

May 23, 2018

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification**
945 Center Street, Wallingford, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 121-foot level of an existing 147-foot tower at 945 Center Street in Wallingford, Connecticut (the “Property”). The tower is owned by Crown Castle (“Crown”). The Council approved Cellco’s use of this tower in 1998. Cellco now intends to replace six (6) of its existing antennas with six (6) new antennas (three (3) model SBNHH-1D65B, 1900 MHz antennas and three (3) model SBNHH-1D65B, 2100 MHz antennas) all at the same level on the tower. Cellco also intends to replace three (3) remote radio heads (“RRHs”) and install three (3) new RRHs and one (1) HYBRIFLEX™ fiber optic antenna cable. Included in Attachment 1 are specifications for Cellco’s replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to William W. Dickinson, Jr., Wallingford’s Mayor; Kacie Hand, Wallingford’s Town Planner; Albert W. Beaumont, the owner of the Property; and Crown, the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure. Cellco’s new antennas and RRHs will be attached to its existing antenna platform at the 121-foot level of the tower.

Melanie A. Bachman, Esq.

May 23, 2018

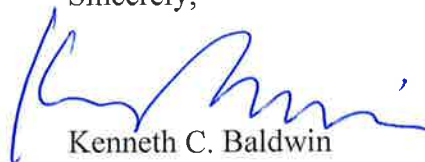
Page 2

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The installation of replacement antennas and RRHs will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included in Attachment 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support Cellco's proposed modifications. (See Structural Analysis Report included in Attachment 3).

A copy of the parcel map and property owner information is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 5.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

William W. Dickinson, Jr., Mayor
Kacie Hand, Town Planner
Albert W. Beaumont
Crown Castle
Tim Parks

ATTACHMENT 1

SBNHH-1D65B

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.



- Interlaced dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR Return Loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0° 14.6	0° 14.5	0° 17.4	0° 17.8	0° 18.1	0° 18.2
	7° 14.6	7° 14.4	3° 17.5	3° 17.9	3° 18.3	3° 18.4
	14° 14.2	14° 13.6	7° 17.4	7° 17.9	7° 18.2	7° 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

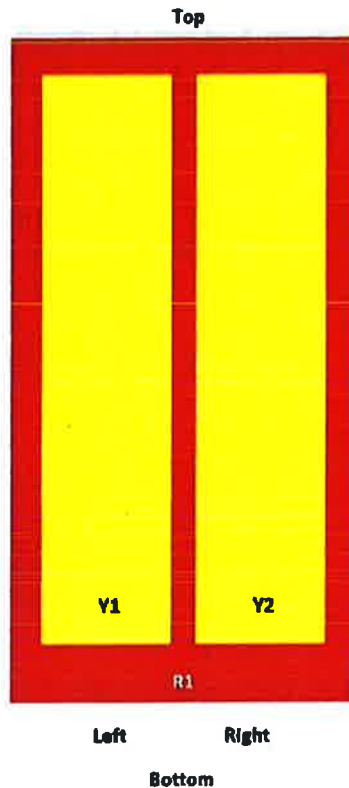
* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, [download the whitepaper Time to Raise the Bar on BSAs.](#)

Array Layout

Product Specifications

SBNHH-1 D65B

SBNHH.65



Array	Freq (MHz)	Combs	RFI (MBET)	ASG REF UID
R1	698-896	1-2	1	ARXXXXXXXXXXXXXXX 1
Y1	1695-2360	1-8	2	ARXXXXXXXXXXXXXXX 2
Y2	1695-2360	1-6		

View from the front of the antenna
(Sizes of colored boxes are not true depictions of array sizes)

General Specifications

Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	6
RF Connector Quantity, low band	2
RF Connector Quantity, high band	4
RF Connector Interface	7-16 DIN Female
Color	Light gray

Product Specifications

SBNHH-1D65B

Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Length	1851.0 mm 72.9 in
Width	301.0 mm 11.9 in
Depth	180.0 mm 7.1 in
Net Weight, without mounting kit	18.4 kg 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10-30 Vdc
Internal RET	High band (1) Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	1 female 1 male

Packed Dimensions

Length	2025.0 mm 79.7 in
Width	390.0 mm 15.4 in
Depth	296.0 mm 11.7 in
Shipping Weight	31.0 kg 68.3 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system



Included Products

Product Specifications



SBNHH1D65B

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

*** Footnotes**

Performance Note **Severe environmental conditions may degrade optimum performance**

ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

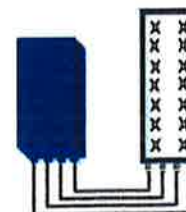


FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R
Can be switched between
modes via SW w/o site
visit

TECHNICAL SPECIFICATIONS

Features & Performance	
Number of TETRA ports	4 duplexed (either 4Tx4R or 2Tx4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Transmit power (maximum) - Reference	10MHz = 1 LTE carrier (in 10MHz occupied bandwidth)
LTE channel bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Return Loss - TX Diversity antenna	2 dB typ. (<2.5 dB max) - 2 or 4 way Rx diversity
Depth (RRH4x30-4R) in mm (in.)	550 x 305 x 220 (21.6" x 12.0" x 9") (with solar shield)
Height in mm (in.)	38 (with solar shield)
Weight in kg (lb) (incl. mounting kit)	26 (57.2) (with solar shield)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	550W typical @100% RF load (in 2TX or 4TX mode)
Environmental conditions	-40°C (-40°F) / +55°C (+131°F)
IP rating (IP65)	IP65
Shock (incl. 100% shock) in g (max)	Frontal: <200N / Lateral: <150N
Interface ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
Other connections	1 AISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Other connections	4 external alarms (1 connector) - 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation considerations	Roof and wall mounting
Regulatory considerations	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein. Copyright © 2014 Alcatel-Lucent. All Rights Reserved

ALCATEL-LUCENT B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B25 RRH4x30 allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity, LTE carriers from 3 MHz up to 20 MHz and up to 65 MHz instantaneous bandwidth.

The Alcatel-Lucent B25 RRH4x30 is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B25 RRH4x30 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

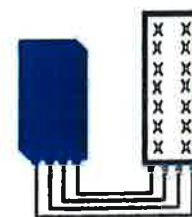


FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- Ready for 3, 5, 10, 15 or 20MHz LTE carrier operation with 4Rx Diversity
- Ready to support up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- Convection-cooled (fan-less)
- Supports AISG 2.0 devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE In PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency and cell edge throughput through MIMO4
- Increases LTE coverage thanks to 4-way Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options (Pole or Wall)



4x30W with 4T4R
or
2x60W with 2T4R
Can be switched between
modes via SW w/o site
visit

TECHNICAL SPECIFICATIONS

Features & specifications	
Number of LR/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Carrier aggregation capability - Downlink	65MHz - Up to 4 LTE carriers (In 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
CP transmit power	2x60W or 4x30W (by SW)
Modem (Hybrid 3GPP Band 2) RF Diversity scheme	2.0 dB typ. (<2.5 dB max) 2 or 4 way Rx diversity
Size (Height) (not incl. antenna) in mm (in.) Weight (incl. water cooling) in g Weight (excl. water cooling) in kg (lb)	538 x 304 x 182 (21.2" x 12.0" x 7.2") 30 24 (53)
DC voltage range DC power consumption	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 580W typical @100% RF load
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) IP65
Wind load (at 100km/h or 62mph)	Frontal: <200N / Lateral : <150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
Alarm interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Other interfaces	1 external alarms connector (4 alarms) 4 RF Tx & 4 RF Rx monitor ports 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory certifications	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein. Copyright © 2014 Alcatel-Lucent. All Rights Reserved

ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.



The Alcatel-Lucent B66a RRH4x45 is a compact (near zero-footprint) solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

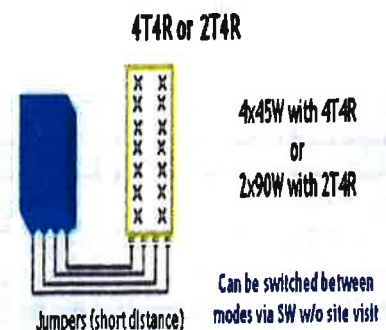
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 2110 - 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



TECHNICAL SPECIFICATIONS

Features & Performance	
Number of TX/RX ports	4 duplexed (either 4T4R or 2T4R selectable by SW)
Frequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz - 4 LTE MIMO carriers (in 70 MHz occupied bandwidth)
LTE carrier bandwidth	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure - RX Diversity scheme Receiver Sensitivity (FRC 4.1-3)	2 dB typical (<2.5 dB max) - 2 or 4 way Rx diversity -104.5 dBm maximum
Size (HxWxD) in mm (in.)	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield)
Volume in Liters	35.5 (with solar shield) 29.7 (without solar shield)
Weight in kg (lb) (w/o mounting HW)	25.8kg (56.8lb) (with solar shield)
DC voltage range	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) UL50E Type 4 Enclosure
Wind load (@150km/h or 93mph)	250N (56lb) Frontal/150N (34lb) Lateral
Antenna ports	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein. Copyright © 2016 Alcatel-Lucent. All Rights Reserved.



HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics - minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding - Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design - Decreases tower loading
- Robust cabling - Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH - Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable - Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket - Ensures long-lasting cable protection



Figure 1: HYBRIFLEX Series

Technical Specifications

Physical Properties			
Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Mechanical Properties			
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
Electrical Properties			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	0.68 (0.205)
DC-Resistance Power Cable, 8.4mm ² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Fiber Properties			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[μm]	50/125
Primary Coating (Acrylate)		[μm]	245
Buffer Diameter, Nominal		[μm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
DC Power Cable Properties			
Size (Power)		[mm (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-93-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Environmental Properties			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

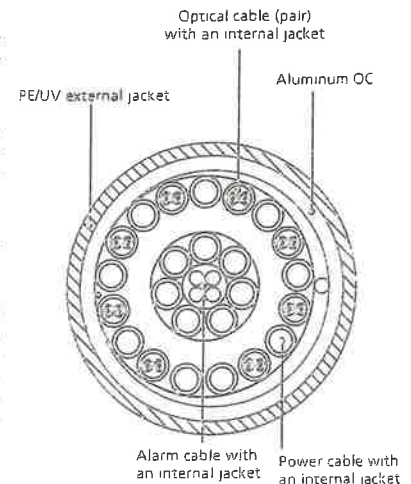


Figure 2: Construction Detail

All information contained in the present datasheet is subject to confirmation at time of ordering.

ATTACHMENT 2

ATTACHMENT 3

Date: November 4, 2016

Sean Dempsey
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6565



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
crown@tepgroup.net

Subject: Structural Analysis Report

Carrier Designation: Verizon Wireless Co-Locate
Carrier Site Number: N/A
Carrier Site Name: Wallingford East, CT

Crown Castle Designation:
Crown Castle BU Number: 876310
Crown Castle Site Name: Beaumont Farm
Crown Castle JDE Job Number: 398753
Crown Castle Work Order Number: 1320220
Crown Castle Application Number: 362962 Rev. 5

Engineering Firm Designation: TEP Project Number: 72875.101124

Site Data: 945 East Center St., Wallingford, New Haven County, CT 06492
Latitude 41° 26' 37.36", Longitude -72° 47' 46.56"
147 Foot - Monopole Tower

Dear Sean Dempsey,

Tower Engineering Professionals is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 966616, in accordance with application 362962, revision 5.

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:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code (2012 International Building Code) based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3.1 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Tables 1 and 2 and the attached drawing for the determined available structural capacity to be effective.

We at Tower Engineering Professionals 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.

Structural analysis prepared by: Dan A. Reidenbach, E.I. / MZS

Respectfully submitted by:

Graham M. Andres, P.E.



TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Antenna and Cable Information

Table 2 - Existing and Reserved Antenna and Cable Information

Table 3 - Design Antenna and Cable Information

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Table 6 - Tower Component Stresses vs. Capacity

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 147-ft monopole tower designed by Paul J. Ford and Company in June of 1998. The tower was originally designed to a height of 133-ft for a wind speed of 90 mph per TIA/EIA-222-F for the appurtenances listed in Table 3. The tower was previously extended 14-ft per reinforcement drawings prepared by URS Greiner Woodward Clyde in December of 1999, bringing the overall tower height to 147-ft. TEP did not visit the site. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

The analysis has been performed in accordance with the ANSI/TIA-222-G-2-2009 Structural Standard for Antenna Supporting Structures and Antennas – Addendum 2 using a nominal 3-second gust wind speed of 97 mph with no ice, 50 mph with 0.75 inch ice thickness and 60 mph under service loads with the following design criteria:

Type of Analysis: **Rigorous Structural Analysis**

Classification of Structure: **Class II**

Exposure Category: **Exposure C**

Topographic Category: **Category 1**

Earthquake Category: **Not Considered**

Earthquake effects may be ignored per this standard for site locations where Ss does not exceed 1.0. (New Haven County Max Ss = 0.32).

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
121.0	121.0	6	Commscope	SBNHH-1D65B w/ Mount Pipe	1	1-5/8	1
		3	Alcatel Lucent	RRH2x60-1900A-4R			
		3	Alcatel Lucent	B66A RRH4X45			
		3	Alcatel Lucent	B13 RRH 4X30			
		1	RFS Celwave	DB-T1-6Z-8AB-0Z			

Note:

- 1) See "Appendix B – Base Level Drawing" for assumed feed line configuration.

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
130.0	132.0	1	Andrew	VHLP1-23	6 3 3 1	5/16 1-1/4 1/2 7/8	1
		1	Andrew	VHLP2-23			
		1	Andrew	VHLP2.5-23			
	130.0	3	RFS Celwave	APXVTM14-C-120			
		2	RFS Celwave	APXVSP18-C-A20			
		1	RFS Celwave	APXV9ERR18-C-A20			
		9	RFS Celwave	ACU-A20-N			
		3	Alcatel Lucent	TD-RRH8x20-25			
		3	Alcatel Lucent	1900MHz RRH (65MHz)			
		1	Tower Mounts	Miscellaneous [NA 510-3]			
	128.0	1	Tower Mounts	Platform Mount [LP 1201-1]			
		3	Argus Technologies	LLPX310R			
	125.0	3	Samsung Telecommunications	FDD_R6_RRH			
		3	Alcatel Lucent	800MHz RRH			
121.0	121.0	3	Alcatel Lucent	800 External Notch Filter			
		3	Commscope	HBX-6516DS-VTM w/ Mount Pipe			
		3	Antel	BXA-171063/12CF w/ Mount Pipe			
		6	RFS Celwave	FD9R6004/2C-3L			
	3	Alcatel Lucent	RRH2x40-AWS				
	121.0	4	Antel	LPA-80080-6CF-EDIN w/ Mount Pipe			
		2	Antel	BXA-70063/6CFx2 w/ Mount Pipe			
		2	Antel	LPA-80063/6CF w/ Mount Pipe			
		1	Antel	BXA-70063/6CFx4 w/ Mount Pipe			
		1	RFS Celwave	DB-T1-6Z-8AB-0Z			
		1	Tower Mounts	Platform Mount [LP 1201-1]			
1		Tower Mounts	Platform Mount [LP 1201-1]				

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
111.0	112.0	3	CCI Antennas	TPA-65R-LCUUUU-H6 w/ Mount Pipe	-	-	3
		3	CCI Antennas	DTMABP7819VG12A			
		3	Ericsson	RRUS12/RRUS A2			
	3	Powerwave Technologies	7770.00 w/ Mount Pipe	6 2 1	1-1/4 3/4 3/8	1	
	3	Ericsson	RRUS-11				
	1	Raycap	DC6-48-60-18-8F				
111.0	1	Tower Mounts	Platform Mount [LP 1201-1]				
70.0	70.0	1	Kathrein	OG-860/1920/GPS-A	1	1/2	1
		1	Tower Mounts	Side Arm Mount [SO 701-1]			

- Notes:
 1) Existing equipment
 2) Existing equipment to be removed; not considered in this analysis
 3) Reserved equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130.0	130.0	12	Decibel	DB980H	-	-
110.0	110.0	12	Generic	3.9 sq.ft. Panel Antenna	-	-
95.0	95.0	12	Generic	3.9 sq.ft. Panel Antenna	-	-
70.0	70.0	1	Generic	GPS Antenna	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Geotechnical Report	Dr. Clarence Welti, P.E., P.C.	1531484	CCISites
Tower Foundation Drawings	Paul J. Ford and Company	1855118	CCISites
Tower Manufacturer Drawings	Paul J. Ford and Company	1855980	CCISites
Tower Reinforcement Drawings	URS Greiner Woodward Clyde	2015154	CCISites

3.1) Analysis Method

tnxTower (version 7.0.5.1), 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.

3.2) Assumptions

- 1) The tower and foundation were built in accordance with the manufacturer's specifications.
- 2) The tower and foundation have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and "Appendix B – Base Level Drawing".
- 4) All tower components are in sufficient condition to carry their full design capacity.
- 5) 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.
- 6) 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.

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 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	ϕP_{allow} (lb)	% Capacity	Pass / Fail
L1	147 - 133	Pole	TP12.75x12.75x0.5	1	-1036.16	606131.00	2.4	Pass
L2	133 - 85.5	Pole	TP29.418x19.537x0.313	2	-16827.70	2074020.00	63.6	Pass
L3	85.5 - 42.75	Pole	TP37.687x27.477x0.375	3	-26236.10	3116790.00	81.9	Pass
L4	42.75 - 0	Pole	TP45.83x35.894x0.438	4	-41207.70	4432580.00	83.4	Pass
							Summary	
						Pole (L4)	83.4	Pass
						Rating =	83.4	Pass

Table 6 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	133.0	4.9	Pass
1	Anchor Rods	-	74.7	Pass
1	Base Plate	-	78.0	Pass
1	Base Foundation Soil Interaction	-	81.4	Pass
1	Base Foundation Structural	-	24.9	Pass

Structure Rating (max from all components) =	83.4%
---	--------------

Note:

- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.

4.1) Recommendations

- 1) If the load differs from that described in Tables 1 and 2 of this report, "Appendix B – Base Level Drawing" 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

Section	1	2	3	4
Length (ft)	14.00	47.50	46.50	47.50
Number of Sides	1	12	12	12
Thickness (in)	0.500	0.313	0.375	0.438
Socket Length (ft)		3.75	4.75	
Top Dia (in)	12.750	19.537	27.477	35.894
Bot Dia (in)	12.750	29.418	37.687	45.830
Grade		A53-B-35	A607-65	20205.2
Weight (lb)	916.7	3930.3	6153.6	9204.7

147.0 ft
133.0 ft
85.5 ft
42.8 ft
0.0 ft

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVTM14-C-120	130	SBNHH-1D65B w/ Mount Pipe	121
APXVTM14-C-120	130	(2) SBNHH-1D65B w/ Mount Pipe	121
APXVTM14-C-120	130	RRH2x60-1900A-4R	121
LLPX310R	130	RRH2x60-1900A-4R	121
LLPX310R	130	RRH2x60-1900A-4R	121
LLPX310R	130	B13 RRH 4X30	121
APXV9ERRR18-C-A20	130	B13 RRH 4X30	121
APXVSP18-C-A20	130	B13 RRH 4X30	121
APXVSP18-C-A20	130	B66A RRH4X45	121
TD-RRH8x20-25	130	B66A RRH4X45	121
TD-RRH8x20-25	130	B66A RRH4X45	121
TD-RRH8x20-25	130	DB-T1-6Z-8AB-0Z	121
FDD_R6_RRH	130	Platform Mount [LP 1201-1]	121
FDD_R6_RRH	130	(2) LPA-80080-6CF-EDIN w/ Mount Pipe	121
FDD_R6_RRH	130	(2) LPA-80080-6CF-EDIN w/ Mount Pipe	121
800 EXTERNAL NOTCH FILTER	130	(2) LPA-80063/6CF w/ Mount Pipe	121
800 EXTERNAL NOTCH FILTER	130	RRUS-11	111
800 EXTERNAL NOTCH FILTER	130	RRUS-11	111
(3) ACU-A20-N	130	RRUS-11	111
(3) ACU-A20-N	130	RRUS-11	111
(3) ACU-A20-N	130	RRUS-11	111
800MHZ RRH	130	DC6-48-60-18-8F	111
800MHZ RRH	130	TPA-65R-LCUUUU-H6 w/ Mount Pipe	111
800MHZ RRH	130	TPA-65R-LCUUUU-H6 w/ Mount Pipe	111
800MHZ RRH	130	TPA-65R-LCUUUU-H6 w/ Mount Pipe	111
1900MHz RRH (65MHz)	130	DTMABP7819VG12A	111
1900MHz RRH (65MHz)	130	DTMABP7819VG12A	111
1900MHz RRH (65MHz)	130	DTMABP7819VG12A	111
2.4" Dia. x 6' Mount Pipe	130	DTMABP7819VG12A	111
2.4" Dia. x 6' Mount Pipe	130	RRUS12/RRUS A2	111
2.4" Dia. x 6' Mount Pipe	130	RRUS12/RRUS A2	111
2.4" Dia. x 6' Mount Pipe	130	RRUS12/RRUS A2	111
Platform Mount [LP 1201-1]	130	RRUS12/RRUS A2	111
Miscellaneous [NA 510-3]	130	2.4" Dia. x 6' Mount Pipe	111
VHLP1-23	130	2.4" Dia. x 6' Mount Pipe	111
VHLP2-23	130	Platform Mount [LP 1201-1]	111
VHLP2.5-23	130	7770.00 w/ Mount Pipe	111
BXA-70063/6CFx2 w/ Mount Pipe	121	7770.00 w/ Mount Pipe	111
BXA-70063/6CFx2 w/ Mount Pipe	121	7770.00 w/ Mount Pipe	111
BXA-70063/6CFx4 w/ Mount Pipe	121	Side Arm Mount [SO 701-1]	70
DB-T1-6Z-8AB-0Z	121	OG-850/1920/GPS-A	70
(2) SBNHH-1D65B w/ Mount Pipe	121		
SBNHH-1D65B w/ Mount Pipe	121		

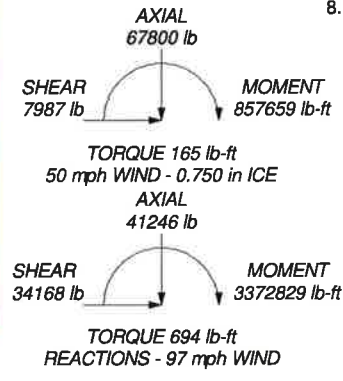
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	60 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 83.4%

ALL REACTIONS ARE FACTORED



 Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job: Beaumont Farm (BU 876310) Project: TEP No. 72875.101124
	Client: Crown Castle Drawn by: mzsmee App'd: Code: TIA-222-G Date: 11/04/16 Scale: N Path: _____ Dwg No.: _____

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 1 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Tower Input Data

There is a pole section.

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

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Basic wind speed of 97 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.750 in.

Ice thickness is considered to increase with height.

Ice density of 56 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.

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 | <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-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	147.00-133.00	14.00	0.000	Round	12.750	12.750	0.500		A53-B-35 (35 ksi)
L2	133.00-85.50	47.50	3.750	12	19.537	29.418	0.313	1.250	A607-65 (65 ksi)

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 2 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

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
L3	85.50-42.75	46.50	4.750	12	27.477	37.687	0.375	1.500	A607-65 (65 ksi)
L4	42.75-0.00	47.50		12	35.894	45.830	0.438	1.750	A607-65 (65 ksi)

Tapered Pole Properties

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	12.750	19.242	361.544	4.335	6.375	56.713	723.088	9.615	0.000	0
	12.750	19.242	361.544	4.335	6.375	56.713	723.088	9.615	0.000	0
L2	20.226	19.345	912.551	6.882	10.120	90.172	1849.075	9.521	4.398	14.075
	30.456	29.287	3166.774	10.420	15.239	207.814	6416.742	14.414	7.047	22.549
L3	29.299	32.726	3068.189	9.703	14.233	215.567	6216.983	16.107	6.359	16.957
	39.016	45.054	8006.057	13.358	19.522	410.107	16222.442	22.174	9.095	24.254
L4	38.189	49.949	8015.109	12.693	18.593	431.079	16240.785	24.584	8.447	19.308
	47.447	63.947	16817.916	16.251	23.740	708.423	34077.658	31.473	11.110	25.394

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	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
L1 147.00-133.00				1	1	1			
L2 133.00-85.50				1	1	1			
L3 85.50-42.75				1	1	1			
L4 42.75-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Misc									
Safety Line 3/8	A	Surface Ar (CaAa)	133.00 - 0.00	1	1	-0.250 -0.250	0.375		0.220
Step Pegs (5/8" SR) 7-in. w/30" step ***	A	Surface Ar (CaAa)	147.00 - 0.00	1	1	-0.250 -0.250	0.350		0.487

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight plf
130 7983A(1/2")	C	No	Inside Pole	130.00 - 0.00	3	No Ice 0.00	0.084

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 3 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _{AA}		Weight plf
						ft ² /ft	plf	
9207(5/16")	C	No	Inside Pole	130.00 - 0.00	6	1/2" Ice	0.00	0.084
						1" Ice	0.00	0.084
						No Ice	0.00	0.600
						1/2" Ice	0.00	0.600
						1" Ice	0.00	0.600
HB114-08U3M12-xxxF(7/8")	C	No	Inside Pole	130.00 - 0.00	1	No Ice	0.00	0.683
						1/2" Ice	0.00	0.683
						1" Ice	0.00	0.683
						No Ice	0.00	1.200
						1/2" Ice	0.00	1.200
HB114-1-0813U4-M5J(1 1/4")	C	No	Inside Pole	130.00 - 0.00	3	1" Ice	0.00	1.200
						No Ice	0.00	1.200
						1/2" Ice	0.00	1.200
						1" Ice	0.00	1.200
						No Ice	0.00	0.340
2" Flexible Conduit	C	No	Inside Pole	130.00 - 0.00	2	1/2" Ice	0.00	0.340
						1" Ice	0.00	0.340
						No Ice	0.00	0.340
						1/2" Ice	0.00	0.340
						1" Ice	0.00	0.340
121	A	No	Inside Pole	121.00 - 0.00	12	No Ice	0.00	0.920
1/2" Ice						0.00	0.920	
1" Ice						0.00	0.920	
No Ice						0.00	1.300	
1/2" Ice						0.00	1.300	
HB158-1-08U8-S8J18(1-5/8")	A	No	Inside Pole	121.00 - 0.00	1	1" Ice	0.00	1.300
						No Ice	0.00	1.300
						1/2" Ice	0.00	1.300
						1" Ice	0.00	1.300
						No Ice	0.00	1.300
HB158-1-08U8-S8J18(1-5/8")	A	No	Inside Pole	121.00 - 0.00	1	1/2" Ice	0.00	1.300
						1" Ice	0.00	1.300
						No Ice	0.00	1.300
						1/2" Ice	0.00	1.300
						1" Ice	0.00	1.300
111	C	No	Inside Pole	111.00 - 0.00	6	No Ice	0.00	0.700
1/2" Ice						0.00	0.700	
1" Ice						0.00	0.700	
No Ice						0.00	0.340	
1/2" Ice						0.00	0.340	
2" Flexible Conduit	C	No	Inside Pole	111.00 - 0.00	2	1" Ice	0.00	0.340
						No Ice	0.00	0.340
						1/2" Ice	0.00	0.340
						1" Ice	0.00	0.340
						No Ice	0.00	0.584
WR-VG86ST-BRD(3/4")	C	No	Inside Pole	111.00 - 0.00	2	1/2" Ice	0.00	0.584
						1" Ice	0.00	0.584
						No Ice	0.00	0.584
						1/2" Ice	0.00	0.584
						1" Ice	0.00	0.584
FB-L98B-002-75000(3/8")	C	No	Inside Pole	111.00 - 0.00	1	No Ice	0.00	0.059
						1/2" Ice	0.00	0.059
						1" Ice	0.00	0.059
						No Ice	0.00	0.150
						1/2" Ice	0.00	0.150
70	C	No	Inside Pole	70.00 - 0.00	1	1" Ice	0.00	0.150
No Ice						0.00	0.150	
1/2" Ice						0.00	0.150	
1" Ice						0.00	0.150	
No Ice						0.00	0.150	

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R	A _F	C _{AA} In Face	C _{AA} Out Face	Weight lb
			ft ²	ft ²	ft ²	ft ²	
L1	147.00-133.00	A	0.000	0.000	0.490	0.000	6.82
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	133.00-85.50	A	0.000	0.000	3.444	0.000	517.80
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	547.99
L3	85.50-42.75	A	0.000	0.000	3.099	0.000	613.33
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	641.99
L4	42.75-0.00	A	0.000	0.000	3.099	0.000	613.33

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 4 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzmsee

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 lb
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	644.31

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 lb
L1	147.00-133.00	A	1.733	0.000	0.000	5.343	0.000	68.58
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	133.00-85.50	A	1.689	0.000	0.000	35.529	0.000	919.83
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	547.99
L3	85.50-42.75	A	1.601	0.000	0.000	31.976	0.000	975.16
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	641.99
L4	42.75-0.00	A	1.437	0.000	0.000	30.484	0.000	941.87
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	644.31

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	147.00-133.00	-0.052	0.000	-0.361	0.000
L2	133.00-85.50	-0.103	0.000	-0.739	0.000
L3	85.50-42.75	-0.104	0.000	-0.805	0.000
L4	42.75-0.00	-0.104	0.000	-0.818	0.000

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	20	Step Pegs (5/8" SR) 7-in. w/30" step	133.00 - 147.00	1.0000	1.0000
L2	19	Safety Line 3/8	85.50 - 133.00	1.0000	1.0000
L2	20	Step Pegs (5/8" SR) 7-in. w/30" step	85.50 - 133.00	1.0000	1.0000
L3	19	Safety Line 3/8	42.75 - 85.50	1.0000	1.0000
L3	20	Step Pegs (5/8" SR) 7-in. w/30" step	42.75 - 85.50	1.0000	1.0000

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Beaumont Farm (BU 876310)	Page	5 of 17
	Project	TEP No. 72875.101124	Date	15:36:47 11/04/16
	Client	Crown Castle	Designed by	mzsmee

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
130									
APXVTM14-C-120	A	From Centroid-Fa	4.00 2.000 0.000	40.000	130.00	No Ice	6.34	3.61	56.20
		ce				1/2" Ice	6.72	3.97	95.73
						1" Ice	7.10	4.33	140.32
APXVTM14-C-120	B	From Centroid-Fa	4.00 -7.000 0.000	20.000	130.00	No Ice	6.34	3.61	56.20
		ce				1/2" Ice	6.72	3.97	95.73
						1" Ice	7.10	4.33	140.32
APXVTM14-C-120	C	From Centroid-Fa	4.00 -7.000 0.000	20.000	130.00	No Ice	6.34	3.61	56.20
		ce				1/2" Ice	6.72	3.97	95.73
						1" Ice	7.10	4.33	140.32
LLPX310R	A	From Centroid-Fa	4.00 -2.000 -2.000	20.000	130.00	No Ice	4.31	1.96	28.66
		ce				1/2" Ice	4.60	2.23	54.63
						1" Ice	4.90	2.50	84.59
LLPX310R	B	From Centroid-Fa	4.00 -2.000 -2.000	10.000	130.00	No Ice	4.31	1.96	28.66
		ce				1/2" Ice	4.60	2.23	54.63
						1" Ice	4.90	2.50	84.59
LLPX310R	C	From Centroid-Fa	4.00 -2.000 -2.000	20.000	130.00	No Ice	4.31	1.96	28.66
		ce				1/2" Ice	4.60	2.23	54.63
						1" Ice	4.90	2.50	84.59
APXV9ERR18-C-A20	A	From Centroid-Fa	4.00 7.000 0.000	40.000	130.00	No Ice	8.02	5.81	62.00
		ce				1/2" Ice	8.48	6.27	113.99
						1" Ice	8.94	6.73	172.12
APXVSPP18-C-A20	B	From Centroid-Fa	4.00 7.000 0.000	30.000	130.00	No Ice	8.02	5.28	57.00
		ce				1/2" Ice	8.48	5.74	106.52
						1" Ice	8.94	6.20	162.12
APXVSPP18-C-A20	C	From Centroid-Fa	4.00 7.000 0.000	20.000	130.00	No Ice	8.02	5.28	57.00
		ce				1/2" Ice	8.48	5.74	106.52
						1" Ice	8.94	6.20	162.12
TD-RRH8x20-25	A	From Face	0.50 2.000 0.000	0.000	130.00	No Ice	4.05	1.53	70.00
						1/2" Ice	4.30	1.71	97.15
						1" Ice	4.56	1.90	127.83
TD-RRH8x20-25	B	From Face	0.50 -7.000 0.000	0.000	130.00	No Ice	4.05	1.53	70.00
						1/2" Ice	4.30	1.71	97.15
						1" Ice	4.56	1.90	127.83
TD-RRH8x20-25	C	From Face	0.50 -7.000 0.000	0.000	130.00	No Ice	4.05	1.53	70.00
						1/2" Ice	4.30	1.71	97.15
						1" Ice	4.56	1.90	127.83
FDD_R6_RRH	A	From Centroid-Fa	4.00 -2.000 -2.000	20.000	130.00	No Ice	1.53	0.68	33.00
		ce				1/2" Ice	1.69	0.80	44.50
						1" Ice	1.85	0.92	58.31
FDD_R6_RRH	B	From Centroid-Fa	4.00 -2.000 -2.000	10.000	130.00	No Ice	1.53	0.68	33.00
		ce				1/2" Ice	1.69	0.80	44.50
						1" Ice	1.85	0.92	58.31
FDD_R6_RRH	C	From Centroid-Fa	4.00 -2.000 -2.000	20.000	130.00	No Ice	1.53	0.68	33.00
		ce				1/2" Ice	1.69	0.80	44.50
						1" Ice	1.85	0.92	58.31
800 EXTERNAL NOTCH FILTER	A	From Face	0.50 0.000 -5.000	0.000	130.00	No Ice	0.66	0.32	11.00
						1/2" Ice	0.76	0.40	16.81
						1" Ice	0.87	0.48	24.26
800 EXTERNAL NOTCH FILTER	B	From Face	0.50 0.000 -5.000	0.000	130.00	No Ice	0.66	0.32	11.00
						1/2" Ice	0.76	0.40	16.81
						1" Ice	0.87	0.48	24.26

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 6 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA}		Weight
			Horz	Vert			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	lb
800 EXTERNAL NOTCH FILTER	C	From Face	0.50	0.000	130.00	No Ice	0.66	0.32	11.00
			0.000			1/2" Ice	0.76	0.40	16.81
			-5.000			1" Ice	0.87	0.48	24.26
(3) ACU-A20-N	A	From Centroid-Face	4.00	40.000	130.00	No Ice	0.07	0.12	1.04
			7.000			1/2" Ice	0.10	0.16	2.32
			0.000			1" Ice	0.15	0.21	4.41
(3) ACU-A20-N	B	From Centroid-Face	4.00	30.000	130.00	No Ice	0.07	0.12	1.04
			7.000			1/2" Ice	0.10	0.16	2.32
			0.000			1" Ice	0.15	0.21	4.41
(3) ACU-A20-N	C	From Centroid-Face	4.00	20.000	130.00	No Ice	0.07	0.12	1.04
			7.000			1/2" Ice	0.10	0.16	2.32
			0.000			1" Ice	0.15	0.21	4.41
800MHZ RRH	A	From Face	0.50	0.000	130.00	No Ice	2.13	1.77	53.00
			0.000			1/2" Ice	2.32	1.95	74.19
			-5.000			1" Ice	2.51	2.13	98.39
800MHZ RRH	B	From Face	0.50	0.000	130.00	No Ice	2.13	1.77	53.00
			0.000			1/2" Ice	2.32	1.95	74.19
			-5.000			1" Ice	2.51	2.13	98.39
800MHZ RRH	C	From Face	0.50	0.000	130.00	No Ice	2.13	1.77	53.00
			0.000			1/2" Ice	2.32	1.95	74.19
			-5.000			1" Ice	2.51	2.13	98.39
1900MHz RRH (65MHz)	A	From Leg	0.50	0.000	130.00	No Ice	2.31	2.38	60.00
			0.000			1/2" Ice	2.52	2.58	83.90
			0.000			1" Ice	2.73	2.79	111.08
1900MHz RRH (65MHz)	B	From Leg	0.50	0.000	130.00	No Ice	2.31	2.38	60.00
			0.000			1/2" Ice	2.52	2.58	83.90
			0.000			1" Ice	2.73	2.79	111.08
1900MHz RRH (65MHz)	C	From Leg	0.50	0.000	130.00	No Ice	2.31	2.38	60.00
			0.000			1/2" Ice	2.52	2.58	83.90
			0.000			1" Ice	2.73	2.79	111.08
2.4" Dia. x 6' Mount Pipe	A	From Centroid-Leg	4.00	0.000	130.00	No Ice	1.43	1.43	21.90
			7.000			1/2" Ice	1.93	1.93	37.81
			0.000			1" Ice	2.31	2.31	55.56
2.4" Dia. x 6' Mount Pipe	B	From Centroid-Leg	4.00	0.000	130.00	No Ice	1.43	1.43	21.90
			7.000			1/2" Ice	1.93	1.93	37.81
			0.000			1" Ice	2.31	2.31	55.56
2.4" Dia. x 6' Mount Pipe	C	From Centroid-Leg	4.00	0.000	130.00	No Ice	1.43	1.43	21.90
			7.000			1/2" Ice	1.93	1.93	37.81
			0.000			1" Ice	2.31	2.31	55.56
Platform Mount [LP 1201-1]	C	None		0.000	130.00	No Ice	23.10	23.10	2100.00
						1/2" Ice	26.80	26.80	2500.00
						1" Ice	30.50	30.50	2900.00
Miscellaneous [NA 510-3]	C	None		0.000	130.00	No Ice	19.70	19.70	519.20
						1/2" Ice	28.20	28.20	721.60
						1" Ice	36.70	36.70	924.00
121									
(2) LPA-80080-6CF-EDIN w/ Mount Pipe	A	From Centroid-Leg	4.00	30.000	121.00	No Ice	4.56	10.27	46.22
			0.000			1/2" Ice	5.10	11.44	112.73
			0.000			1" Ice	5.61	12.32	187.10
(2) LPA-80080-6CF-EDIN w/ Mount Pipe	B	From Centroid-Leg	4.00	30.000	121.00	No Ice	4.56	10.27	46.22
			0.000			1/2" Ice	5.10	11.44	112.73
			0.000			1" Ice	5.61	12.32	187.10
(2) LPA-80063/6CF w/ Mount Pipe	C	From Centroid-Leg	4.00	30.000	121.00	No Ice	10.06	10.45	56.20
			0.000			1/2" Ice	10.75	11.74	151.25
			0.000			1" Ice	11.40	12.87	254.99
BXA-70063/6CFx2 w/ Mount Pipe	A	From Centroid-Leg	4.00	30.000	121.00	No Ice	7.83	5.42	42.55
			0.000			1/2" Ice	8.39	6.58	101.64

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 7 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft ²	ft ²	lb	
BXA-70063/6CFx2 w/ Mount Pipe	B	g	0.000		30.000	121.00	1" Ice	8.91	7.45	168.43
		From	4.00				No Ice	7.83	5.42	42.55
		Centroid-Le	-3.500				1/2" Ice	8.39	6.58	101.64
BXA-70063/6CFx4 w/ Mount Pipe	C	g	0.000		30.000	121.00	1" Ice	8.91	7.45	168.43
		From	4.00				No Ice	7.81	5.40	42.25
		Centroid-Le	0.000				1/2" Ice	8.36	6.55	101.12
DB-T1-6Z-8AB-0Z	A	g	0.000		30.000	121.00	1" Ice	8.87	7.41	167.67
		From	4.00				No Ice	4.80	2.00	44.00
		Centroid-Le	3.500				1/2" Ice	5.07	2.19	80.13
(2) SBNHH-1D65B w/ Mount Pipe	A	g	0.000		30.000	121.00	1" Ice	5.35	2.39	120.22
		From	4.00				No Ice	8.16	7.12	75.34
		Centroid-Le	0.000				1/2" Ice	8.62	7.94	144.51
SBNHH-1D65B w/ Mount Pipe	B	g	0.000		30.000	121.00	1" Ice	9.09	8.78	222.29
		From	4.00				No Ice	8.16	7.12	75.34
		Centroid-Le	0.000				1/2" Ice	8.62	7.94	144.51
SBNHH-1D65B w/ Mount Pipe	B	g	0.000		40.000	121.00	1" Ice	9.09	8.78	222.29
		From	4.00				No Ice	8.16	7.12	75.34
		Centroid-Le	3.500				1/2" Ice	8.62	7.94	144.51
(2) SBNHH-1D65B w/ Mount Pipe	C	g	0.000		30.000	121.00	1" Ice	9.09	8.78	222.29
		From	4.00				No Ice	8.16	7.12	75.34
		Centroid-Le	0.000				1/2" Ice	8.62	7.94	144.51
RRH2x60-1900A-4R	A	g	0.000		30.000	121.00	1" Ice	9.09	8.78	222.29
		From	4.00				No Ice	1.84	1.35	46.00
		Centroid-Le	-3.500				1/2" Ice	2.01	1.50	62.66
RRH2x60-1900A-4R	B	g	0.000		30.000	121.00	1" Ice	2.20	1.67	82.05
		From	4.00				No Ice	1.84	1.35	46.00
		Centroid-Le	0.000				1/2" Ice	2.01	1.50	62.66
RRH2x60-1900A-4R	C	g	0.000		30.000	121.00	1" Ice	2.20	1.67	82.05
		From	4.00				No Ice	1.84	1.35	46.00
		Centroid-Le	3.500				1/2" Ice	2.01	1.50	62.66
B13 RRH 4X30	A	g	0.000		30.000	121.00	1" Ice	2.20	1.67	82.05
		From	4.00				No Ice	2.06	1.32	55.60
		Centroid-Le	0.000				1/2" Ice	2.24	1.48	72.88
B13 RRH 4X30	B	g	0.000		30.000	121.00	1" Ice	2.43	1.64	92.95
		From	4.00				No Ice	2.06	1.32	55.60
		Centroid-Le	-3.500				1/2" Ice	2.24	1.48	72.88
B13 RRH 4X30	C	g	0.000		30.000	121.00	1" Ice	2.43	1.64	92.95
		From	4.00				No Ice	2.06	1.32	55.60
		Centroid-Le	0.000				1/2" Ice	2.24	1.48	72.88
B66A RRH4X45	A	g	0.000		30.000	121.00	1" Ice	2.43	1.64	92.95
		From	4.00				No Ice	2.58	1.63	56.80
		Centroid-Le	3.500				1/2" Ice	2.79	1.81	77.27
B66A RRH4X45	B	g	0.000		40.000	121.00	1" Ice	3.01	2.00	100.86
		From	4.00				No Ice	2.58	1.63	56.80
		Centroid-Le	3.500				1/2" Ice	2.79	1.81	77.27
B66A RRH4X45	C	g	0.000		30.000	121.00	1" Ice	3.01	2.00	100.86
		From	4.00				No Ice	2.58	1.63	56.80
		Centroid-Le	-3.500				1/2" Ice	2.79	1.81	77.27
DB-T1-6Z-8AB-0Z	C	g	0.000		30.000	121.00	1" Ice	3.01	2.00	100.86
		From	4.00				No Ice	4.80	2.00	44.00
		Centroid-Le	0.000				1/2" Ice	5.07	2.19	80.13
Platform Mount [LP 1201-1]	C	g	0.000		0.000	121.00	1" Ice	5.35	2.39	120.22
		None					No Ice	23.10	23.10	2100.00
							1/2" Ice	26.80	26.80	2500.00
							1" Ice	30.50	30.50	2900.00

111

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 8 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft ²	ft ²	lb	
7770.00 w/ Mount Pipe	A	From	4.00		20.000	111.00	No Ice	5.75	4.25	55.38
		Centroid-Le	-7.000				1/2" Ice	6.18	5.01	102.81
		g	1.000				1" Ice	6.61	5.71	156.64
7770.00 w/ Mount Pipe	B	From	4.00		20.000	111.00	No Ice	5.75	4.25	55.38
		Centroid-Le	-7.000				1/2" Ice	6.18	5.01	102.81
		g	1.000				1" Ice	6.61	5.71	156.64
7770.00 w/ Mount Pipe	C	From	4.00		20.000	111.00	No Ice	5.75	4.25	55.38
		Centroid-Le	-7.000				1/2" Ice	6.18	5.01	102.81
		g	1.000				1" Ice	6.61	5.71	156.64
RRUS-11	A	From	4.00		20.000	111.00	No Ice	2.79	1.19	50.00
		Centroid-Le	0.000				1/2" Ice	3.00	1.34	70.87
		g	1.000				1" Ice	3.21	1.50	94.78
RRUS-11	B	From	4.00		20.000	111.00	No Ice	2.79	1.19	50.00
		Centroid-Le	0.000				1/2" Ice	3.00	1.34	70.87
		g	1.000				1" Ice	3.21	1.50	94.78
RRUS-11	C	From	4.00		20.000	111.00	No Ice	2.79	1.19	50.00
		Centroid-Le	0.000				1/2" Ice	3.00	1.34	70.87
		g	1.000				1" Ice	3.21	1.50	94.78
DC6-48-60-18-8F	A	From	4.00		20.000	111.00	No Ice	1.21	1.21	32.80
		Centroid-Le	0.000				1/2" Ice	1.89	1.89	54.76
		g	1.000				1" Ice	2.11	2.11	79.58
TPA-65R-LCUUUU-H6 w/ Mount Pipe	A	From	4.00		20.000	111.00	No Ice	8.16	9.46	96.51
		Centroid-Le	0.000				1/2" Ice	8.71	10.63	176.35
		g	1.000				1" Ice	9.23	11.51	264.39
TPA-65R-LCUUUU-H6 w/ Mount Pipe	B	From	4.00		20.000	111.00	No Ice	8.16	9.46	96.51
		Centroid-Le	0.000				1/2" Ice	8.71	10.63	176.35
		g	1.000				1" Ice	9.23	11.51	264.39
TPA-65R-LCUUUU-H6 w/ Mount Pipe	C	From	4.00		20.000	111.00	No Ice	8.16	9.46	96.51
		Centroid-Le	0.000				1/2" Ice	8.71	10.63	176.35
		g	1.000				1" Ice	9.23	11.51	264.39
DTMABP7819VG12A	A	From	4.00		20.000	111.00	No Ice	0.98	0.34	19.18
		Centroid-Le	-7.000				1/2" Ice	1.10	0.42	26.48
		g	1.000				1" Ice	1.23	0.51	35.63
DTMABP7819VG12A	B	From	4.00		20.000	111.00	No Ice	0.98	0.34	19.18
		Centroid-Le	-7.000				1/2" Ice	1.10	0.42	26.48
		g	1.000				1" Ice	1.23	0.51	35.63
DTMABP7819VG12A	C	From	4.00		20.000	111.00	No Ice	0.98	0.34	19.18
		Centroid-Le	-7.000				1/2" Ice	1.10	0.42	26.48
		g	1.000				1" Ice	1.23	0.51	35.63
RRUS12/RRUS A2	A	From	4.00		20.000	111.00	No Ice	3.14	1.84	71.50
		Centroid-Le	0.000				1/2" Ice	3.36	2.01	98.98
		g	1.000				1" Ice	3.59	2.20	129.87
RRUS12/RRUS A2	B	From	4.00		20.000	111.00	No Ice	3.14	1.84	71.50
		Centroid-Le	0.000				1/2" Ice	3.36	2.01	98.98
		g	1.000				1" Ice	3.59	2.20	129.87
RRUS12/RRUS A2	C	From	4.00		20.000	111.00	No Ice	3.14	1.84	71.50
		Centroid-Le	0.000				1/2" Ice	3.36	2.01	98.98
		g	1.000				1" Ice	3.59	2.20	129.87
2.4" Dia. x 6' Mount Pipe	A	From	4.00		0.000	111.00	No Ice	1.43	1.43	21.90
		Centroid-Le	7.000				1/2" Ice	1.93	1.93	37.81
		g	0.000				1" Ice	2.31	2.31	55.56
2.4" Dia. x 6' Mount Pipe	B	From	4.00		0.000	111.00	No Ice	1.43	1.43	21.90
		Centroid-Le	7.000				1/2" Ice	1.93	1.93	37.81
		g	0.000				1" Ice	2.31	2.31	55.56
2.4" Dia. x 6' Mount Pipe	C	From	4.00		0.000	111.00	No Ice	1.43	1.43	21.90
		Centroid-Le	7.000				1/2" Ice	1.93	1.93	37.81
		g	0.000				1" Ice	2.31	2.31	55.56

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 9 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
Platform Mount [LP 1201-1]	C	None			0.000	111.00	No Ice 23.10 1/2" Ice 26.80 1" Ice 30.50	23.10 26.80 30.50	2100.00 2500.00 2900.00
70									
OG-860/1920/GPS-A	C	From Face	3.00	0.000	0.000	70.00	No Ice 0.14 1/2" Ice 0.22 1" Ice 0.30	0.14 0.22 0.30	1.65 3.53 6.44
Side Arm Mount [SO 701-1]	C	From Face	1.50	0.000	0.000	70.00	No Ice 0.85 1/2" Ice 1.14 1" Ice 1.43	1.67 2.34 3.01	65.00 79.00 93.00

*									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz Lateral	Vert						
			ft	ft	°	°	ft	ft	ft ²	lb	
130											
VHLP1-23	C	Paraboloid w/Shroud (HP)	From Centroid	4.00	-2.000	30.000		130.00	1.27	No Ice 1.28 1/2" Ice 1.45 1" Ice 1.62	14.00 19.34 24.68
VHLP2-23	A	Paraboloid w/Shroud (HP)	From Centroid	4.00	-2.000	70.000		130.00	2.18	No Ice 3.73 1/2" Ice 4.02 1" Ice 4.31	31.00 51.64 72.27
VHLP2.5-23	C	Paraboloid w/Shroud (HP)	From Centroid	4.00	2.000	-20.000		130.00	2.92	No Ice 6.68 1/2" Ice 7.07 1" Ice 7.46	47.60 83.89 120.17

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 10 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Comb. No.	Description
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 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
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 lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	147 - 133	Pole	Max Tension	21	0.06	-0.00	-0.97
			Max. Compression	26	-1599.32	38.27	5.47
			Max. Mx	20	-1036.47	4389.68	2.75
			Max. My	2	-1036.03	2.02	4390.35
			Max. Vy	8	626.54	-4382.32	5.38
			Max. Vx	2	-627.05	2.02	4390.35
			Max. Torque	27			0.00
L2	133 - 85.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37862.89	164.89	2984.44
			Max. Mx	8	-16836.17	-743720.52	3965.57
			Max. My	2	-16840.99	-2123.07	747043.66
			Max. Vy	8	24116.47	-743720.52	3965.57
			Max. Vx	2	-24059.40	-2123.07	747043.66
			Max. Torque	13			-2251.17
L3	85.5 - 42.75	Pole	Max Tension	1	0.00	0.00	0.00

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Beaumont Farm (BU 876310)	Page	11 of 17
	Project	TEP No. 72875.101124	Date	15:36:47 11/04/16
	Client	Crown Castle	Designed by	mzsmee

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L4	42.75 - 0	Pole	Max. Compression	26	-49861.09	724.44	2704.57
			Max. Mx	8	-26242.14	-1855824.9	7494.80
			Max. My	2	-26248.26	-4648.30	1855659.85
			Max. Vy	8	29145.79	-1855824.9	7494.80
			Max. Vx	2	-29047.89	-4648.30	1855659.85
			Max. Torque	19			-914.71
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67800.34	1419.96	2704.11
			Max. Mx	8	-41207.83	-3365342.3	11566.46
			Max. My	2	-41207.99	-7402.86	3360605.31
			Max. Vy	8	34163.67	-3365342.3	11566.46
			Max. Vx	2	-34066.73	-7402.86	3360605.31
			Max. Torque	19			-695.56

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	27	67800.34	-9.49	7962.60
	Max. H _x	21	30934.72	34104.84	-1.29
	Max. H _z	3	30934.72	-57.62	34020.35
	Max. M _x	2	3360605.31	-57.62	34020.35
	Max. M _z	8	3365342.36	-34117.22	82.84
	Max. Torsion	5	655.71	-17012.99	29556.38
	Min. Vert	19	30934.72	29529.72	-17187.84
	Min. H _x	8	41246.29	-34117.22	82.84
	Min. H _z	15	30934.72	86.61	-33958.39
	Min. M _x	14	-3350289.85	86.61	-33958.39
	Min. M _z	20	-3363184.88	34104.84	-1.29
	Min. Torsion	19	-693.92	29529.72	-17187.84

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
Dead Only	34371.91	0.00	-0.00	-650.93	-164.11	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	41246.29	57.62	-34020.35	-3360605.31	-7402.86	3.06
0.9 Dead+1.6 Wind 0 deg - No Ice	30934.72	57.62	-34020.35	-3314033.64	-7235.83	5.16
1.2 Dead+1.6 Wind 30 deg - No Ice	41246.29	17012.99	-29556.38	-2923158.07	-1675594.83	-653.57
0.9 Dead+1.6 Wind 30 deg - No Ice	30934.72	17012.99	-29556.38	-2882607.32	-1652490.18	-655.71
1.2 Dead+1.6 Wind 60 deg - No Ice	41246.29	29537.68	-17129.51	-1696661.90	-2912803.27	-477.79
0.9 Dead+1.6 Wind 60 deg - No Ice	30934.72	29537.68	-17129.51	-1673018.76	-2872648.76	-483.16

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 12 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
Ice						
1.2 Dead+1.6 Wind 90 deg - No Ice	41246.29	34117.22	-82.84	-11566.37	-3365342.36	-279.18
0.9 Dead+1.6 Wind 90 deg - No Ice	30934.72	34117.22	-82.84	-11172.39	-3318947.84	-286.59
1.2 Dead+1.6 Wind 120 deg - No Ice	41246.29	29415.16	17018.47	1681020.24	-2896637.17	-213.95
0.9 Dead+1.6 Wind 120 deg - No Ice	30934.72	29415.16	17018.47	1658041.86	-2856726.52	-221.60
1.2 Dead+1.6 Wind 150 deg - No Ice	41246.29	16920.85	29400.86	2900695.15	-1664296.40	-198.00
0.9 Dead+1.6 Wind 150 deg - No Ice	30934.72	16920.85	29400.86	2860921.07	-1641353.72	-203.70
1.2 Dead+1.6 Wind 180 deg - No Ice	41246.29	-86.61	33958.39	3350289.85	11026.98	-64.07
0.9 Dead+1.6 Wind 180 deg - No Ice	30934.72	-86.61	33958.39	3304313.22	10916.76	-66.19
1.2 Dead+1.6 Wind 210 deg - No Ice	41246.29	-17050.23	29519.85	2916370.68	1680371.80	506.45
0.9 Dead+1.6 Wind 210 deg - No Ice	30934.72	-17050.23	29519.85	2876357.97	1657307.25	508.82
1.2 Dead+1.6 Wind 240 deg - No Ice	41246.29	-29529.72	17187.84	1703147.68	2911230.60	687.91
0.9 Dead+1.6 Wind 240 deg - No Ice	30934.72	-29529.72	17187.84	1679830.64	2871216.39	693.92
1.2 Dead+1.6 Wind 270 deg - No Ice	41246.29	-34104.84	1.29	-1562.50	3363184.88	240.80
0.9 Dead+1.6 Wind 270 deg - No Ice	30934.72	-34104.84	1.29	-1309.35	3316925.70	248.20
1.2 Dead+1.6 Wind 300 deg - No Ice	41246.29	-29482.95	-17050.18	-1687130.28	2905639.06	143.06
0.9 Dead+1.6 Wind 300 deg - No Ice	30934.72	-29482.95	-17050.18	-1663619.13	2865701.95	150.21
1.2 Dead+1.6 Wind 330 deg - No Ice	41246.29	-16939.04	-29456.59	-2910153.46	1666380.14	294.20
0.9 Dead+1.6 Wind 330 deg - No Ice	30934.72	-16939.04	-29456.59	-2869796.07	1643520.78	299.66
1.2 Dead+1.0 Ice+1.0 Temp	67800.34	-0.00	-0.02	-2704.11	1419.96	-0.10
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	67800.34	9.49	-7962.60	-857411.82	218.18	-15.24
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	67800.34	3978.14	-6913.10	-745476.13	-424079.86	-152.38
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	67800.34	6906.66	-4003.81	-433382.36	-738219.61	-115.09
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	67800.34	7979.11	-15.58	-5008.47	-853288.95	-65.75
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	67800.34	6884.41	3985.83	425296.98	-735054.70	-41.14
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	67800.34	3963.24	6885.30	735798.56	-422137.87	-27.42
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	67800.34	-15.16	7950.12	849864.26	3577.75	8.42
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	67800.34	-3985.37	6905.82	738705.00	428111.35	129.68
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	67800.34	-6904.63	4015.39	429436.77	740861.86	164.62
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	67800.34	-7976.40	-1.54	-3238.26	855830.58	58.39
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	67800.34	-6898.42	-3991.30	-431799.32	740099.02	23.54
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	67800.34	-3966.31	-6896.37	-743137.02	425544.28	51.26

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Beaumont Farm (BU 876310)	Page	13 of 17
	Project	TEP No. 72875.101124	Date	15:36:47 11/04/16
	Client	Crown Castle	Designed by	mzsmee

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	34371.91	12.33	-7279.03	-714704.92	-1707.36	0.94
Dead+Wind 30 deg - Service	34371.91	3640.12	-6323.91	-621746.90	-356230.57	-141.96
Dead+Wind 60 deg - Service	34371.91	6319.91	-3665.05	-361093.51	-619158.49	-104.33
Dead+Wind 90 deg - Service	34371.91	7299.75	-17.72	-2982.95	-715322.86	-62.42
Dead+Wind 120 deg - Service	34371.91	6293.70	3641.29	356704.08	-615702.14	-49.48
Dead+Wind 150 deg - Service	34371.91	3620.40	6290.64	615895.69	-353816.52	-45.38
Dead+Wind 180 deg - Service	34371.91	-18.53	7265.77	711448.55	2207.02	-14.34
Dead+Wind 210 deg - Service	34371.91	-3648.08	6316.10	619247.35	356975.58	112.39
Dead+Wind 240 deg - Service	34371.91	-6318.21	3677.53	361417.01	618558.00	152.92
Dead+Wind 270 deg - Service	34371.91	-7297.10	0.28	-857.28	714591.37	53.90
Dead+Wind 300 deg - Service	34371.91	-6308.20	-3648.07	-359060.56	617355.83	31.38
Dead+Wind 330 deg - Service	34371.91	-3624.29	-6302.56	-618966.97	353994.44	64.04

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-34371.91	0.00	-0.00	34371.91	0.00	0.000%
2	57.62	-41246.29	-34020.35	-57.62	41246.29	34020.35	0.000%
3	57.62	-30934.72	-34020.35	-57.62	30934.72	34020.35	0.000%
4	17012.99	-41246.29	-29556.38	-17012.99	41246.29	29556.38	0.000%
5	17012.99	-30934.72	-29556.38	-17012.99	30934.72	29556.38	0.000%
6	29537.68	-41246.29	-17129.51	-29537.68	41246.29	17129.51	0.000%
7	29537.68	-30934.72	-17129.51	-29537.68	30934.72	17129.51	0.000%
8	34117.22	-41246.29	-82.84	-34117.22	41246.29	82.84	0.000%
9	34117.22	-30934.72	-82.84	-34117.22	30934.72	82.84	0.000%
10	29415.16	-41246.29	17018.47	-29415.16	41246.29	-17018.47	0.000%
11	29415.16	-30934.72	17018.47	-29415.16	30934.72	-17018.47	0.000%
12	16920.85	-41246.29	29400.86	-16920.85	41246.29	-29400.86	0.000%
13	16920.85	-30934.72	29400.86	-16920.85	30934.72	-29400.86	0.000%
14	-86.61	-41246.29	33958.38	86.61	41246.29	-33958.39	0.000%
15	-86.61	-30934.72	33958.38	86.61	30934.72	-33958.39	0.000%
16	-17050.23	-41246.29	29519.85	17050.23	41246.29	-29519.85	0.000%
17	-17050.23	-30934.72	29519.85	17050.23	30934.72	-29519.85	0.000%
18	-29529.72	-41246.29	17187.84	29529.72	41246.29	-17187.84	0.000%
19	-29529.72	-30934.72	17187.84	29529.72	30934.72	-17187.84	0.000%
20	-34104.83	-41246.29	1.29	34104.84	41246.29	-1.29	0.000%
21	-34104.83	-30934.72	1.29	34104.84	30934.72	-1.29	0.000%
22	-29482.95	-41246.29	-17050.18	29482.95	41246.29	17050.18	0.000%
23	-29482.95	-30934.72	-17050.18	29482.95	30934.72	17050.18	0.000%
24	-16939.04	-41246.29	-29456.59	16939.04	41246.29	29456.59	0.000%
25	-16939.04	-30934.72	-29456.59	16939.04	30934.72	29456.59	0.000%
26	0.00	-67800.34	0.00	0.00	67800.34	0.02	0.000%
27	9.49	-67800.34	-7962.40	-9.49	67800.34	7962.60	0.000%
28	3978.12	-67800.34	-6913.08	-3978.14	67800.34	6913.10	0.000%
29	6906.64	-67800.34	-4003.79	-6906.66	67800.34	4003.81	0.000%
30	7978.91	-67800.34	-15.58	-7979.11	67800.34	15.58	0.000%
31	6884.38	-67800.34	3985.82	-6884.41	67800.34	-3985.83	0.000%
32	3963.22	-67800.34	6885.27	-3963.24	67800.34	-6885.30	0.000%
33	-15.16	-67800.34	7949.92	15.16	67800.34	-7950.12	0.000%
34	-3985.36	-67800.34	6905.79	3985.37	67800.34	-6905.82	0.000%
35	-6904.60	-67800.34	4015.38	6904.63	67800.34	-4015.39	0.000%
36	-7976.20	-67800.34	-1.53	7976.40	67800.34	1.54	0.000%
37	-6898.40	-67800.34	-3991.29	6898.42	67800.34	3991.30	0.000%
38	-3966.30	-67800.34	-6896.35	3966.31	67800.34	6896.37	0.000%
39	12.33	-34371.91	-7279.02	-12.33	34371.91	7279.03	0.000%

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Beaumont Farm (BU 876310)	Page	14 of 17
	Project	TEP No. 72875.101124	Date	15:36:47 11/04/16
	Client	Crown Castle	Designed by	mzsmee

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
40	3640.11	-34371.91	-6323.91	-3640.12	34371.91	6323.91	0.000%
41	6319.91	-34371.91	-3665.05	-6319.91	34371.91	3665.05	0.000%
42	7299.75	-34371.91	-17.72	-7299.75	34371.91	17.72	0.000%
43	6293.69	-34371.91	3641.29	-6293.70	34371.91	-3641.29	0.000%
44	3620.40	-34371.91	6290.63	-3620.40	34371.91	-6290.64	0.000%
45	-18.53	-34371.91	7265.77	18.53	34371.91	-7265.77	0.000%
46	-3648.08	-34371.91	6316.09	3648.08	34371.91	-6316.10	0.000%
47	-6318.20	-34371.91	3677.52	6318.21	34371.91	-3677.53	0.000%
48	-7297.10	-34371.91	0.28	7297.10	34371.91	-0.28	0.000%
49	-6308.20	-34371.91	-3648.07	6308.20	34371.91	3648.07	0.000%
50	-3624.29	-34371.91	-6302.56	3624.29	34371.91	6302.56	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00002233
3	Yes	4	0.00000001	0.00071831
4	Yes	6	0.00000001	0.00023587
5	Yes	6	0.00000001	0.00006838
6	Yes	6	0.00000001	0.00024374
7	Yes	6	0.00000001	0.00007091
8	Yes	5	0.00000001	0.00010874
9	Yes	5	0.00000001	0.00004767
10	Yes	6	0.00000001	0.00023576
11	Yes	6	0.00000001	0.00006862
12	Yes	6	0.00000001	0.00023814
13	Yes	6	0.00000001	0.00006970
14	Yes	5	0.00000001	0.00004302
15	Yes	4	0.00000001	0.00079614
16	Yes	6	0.00000001	0.00024314
17	Yes	6	0.00000001	0.00007099
18	Yes	6	0.00000001	0.00023611
19	Yes	6	0.00000001	0.00006822
20	Yes	5	0.00000001	0.00007406
21	Yes	4	0.00000001	0.00098913
22	Yes	6	0.00000001	0.00024023
23	Yes	6	0.00000001	0.00006994
24	Yes	6	0.00000001	0.00023663
25	Yes	6	0.00000001	0.00006894
26	Yes	4	0.00000001	0.00002831
27	Yes	5	0.00000001	0.00060154
28	Yes	6	0.00000001	0.00014859
29	Yes	6	0.00000001	0.00015262
30	Yes	5	0.00000001	0.00059678
31	Yes	6	0.00000001	0.00014495
32	Yes	6	0.00000001	0.00014540
33	Yes	5	0.00000001	0.00059114
34	Yes	6	0.00000001	0.00014863
35	Yes	6	0.00000001	0.00014640
36	Yes	5	0.00000001	0.00059768
37	Yes	6	0.00000001	0.00015148
38	Yes	6	0.00000001	0.00014910
39	Yes	4	0.00000001	0.00011150
40	Yes	4	0.00000001	0.00084837

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 15 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

41	Yes	4	0.00000001	0.00094219
42	Yes	4	0.00000001	0.00013363
43	Yes	4	0.00000001	0.00084684
44	Yes	4	0.00000001	0.00087325
45	Yes	4	0.00000001	0.00011003
46	Yes	4	0.00000001	0.00092004
47	Yes	4	0.00000001	0.00084154
48	Yes	4	0.00000001	0.00012760
49	Yes	4	0.00000001	0.00090125
50	Yes	4	0.00000001	0.00085693

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147 - 133	29.017	40	1.582	0.003
L2	133 - 85.5	24.382	40	1.579	0.003
L3	89.25 - 42.75	11.019	40	1.213	0.001
L4	47.5 - 0	3.011	41	0.592	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
132.00	VHLP1-23	40	24.052	1.576	0.003	45794
130.00	APXVTM14-C-120	40	23.392	1.571	0.003	32091
121.00	(2) LPA-80080-6CF-EDIN w/ Mount Pipe	40	20.450	1.531	0.003	12440
111.00	7770.00 w/ Mount Pipe	40	17.275	1.457	0.002	7388
70.00	OG-860/1920/GPS-A	40	6.606	0.932	0.000	3625

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147 - 133	136.053	4	7.431	0.016
L2	133 - 85.5	114.381	4	7.415	0.016
L3	89.25 - 42.75	51.812	18	5.708	0.004
L4	47.5 - 0	14.175	18	2.788	0.001

Critical Deflections and Radius of Curvature - Design Wind

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 16 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmeem

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
132.00	VHLP1-23	4	112.837	7.405	0.016	10661
130.00	APXVTM14-C-120	4	109.751	7.381	0.016	7331
121.00	(2) LPA-80080-6CF-EDIN w/ Mount Pipe	4	95.984	7.194	0.014	2758
111.00	7770.00 w/ Mount Pipe	4	81.115	6.851	0.011	1623
70.00	OG-860/1920/GPS-A	18	31.094	4.392	0.001	781

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio P _u / φP _n
L1	147 - 133 (1)	TP12.75x12.75x0.5	14.00	0.00	0.0	19.242	-1036.16	606131.00	0.002
L2	133 - 85.5 (2)	TP29.418x19.537x0.313	47.50	0.00	0.0	28.503	-16827.70	2074020.00	0.008
L3	85.5 - 42.75 (3)	TP37.687x27.477x0.375	46.50	0.00	0.0	43.795	-26236.10	3116790.00	0.008
L4	42.75 - 0 (4)	TP45.83x35.894x0.438	47.50	0.00	0.0	63.947	-41207.70	4432580.00	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} lb-ft	φM _{ux} lb-ft	Ratio M _{ux} / φM _{ux}	M _{uy} lb-ft	φM _{uy} lb-ft	Ratio M _{uy} / φM _{uy}
L1	147 - 133 (1)	TP12.75x12.75x0.5	4393.26	197066.67	0.022	0.00	197066.67	0.000
L2	133 - 85.5 (2)	TP29.418x19.537x0.313	748365.00	1193158.33	0.627	0.00	1193158.33	0.000
L3	85.5 - 42.75 (3)	TP37.687x27.477x0.375	1860708.33	2297475.00	0.810	0.00	2297475.00	0.000
L4	42.75 - 0 (4)	TP45.83x35.894x0.438	3372825.00	4092133.33	0.824	0.00	4092133.33	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u lb	φV _n lb	Ratio V _u / φV _n	Actual T _u lb-ft	φT _n lb-ft	Ratio T _u / φT _n
L1	147 - 133 (1)	TP12.75x12.75x0.5	627.48	303066.00	0.002	0.00	297741.67	0.000
L2	133 - 85.5 (2)	TP29.418x19.537x0.313	24136.70	1037010.00	0.023	781.53	2419358.33	0.000
L3	85.5 - 42.75 (3)	TP37.687x27.477x0.375	29199.40	1558400.00	0.019	689.99	4658566.67	0.000
L4	42.75 - 0 (4)	TP45.83x35.894x0.438	34214.20	2216290.00	0.015	687.97	8297566.67	0.000

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Beaumont Farm (BU 876310)	Page 17 of 17
	Project TEP No. 72875.101124	Date 15:36:47 11/04/16
	Client Crown Castle	Designed by mzsmee

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_u	ϕM_{ux}	ϕM_{uy}	ϕV_u	ϕT_u			
L1	147 - 133 (1)	0.002	0.022	0.000	0.002	0.000	0.024	1.000	4.8.2
L2	133 - 85.5 (2)	0.008	0.627	0.000	0.023	0.000	0.636	1.000	4.8.2
L3	85.5 - 42.75 (3)	0.008	0.810	0.000	0.019	0.000	0.819	1.000	4.8.2
L4	42.75 - 0 (4)	0.009	0.824	0.000	0.015	0.000	0.834	1.000	4.8.2

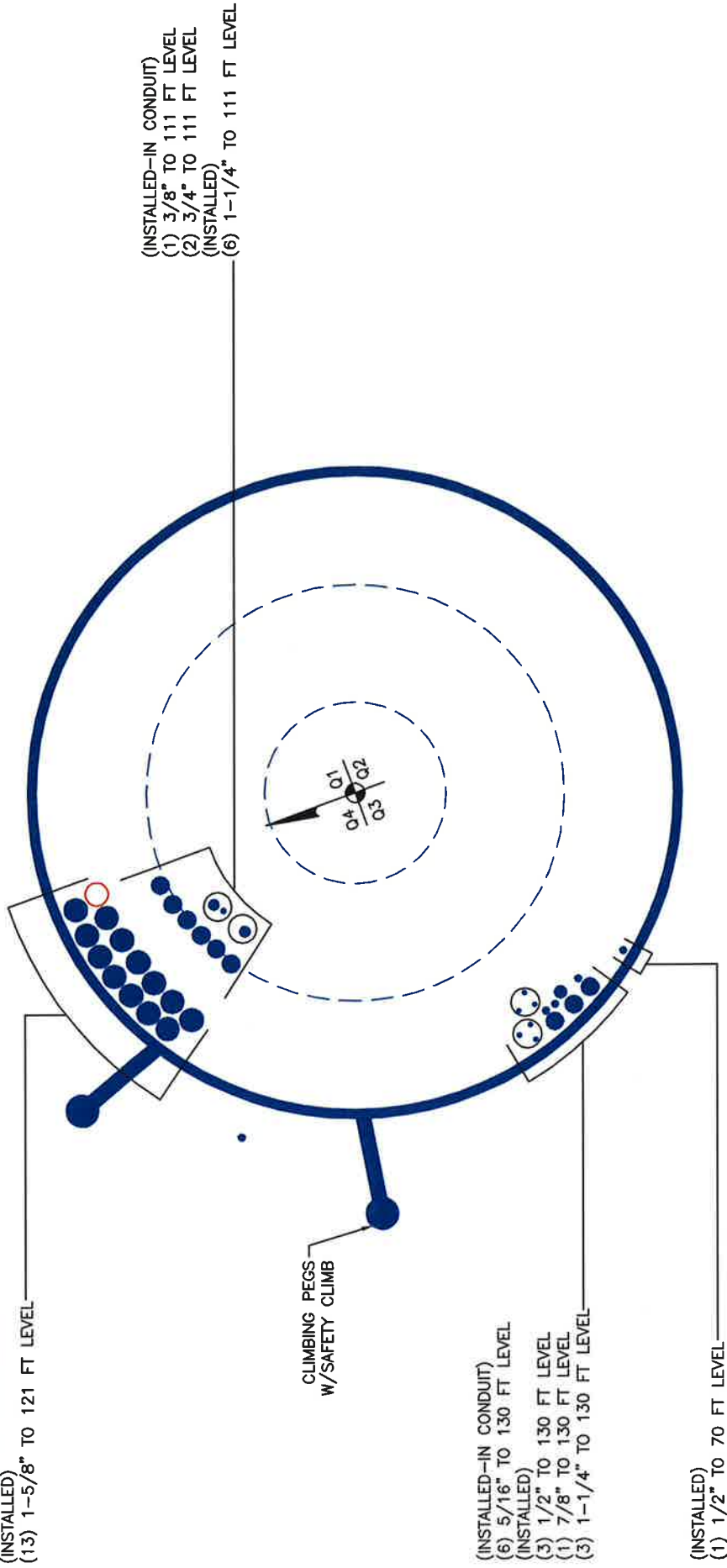
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail	
L1	147 - 133	Pole	TP12.75x12.75x0.5	1	-1036.16	606131.00	2.4	Pass	
L2	133 - 85.5	Pole	TP29.418x19.537x0.313	2	-16827.70	2074020.00	63.6	Pass	
L3	85.5 - 42.75	Pole	TP37.687x27.477x0.375	3	-26236.10	3116790.00	81.9	Pass	
L4	42.75 - 0	Pole	TP45.83x35.894x0.438	4	-41207.70	4432580.00	83.4	Pass	
							Summary		
							Pole (L4)	83.4	Pass
							Rating =	83.4	Pass

APPENDIX B
BASE LEVEL DRAWING



(PROPOSED)
 (1) 1-5/8" TO 121 FT LEVEL
 (INSTALLED)
 (13) 1-5/8" TO 121 FT LEVEL



APPENDIX C
ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: 876310
 Site Name: *Beaumont Farm*
 App #: 362962 Rev. 5

Reactions		
Mu	4.39	ft-kips
Axial, Pu:	1.04	kips
Shear, Vu:	0.63	kips
Elevation:	133	feet

Bolt Threads:
X-Excluded
$\phi V_n = \phi(0.55 \cdot A_b \cdot F_u)$
$\phi = 0.75, \phi \cdot V_n$ (kips):
53.15

Pole Manufacturer:	Other
--------------------	-------

If No stiffeners, Criteria: **TIA G** <-Only Applicable to Unstiffened Cases

Bolt Data		
Qty:	20	
Diameter (in.):	1.25	Bolt Fu: 105
Bolt Material:	A325	Bolt Fy: 81
N/A:	100	<-- Disregard
N/A:	75	<-- Disregard
Circle (in.):	24	

Flange Bolt Results
 Bolt Tension Capacity, $\phi \cdot T_n, B1$: 76.31 kips
 Adjusted $\phi \cdot T_n$ (due to $V_u = V_u / Q_t$), **B**: 76.31 kips
 Max Bolt directly applied Tu: 0.39 Kips
 Min. PL "tc" for **B cap. w/o Pry**: 3.607 in
 Min PL "treq" for **actual T w/ Pry**: 0.222 in
 Min PL "t1" for **actual T w/o Pry**: 0.257 in
 T allowable with Prying: 7.88 kips
 Prying Force, q: 0.00 kips
 Total Bolt Tension=Tu+q: 0.39 kips
 Prying Bolt Stress Ratio=(Tu+q)/(B): 0.5% **Pass**

Non-Rigid
$\phi \cdot T_n$
$\phi T_n [(1 - (V_u / \phi V_n)^2)^{0.5}]$

$\alpha > 1$ case

Plate Data		
Diam:	28	in
Thick, t:	1	in
Grade (Fy):	50	ksi
Strength, Fu:	65	ksi
Single-Rod B-eff:	2.00	in

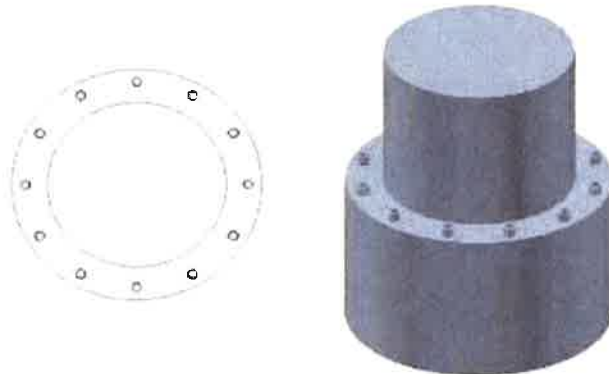
Exterior Flange Plate Results Flexural Check
 Compression Side Plate Stress: 2.1 ksi
 Allowable Plate Stress: 45.0 ksi
 Compression Plate Stress Ratio: 4.7% **Pass**
No Prying
 Tension Side Stress Ratio, $(treq/t)^2$: 4.9% **Pass**

Non-Rigid
TIA G
$\phi \cdot F_y$
Comp. Y.L. Length: 20.33

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a
Stiffener Results
 Horizontal Weld : n/a
 Vertical Weld: n/a
 Plate Flex+Shear, $f_b / F_b + (f_v / F_v)^2$: n/a
 Plate Tension+Shear, $f_t / F_t + (f_v / F_v)^2$: n/a
 Plate Comp. (AISC Bracket): n/a
Pole Results
 Pole Punching Shear Check: n/a

Pole Data		
Diam:	12.75	in
Thick:	0.5	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /G

- Assumptions:**
- 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
 - 2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
 - 3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: 876310
 Site Name: *Beaumont Farm*
 App #: 362962 Rev. 5

Anchor Rod Data

Eta Factor, η	0.5	TIA G (Fig. 4-4)
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, F_y :	75	ksi
Strength, F_u :	100	ksi
Bolt Circle:	54	in
Anchor Spacing:	6	in

Plate Data

W=Side:	54	in
Thick:	3	in
Grade:	50	ksi
Clip Distance:	6	in

Stiffener Data (Welding at both sides)

Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	45.83	in
Thick:	0.4375	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round

Base Reactions

TIA Revision:	G	
Factored Moment, M_u :	3372.83	ft-kips
Factored Axial, P_u :	41.25	kips
Factored Shear, V_u :	34.17	kips

Anchor Rod Results

TIA G --> Max Rod ($C_u + V_u/\eta$): 194.2 Kips
 Axial Design Strength, $\Phi * F_u * A_{net}$: 260.0 Kips
 Anchor Rod Stress Ratio: 74.7% **Pass**

Base Plate Results

Base Plate Stress: 35.1 ksi
 PL Design Bending Strength, $\Phi * F_y$: 45.0 ksi
 Base Plate Stress Ratio: 78.0% **Pass**

Flexural Check

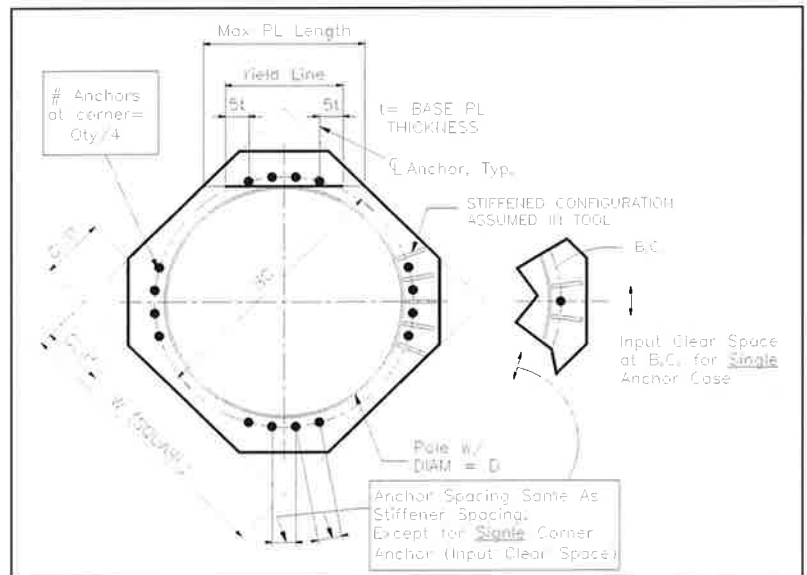
PL Ref. Data

Yield Line (in):	30.54
Max PL Length:	30.54

N/A - Unstiffened

Stiffener Results

Horizontal Weld : N/A
 Vertical Weld: N/A
 Plate Flex+Shear, $f_b/F_b + (f_v/F_v)^2$: N/A
 Plate Tension+Shear, $f_t/F_t + (f_v/F_v)^2$: N/A
 Plate Comp. (AISC Bracket): N/A
Pole Results
 Pole Punching Shear Check: N/A



** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes



JOB: Beaumont Farm (BU 876310); TEP No. 72875.101124
 SHEET NUMBER: 1 OF 2
 CALCULATED BY: DAR DATE 11/4/2016
 CHECKED BY: MZS DATE 11/4/2016

Pad and Pier Foundation for Monopole - TIA-222-G

q_a , ALLOWABLE SOIL PRESS. (ksf)	20.00
NET or GROSS	NET
SAFETY FACTOR IN q_a	2
SOIL DENSITY (pcf)	165

F'_c (ksi)	3
F'_y (ksi)	60

$\phi^*q_n = 30.0$ ksf

Base Reactions LC1: 1.2D + 1.6W

M , MOMENT (k-ft)	3372.83
P_t , TOTAL DOWNLOAD (k)	41.25
H , HORIZONTAL SHEAR (k)	34.17

Base Reaction LC 2: 0.9D + 1.6W

M (k-ft)	3372.8
P_t (k)	30.9
H (k)	34.2

Try:	L (ft.)	B (ft.)	t (ft.)	Soil depth to TOP of mat (ft.)	Soil depth to BOT. of mat (ft.)	Pier dia./width (ft.)	Pier Height, h (cu.ft.)	Pier Shape
	23	23	5.00	0	4.50	3.82	0.00	Round

W_m , Weight of Mat (k) =	396.8
W_p , Weight of Pier (k) =	0.0
W_s , Weight of Soil (k) =	0.0

Concrete Vol. (cu yd) **97.96**

CHECK BEARING PRESSURE for LC1: 1.2D + 1.6W

P = P_t + W_f + W_s =	517.3 k
e = M / P =	6.85 ft
L/6 =	3.83 ft
Width of Wedge, L' =	9.30 ft
90° Axis: q_{max} =	1.68 ksf
Diag. Axis: q_{max} =	2.18 ksf

Capacity: 7.3%

CHECK BEARING STABILITY FOR LC2: 0.9D + 1.6W

90° Axis	M_{φqn}¹ =	4355.6 k-ft
	M_{ot}/M_{φqn} =	0.81
Diag. Axis	M_{φqn} =	5335.7 k-ft
	M_{ot}/M_{φqn} =	0.66

Capacity: 81.4%

¹ M_{φqn} is the overturning moment at which q_{max} = φq_n

CHECK OVERTURNING: LC2 CONTROLS

M_{st} = P * (L/2) + (V_{f+s} * L/2) =	4462.1 k-ft
M_{ot} = M + H*(t+h) =	3543.7 k-ft
M_{ot}/M_{st} =	0.79

Capacity: 79.4%



JOB: Beaumont Farm (BU 876310); TEP No. 72875.101124
 SHEET NUMBER: 2 OF 2
 CALCULATED BY: DAR DATE 11/4/2016
 CHECKED BY: MZS DATE 11/4/2016

CHECK ONE WAY SHEAR

$V_u =$
 $V_c =$

Capacity: 24.9%

CHECK TWO WAY SHEAR: PUNCHING + UNBALANCED MOMENT

$v_u =$
 $\phi v_c =$

Capacity: 12.4%

CALCULATE REINFORCING REQUIRED

$F'_c = 3.0$ ksi $F_y = 60.0$ ksi

Temp & Shrinkage reinforcing, $A_{s,t} =$ (ACI 318 Sec. 10.5.4)

BOTTOM REINFORCING

Bar Size =
 Bar Spacing, c-c:
 $d = 54.9$ in.

$M_u =$

$\phi Mn = 0.9 \cdot A_s \cdot F_y \cdot d (1 - 0.59 \cdot A_s \cdot F_y / (b \cdot d \cdot F'_c))$

Solution: $A_{s,req} =$

Check, $A_s =$

Capacity: 23.7%

TOP REINFORCING

Bar Size =
 Bar Spacing, c-c:
 $d = 54.9$ in.

$M_u =$

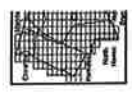
$\phi Mn = 0.9 \cdot A_s \cdot F_y \cdot d (1 - 0.59 \cdot A_s \cdot F_y / (b \cdot d \cdot F'_c))$

Solution: $A_{s,req} =$

Check, $A_s =$

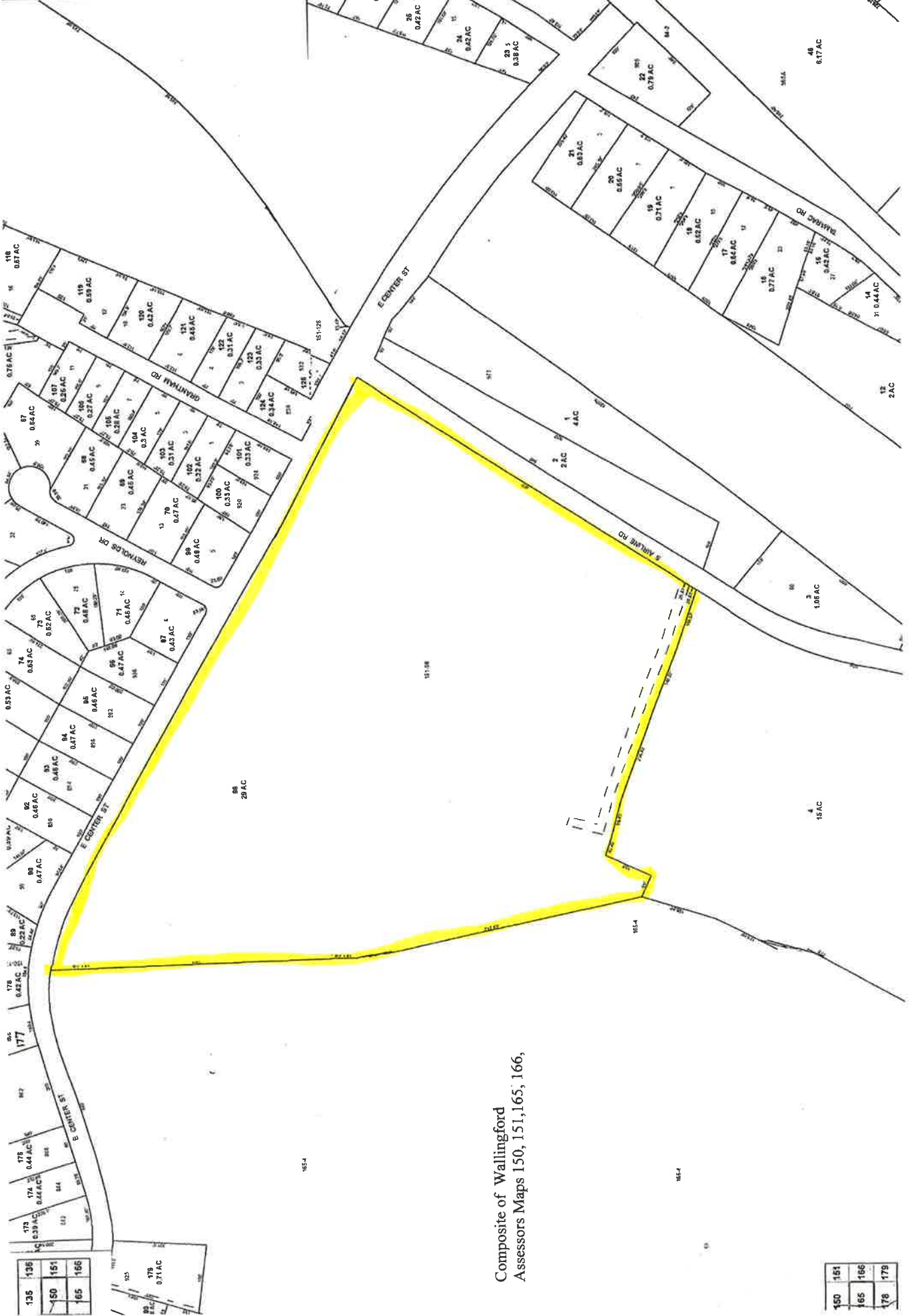
Capacity: 8.1%

ATTACHMENT 4



135	136
150	151
165	166

150	151
165	166
178	179



Composite of Wallingford
Assessors Maps 150, 151, 165, 166,

135	136
150	151
165	166

150	151
165	166
178	179

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd	Ch	Description	Element	Cd	Ch	Description
Style	03		Colonial				
Model	01		Residential				
Grade	B						
Stories	2		2 Stories				
Occupancy	1						
Exterior Wall 1	14		Wood Shingle				
Exterior Wall 2							
Roof Structure	04		Hip				
Roof Cover	03		Asphalt				
Interior Wall 1	03		Plastered				
Interior Wall 2	05		Drywall				
Interior Flr 1	12		Hardwood				
Interior Flr 2	09		Pine/Soft Wood				
Heat Fuel	02		Oil				
Heat Type	05		Hot Water				
AC Type	01		None				
Total Bedrooms	06		6 Bedrooms				
Total Bthrms	2						
Total Half Baths	0						
Total Xtra Fixtrs							
Total Rooms	12						
Bath Style	02		Average				
Kitchen Style	02		Average				
Whirlpool Tub							
Fireplaces	2						

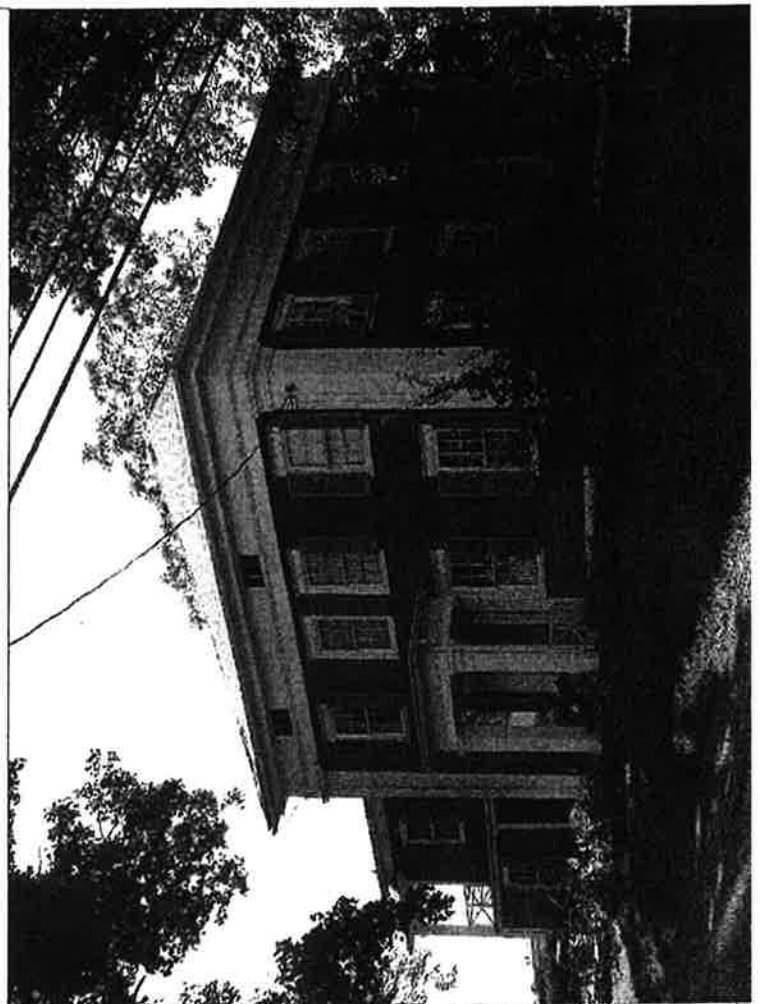
BAS	11	FOP	7
CRL		FOP	
12		FUS	
FOP		BAS	26
14		CRL	
4			16
UAT			
FUS			
BAS			
UBM			
FOP	30		
			30

OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Units	Unit Price	Yr	Gde	Dp Rt	%Cnd	Apr Value
GRN3	Pipe + Plastic	G5	2,400	4.00	1996	C	A	50	4,800
GRN3	Pipe + Plastic	G6	2,880	4.00	1996	C	F	30	3,500
IMP	Implement She		1,296	6.00	1940	C	A	50	3,900
SHD1	Shed Frame		1,008	10.00	1940	C	A	50	5,000
IMP	Implement She		840	6.00	1940	C	A	50	2,500
IMP	Implement She		720	6.00	1940	C	NV	0	0
IMP	Implement She		840	6.00	1940	C	NV	0	0
IMP	Implement She		1,350	6.00	1940	C	NV	0	0
SHD1	Shed Frame		100	10.00	1940	C	NV	0	0

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprc. Value
BAS	First Floor	1,364	1,364	1,364	92.63	126,345
CRL	Crawl Space	0	464	0	0.00	0
FOP	Porch, Open	0	250	50	18.53	4,631
FUS	Upper Story, Finished	1,316	1,316	1,316	92.63	121,898
UAT	Attic, Unfinished	0	900	135	13.89	12,505
UBM	Basement, Unfinished	0	900	180	18.53	16,673
	Ttl Gross Ins/once Avail.	7,680	5,194	3,045		307,157



TOPO.	UTILITIES	STRT./ROAD	LOCATION	Code	Appraised Value	Assessed Value
1 Level	2 Public Water	1 Paved	2 Suburban	1-1	110,400	77,300
				1-2	9,700	6,800
				1-3	154,300	108,000
				1-4	780,200	546,200
				4-1	100,000	70,000
				6-1	224,400	12,800
Total					1,379,000	821,100

RECORD OF OWNERSHIP

BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	V.C.
724/ 18	03/13/1992				0
626/ 650					

Other ID: 024801002
 Census: 1759
 Old MBLU
 TC MAP #
 TC MAP #
 Record Lot
 GIS ID: 151/98

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2015	1-1	77,300	2013	1-1	77,300
2015	1-2	6,800	2013	1-2	6,800
2015	1-3	108,000	2013	1-3	108,000
2015	1-4	546,200	2013	1-4	546,200
2015	4-1	70,000	2013	4-1	70,000
Total:		821,100	Total:		797,900

OTHER ASSESSMENTS

Year	Type	Description	Code	Amount	Number	Comm. Int.

ASSESSING NEIGHBORHOOD

NBHD/ SUB	Street Index Name	Tracing	Batch
110/A			

NOTES
 DOWN=VP COND/2ND FLR = F. COND
 CORRECTED FARM BUILDING SIZES FOR THE
 2006 GRAND LIST 4 NEW FARM BUILDINGS
 FOR 2007 GL
 CELL TOWER VALUED ON 151/98/2

EXEMPTIONS

Year	Type	Description	Code	Amount

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	154,300
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	780,200
Appraised Land Value (Bldg)	220,100
Special Land Value	224,400
Total Appraised Parcel Value	1,379,000

Valuation Method: C
 Adjustment: 0

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	Cd	Purpose/Result
27234	11/13/2012	CM	Commercial	112,000	07/30/2013	100		4 GREENHOUSES	11/06/2015	02	1	KC	63	Permit Check - No Measu
25068	10/12/2010	RS	Residential	3,500	08/22/2011	100		BARN ROOF	09/18/2015	02	1	V	29	Field Review
25067	10/12/2010	CM	Commercial	3,200	08/22/2011	100		HOUSE ROOF	12/04/2014	06	1	KC	63	Permit Check - No Measu
24367	02/04/2010	CM	Commercial	6,000	07/23/2010	100	07/23/2010	RPL 6 ANTENNAS	09/05/2013	06		SJ	16	Letter Sent-Cost Informa
24364	02/03/2010	CM	Commercial	20,000	07/23/2010	100	07/23/2010	MODIFY FACILITY	08/07/2013	06		SJ	16	Letter Sent-Cost Informa
20744	07/06/2006	CM	Commercial	10,000	09/07/2006	100	09/07/2006	RPL 6 ANTENNAS/ADI						

NET TOTAL APPRAISED PARCEL VALUE
 1,379,000

LAND LINE VALUATION SECTION

Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	Factor S.A.	Acre	Disc	Factor	Idx	ST.	Notes-Adj	Special Pricing	Spec Calc	Spec Use	S Adj Fact	Adj. Unit Price	Land Value
1	1010 Single Family	R18				18,000 SF	6.15	1.0000	5	1.0000	1.00	110			TF1	.95	490	1.00	6.13	110,400
1	1010 Single Family	R18				0.92 AC	10,000.00	1.0000	0	1.0000	1.00	110					670	1.00	10,500.00	9,700
1	7120 Tillable C	R18				24.50 AC	10,000.00	1.0000	0	1.0000	0.75	110					490	1.00	7,875.00	192,900
1	7140 Orchards	R18				1.00 AC	10,000.00	1.0000	0	1.0000	1.00	110					490	1.00	10,500.00	10,500
1	7170 Woodland	R18				2.00 AC	10,000.00	1.0000	0	1.0000	1.00	110					490	1.00	10,500.00	21,000
Total Card Land Units:														28.83 AC	Parcel Total Land Area:		29 AC	Total Land Value:		344,500

TOPO.	UTILITIES	STRT./ROAD	LOCATION	Code	Appraised Value	Assessed Value
SUPPLEMENTAL DATA						
Other ID: 024001002						

RECORD OF OWNERSHIP	GIS ID: 151/98	ASSOC PID#	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.

EXEMPTIONS			OTHER ASSESSMENTS					
Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.

ASSESSING NEIGHBORHOOD		NOTES	
NBHD/ SUB	NBHD Name	Street Index Name	Batch
110/A			

RECORD OF OWNERSHIP		OTHER ASSESSMENTS			
Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
Total:		1,379,000	Total:		821,100

PREVIOUS ASSESSMENTS (HISTORY)		APPRaised VALUE SUMMARY			
Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
Total:		1,379,000	Total:		154,300

BUILDING PERMIT RECORD		VISIT/ CHANGE HISTORY			
Permit ID	Issue Date	Type	Date	Comp.	Comments

LAND LINE VALUATION SECTION		VISIT/ CHANGE HISTORY																
B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	Acre	Factor	S.A.	Disc	Adj.	Notes- Adj	Special Pricing	S Adj	Land Value	
1	431V	TEL REL TW M00	R18		1.00	BL	1,600.00	FF	1.0000	1.00	1.00	0.00	1.00	0.00	CELL SITE	FF 0.01	1.00	100,000.00
1	8000	Frontage	R18		1.00	FF	7,350	SF	1.0000	1.00	1.00	0.00	1.00	0.00	CELL SITE AREA		.00	0.00
1	431V	TEL REL TW M00			1.00	SF			1.0000	1.00	1.00	0.00	1.00	0.00			.00	0.00
Total Card Land Units: 0.17 AC																		
Parcel Total Land Area: 29 AC																		
Total Land Value: 100,000																		

CURRENT ASSESSMENT
 BEAUMONT ALBERT WILLIAM
 945 E CENTER ST
 WALLINGFORD, CT 06492
 Additional Owners:
 Other ID: 024001002
 SUPPLEMENTAL DATA
 ASSOC PID#
 GIS ID: 151/98
 BK-VOL/PAGE
 SALE DATE q/u v/i
 SALE PRICE V.C.
VISION
 WALLINGFORD, CT
 6148

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
PREVIOUS ASSESSMENTS (HISTORY)								
Total			1,379,000			821,100		

RECORD OF OWNERSHIP
 GIS ID: 151/98
 BK-VOL/PAGE
 SALE DATE q/u v/i
 SALE PRICE V.C.
OTHER ASSESSMENTS
 Amount Number Description Comm. Int.
 Total:

EXEMPTIONS
 Year Type Description Amount Code Description Number Amount Comm. Int.
 NBHD/ SUB 110/A
 NBHD Name Street Index Name Tracing Batch
ASSESSING NEIGHBORHOOD
 Total:

APPRAISED VALUE SUMMARY
 Appraised Bldg. Value (Card) 154,300
 Appraised XF (B) Value (Bldg) 0
 Appraised OB (L) Value (Bldg) 780,200
 Appraised Land Value (Bldg) 220,100
 Special Land Value 224,400
 Total Appraised Parcel Value 1,379,000
 Valuation Method: C
 Adjustment: 0

NET TOTAL APPRAISED PARCEL VALUE 1,379,000
VISIT/CHANGE HISTORY

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
BUILDING PERMIT RECORD								

LAND LINE VALUATION SECTION

B Use Code	Use Description	Zone D	Front Depth	Units	Unit Price	I. Factor S.A.	C. Factor	ST. Idx	Adj.	Notes-Adj	Special Pricing Spec Calc	S Adj Fact	Unit Price	Land Value
LAND LINE VALUATION SECTION														

Total Card Land Units: 0.00 AC Parcel Total Land Area: 29 AC
 Total Land Value: 0

ATTACHMENT 5



Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here Postmark with Date of Receipt.		
UNITED STATES POSTAL SERVICE® Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3			
USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	William W. Dickinson, Jr., Mayor Town of Wallingford 45 South Main Street Wallingford, CT 06492				
2.	Kacie Hand, Town Planner Town of Wallingford 45 South Main Street Wallingford, CT 06492				
3.	Albert W. Beaumont 945 Center Street Wallingford, CT 06492				
4.					
5.					
6.					