
L46	33.75 - 33.5	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.03	5.00	11.54
			Max. Mx	20	-41.13	2456.54	6.89
			Max. My	2	-41.03	13.39	2529.20
			Max. Vy	20	-39.06	2456.54	6.89
			Max. Vx	14	41.27	-3.59	-2526.17
L47	33.5 - 28.5	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.29	5.32	12.06
			Max. Mx	20	-43.34	2654.20	7.26
			Max. My	2	-43.26	14.18	2737.87
			Max. Vy	20	-39.97	2654.20	7.26
			Max. Vx	14	42.27	-3.81	-2734.77
L48	28.5 - 24	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.23	5.60	12.50
			Max. Mx	20	-45.37	2835.85	7.60
			Max. My	2	-45.30	14.89	2929.84
			Max. Vy	20	-40.75	2835.85	7.60
			Max. Vx	14	43.14	-4.01	-2926.68
L49	24 - 23.75	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.40	5.62	12.53
			Max. Mx	20	-45.50	2846.04	7.62
			Max. My	2	-45.43	14.93	2940.62
			Max. Vy	20	-40.78	2846.04	7.62
			Max. Vx	14	43.17	-4.02	-2937.45
L50	23.75 - 18.75	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.77	5.93	13.02
			Max. Mx	20	-47.87	3051.66	7.99
			Max. My	2	-47.81	15.72	3158.64

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L51	18.75 - 14.25	Pole	Max. Vy	20	-41.44	3051.66	7.99
			Max. Vx	14	44.11	-4.23	-3155.39
			Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.87	6.23	13.48
			Max. Mx	20	-50.04	3239.42	8.33
			Max. My	2	-49.99	16.43	3358.71
			Max. Vy	20	-41.99	3239.42	8.33
L52	14.25 - 14	Pole	Max. Vx	14	44.90	-4.42	-3355.39
			Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.05	6.24	13.50
			Max. Mx	20	-50.19	3249.93	8.34
			Max. My	2	-50.14	16.47	3369.93
			Max. Vy	20	-42.01	3249.93	8.34
			Max. Vx	14	44.93	-4.43	-3366.61
L53	14 - 9	Pole	Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.76	6.59	14.03
			Max. Mx	20	-52.83	3461.67	8.72
			Max. My	2	-52.79	17.26	3596.66
			Max. Vy	20	-42.65	3461.67	8.72
			Max. Vx	14	45.83	-4.63	-3593.24
			Max. Torque	18			-5.30
L54	9 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-94.88	6.88	14.47
			Max. Mx	20	-55.11	3644.14	9.04
			Max. My	2	-55.09	17.93	3792.87
			Max. Vy	20	-43.19	3644.14	9.04
			Max. Vx	14	46.59	-4.80	-3789.37
			Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
L55	4.75 - 4.5	Pole	Max. Compression	26	-95.06	6.89	14.49
			Max. Mx	20	-55.26	3654.94	9.06
			Max. My	2	-55.24	17.97	3804.51
			Max. Vy	20	-43.21	3654.94	9.06
			Max. Vx	14	46.61	-4.81	-3801.00
			Max. Torque	18			-5.30
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.12	7.19	14.93
L56	4.5 - 0	Pole	Max. Mx	20	-57.61	3850.67	9.40
			Max. My	2	-57.61	18.67	4015.86
			Max. Vy	20	-43.75	3850.67	9.40
			Max. Vx	14	47.39	-4.99	-4012.25
			Max. Torque	18			-5.30

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	98.12	0.03	10.15
	Max. H _x	21	43.22	43.73	0.04
	Max. H _z	2	57.63	0.12	47.30
	Max. M _x	2	4015.86	0.12	47.30
	Max. M _z	8	3826.98	-43.56	-0.09
	Max. Torsion	6	5.03	-36.45	20.46

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. Vert	5	43.22	-20.99	35.57
	Min. H _x	8	57.63	-43.56	-0.09
	Min. H _z	14	57.63	-0.07	-47.36
	Min. M _x	14	-4012.25	-0.07	-47.36
	Min. M _z	20	-3850.67	43.73	0.04
	Min. Torsion	18	-5.30	36.61	-20.54

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	48.03	0.00	0.00	-4.57	2.72	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	57.63	-0.12	-47.30	-4015.86	18.67	-1.05
0.9 Dead+1.0 Wind 0 deg - No Ice	43.22	-0.12	-47.30	-3983.63	17.68	-1.04
1.2 Dead+1.0 Wind 30 deg - No Ice	57.63	20.99	-35.57	-3100.85	-1837.33	-4.15
0.9 Dead+1.0 Wind 30 deg - No Ice	43.22	20.99	-35.57	-3075.31	-1823.80	-4.12
1.2 Dead+1.0 Wind 60 deg - No Ice	57.63	36.45	-20.46	-1783.63	-3196.46	-5.03
0.9 Dead+1.0 Wind 60 deg - No Ice	43.22	36.45	-20.46	-1768.35	-3172.31	-4.99
1.2 Dead+1.0 Wind 90 deg - No Ice	57.63	43.56	0.09	4.58	-3826.98	-4.59
0.9 Dead+1.0 Wind 90 deg - No Ice	43.22	43.56	0.09	5.94	-3798.05	-4.55
1.2 Dead+1.0 Wind 120 deg - No Ice	57.63	36.65	20.69	1797.80	-3217.72	-2.97
0.9 Dead+1.0 Wind 120 deg - No Ice	43.22	36.65	20.69	1785.20	-3193.40	-2.95
1.2 Dead+1.0 Wind 150 deg - No Ice	57.63	21.17	35.83	3119.39	-1856.26	-0.31
0.9 Dead+1.0 Wind 150 deg - No Ice	43.22	21.17	35.83	3096.49	-1842.59	-0.30
1.2 Dead+1.0 Wind 180 deg - No Ice	57.63	0.07	47.36	4012.25	-4.99	1.12
0.9 Dead+1.0 Wind 180 deg - No Ice	43.22	0.07	47.36	3982.84	-5.78	1.10
1.2 Dead+1.0 Wind 210 deg - No Ice	57.63	-21.06	35.71	3104.32	1851.03	4.20
0.9 Dead+1.0 Wind 210 deg - No Ice	43.22	-21.06	35.71	3081.55	1835.74	4.17
1.2 Dead+1.0 Wind 240 deg - No Ice	57.63	-36.61	20.54	1780.03	3219.38	5.30
0.9 Dead+1.0 Wind 240 deg - No Ice	43.22	-36.61	20.54	1767.58	3193.39	5.25
1.2 Dead+1.0 Wind 270 deg - No Ice	57.63	-43.73	-0.04	-9.40	3850.67	4.69
0.9 Dead+1.0 Wind 270 deg - No Ice	43.22	-43.73	-0.04	-7.92	3819.89	4.65
1.2 Dead+1.0 Wind 300 deg - No Ice	57.63	-36.63	-20.66	-1804.57	3220.54	3.05
0.9 Dead+1.0 Wind 300 deg - No Ice	43.22	-36.63	-20.66	-1789.12	3194.55	3.03

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 330 deg - No Ice	57.63	-21.19	-35.74	-3117.26	1865.01	0.48
0.9 Dead+1.0 Wind 330 deg - No Ice	43.22	-21.19	-35.74	-3091.59	1849.60	0.48
1.2 Dead+1.0 Ice+1.0 Temp	98.12	-0.00	-0.00	-14.93	7.19	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	98.12	-0.03	-10.15	-914.80	10.81	-0.03
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	98.12	4.26	-7.27	-701.73	-396.30	-0.87
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	98.12	7.40	-4.18	-409.41	-694.55	-1.14
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	98.12	9.16	0.02	-12.51	-845.99	-1.10
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	98.12	7.41	4.22	383.58	-696.34	-0.79
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	98.12	4.28	7.30	675.20	-399.20	-0.22
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	98.12	0.02	10.16	886.31	5.10	0.04
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	98.12	-4.27	7.30	674.57	412.15	0.88
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	98.12	-7.43	4.20	380.86	712.24	1.19
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	98.12	-9.19	-0.01	-16.24	863.83	1.12
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	98.12	-7.44	-4.23	-414.36	712.87	0.81
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	98.12	-4.30	-7.31	-705.36	415.74	0.25
Dead+Wind 0 deg - Service	48.03	-0.03	-10.26	-871.18	6.08	-0.23
Dead+Wind 30 deg - Service	48.03	4.55	-7.72	-673.33	-394.87	-0.90
Dead+Wind 60 deg - Service	48.03	7.91	-4.44	-388.78	-688.51	-1.09
Dead+Wind 90 deg - Service	48.03	9.45	0.02	-2.46	-824.79	-1.00
Dead+Wind 120 deg - Service	48.03	7.95	4.49	384.96	-693.11	-0.64
Dead+Wind 150 deg - Service	48.03	4.59	7.78	670.46	-398.97	-0.07
Dead+Wind 180 deg - Service	48.03	0.02	10.28	863.52	0.97	0.24
Dead+Wind 210 deg - Service	48.03	-4.57	7.75	667.20	401.93	0.91
Dead+Wind 240 deg - Service	48.03	-7.94	4.46	381.12	697.56	1.15
Dead+Wind 270 deg - Service	48.03	-9.49	-0.01	-5.48	834.01	1.02
Dead+Wind 300 deg - Service	48.03	-7.95	-4.48	-393.31	697.81	0.66
Dead+Wind 330 deg - Service	48.03	-4.60	-7.75	-676.88	404.95	0.10

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-48.03	0.00	0.00	48.03	0.00	0.000%
2	-0.12	-57.63	-47.30	0.12	57.63	47.30	0.000%
3	-0.12	-43.22	-47.30	0.12	43.22	47.30	0.000%
4	20.99	-57.63	-35.57	-20.99	57.63	35.57	0.000%
5	20.99	-43.22	-35.57	-20.99	43.22	35.57	0.000%
6	36.45	-57.63	-20.46	-36.45	57.63	20.46	0.000%
7	36.45	-43.22	-20.46	-36.45	43.22	20.46	0.000%
8	43.56	-57.63	0.09	-43.56	57.63	-0.09	0.000%
9	43.56	-43.22	0.09	-43.56	43.22	-0.09	0.000%
10	36.65	-57.63	20.69	-36.65	57.63	-20.69	0.000%
11	36.65	-43.22	20.69	-36.65	43.22	-20.69	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
12	21.17	-57.63	35.83	-21.17	57.63	-35.83	0.000%
13	21.17	-43.22	35.83	-21.17	43.22	-35.83	0.000%
14	0.07	-57.63	47.36	-0.07	57.63	-47.36	0.000%
15	0.07	-43.22	47.36	-0.07	43.22	-47.36	0.000%
16	-21.06	-57.63	35.71	21.06	57.63	-35.71	0.000%
17	-21.06	-43.22	35.71	21.06	43.22	-35.71	0.000%
18	-36.61	-57.63	20.54	36.61	57.63	-20.54	0.000%
19	-36.61	-43.22	20.54	36.61	43.22	-20.54	0.000%
20	-43.73	-57.63	-0.04	43.73	57.63	0.04	0.000%
21	-43.73	-43.22	-0.04	43.73	43.22	0.04	0.000%
22	-36.63	-57.63	-20.66	36.63	57.63	20.66	0.000%
23	-36.63	-43.22	-20.66	36.63	43.22	20.66	0.000%
24	-21.19	-57.63	-35.74	21.19	57.63	35.74	0.000%
25	-21.19	-43.22	-35.74	21.19	43.22	35.74	0.000%
26	0.00	-98.12	0.00	0.00	98.12	0.00	0.000%
27	-0.03	-98.12	-10.15	0.03	98.12	10.15	0.000%
28	4.26	-98.12	-7.27	-4.26	98.12	7.27	0.000%
29	7.40	-98.12	-4.18	-7.40	98.12	4.18	0.000%
30	9.16	-98.12	0.02	-9.16	98.12	-0.02	0.000%
31	7.41	-98.12	4.22	-7.41	98.12	-4.22	0.000%
32	4.28	-98.12	7.30	-4.28	98.12	-7.30	0.000%
33	0.02	-98.12	10.16	-0.02	98.12	-10.16	0.000%
34	-4.27	-98.12	7.30	4.27	98.12	-7.30	0.000%
35	-7.43	-98.12	4.20	7.43	98.12	-4.20	0.000%
36	-9.19	-98.12	-0.01	9.19	98.12	0.01	0.000%
37	-7.44	-98.12	-4.23	7.44	98.12	4.23	0.000%
38	-4.30	-98.12	-7.31	4.30	98.12	7.31	0.000%
39	-0.03	-48.03	-10.26	0.03	48.03	10.26	0.000%
40	4.55	-48.03	-7.72	-4.55	48.03	7.72	0.000%
41	7.91	-48.03	-4.44	-7.91	48.03	4.44	0.000%
42	9.45	-48.03	0.02	-9.45	48.03	-0.02	0.000%
43	7.95	-48.03	4.49	-7.95	48.03	-4.49	0.000%
44	4.59	-48.03	7.78	-4.59	48.03	-7.78	0.000%
45	0.02	-48.03	10.28	-0.02	48.03	-10.28	0.000%
46	-4.57	-48.03	7.75	4.57	48.03	-7.75	0.000%
47	-7.94	-48.03	4.46	7.94	48.03	-4.46	0.000%
48	-9.49	-48.03	-0.01	9.49	48.03	0.01	0.000%
49	-7.95	-48.03	-4.48	7.95	48.03	4.48	0.000%
50	-4.60	-48.03	-7.75	4.60	48.03	7.75	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000511
2	Yes	5	0.0000001	0.00046516
3	Yes	5	0.0000001	0.00020557
4	Yes	6	0.0000001	0.00021405
5	Yes	6	0.0000001	0.00006914
6	Yes	6	0.0000001	0.00025231
7	Yes	6	0.0000001	0.00008227
8	Yes	5	0.0000001	0.00094569
9	Yes	5	0.0000001	0.00042718
10	Yes	6	0.0000001	0.00022073
11	Yes	6	0.0000001	0.00007102
12	Yes	6	0.0000001	0.00023168

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13	Yes	6	0.00000001	0.00007512
14	Yes	5	0.00000001	0.00035480
15	Yes	5	0.00000001	0.00015614
16	Yes	6	0.00000001	0.00024604
17	Yes	6	0.00000001	0.00008033
18	Yes	6	0.00000001	0.00021116
19	Yes	6	0.00000001	0.00006781
20	Yes	6	0.00000001	0.00003637
21	Yes	5	0.00000001	0.00046904
22	Yes	6	0.00000001	0.00024722
23	Yes	6	0.00000001	0.00008004
24	Yes	6	0.00000001	0.00023036
25	Yes	6	0.00000001	0.00007442
26	Yes	5	0.00000001	0.00014812
27	Yes	6	0.00000001	0.00028016
28	Yes	6	0.00000001	0.00028485
29	Yes	6	0.00000001	0.00028915
30	Yes	6	0.00000001	0.00026329
31	Yes	6	0.00000001	0.00027671
32	Yes	6	0.00000001	0.00027466
33	Yes	6	0.00000001	0.00026788
34	Yes	6	0.00000001	0.00027991
35	Yes	6	0.00000001	0.00028181
36	Yes	6	0.00000001	0.00026992
37	Yes	6	0.00000001	0.00029673
38	Yes	6	0.00000001	0.00029271
39	Yes	4	0.00000001	0.00087834
40	Yes	5	0.00000001	0.00007992
41	Yes	5	0.00000001	0.00012071
42	Yes	5	0.00000001	0.00005305
43	Yes	5	0.00000001	0.00007930
44	Yes	5	0.00000001	0.00008860
45	Yes	4	0.00000001	0.00085084
46	Yes	5	0.00000001	0.00011089
47	Yes	5	0.00000001	0.00007923
48	Yes	5	0.00000001	0.00005559
49	Yes	5	0.00000001	0.00010995
50	Yes	5	0.00000001	0.00008913

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	14.03	39	1.00	0.01
L2	115 - 110	12.99	39	0.99	0.01
L3	110 - 105	11.96	39	0.97	0.01
L4	105 - 100	10.95	39	0.94	0.01
L5	100 - 99.25	9.99	39	0.90	0.00
L6	99.25 - 99	9.85	39	0.89	0.00
L7	99 - 94	9.80	39	0.89	0.00
L8	94 - 90.08	8.90	39	0.84	0.00
L9	90.08 - 89.83	8.22	39	0.80	0.00
L10	89.83 - 89.5	8.18	39	0.80	0.00
L11	89.5 - 89.25	8.13	39	0.80	0.00
L12	89.25 - 84.25	8.08	39	0.80	0.00
L13	84.25 - 78	7.27	39	0.76	0.00
L14	81.75 - 77	6.87	39	0.75	0.00
L15	77 - 76.75	6.14	39	0.73	0.00
L16	76.75 - 76.5	6.10	39	0.73	0.00

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L17	76.5 - 75.5	6.06	39	0.72	0.00
L18	75.5 - 75.25	5.91	39	0.72	0.00
L19	75.25 - 74.5	5.87	39	0.72	0.00
L20	74.5 - 74.25	5.76	39	0.71	0.00
L21	74.25 - 72	5.72	39	0.71	0.00
L22	72 - 71.75	5.39	39	0.69	0.00
L23	71.75 - 70.5	5.36	39	0.69	0.00
L24	70.5 - 70.25	5.18	39	0.68	0.00
L25	70.25 - 70	5.14	39	0.68	0.00
L26	70 - 69.75	5.11	39	0.68	0.00
L27	69.75 - 69.5	5.07	39	0.68	0.00
L28	69.5 - 69.25	5.04	39	0.67	0.00
L29	69.25 - 64.25	5.00	39	0.67	0.00
L30	64.25 - 59.25	4.32	39	0.63	0.00
L31	59.25 - 56	3.68	39	0.59	0.00
L32	56 - 55.75	3.30	39	0.56	0.00
L33	55.75 - 55.5	3.27	39	0.55	0.00
L34	55.5 - 55.25	3.24	39	0.55	0.00
L35	55.25 - 54	3.21	39	0.55	0.00
L36	54 - 53.75	3.07	39	0.54	0.00
L37	53.75 - 53.5	3.04	39	0.54	0.00
L38	53.5 - 53.25	3.01	39	0.54	0.00
L39	53.25 - 53	2.98	39	0.53	0.00
L40	53 - 48	2.95	39	0.53	0.00
L41	48 - 39.75	2.43	39	0.48	0.00
L42	44.5 - 38.75	2.09	39	0.44	0.00
L43	38.75 - 34.75	1.59	39	0.40	0.00
L44	34.75 - 34.5	1.27	39	0.36	0.00
L45	34.5 - 33.75	1.25	39	0.35	0.00
L46	33.75 - 33.5	1.20	39	0.35	0.00
L47	33.5 - 28.5	1.18	39	0.35	0.00
L48	28.5 - 24	0.85	39	0.29	0.00
L49	24 - 23.75	0.60	39	0.24	0.00
L50	23.75 - 18.75	0.59	39	0.24	0.00
L51	18.75 - 14.25	0.37	39	0.19	0.00
L52	14.25 - 14	0.21	39	0.14	0.00
L53	14 - 9	0.21	39	0.14	0.00
L54	9 - 4.75	0.09	39	0.09	0.00
L55	4.75 - 4.5	0.03	39	0.05	0.00
L56	4.5 - 0	0.02	39	0.05	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	VHLP2-11	39	14.03	1.00	0.01	21741
123.000	PX2F-52	39	14.03	1.00	0.01	21741
122.000	APXVTM14-ALU-I20 w/ Mount Pipe	39	14.03	1.00	0.01	21741
120.000	Pipe 6" x 10'	39	14.03	1.00	0.01	21741
113.000	BXA-171063/8CF w/ Mount Pipe	39	12.57	0.99	0.01	15635
105.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	10.95	0.94	0.01	7315
97.000	DC6-48-60-18-8F	39	9.44	0.87	0.00	6381
96.000	7770.00 w/ Mount Pipe	39	9.25	0.86	0.00	6297
75.000	ACUTIME 2000	39	5.84	0.71	0.00	8769

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Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	64.55	2	4.59	0.04
L2	115 - 110	59.77	2	4.55	0.04
L3	110 - 105	55.04	2	4.47	0.03
L4	105 - 100	50.44	2	4.33	0.03
L5	100 - 99.25	46.01	2	4.12	0.02
L6	99.25 - 99	45.37	2	4.08	0.02
L7	99 - 94	45.15	2	4.08	0.02
L8	94 - 90.08	40.99	2	3.88	0.02
L9	90.08 - 89.83	37.88	2	3.69	0.01
L10	89.83 - 89.5	37.69	2	3.68	0.01
L11	89.5 - 89.25	37.44	2	3.67	0.01
L12	89.25 - 84.25	37.24	2	3.66	0.01
L13	84.25 - 78	33.49	2	3.52	0.01
L14	81.75 - 77	31.67	2	3.44	0.01
L15	77 - 76.75	28.29	2	3.35	0.01
L16	76.75 - 76.5	28.11	2	3.34	0.01
L17	76.5 - 75.5	27.94	2	3.34	0.01
L18	75.5 - 75.25	27.24	2	3.31	0.01
L19	75.25 - 74.5	27.07	2	3.30	0.01
L20	74.5 - 74.25	26.55	2	3.27	0.01
L21	74.25 - 72	26.38	2	3.27	0.01
L22	72 - 71.75	24.86	2	3.19	0.01
L23	71.75 - 70.5	24.69	2	3.18	0.01
L24	70.5 - 70.25	23.87	2	3.14	0.01
L25	70.25 - 70	23.70	2	3.13	0.01
L26	70 - 69.75	23.54	2	3.12	0.01
L27	69.75 - 69.5	23.38	2	3.11	0.01
L28	69.5 - 69.25	23.21	2	3.10	0.01
L29	69.25 - 64.25	23.05	2	3.09	0.01
L30	64.25 - 59.25	19.91	2	2.90	0.01
L31	59.25 - 56	16.98	2	2.70	0.01
L32	56 - 55.75	15.19	2	2.56	0.01
L33	55.75 - 55.5	15.06	2	2.55	0.01
L34	55.5 - 55.25	14.92	2	2.54	0.01
L35	55.25 - 54	14.79	2	2.54	0.01
L36	54 - 53.75	14.13	2	2.49	0.01
L37	53.75 - 53.5	14.00	2	2.48	0.01
L38	53.5 - 53.25	13.87	2	2.47	0.01
L39	53.25 - 53	13.74	2	2.46	0.01
L40	53 - 48	13.61	2	2.45	0.01
L41	48 - 39.75	11.18	2	2.19	0.01
L42	44.5 - 38.75	9.64	2	2.01	0.00
L43	38.75 - 34.75	7.31	2	1.84	0.00
L44	34.75 - 34.5	5.85	2	1.64	0.00
L45	34.5 - 33.75	5.77	2	1.63	0.00
L46	33.75 - 33.5	5.51	2	1.60	0.00
L47	33.5 - 28.5	5.43	2	1.59	0.00
L48	28.5 - 24	3.90	2	1.32	0.00
L49	24 - 23.75	2.76	2	1.10	0.00
L50	23.75 - 18.75	2.70	2	1.09	0.00
L51	18.75 - 14.25	1.68	2	0.85	0.00
L52	14.25 - 14	0.98	2	0.64	0.00
L53	14 - 9	0.95	2	0.63	0.00
L54	9 - 4.75	0.40	2	0.41	0.00

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L55	4.75 - 4.5	0.12	2	0.23	0.00
L56	4.5 - 0	0.10	2	0.22	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	VHLP2-11	2	64.55	4.59	0.04	4954
123.000	PX2F-52	2	64.55	4.59	0.04	4954
122.000	APXVTM14-ALU-I20 w/ Mount Pipe	2	64.55	4.59	0.04	4954
120.000	Pipe 6" x 10'	2	64.55	4.59	0.04	4954
113.000	BXA-171063/8CF w/ Mount Pipe	2	57.87	4.53	0.04	3555
105.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	50.44	4.33	0.03	1621
97.000	DC6-48-60-18-8F	2	43.46	4.01	0.02	1402
96.000	7770.00 w/ Mount Pipe	2	42.63	3.97	0.02	1383
75.000	ACUTIME 2000	2	26.90	3.29	0.01	1921

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	120 - 115 (1)	TP23.0103x22x0.25	5.000	0.000	0.0	18.3220	-3.73	989.39	0.004
L2	115 - 110 (2)	TP24.0205x23.0103x0.25	5.000	0.000	0.0	19.1353	-6.80	1033.30	0.007
L3	110 - 105 (3)	TP25.0307x24.0205x0.25	5.000	0.000	0.0	19.9485	-7.31	1077.22	0.007
L4	105 - 100 (4)	TP26.041x25.0307x0.25	5.000	0.000	0.0	20.7617	-11.53	1121.13	0.010
L5	100 - 99.25 (5)	TP26.1925x26.041x0.25	0.750	0.000	0.0	20.8837	-11.63	1127.72	0.010
L6	99.25 - 99 (6)	TP26.243x26.1925x0.3625	0.250	0.000	0.0	30.2090	-11.68	1631.29	0.007
L7	99 - 94 (7)	TP27.2532x26.243x0.3563	5.000	0.000	0.0	30.8542	-16.20	1666.13	0.010
L8	94 - 90.08 (8)	TP28.0453x27.2532x0.35	3.920	0.000	0.0	31.2126	-17.00	1685.48	0.010
L9	90.08 - 89.83 (9)	TP28.0958x28.0453x0.5125	0.250	0.000	0.0	45.5193	-17.07	2458.04	0.007
L10	89.83 - 89.5 (10)	TP28.1625x28.0958x0.5125	0.330	0.000	0.0	45.6293	-17.15	2463.98	0.007
L11	89.5 - 89.25 (11)	TP28.213x28.1625x0.725	0.250	0.000	0.0	64.1707	-17.22	3465.22	0.005
L12	89.25 - 84.25 (12)	TP29.2232x28.213x0.7	5.000	0.000	0.0	64.2913	-18.56	3471.73	0.005
L13	84.25 - 78 (13)	TP30.486x29.2232x0.7	6.250	0.000	0.0	65.4298	-19.28	3533.21	0.005
L14	78 - 77 (14)	TP30.188x29.2283x0.8625	4.750	0.000	0.0	81.4443	-21.97	4397.99	0.005
L15	77 - 76.75 (15)	TP30.2385x30.188x0.8625	0.250	0.000	0.0	81.5846	-22.07	4405.57	0.005
L16	76.75 - 76.5 (16)	TP30.289x30.2385x0.9625	0.250	0.000	0.0	90.8903	-22.17	4908.07	0.005
L17	76.5 - 75.5 (17)	TP30.4911x30.289x0.9625	1.000	0.000	0.0	91.5164	-22.56	4941.89	0.005
L18	75.5 - 75.25	TP30.5416x30.4911x0.7625	0.250	0.000	0.0	73.1151	-22.66	3948.22	0.006

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L19	(18) 75.25 - 74.5	TP30.6931x30.5416x0.7625	0.750	0.000	0.0	73.4871	-23.01	3968.31	0.006
L20	(19) 74.5 - 74.25	TP30.7436x30.6931x0.8375	0.250	0.000	0.0	80.6493	-23.10	4355.06	0.005
L21	(20) 74.25 - 72 (21)	TP31.1982x30.7436x0.825	2.250	0.000	0.0	80.6864	-23.87	4357.07	0.005
L22	72 - 71.75 (22)	TP31.2487x31.1982x0.7625	0.250	0.000	0.0	74.8513	-23.97	4041.97	0.006
L23	71.75 - 70.5 (23)	TP31.5013x31.2487x0.7625	1.250	0.000	0.0	75.4714	-24.44	4075.45	0.006
L24	70.5 - 70.25 (24)	TP31.5518x31.5013x0.7875	0.250	0.000	0.0	78.0105	-24.55	4212.57	0.006
L25	70.25 - 70 (25)	TP31.6023x31.5518x0.7875	0.250	0.000	0.0	78.1386	-24.66	4219.49	0.006
L26	70 - 69.75 (26)	TP31.6528x31.6023x0.725	0.250	0.000	0.0	72.2010	-24.75	3898.85	0.006
L27	69.75 - 69.5 (27)	TP31.7033x31.6528x0.875	0.250	0.000	0.0	86.8588	-24.85	4690.37	0.005
L28	69.5 - 69.25 (28)	TP31.7538x31.7033x0.75	0.250	0.000	0.0	74.8742	-24.94	4043.21	0.006
L29	69.25 - 64.25 (29)	TP32.764x31.7538x0.7375	5.000	0.000	0.0	76.0550	-26.72	4106.97	0.007
L30	64.25 - 59.25 (30)	TP33.7742x32.764x0.7125	5.000	0.000	0.0	75.8519	-28.54	4096.00	0.007
L31	59.25 - 56 (31)	TP34.4309x33.7742x0.7125	3.250	0.000	0.0	77.3583	-29.75	4177.35	0.007
L32	56 - 55.75 (32)	TP34.4814x34.4309x0.8125	0.250	0.000	0.0	88.0862	-29.88	4756.65	0.006
L33	55.75 - 55.5 (33)	TP34.5319x34.4814x0.8125	0.250	0.000	0.0	88.2183	-30.00	4763.79	0.006
L34	55.5 - 55.25 (34)	TP34.5824x34.5319x0.8875	0.250	0.000	0.0	96.2915	-30.12	5199.74	0.006
L35	55.25 - 54 (35)	TP34.8349x34.5824x0.875	1.250	0.000	0.0	95.6821	-30.73	5166.83	0.006
L36	54 - 53.75 (36)	TP34.8854x34.8349x0.75	0.250	0.000	0.0	82.4371	-30.86	4451.60	0.007
L37	53.75 - 53.5 (37)	TP34.936x34.8854x0.7375	0.250	0.000	0.0	81.2128	-30.97	4385.49	0.007
L38	53.5 - 53.25 (38)	TP34.9865x34.936x0.6625	0.250	0.000	0.0	73.2216	-31.08	3953.97	0.008
L39	53.25 - 53 (39)	TP35.037x34.9865x0.6	0.250	0.000	0.0	66.5322	-31.19	3592.74	0.009
L40	53 - 48 (40)	TP36.0472x35.037x0.5875	5.000	0.000	0.0	67.0808	-33.27	3622.37	0.009
L41	48 - 39.75 (41)	TP37.714x36.0472x0.5875	8.250	0.000	0.0	68.4186	-34.76	3694.60	0.009
L42	39.75 - 38.75 (42)	TP37.291x36.1293x0.6625	5.750	0.000	0.0	78.1378	-38.63	4219.44	0.009
L43	38.75 - 34.75 (43)	TP38.0992x37.291x0.6625	4.000	0.000	0.0	79.8618	-40.39	4312.54	0.009
L44	34.75 - 34.5 (44)	TP38.1497x38.0992x0.825	0.250	0.000	0.0	99.1530	-40.53	5354.26	0.008
L45	34.5 - 33.75 (45)	TP38.3012x38.1497x0.825	0.750	0.000	0.0	99.5556	-40.91	5376.00	0.008
L46	33.75 - 33.5 (46)	TP38.3517x38.3012x0.625	0.250	0.000	0.0	75.9250	-41.03	4099.95	0.010
L47	33.5 - 28.5 (47)	TP39.3619x38.3517x0.6125	5.000	0.000	0.0	76.4235	-43.26	4126.87	0.010
L48	28.5 - 24 (48)	TP40.2711x39.3619x0.6625	4.500	0.000	0.0	84.4950	-45.30	4562.73	0.010
L49	24 - 23.75 (49)	TP40.3216x40.2711x0.7	0.250	0.000	0.0	89.3071	-45.43	4822.58	0.009
L50	23.75 - 18.75 (50)	TP41.3318x40.3216x0.6875	5.000	0.000	0.0	89.9763	-47.81	4858.72	0.010
L51	18.75 - 14.25 (51)	TP42.241x41.3318x0.675	4.500	0.000	0.0	90.3436	-49.99	4878.56	0.010
L52	14.25 - 14 (52)	TP42.2915x42.241x0.775	0.250	0.000	0.0	103.604	-50.14	5594.63	0.009
L53	14 - 9 (53)	TP43.3017x42.2915x0.7625	5.000	0.000	0.0	104.444	-52.79	5639.99	0.009
L54	9 - 4.75 (54)	TP44.1603x43.3017x0.75	4.250	0.000	0.0	104.836	-55.09	5661.14	0.010
L55	4.75 - 4.5 (55)	TP44.2108x44.1603x0.6625	0.250	0.000	0.0	92.8995	-55.24	5016.57	0.011

tnxTower Tower Engineering Professionals 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	528 Wheelers Farm Rd (BU 876320)	Page	55 of 58
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	Client	Crown Castle	Designed by	mfry

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L56	4.5 - 0 (56)	TP45.12x44.2108x0.65	4.500	0.000	0.0	93.0757	-57.61	5026.09	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	120 - 115 (1)	TP23.0103x22x0.25	48.14	564.84	0.085	0.00	564.84	0.000
L2	115 - 110 (2)	TP24.0205x23.0103x0.25	114.36	607.66	0.188	0.00	607.66	0.000
L3	110 - 105 (3)	TP25.0307x24.0205x0.25	190.85	651.21	0.293	0.00	651.21	0.000
L4	105 - 100 (4)	TP26.041x25.0307x0.25	299.07	695.40	0.430	0.00	695.40	0.000
L5	100 - 99.25 (5)	TP26.1925x26.041x0.25	314.66	702.08	0.448	0.00	702.08	0.000
L6	99.25 - 99 (6)	TP26.243x26.1925x0.3625	319.88	1077.23	0.297	0.00	1077.23	0.000
L7	99 - 94 (7)	TP27.2532x26.243x0.3563	445.09	1144.31	0.389	0.00	1144.31	0.000
L8	94 - 90.08 (8)	TP28.0453x27.2532x0.35	554.24	1192.67	0.465	0.00	1192.67	0.000
L9	90.08 - 89.83 (9)	TP28.0958x28.0453x0.5125	561.29	1722.21	0.326	0.00	1722.21	0.000
L10	89.83 - 89.5 (10)	TP28.1625x28.0958x0.5125	570.62	1730.63	0.330	0.00	1730.63	0.000
L11	89.5 - 89.25 (11)	TP28.213x28.1625x0.725	577.70	2401.11	0.241	0.00	2401.11	0.000
L12	89.25 - 84.25 (12)	TP29.2232x28.213x0.7	722.90	2500.69	0.289	0.00	2500.69	0.000
L13	84.25 - 78 (13)	TP30.486x29.2232x0.7	798.25	2591.13	0.308	0.00	2591.13	0.000
L14	78 - 77 (14)	TP30.188x29.2283x0.8625	945.42	3241.57	0.292	0.00	3241.57	0.000
L15	77 - 76.75 (15)	TP30.2385x30.188x0.8625	953.31	3252.92	0.293	0.00	3252.92	0.000
L16	76.75 - 76.5 (16)	TP30.289x30.2385x0.9625	961.22	3605.72	0.267	0.00	3605.72	0.000
L17	76.5 - 75.5 (17)	TP30.4911x30.289x0.9625	992.98	3656.38	0.272	0.00	3656.38	0.000
L18	75.5 - 75.25 (18)	TP30.5416x30.4911x0.7625	1000.96	2966.04	0.337	0.00	2966.04	0.000
L19	75.25 - 74.5 (19)	TP30.6931x30.5416x0.7625	1025.15	2996.68	0.342	0.00	2996.68	0.000
L20	74.5 - 74.25 (20)	TP30.7436x30.6931x0.8375	1033.20	3277.97	0.315	0.00	3277.97	0.000
L21	74.25 - 72 (21)	TP31.1982x30.7436x0.825	1106.22	3333.43	0.332	0.00	3333.43	0.000
L22	72 - 71.75 (22)	TP31.2487x31.1982x0.7625	1114.40	3110.38	0.358	0.00	3110.38	0.000
L23	71.75 - 70.5 (23)	TP31.5013x31.2487x0.7625	1155.52	3162.76	0.365	0.00	3162.76	0.000
L24	70.5 - 70.25 (24)	TP31.5518x31.5013x0.7875	1163.78	3269.36	0.356	0.00	3269.36	0.000
L25	70.25 - 70 (25)	TP31.6023x31.5518x0.7875	1172.06	3280.23	0.357	0.00	3280.23	0.000
L26	70 - 69.75 (26)	TP31.6528x31.6023x0.725	1180.35	3048.38	0.387	0.00	3048.38	0.000
L27	69.75 - 69.5 (27)	TP31.7033x31.6528x0.875	1188.66	3637.88	0.327	0.00	3637.88	0.000
L28	69.5 - 69.25 (28)	TP31.7538x31.7033x0.75	1196.97	3166.69	0.378	0.00	3166.69	0.000
L29	69.25 - 64.25 (29)	TP32.764x31.7538x0.7375	1366.25	3326.52	0.411	0.00	3326.52	0.000
L30	64.25 - 59.25 (30)	TP33.7742x32.764x0.7125	1540.94	3429.82	0.449	0.00	3429.82	0.000
L31	59.25 - 56 (31)	TP34.4309x33.7742x0.7125	1657.38	3568.88	0.464	0.00	3568.88	0.000
L32	56 - 55.75 (32)	TP34.4814x34.4309x0.8125	1666.43	4045.94	0.412	0.00	4045.94	0.000
L33	55.75 - 55.5 (33)	TP34.5319x34.4814x0.8125	1675.50	4058.23	0.413	0.00	4058.23	0.000
L34	55.5 - 55.25	TP34.5824x34.5319x0.8875	1684.58	4416.73	0.381	0.00	4416.73	0.000

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	Client	Crown Castle	Designed by	mfry

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
	(34)							
L35	55.25 - 54 (35)	TP34.8349x34.5824x0.875	1730.22	4425.77	0.391	0.00	4425.77	0.000
L36	54 - 53.75 (36)	TP34.8854x34.8349x0.75	1739.39	3847.06	0.452	0.00	3847.06	0.000
L37	53.75 - 53.5	TP34.936x34.8854x0.7375	1748.58	3798.43	0.460	0.00	3798.43	0.000
	(37)							
L38	53.5 - 53.25	TP34.9865x34.936x0.6625	1757.78	3444.88	0.510	0.00	3444.88	0.000
	(38)							
L39	53.25 - 53 (39)	TP35.037x34.9865x0.6	1767.00	3146.26	0.562	0.00	3146.26	0.000
L40	53 - 48 (40)	TP36.0472x35.037x0.5875	1954.27	3269.16	0.598	0.00	3269.16	0.000
L41	48 - 39.75 (41)	TP37.714x36.0472x0.5875	2088.64	3401.93	0.614	0.00	3401.93	0.000
L42	39.75 - 38.75	TP37.291x36.1293x0.6625	2315.60	3927.67	0.590	0.00	3927.67	0.000
	(42)							
L43	38.75 - 34.75	TP38.0992x37.291x0.6625	2477.85	4104.48	0.604	0.00	4104.48	0.000
	(43)							
L44	34.75 - 34.5	TP38.1497x38.0992x0.825	2488.10	5058.79	0.492	0.00	5058.79	0.000
	(44)							
L45	34.5 - 33.75	TP38.3012x38.1497x0.825	2518.93	5100.39	0.494	0.00	5100.39	0.000
	(45)							
L46	33.75 - 33.5	TP38.3517x38.3012x0.625	2529.23	3936.75	0.642	0.00	3936.75	0.000
	(46)							
L47	33.5 - 28.5 (47)	TP39.3619x38.3517x0.6125	2737.91	4073.06	0.672	0.00	4073.06	0.000
L48	28.5 - 24 (48)	TP40.2711x39.3619x0.6625	2929.88	4598.92	0.637	0.00	4598.92	0.000
L49	24 - 23.75 (49)	TP40.3216x40.2711x0.7	2940.66	4857.93	0.605	0.00	4857.93	0.000
L50	23.75 - 18.75	TP41.3318x40.3216x0.6875	3158.68	5024.38	0.629	0.00	5024.38	0.000
	(50)							
L51	18.75 - 14.25	TP42.241x41.3318x0.675	3358.76	5162.72	0.651	0.00	5162.72	0.000
	(51)							
L52	14.25 - 14 (52)	TP42.2915x42.241x0.775	3369.97	5899.37	0.571	0.00	5899.37	0.000
L53	14 - 9 (53)	TP43.3017x42.2915x0.7625	3596.70	6098.13	0.590	0.00	6098.13	0.000
L54	9 - 4.75 (54)	TP44.1603x43.3017x0.75	3792.92	6250.33	0.607	0.00	6250.33	0.000
L55	4.75 - 4.5 (55)	TP44.2108x44.1603x0.6625	3804.56	5567.58	0.683	0.00	5567.58	0.000
L56	4.5 - 0 (56)	TP45.12x44.2108x0.65	4015.90	5699.55	0.705	0.00	5699.55	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	120 - 115 (1)	TP23.0103x22x0.25	7.49	296.82	0.025	2.74	594.25	0.005
L2	115 - 110 (2)	TP24.0205x23.0103x0.25	15.03	309.99	0.048	4.51	648.17	0.007
L3	110 - 105 (3)	TP25.0307x24.0205x0.25	15.56	323.17	0.048	4.50	704.43	0.006
L4	105 - 100 (4)	TP26.041x25.0307x0.25	20.73	336.34	0.062	4.50	763.04	0.006
L5	100 - 99.25 (5)	TP26.1925x26.041x0.25	20.85	338.32	0.062	4.51	772.03	0.006
L6	99.25 - 99 (6)	TP26.243x26.1925x0.3625	20.89	489.39	0.043	4.51	1114.10	0.004
L7	99 - 94 (7)	TP27.2532x26.243x0.3563	27.49	499.84	0.055	4.65	1182.59	0.004
L8	94 - 90.08 (8)	TP28.0453x27.2532x0.35	28.18	505.64	0.056	4.67	1231.83	0.004
L9	90.08 - 89.83	TP28.0958x28.0453x0.5125	28.22	737.41	0.038	4.67	1789.19	0.003
	(9)							
L10	89.83 - 89.5	TP28.1625x28.0958x0.5125	28.28	739.20	0.038	4.67	1797.85	0.003
	(10)							
L11	89.5 - 89.25	TP28.213x28.1625x0.725	28.33	1039.56	0.027	4.67	2513.59	0.002
	(11)							
L12	89.25 - 84.25	TP29.2232x28.213x0.7	29.86	1041.52	0.029	2.29	2613.16	0.001
	(12)							
L13	84.25 - 78 (13)	TP30.486x29.2232x0.7	30.40	1059.96	0.029	2.27	2706.53	0.001
L14	78 - 77 (14)	TP30.188x29.2283x0.8625	31.53	1319.40	0.024	2.24	3403.47	0.001

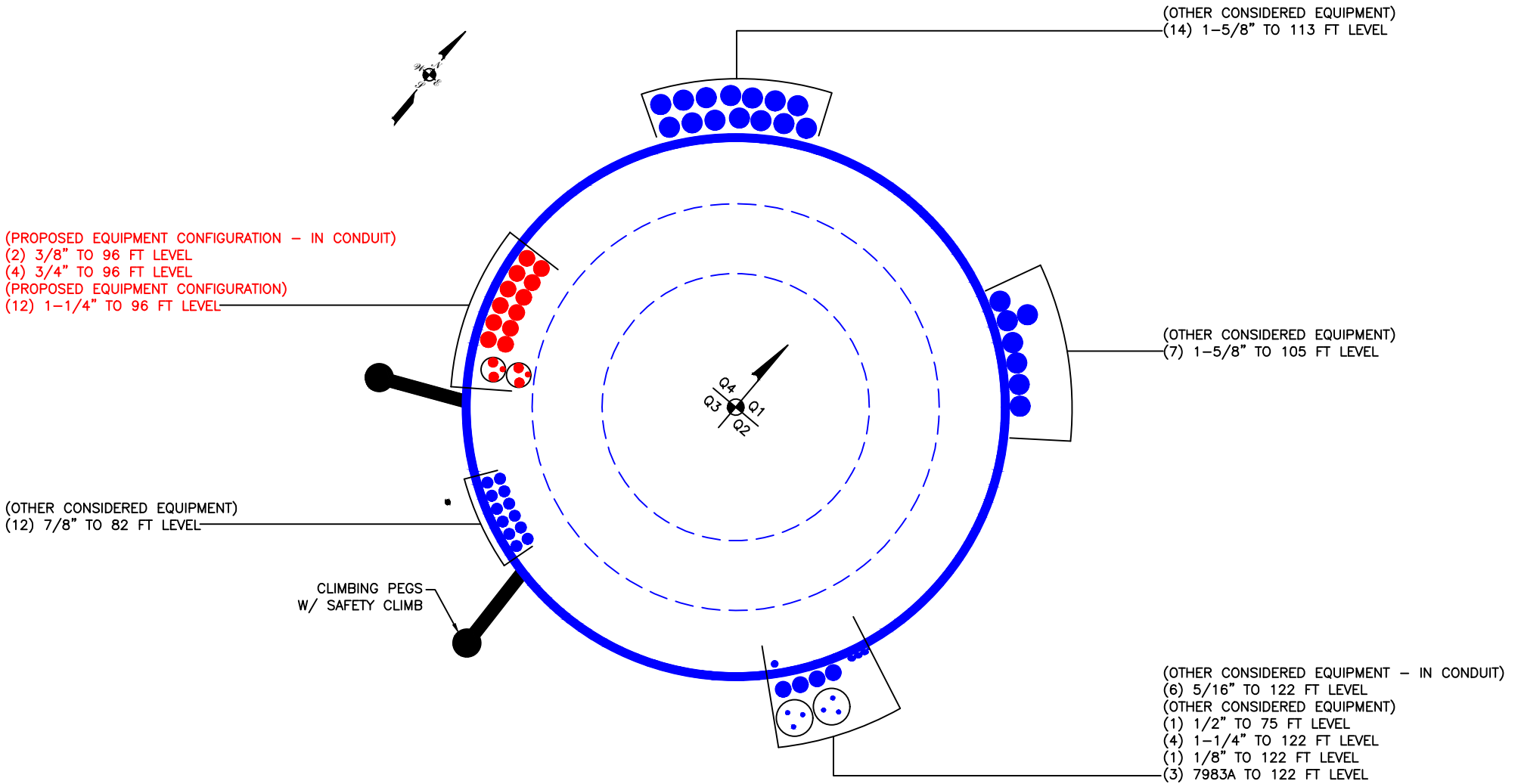
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	Client	Crown Castle	Designed by	mfry

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L15	77 - 76.75 (15)	TP30.2385x30.188x0.8625	31.58	1321.67	0.024	2.23	3415.20	0.001
L16	76.75 - 76.5 (16)	TP30.289x30.2385x0.9625	31.64	1472.42	0.021	2.23	3798.33	0.001
L17	76.5 - 75.5 (17)	TP30.4911x30.289x0.9625	31.86	1482.57	0.021	2.23	3850.85	0.001
L18	75.5 - 75.25 (18)	TP30.5416x30.4911x0.7625	31.91	1184.46	0.027	2.23	3102.65	0.001
L19	75.25 - 74.5 (19)	TP30.6931x30.5416x0.7625	32.14	1190.49	0.027	2.23	3134.31	0.001
L20	74.5 - 74.25 (20)	TP30.7436x30.6931x0.8375	32.19	1306.52	0.025	2.22	3436.97	0.001
L21	74.25 - 72 (21)	TP31.1982x30.7436x0.825	32.69	1307.12	0.025	2.21	3492.26	0.001
L22	72 - 71.75 (22)	TP31.2487x31.1982x0.7625	32.74	1212.59	0.027	2.20	3251.76	0.001
L23	71.75 - 70.5 (23)	TP31.5013x31.2487x0.7625	33.02	1222.64	0.027	2.19	3305.85	0.001
L24	70.5 - 70.25 (24)	TP31.5518x31.5013x0.7875	33.07	1263.77	0.026	2.18	3419.91	0.001
L25	70.25 - 70 (25)	TP31.6023x31.5518x0.7875	33.13	1265.85	0.026	2.17	3431.15	0.001
L26	70 - 69.75 (26)	TP31.6528x31.6023x0.725	33.18	1169.66	0.028	2.17	3182.05	0.001
L27	69.75 - 69.5 (27)	TP31.7033x31.6528x0.875	33.24	1407.11	0.024	2.17	3815.73	0.001
L28	69.5 - 69.25 (28)	TP31.7538x31.7033x0.75	33.29	1212.96	0.027	2.16	3307.97	0.001
L29	69.25 - 64.25 (29)	TP32.764x31.7538x0.7375	34.39	1232.09	0.028	2.11	3470.98	0.001
L30	64.25 - 59.25 (30)	TP33.7742x32.764x0.7125	35.47	1228.80	0.029	2.04	3573.61	0.001
L31	59.25 - 56 (31)	TP34.4309x33.7742x0.7125	36.16	1253.20	0.029	1.99	3716.97	0.001
L32	56 - 55.75 (32)	TP34.4814x34.4309x0.8125	36.21	1427.00	0.025	1.98	4226.21	0.000
L33	55.75 - 55.5 (33)	TP34.5319x34.4814x0.8125	36.27	1429.14	0.025	1.97	4238.90	0.000
L34	55.5 - 55.25 (34)	TP34.5824x34.5319x0.8875	36.33	1559.92	0.023	1.97	4623.46	0.000
L35	55.25 - 54 (35)	TP34.8349x34.5824x0.875	36.64	1550.05	0.024	1.97	4630.33	0.000
L36	54 - 53.75 (36)	TP34.8854x34.8349x0.75	36.69	1335.48	0.027	1.95	4009.99	0.000
L37	53.75 - 53.5 (37)	TP34.936x34.8854x0.7375	36.75	1315.65	0.028	1.94	3957.72	0.000
L38	53.5 - 53.25 (38)	TP34.9865x34.936x0.6625	36.81	1186.19	0.031	1.94	3581.39	0.001
L39	53.25 - 53 (39)	TP35.037x34.9865x0.6	36.87	1077.82	0.034	1.93	3264.92	0.001
L40	53 - 48 (40)	TP36.0472x35.037x0.5875	38.00	1086.71	0.035	1.86	3389.60	0.001
L41	48 - 39.75 (41)	TP37.714x36.0472x0.5875	38.75	1108.38	0.035	1.81	3526.13	0.001
L42	39.75 - 38.75 (42)	TP37.291x36.1293x0.6625	40.13	1265.83	0.032	1.71	4078.45	0.000
L43	38.75 - 34.75 (43)	TP38.0992x37.291x0.6625	40.96	1293.76	0.032	1.65	4260.41	0.000
L44	34.75 - 34.5 (44)	TP38.1497x38.0992x0.825	41.00	1606.28	0.026	1.63	5273.72	0.000
L45	34.5 - 33.75 (45)	TP38.3012x38.1497x0.825	41.17	1612.80	0.026	1.62	5316.63	0.000
L46	33.75 - 33.5 (46)	TP38.3517x38.3012x0.625	41.21	1229.99	0.034	1.61	4081.78	0.000
L47	33.5 - 28.5 (47)	TP39.3619x38.3517x0.6125	42.21	1238.06	0.034	1.54	4219.95	0.000
L48	28.5 - 24 (48)	TP40.2711x39.3619x0.6625	43.08	1368.82	0.031	1.47	4769.09	0.000
L49	24 - 23.75 (49)	TP40.3216x40.2711x0.7	43.11	1446.77	0.030	1.45	5042.35	0.000
L50	23.75 - 18.75 (50)	TP41.3318x40.3216x0.6875	44.05	1457.62	0.030	1.39	5211.26	0.000
L51	18.75 - 14.25 (51)	TP42.241x41.3318x0.675	44.84	1463.57	0.031	1.32	5351.18	0.000
L52	14.25 - 14 (52)	TP42.2915x42.241x0.775	44.87	1678.39	0.027	1.30	6129.33	0.000
L53	14 - 9 (53)	TP43.3017x42.2915x0.7625	45.77	1692.00	0.027	1.23	6331.23	0.000

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Rd. Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job 528 Wheelers Farm Rd (BU 876320)	Page 58 of 58
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	Client Crown Castle	Designed by mfry

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L54	9 - 4.75 (54)	TP44.1603x43.3017x0.75	46.53	1698.34	0.027	1.15	6485.12	0.000
L55	4.75 - 4.5 (55)	TP44.2108x44.1603x0.6625	46.55	1504.97	0.031	1.13	5765.00	0.000
L56	4.5 - 0 (56)	TP45.12x44.2108x0.65	47.33	1507.83	0.031	1.07	5898.18	0.000

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876320 TOWER ID: C_BASELEVEL

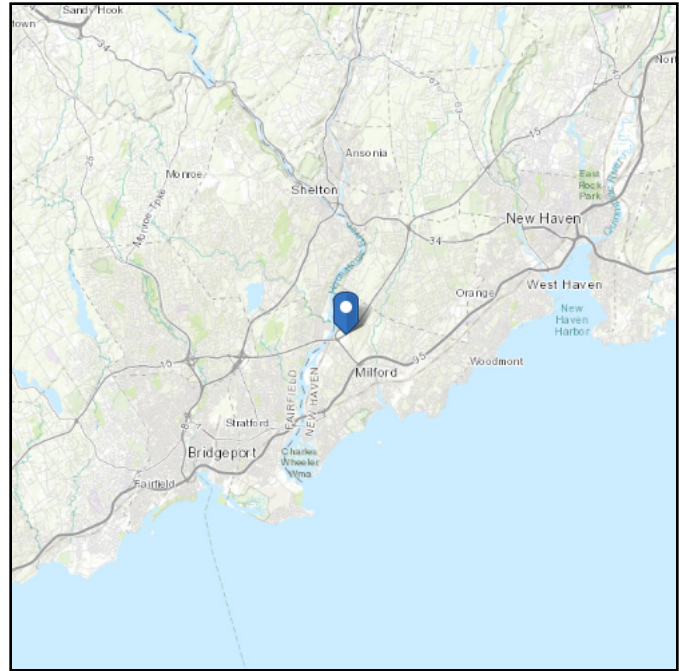
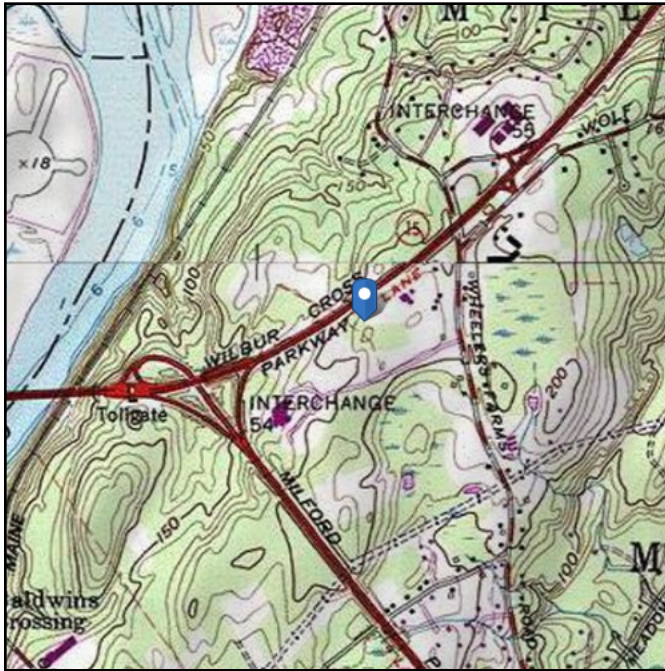
APPENDIX C
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 212.97 ft (NAVD 88)
Latitude: 41.248431
Longitude: -73.079075



Wind

Results:

Wind Speed:	124 Vmph	*Milford, CT Requires 125 mph Vult
10-year MRI	77 Vmph	
25-year MRI	87 Vmph	
50-year MRI	93 Vmph	
100-year MRI	100 Vmph	

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014

Date Accessed: Tue Sep 18 2018

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

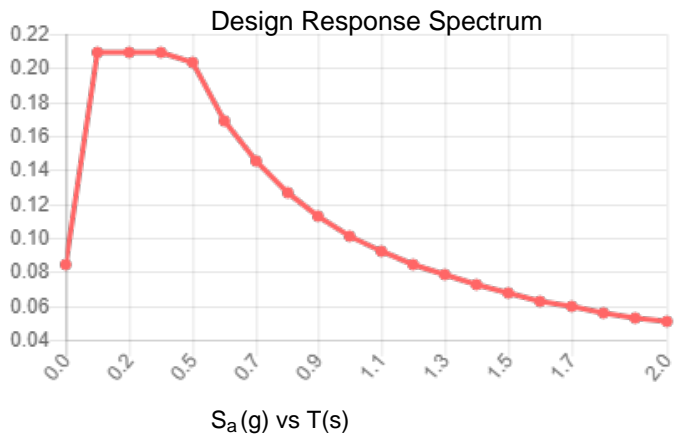
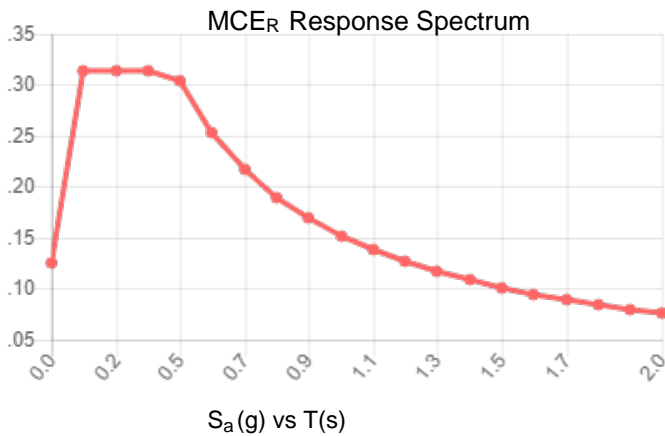
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.196	S_{DS} :	0.209
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.104
S_{MS} :	0.314	PGA _M :	0.166
S_{M1} :	0.152	F _{PGA} :	1.591
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Sep 18 2018

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 0.75 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

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

Date Accessed: Tue Sep 18 2018

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	120	42	3.75	12	22.00003	30.486	0.25	Auto	A607-60
2	81.75	42	4.75	12	29.23	37.714	0.3125	Auto	A607-60
3	44.5	44.5	0	12	36.13	45.12	0.375	Auto	A607-60

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	4.75	plate	(TS) 1.25x4.00 (65 ksi)	3			x		x							x
2	0	24	channel	MP3-04 (1.25in)	4			x		x					x		x
3	4.75	34.75	plate	PL 1" X 5"	4		3				-3		-4				-3.3
4	33.75	69.75	plate	PL 1" X 5"	4		-2.5				2.5		2.5				2.5
5	0	14.25	channel	MP3-03 (1.25in)	4		-1.8				1.5		0				1.8
6	24	44.25	channel	MP3-03 (1.25in)	4			x		x					x		x
7	53.5	70.5	plate	CCI-SFP-045100	1												2.25
8	53.25	72	plate	CCI-SFP-065125	1			x									
9	54	70	plate	CCI-AFP-045100	2					x					x		
10	69.5	89.5	plate	CCI-AFP-060100	2	x										x	
11	70	90.08	plate	CCI-AFP-045100	2					x					x		
12	44	56	plate	CCI-SFP-045100	3			3			-3		-3				
13	43.75	55.5	plate	CCI-SFP-045100	1												-3
14	74.5	99.25	plate	PL 1.25" X 4"	1			x									
15	75.5	99.25	plate	PL 1.25" X 4"	1						x						
16	75.5	99.25	plate	PL 1.25" X 4"	1												x
17	69.75	78.5	plate	PL 1.25" X 4"	2				x			x					
18	70	78.5	plate	PL 1.25" X 4"	1												-2
19	69.75	76.75	plate	PL 1.25" X 4"	1								-3				
20																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L _v (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	1.25	4	5	8	n/a	n/a	6.000	5.000	0.0000	A572-65
2	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.566	1.2500	A572-65
3	5	1	5	0.5	27.000	27.000	18.000	3.750	1.1875	A572-65
4	5	1	5	0.5	27.000	27.000	18.000	3.750	1.1875	A572-65
5	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.526	1.2500	A572-65
6	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.526	1.2500	A572-65
7	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
8	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
9	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
10	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
11	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
12	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
13	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
14	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
15	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
16	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
17	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
18	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
19	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	120 - 115	5		12	22.000	23.010	0.25	A607-60	1.000
2	115 - 110	5		12	23.010	24.020	0.25	A607-60	1.000
3	110 - 105	5		12	24.020	25.031	0.25	A607-60	1.000
4	105 - 100	5		12	25.031	26.041	0.25	A607-60	1.000
5	100 - 99.25	0.75		12	26.041	26.193	0.25	A607-60	1.000
6	99.25 - 99	0.25		12	26.193	26.243	0.3625	A607-60	1.190
7	99 - 94	5		12	26.243	27.253	0.35625	A607-60	1.191
8	94 - 90.08	3.92		12	27.253	28.045	0.35	A607-60	1.198
9	90.08 - 89.83	0.25		12	28.045	28.096	0.5125	A607-60	1.020
10	89.83 - 89.5	0.33		12	28.096	28.162	0.5125	A607-60	1.019
11	89.5 - 89.25	0.25		12	28.162	28.213	0.725	A607-60	0.913
12	89.25 - 84.25	5		12	28.213	29.223	0.7	A607-60	0.924
13	84.25 - 81.75	6.25	3.75	12	29.223	30.486	0.7	A607-60	0.914
14	81.75 - 77	4.75		12	29.228	30.188	0.8625	A607-60	0.996
15	77 - 76.75	0.25		12	30.188	30.239	0.8625	A607-60	0.995
16	76.75 - 76.5	0.25		12	30.239	30.289	0.9625	A607-60	0.949
17	76.5 - 75.5	1		12	30.289	30.491	0.9625	A607-60	0.945
18	75.5 - 75.25	0.25		12	30.491	30.542	0.7625	A607-60	1.046
19	75.25 - 74.5	0.75		12	30.542	30.693	0.7625	A607-60	1.043
20	74.5 - 74.25	0.25		12	30.693	30.744	0.8375	A607-60	0.889
21	74.25 - 72	2.25		12	30.744	31.198	0.825	A607-60	0.894
22	72 - 71.75	0.25		12	31.198	31.249	0.7625	A607-60	1.073
23	71.75 - 70.5	1.25		12	31.249	31.501	0.7625	A607-60	1.068
24	70.5 - 70.25	0.25		12	31.501	31.552	0.7875	A607-60	1.091
25	70.25 - 70	0.25		12	31.552	31.602	0.7875	A607-60	1.090
26	70 - 69.75	0.25		12	31.602	31.653	0.725	A607-60	1.111
27	69.75 - 69.5	0.25		12	31.653	31.703	0.875	A607-60	0.982
28	69.5 - 69.25	0.25		12	31.703	31.754	0.75	A607-60	0.979
29	69.25 - 64.25	5		12	31.754	32.764	0.7375	A607-60	0.977
30	64.25 - 59.25	5		12	32.764	33.774	0.7125	A607-60	0.993
31	59.25 - 56	3.25		12	33.774	34.431	0.7125	A607-60	0.983
32	56 - 55.75	0.25		12	34.431	34.481	0.8125	A607-60	1.017
33	55.75 - 55.5	0.25		12	34.481	34.532	0.8125	A607-60	1.016
34	55.5 - 55.25	0.25		12	34.532	34.582	0.8875	A607-60	0.978
35	55.25 - 54	1.25		12	34.582	34.835	0.875	A607-60	0.987
36	54 - 53.75	0.25		12	34.835	34.885	0.75	A607-60	1.037
37	53.75 - 53.5	0.25		12	34.885	34.936	0.7375	A607-60	1.053
38	53.5 - 53.25	0.25		12	34.936	34.986	0.6625	A607-60	1.107
39	53.25 - 53	0.25		12	34.986	35.037	0.6	A607-60	1.097
40	53 - 48	5		12	35.037	36.047	0.5875	A607-60	1.103
41	48 - 44.5	8.25	4.75	12	36.047	37.714	0.5875	A607-60	1.092
42	44.5 - 38.75	5.75		12	36.129	37.291	0.6625	A607-60	0.976
43	38.75 - 34.75	4		12	37.291	38.099	0.6625	A607-60	0.968
44	34.75 - 34.5	0.25		12	38.099	38.150	0.825	A607-60	0.982
45	34.5 - 33.75	0.75		12	38.150	38.301	0.825	A607-60	0.980
46	33.75 - 33.5	0.25		12	38.301	38.352	0.625	A607-60	1.022
47	33.5 - 28.5	5		12	38.352	39.362	0.6125	A607-60	1.031
48	28.5 - 24	4.5		12	39.362	40.271	0.6625	A607-60	0.946
49	24 - 23.75	0.25		12	40.271	40.322	0.7	A607-60	0.950
50	23.75 - 18.75	5		12	40.322	41.332	0.6875	A607-60	0.956
51	18.75 - 14.25	4.5		12	41.332	42.241	0.675	A607-60	0.964
52	14.25 - 14	0.25		12	42.241	42.291	0.775	A607-60	0.954
53	14 - 9	5		12	42.291	43.302	0.7625	A607-60	0.958
54	9 - 4.75	4.25		12	43.302	44.160	0.75	A607-60	0.965
55	4.75 - 4.5	0.25		12	44.160	44.211	0.6625	A607-60	1.035
56	4.5 - 0	4.5		12	44.211	45.120	0.65	A607-60	1.045

TNX Section Forces

Increment (ft):		TNX Output			
5		P _u	M _{ux} (kip-ft)	V _u	
	Section Height (ft)	(K)		(K)	
1	120 - 115	3.73	48.14	7.49	
2	115 - 110	6.80	114.36	15.03	
3	110 - 105	7.32	190.85	15.56	
4	105 - 100	11.55	299.07	20.72	
5	100 - 99.25	11.63	314.66	20.84	
6	99.25 - 99	11.68	319.88	20.89	
7	99 - 94	16.22	445.09	27.48	
8	94 - 90.08	17.01	554.24	28.17	
9	90.08 - 89.83	17.07	561.29	28.22	
10	89.83 - 89.5	17.15	570.62	28.28	
11	89.5 - 89.25	17.22	577.70	28.33	
12	89.25 - 84.25	18.56	722.90	29.86	
13	84.25 - 81.75	19.28	798.25	30.40	
14	81.75 - 77	21.97	945.42	31.53	
15	77 - 76.75	22.07	953.31	31.58	
16	76.75 - 76.5	22.17	961.22	31.64	
17	76.5 - 75.5	22.56	992.98	31.86	
18	75.5 - 75.25	22.66	1000.96	31.91	
19	75.25 - 74.5	23.01	1025.15	32.14	
20	74.5 - 74.25	23.10	1033.20	32.19	
21	74.25 - 72	23.87	1106.22	32.69	
22	72 - 71.75	23.97	1114.40	32.74	
23	71.75 - 70.5	24.44	1155.51	33.02	
24	70.5 - 70.25	24.55	1163.78	33.07	
25	70.25 - 70	24.66	1172.06	33.13	
26	70 - 69.75	24.75	1180.35	33.18	
27	69.75 - 69.5	24.85	1188.66	33.24	
28	69.5 - 69.25	24.94	1196.98	33.29	
29	69.25 - 64.25	26.72	1366.25	34.39	
30	64.25 - 59.25	28.54	1540.94	35.47	
31	59.25 - 56	29.75	1657.38	36.16	
32	56 - 55.75	29.88	1666.43	36.21	
33	55.75 - 55.5	30.00	1675.50	36.27	
34	55.5 - 55.25	30.12	1684.58	36.33	
35	55.25 - 54	30.73	1730.22	36.64	
36	54 - 53.75	30.85	1739.39	36.69	
37	53.75 - 53.5	30.97	1748.58	36.75	
38	53.5 - 53.25	31.08	1757.78	36.81	
39	53.25 - 53	31.19	1767.00	36.87	
40	53 - 48	33.27	1954.27	38.00	
41	48 - 44.5	34.76	2088.64	38.75	
42	44.5 - 38.75	38.63	2315.60	40.13	
43	38.75 - 34.75	40.39	2477.85	40.96	
44	34.75 - 34.5	40.53	2488.10	41.00	
45	34.5 - 33.75	40.91	2518.93	41.17	
46	33.75 - 33.5	41.03	2529.24	41.21	
47	33.5 - 28.5	43.26	2737.90	42.21	
48	28.5 - 24	45.30	2929.88	43.08	
49	24 - 23.75	45.43	2940.66	43.11	
50	23.75 - 18.75	47.81	3158.68	44.05	
51	18.75 - 14.25	49.99	3358.75	44.84	
52	14.25 - 14	50.14	3369.97	44.87	
53	14 - 9	52.79	3596.70	45.77	
54	9 - 4.75	55.09	3792.91	46.53	
55	4.75 - 4.5	55.24	3804.56	46.55	
56	4.5 - 0	57.61	4015.90	47.33	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP23.01x22x0.25	Pole	8.4%	Pass
115 - 110	Pole	TP24.02x23.01x0.25	Pole	18.4%	Pass
110 - 105	Pole	TP25.031x24.02x0.25	Pole	28.4%	Pass
105 - 100	Pole	TP26.041x25.031x0.25	Pole	41.8%	Pass
100 - 99.25	Pole	TP26.193x26.041x0.25	Pole	43.5%	Pass
99.25 - 99	Pole + Reinf.	TP26.243x26.193x0.3625	Reinf. 14 Tension Rupture	40.4%	Pass
99 - 94	Pole + Reinf.	TP27.253x26.243x0.3563	Reinf. 14 Tension Rupture	52.9%	Pass
94 - 90.08	Pole + Reinf.	TP28.045x27.253x0.35	Reinf. 14 Tension Rupture	62.7%	Pass
90.08 - 89.83	Pole + Reinf.	TP28.096x28.045x0.5125	Reinf. 11 Tension Rupture	51.9%	Pass
89.83 - 89.5	Pole + Reinf.	TP28.162x28.096x0.5125	Reinf. 11 Tension Rupture	52.5%	Pass
89.5 - 89.25	Pole + Reinf.	TP28.213x28.162x0.725	Reinf. 15 Tension Rupture	40.6%	Pass
89.25 - 84.25	Pole + Reinf.	TP29.223x28.213x0.7	Reinf. 15 Tension Rupture	48.4%	Pass
84.25 - 81.75	Pole + Reinf.	TP30.486x29.223x0.7	Reinf. 15 Tension Rupture	52.1%	Pass
81.75 - 77	Pole + Reinf.	TP30.188x29.228x0.8625	Reinf. 17 Tension Rupture	46.8%	Pass
77 - 76.75	Pole + Reinf.	TP30.239x30.188x0.8625	Reinf. 17 Tension Rupture	47.1%	Pass
76.75 - 76.5	Pole + Reinf.	TP30.289x30.239x0.9625	Reinf. 14 Tension Rupture	44.2%	Pass
76.5 - 75.5	Pole + Reinf.	TP30.491x30.289x0.9625	Reinf. 14 Tension Rupture	45.3%	Pass
75.5 - 75.25	Pole + Reinf.	TP30.542x30.491x0.7625	Reinf. 17 Tension Rupture	52.1%	Pass
75.25 - 74.5	Pole + Reinf.	TP30.693x30.542x0.7625	Reinf. 17 Tension Rupture	52.9%	Pass
74.5 - 74.25	Pole + Reinf.	TP30.744x30.693x0.8375	Reinf. 17 Tension Rupture	55.8%	Pass
74.25 - 72	Pole + Reinf.	TP31.198x30.744x0.825	Reinf. 17 Tension Rupture	58.4%	Pass
72 - 71.75	Pole + Reinf.	TP31.249x31.198x0.7625	Reinf. 17 Tension Rupture	56.0%	Pass
71.75 - 70.5	Pole + Reinf.	TP31.501x31.249x0.7625	Reinf. 17 Tension Rupture	57.4%	Pass
70.5 - 70.25	Pole + Reinf.	TP31.552x31.501x0.7875	Reinf. 17 Tension Rupture	57.4%	Pass
70.25 - 70	Pole + Reinf.	TP31.602x31.552x0.7875	Reinf. 17 Tension Rupture	57.7%	Pass
70 - 69.75	Pole + Reinf.	TP31.653x31.602x0.725	Reinf. 17 Tension Rupture	59.8%	Pass
69.75 - 69.5	Pole + Reinf.	TP31.703x31.653x0.875	Reinf. 4 Tension Rupture	50.8%	Pass
69.5 - 69.25	Pole + Reinf.	TP31.754x31.703x0.75	Reinf. 4 Tension Rupture	56.8%	Pass
69.25 - 64.25	Pole + Reinf.	TP32.764x31.754x0.7375	Reinf. 4 Tension Rupture	61.8%	Pass
64.25 - 59.25	Pole + Reinf.	TP33.774x32.764x0.7125	Reinf. 4 Tension Rupture	66.7%	Pass
59.25 - 56	Pole + Reinf.	TP34.431x33.774x0.7125	Reinf. 4 Tension Rupture	69.7%	Pass
56 - 55.75	Pole + Reinf.	TP34.481x34.431x0.8125	Reinf. 7 Tension Rupture	67.0%	Pass
55.75 - 55.5	Pole + Reinf.	TP34.532x34.481x0.8125	Reinf. 7 Tension Rupture	67.3%	Pass
55.5 - 55.25	Pole + Reinf.	TP34.582x34.532x0.8875	Reinf. 7 Tension Rupture	60.6%	Pass
55.25 - 54	Pole + Reinf.	TP34.835x34.582x0.875	Reinf. 7 Tension Rupture	61.6%	Pass
54 - 53.75	Pole + Reinf.	TP34.885x34.835x0.75	Reinf. 7 Tension Rupture	70.7%	Pass
53.75 - 53.5	Pole + Reinf.	TP34.936x34.885x0.7375	Reinf. 7 Tension Rupture	70.9%	Pass
53.5 - 53.25	Pole + Reinf.	TP34.986x34.936x0.6625	Reinf. 4 Tension Rupture	76.1%	Pass
53.25 - 53	Pole + Reinf.	TP35.037x34.986x0.6	Reinf. 12 Tension Rupture	78.7%	Pass
53 - 48	Pole + Reinf.	TP36.047x35.037x0.5875	Reinf. 12 Tension Rupture	83.5%	Pass
48 - 44.5	Pole + Reinf.	TP37.714x36.047x0.5875	Reinf. 12 Tension Rupture	86.7%	Pass
44.5 - 38.75	Pole + Reinf.	TP37.291x36.129x0.6625	Reinf. 4 Tension Rupture	84.7%	Pass
38.75 - 34.75	Pole + Reinf.	TP38.099x37.291x0.6625	Reinf. 4 Tension Rupture	87.5%	Pass
34.75 - 34.5	Pole + Reinf.	TP38.15x38.099x0.825	Reinf. 3 Tension Rupture	70.2%	Pass
34.5 - 33.75	Pole + Reinf.	TP38.301x38.15x0.825	Reinf. 3 Tension Rupture	70.6%	Pass
33.75 - 33.5	Pole + Reinf.	TP38.352x38.301x0.625	Reinf. 6 Tension Rupture	86.9%	Pass
33.5 - 28.5	Pole + Reinf.	TP39.362x38.352x0.6125	Reinf. 6 Tension Rupture	90.0%	Pass
28.5 - 24	Pole + Reinf.	TP40.271x39.362x0.6625	Reinf. 3 Tension Rupture	92.9%	Pass
24 - 23.75	Pole + Reinf.	TP40.322x40.271x0.7	Reinf. 3 Tension Rupture	88.8%	Pass
23.75 - 18.75	Pole + Reinf.	TP41.332x40.322x0.6875	Reinf. 3 Tension Rupture	91.7%	Pass
18.75 - 14.25	Pole + Reinf.	TP42.241x41.332x0.675	Reinf. 3 Tension Rupture	94.2%	Pass
14.25 - 14	Pole + Reinf.	TP42.291x42.241x0.775	Reinf. 3 Tension Rupture	81.7%	Pass
14 - 9	Pole + Reinf.	TP43.302x42.291x0.7625	Reinf. 3 Tension Rupture	84.1%	Pass
9 - 4.75	Pole + Reinf.	TP44.16x43.302x0.75	Reinf. 3 Tension Rupture	86.1%	Pass
4.75 - 4.5	Pole + Reinf.	TP44.211x44.16x0.6625	Reinf. 5 Tension Rupture	94.0%	Pass
4.5 - 0	Pole + Reinf.	TP45.12x44.211x0.65	Reinf. 5 Tension Rupture	96.0%	Pass
				Summary	
			Pole	78.8%	Pass
			Reinforcement	96.0%	Pass
			Overall	96.0%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*																				
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	
120 - 115	1213	n/a	1213	18.30	n/a	18.30	8.4%																				
115 - 110	1382	n/a	1382	19.11	n/a	19.11	18.4%																				
110 - 105	1566	n/a	1566	19.92	n/a	19.92	28.4%																				
105 - 100	1765	n/a	1765	20.73	n/a	20.73	41.8%																				
100 - 99.25	1796	n/a	1796	20.85	n/a	20.85	43.5%																				
99.25 - 99	1884	751	2634	20.89	15.00	35.89	33.4%															40.4%	34.2%	34.2%			
99 - 94	2108	809	2917	21.71	15.00	36.71	44.1%															52.9%	45.0%	45.0%			
94 - 90.08	2295	857	3153	22.34	15.00	37.34	52.7%															62.7%	53.4%	53.4%			
90.08 - 89.83	2235	2180	4415	22.38	24.00	46.38	36.1%											51.9%				49.9%	43.4%	50.0%			
89.83 - 89.5	2251	2190	4441	22.44	24.00	46.44	36.6%												52.5%			60.5%	43.9%	50.7%			
89.5 - 89.25	2276	3952	6228	22.48	36.00	58.48	27.4%															33.1%	39.7%	27.4%			
89.25 - 84.25	2531	4227	6758	23.29	36.00	59.29	33.1%															39.4%	47.3%	33.1%			
84.25 - 81.75	2665	4368	7033	23.70	36.00	59.70	35.9%															42.5%	50.9%	35.9%			
81.75 - 77	3434	5537	8970	30.02	51.00	81.02	29.7%															38.5%	45.0%	29.7%			
77 - 76.75	3451	5554	9005	30.07	51.00	81.07	29.9%															38.8%	45.3%	30.0%			
76.75 - 76.5	3483	6565	10048	30.12	56.00	86.12	27.5%															37.2%	37.8%	27.5%			
76.5 - 75.5	3554	6648	10202	30.32	56.00	86.32	28.3%															38.1%	38.7%	28.3%			
75.5 - 75.25	3556	4807	8363	30.37	46.00	76.37	33.8%															46.7%	47.3%	33.8%			
75.25 - 74.5	3609	4852	8461	30.53	46.00	76.53	34.4%															47.5%	48.1%	34.4%			
74.5 - 74.25	3738	5532	9270	30.58	41.00	71.58	35.0%															52.0%	51.4%	35.0%			
74.25 - 72	3906	5690	9596	31.03	41.00	72.03	36.9%															54.5%	53.9%	36.9%			
72 - 71.75	3808	5092	8900	31.09	49.13	80.21	36.1%															37.7%	48.5%	49.7%			
71.75 - 70.5	3902	5171	9072	31.34	49.13	80.46	37.2%															38.7%	49.7%	51.0%			
70.5 - 70.25	3925	5537	9462	31.39	53.63	85.01	36.3%															42.0%	39.0%	36.3%			
70.25 - 70	3944	5554	9498	31.44	53.63	85.07	36.5%															42.2%	39.2%	36.5%			
70 - 69.75	3961	4823	8785	31.49	48.63	80.12	40.1%															51.2%	39.2%	52.8%			
69.75 - 69.5	4028	6551	10579	31.54	53.63	85.17	34.6%															43.5%	38.6%	49.4%			
69.5 - 69.25	4004	5187	9190	31.59	41.63	73.22	39.0%															56.8%	43.9%	53.8%			
69.25 - 64.25	4401	5507	9909	32.61	41.63	74.23	43.0%															61.8%	61.4%	48.0%			
64.25 - 59.25	4825	5838	10663	33.62	41.63	75.25	47.0%															66.7%	61.9%	63.5%			
59.25 - 56	5114	6058	11172	34.28	41.63	75.91	49.5%															69.7%	69.4%	54.4%			
56 - 55.75	5209	7530	12738	34.33	55.13	89.46	45.5%															69.2%	67.0%	45.1%			
55.75 - 55.5	5232	7551	12782	34.38	55.13	89.51	45.7%															66.4%	67.3%	45.2%			
55.5 - 55.25	5199	8671	13870	34.43	59.63	94.06	41.6%															57.2%	60.8%	45.2%			
55.25 - 54	5314	8793	14107	34.69	59.63	94.31	42.5%															58.2%	61.6%	46.0%			
54 - 53.75	5328	6906	12234	34.74	50.63	85.36	49.3%															63.1%	70.7%	51.9%			
53.75 - 53.5	5351	6925	12276	34.79	50.63	85.41	49.5%															63.3%	70.9%	52.0%			
53.5 - 53.25	5418	5610	11027	34.84	46.13	80.97	56.8%															76.1%	54.2%	56.8%			
53.25 - 53	5388	4730	10118	34.89	38.00	72.89	59.9%															76.4%	78.7%	70.7%			
53 - 48	5872	4982	10854	35.91	38.00	73.91	64.3%															80.8%					
48 - 44.5	6228	5162	11390	36.62	38.00	74.62	67.3%															83.7%					
44.5 - 38.75	7765	5730	13494	44.51	31.68	76.19	59.1%															84.7%	79.0%				
38.75 - 34.75	8286	5977	14263	45.49	31.68	77.17	61.6%															87.5%	81.6%				
34.75 - 34.5	8319	9340	17659	45.55	51.68	97.23	49.4%															70.2%	69.1%	69.1%			
34.5 - 33.75	8419	9410	17829	45.73	51.68	97.41	49.8%															70.6%	69.5%	69.6%			
33.75 - 33.5	8462	5245	13707	45.79	31.68	77.47	66.5%															86.7%		86.9%			
33.5 - 28.5	9155	5523	14678	47.01	31.68	78.69	69.6%															90.0%		90.0%			
28.5 - 24	9807	7211	17019	48.11	31.68	79.79	64.9%															92.9%		92.7%			
24 - 23.75	9844	8023	17867	48.17	36.52	84.69	62.1%															84.7%	88.8%				
23.75 - 18.75	10609	8417	19026	49.38	36.52	85.90	64.8%															87.3%	91.7%				
18.75 - 14.25	11331	8779	20110	50.48	36.52	87.00	67.2%															89.6%	94.2%				
14.25 - 14	11367	11520	22886	50.54	48.20	98.74	60.5%															80.5%	81.7%	75.9%			
14 - 9	12208	12047	24255	51.76	48.20	99.96	63.0%															82.8%	84.1%	78.1%			
9 - 4.75	12956	12504	25460	52.80	48.20	101.00	65.1%															84.6%	86.1%	79.9%			
4.75 - 4.5	13085	9560	22645	52.86	43.20	96.06	76.3%															85.6%	83.6%	93.9%			
4.5 - 0	13914	9922	23836	53.95	43.20	97.15	78.8%															87.3%	85.5%	96.0%			

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

Monopole Base Plate Connection

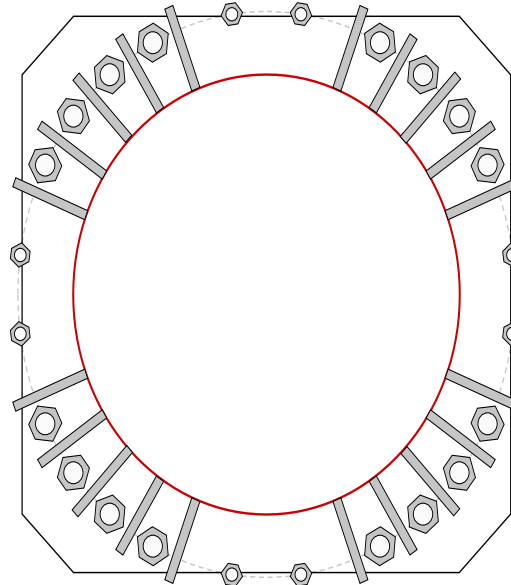


Site Info	
BU #	876320
Site Name	528 Wheelers Farm Rd
Order #	420940 Rev. 4

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2

Applied Loads	
Moment (kip-ft)	4016.00
Axial Force (kips)	58.00
Shear Force (kips)	47.00

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
GROUP 1: (16) 2-1/4" ϕ bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 58" BC
GROUP 2: (8) 1-3/8" ϕ bolts (R71 150ksi 1-3/8" N; Fy=120 ksi, Fu=125 ksi) on 58" BC
Base Plate Data
57" OD x 3.25" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)
Stiffener Data
(20) 18"H x 9"W x 1"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet
vert. weld: 0.375" fillet
Pole Data
45.12" x 0.375" 12-sided pole (A607-60; Fy=60 ksi, Fu=75 ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
GROUP 1:		
Pu_c = 179.22	$\phi Pn_c = 243.75$	Stress Rating
Vu = 2.49	$\phi Vn = 73.13$	70.1%
Mu = n/a	$\phi Mn = n/a$	Pass
GROUP 2:		
Pu_c = 63.94	$\phi Pn_c = 139.2$	Stress Rating
Vu = 0.89	$\phi Vn = 41.76$	43.8%
Mu = n/a	$\phi Mn = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	3.44	(Shear)
Allowable Stress (ksi):	29.25	
Stress Rating:	11.2%	Pass
Stiffener Summary		
Horizontal Weld:	36.3%	Pass
Vertical Weld:	47.6%	Pass
Plate Flexure+Shear:	18.4%	Pass
Plate Tension+Shear:	37.6%	Pass
Plate Compression:	52.9%	Pass
Pole Summary		
Punching Shear:	20.7%	Pass

Drilled Pier Foundation

BU #: 876320
 Site Name: 528 Wheelers Farm Rd
 Order Number: 420940 Rev. 4

TIA-222 Revision: H
 Tower Type: Monopole



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	4016	
Axial Force (kips)	58	
Shear Force (kips)	47	

Material Properties		
Concrete Strength, f _c :	3	ksi
Rebar Strength, F _y :	60	ksi

Pier Design Data		
Depth	19	ft
Ext. Above Grade	0.5	ft

Pier Section 1		
<i>From 0.5' above grade to 19' below grade</i>		
Pier Diameter	7	ft
Rebar Quantity	32	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity		
	Compression	Uplift
D _{v=0} (ft from TOC)	5.88	-
Soil Safety Factor	2.03	-
Max Moment (kip-ft)	4275.49	-
Rating*	62.4%	-

Soil Vertical Capacity		
	Compression	Uplift
Skin Friction (kips)	525.15	-
End Bearing (kips)	651.55	-
Weight of Concrete (kips)	100.50	-
Total Capacity (kips)	1176.70	-
Axial (kips)	158.50	-
Rating*	12.8%	-

Reinforced Concrete Capacity		
	Compression	Uplift
Critical Depth (ft from TOC)	5.69	-
Critical Moment (kip-ft)	4274.94	-
Critical Moment Capacity	7541.05	-
Rating*	54.0%	-

Soil Interaction Rating*	62.4%
Structural Foundation Rating*	54.0%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>

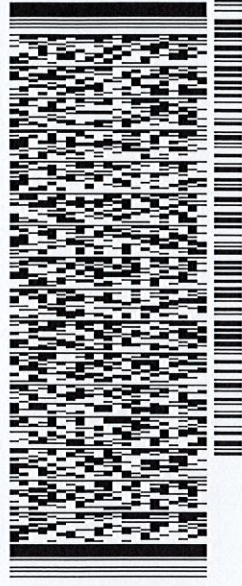
Soil Profile		
Groundwater Depth	7	ft
# of Layers	7	

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ _{soil} (pcf)	γ _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.5	1.5	135	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.5	6	2.5	135	150	0	42	0.000	0.000	0.00	0.00			Cohesionless
4	6	7	1	135	150	0	42	0.000	0.000	1.28	1.28			Cohesionless
5	7	13.5	6.5	72.6	87.6	0	42	0.000	0.000	1.28	1.28			Cohesionless
6	13.5	14	0.5	77.6	87.6	8	0	3.600	3.600	1.28	1.28			Cohesive
7	14	19	5	77.6	87.6	8	0	3.60	3.60	4.32	4.32	22.5737		Cohesive

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MAHWAH, NJ 07430
UNITED STATES US
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ACTWGT: 6.50 LB
CAD: 104924192JNET4100
BILL SENDER

TO EXECUTIVE DIRECTOR: MELANIE BACHAM
CONNECTICUT SITTING COUNCIL
10 FRANKLIN SQUARE

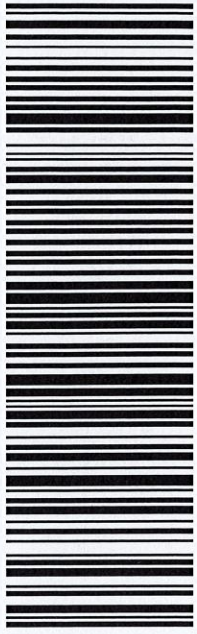
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