ROBINSON & COLE LLP

KENNETH C. BALDWIN

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Also admitted in Massachusetts

April 28, 2014

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

Re: **Notice of Exempt Modification – Facility Modification**
1919 Boston Post Road, Guilford, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the 118-foot level of the existing 149-foot tower at 1919 Boston Post Road in Guilford, Connecticut (the "Property"). The tower is owned by Crown Castle. The Council approved Cellco's use of this tower in 1998. Cellco now intends to add three (3) model BXA-171063-12CF, 2100 MHz antennas, for a total of fifteen (15) antennas, all at the same 118-foot level on the tower. Cellco also intends to install three (3) remote radio heads ("RRHs") behind its 2100 MHz antennas and one (1) HYBRIFLEX™ antenna cable inside the monopole. 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 Joseph S. Mazza, First Selectman of the Town of Guilford. A copy of this letter is also being sent to Roger W. Stone, the owner of the Property.

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 tower. Cellco's three (3) additional antennas and RRHs will be located at the 118-foot level on the 149-foot tower.

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 operation of the replacement antennas 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 worst-case 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).

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:
Joseph S. Mazza, Guilford First Selectman
Roger W. Stone
Sandy M. Carter

ATTACHMENT 1

BXA-171063-12CF-EDIN-X

X-Pol | FET Panel | 63° | 19.0 dBi

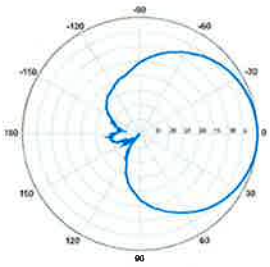
Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	4.5°	4.5°	4.5°
Gain	16.1 dBd / 18.2 dBi	16.5 dBd / 18.6 dBi	16.9 dBd / 19.0 dBi
Electrical downtilt (X)	0, 2, 5		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back ratio	> 30 dB		
In-band isolation	< -25 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)		
Operating temperature	-40° to +60° C / -40° to +140° F		
Mechanical Characteristics			
Dimensions Length x Width x Depth	1842 x 154 x 105 mm		72.5 x 6.1 x 4.1 in
Depth with z-brackets	133 mm		5.2 in
Weight without mounting brackets	5.8 kg		12.8 lbs
Survival wind speed	> 201 km/hr		> 125 mph
Wind area	Front: 0.28 m² Side: 0.19 m²		Front: 3.1 ft² Side: 2.1 ft²
Wind load @ 161 km/hr (100 mph)	Front: 460 N Side: 304 N		Front: 103 lbf Side: 68 lbf

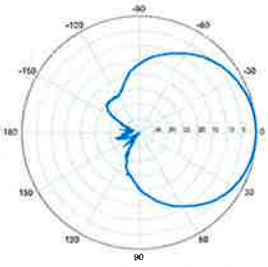
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171063-12CF-EDIN-X-FP		

BXA-171063-12CF-EDIN-X



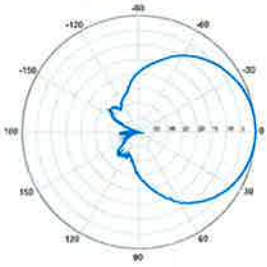
Horizontal | 1710-1880 MHz

BXA-171063-12CF-EDIN-X



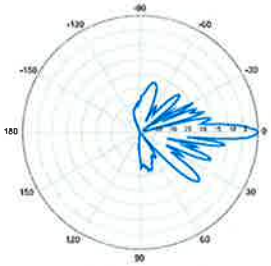
Horizontal | 1850-1990 MHz

BXA-171063-12CF-EDIN-X



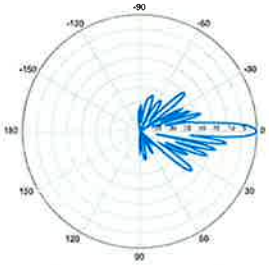
Horizontal | 1920-2170 MHz

BXA-171063-12CF-EDIN-0



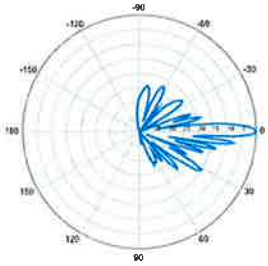
0° | Vertical | 1710-1880 MHz

BXA-171063-12CF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171063-12CF-EDIN-0



0° | Vertical | 1920-2170 MHz

Alcatel-Lucent RRH2x40-AWS

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-AWS is a high-power, small form-factor Remote Radio Head (RRH) operating in the AWS frequency band (1700/2100MHz - 3GPP Band 4). The Alcatel-Lucent RRH2x40-AWS is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.

A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-AWS has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to four-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 20 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-AWS is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-AWS is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-AWS is compact and weighs less than 20 kg (44 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

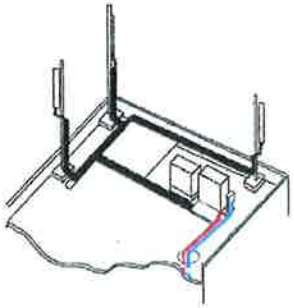
Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-AWS provides more RF power while at the same time consuming less electricity.

Features

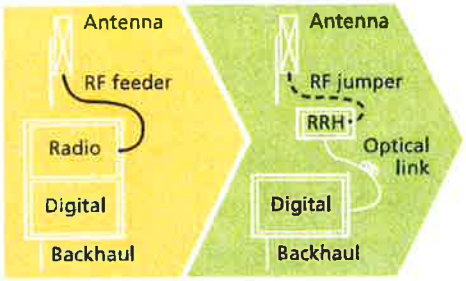
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption

Benefits

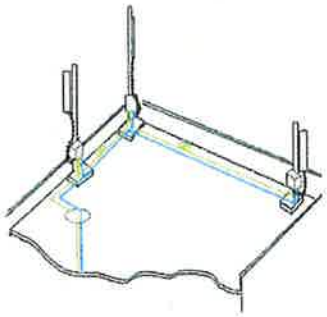
- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning



Macro



RRH for space-constrained cell sites



Distributed

Technical specifications

Physical dimensions

- Height: 620 mm (24.4 in.)
- Width: 270 mm (10.63 in.)
- Depth: 170m (6.7 in.)
- Weight (without mounting kit): less than 20 kg (44 lb)

Power

- Power supply: -48VDC

Operating environment

- Outdoor temperature range:
  - ¬ With solar load: -40°C to +50°C (-40°F to +122°F)
  - ¬ Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)
- Enclosure protection
  - ¬ IP65 (International Protection rating)

RF characteristics

- Frequency band: 1700/2100 MHz (AWS); 3GPP Band 4
- Bandwidth: up to 20 MHz
- RF output power at antenna port: 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way with optional Rx Diversity module
- Noise figure: below 2.0 dB typical
- Antenna Line Device features
  - ¬ TMA and Remote electrical tilt (RET) support via AISG v2.0

Optical characteristics

Type/number of fibers

- Single-mode variant
  - ¬ One Single Mode Single Fiber per RRH2x, carrying UL and DL using CWDM
  - ¬ Single mode dual fiber (SM/DF)
- Multi-mode variant
  - ¬ Two Multi-mode fibers per RRH2x: one carrying UL, the other carrying DL

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Digital Ports and Alarms

- Two optical ports to support daisy-chaining
- Six external alarms

CPG2809100912 (09)

Alcatel·Lucent

Product Data Sheet HB158-1-08U8-S8J18

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.

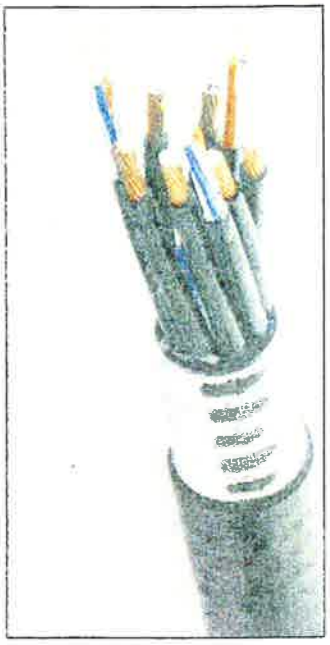


Figure 1: HYBRIFLEX Series

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

Technical Specifications

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
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)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm²(8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
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
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (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-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

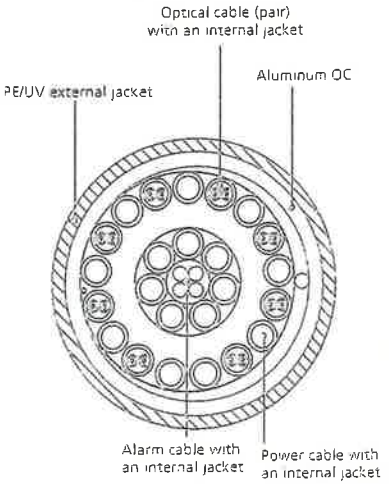


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Guilford 2 Relo								
Tower Height: 149Ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*AT&T UMTS	2	565	108	0.0348	880	0.5867	5.94%	
*AT&T UMTS	2	875	108	0.0539	1900	1.0000	5.39%	
*AT&T GSM	1	283	108	0.0087	880	0.5867	1.49%	
*AT&T GSM	4	525	108	0.0647	1900	1.0000	6.47%	
*AT&T LTE	1	1313	108	0.0405	734	0.4893	8.27%	
*Pocket (now MetroPCS)	3	631	103	0.0642	2130	1.0000	6.42%	
*T-Mobile GSM	8	120	148	0.0158	1945	1.0000	1.58%	
*T-Mobile UMTS	2	674	148	0.0221	2100	1.0000	2.21%	
*Nextel	9	100	140	0.0165	851	0.5673	2.91%	
*Sprint CDMA/LTE	3	347.5	130	0.0222	1900	1.0000	2.22%	
*Sprint CDMA/LTE	1	195	130	0.0041	850	0.5667	0.73%	
*Sprint CDMA/LTE	2	195	130	0.0083	2500	1.0000	0.83%	
Verizon	**7**	**422**	**118**	**0.0763**	**1970**	**1.0000**	**7.63%**	
Verizon	**9**	**394**	**118**	**0.0916**	**869**	**0.5793**	**15.81%**	
Verizon	**1**	**1828**	**118**	**0.0472**	**2145**	**1.0000**	**4.72%**	
Verizon	**1**	**818**	**118**	**0.0211**	**698**	**0.4653**	**4.54%**	
								77.16%
* Source: Siting Council								

ATTACHMENT 3

March 24, 2014

Darcy Tarr
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6589

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	N/A
	Carrier Site Name:	Guilford 2 Relo, CT
Crown Castle Designation:	**Crown Castle BU Number:**	876343
	Crown Castle Site Name:	Guilford West Stone Property
	Crown Castle JDE Job Number:	264390
	Crown Castle Work Order Number:	723470
	Crown Castle Application Number:	216659 Rev. 1
Engineering Firm Designation:	**B+T Group Project Number:**	84701.003.01
Site Data:	**1919 Boston Post Rd., Guilford, New Haven County, CT** **Latitude *41° 18' 1.27"*, Longitude *-72° 42' 29.13"*** **149 Foot - Monopole Tower**	

Dear Darcy Tarr,

B+T Group 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 628424, in accordance with application 216659, revision 1.

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 1 and Table 2 for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and IBC 2006 based upon a wind speed of 85 mph fastest mile.

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *B+T Group* 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.

Respectfully submitted by:
B+T Engineering, Inc.

John Landon
Project Engineer

Chad E. Tuttle, P.E.
President

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
3/24/14

TnxTower Report - version 6.1.4.1

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 149 ft Monopole tower designed by EEI in June of 2008. The tower was originally designed for a wind speed of 115 mph per TIA-222-G.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 37.6 mph with 0.75 inch ice thickness and 50 mph under service loads.

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
116.0	118.0	3	Alcatel Lucent	RRH2x40-AWS	1	1 5/8	--
		3	Antel	BXA-171063-12CF-EDIN-2			
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z			

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
148.0	148.0	3	Ericsson	ERICSSON AIR 21 B2A B4P	7	1 5/8	2
		3	Ericsson	ERICSSON AIR 21 B4A B2P			
		3	Ericsson	KRY 112 144/1			
		1	--	Sector Mount [SM 901-3]	6	1 5/8	1
139.0	140.0	12	Decibel	DB848H90E-XY	12	1 1/4	1
	139.0	1	--	Sector Mount [SM 901-3]			
128.0	130.0	3	Alcatel Lucent	TD-RRH8x20-25	1	5/8	2
		3	Rfs Celwave	APXVTM14-C-120			
		3	Rfs Celwave	APXVSPP18-C-A20	3	1 1/4	1
	128.0	3	Alcatel Lucent	800 External Notch Filter			
		9	Rfs Celwave	ACU-A20-N			
		1	--	Sector Mount [SM 901-3]			
128.0	130.0	3	Alcatel Lucent	800MHZ RRH	--	--	1
	126.0	3	Alcatel Lucent	1900MHz RRH (65MHz)			
		1	--	Side Arm Mount [SO 102-3]			
116.0	118.0	4	Andrew	DB846F65ZAXY	12 1	1 5/8 1/2	1
		1	Antel	BXA-171063-12BF			
		1	Antel	BXA-171063-8BF-2			
		1	Antel	BXA-171085-12BF-2			
		3	Antel	BXA-70063/6CF-2			
		2	Decibel	DB846H80E-SX			
		1	Maxrad	GPS-TMG-26NMS			
	116.0	6	Rfs Celwave	FD9R6004/2C-3L			
		1	--	Sector Mount [SM 901-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
110.0	110.0	3	Ericsson	RRUS 11	--	--	1
		1	--	Side Arm Mount [SO 102-3]			
106.0	108.0	3	Ericsson	RRUS-11	12 2 1	1 5/8 3/4 3/8	1
		1	Kmw Com.	AM-X-CD-14-65-00T-RET			
		2	Kmw Com.	AM-X-CD-16-65-00T-RET			
		6	Powerwave	7200.40			
		12	Powerwave	LGP 21403			
		1	Raycap	DC6-48-60-18-8F			
	106.0	1	--	Sector Mount [SM 901-3]			
98.0	98.0	3	Rfs Celwave	APXV18-206517S-C	6	1 5/8	1
55.0	57.0	1	Lucent	KS24019-L112A	1	1/2	1
	55.0	1	--	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) 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)
150	150	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
140	140	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
130	130	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
120	120	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		
110	110	3	Generic	10' Universal T-Arms	--	--
		12	Generic	72" x 12" Panel		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	Verizon Wireless Co-Locate Rev # 1	216659	CCI Sites
Tower Manufacturing Drawings	EEI, Project No:15475	2302343	CCI Sites
Tower Foundation Drawings	EEI, Project No:15475	2302348	CCI Sites
Geotech Report	Terracon, Project No:J2085178	2302346	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 03/11/2014	CCI Sites

3.1) Analysis Method

TnxTower (version 6.1.4.1), 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) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures 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 the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
5) Mount areas and weights are assumed based on photographs provided.

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group 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 (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	149 - 135.08	Pole	TP26.743x22x0.188	1	-4.109	781.111	9.6	Pass
L2	135.08 - 92.2	Pole	TP40.914x25.06x0.25	2	-15.727	1576.126	64.6	Pass
L3	92.2 - 45.24	Pole	TP56.356x38.51x0.313	3	-26.230	2591.019	77.3	Pass
L4	45.24 - 0	Pole	TP71x53.171x0.375	4	-44.303	3890.107	73.0	Pass
							Summary	
						Pole (L3)	77.3	Pass
						RATING =	77.3	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	44.5	Pass
1	Base Plate	Base	44.6	Pass
1	Base Foundation	Base	90.3	Pass

Structure Rating (max from all components) =	90.3%

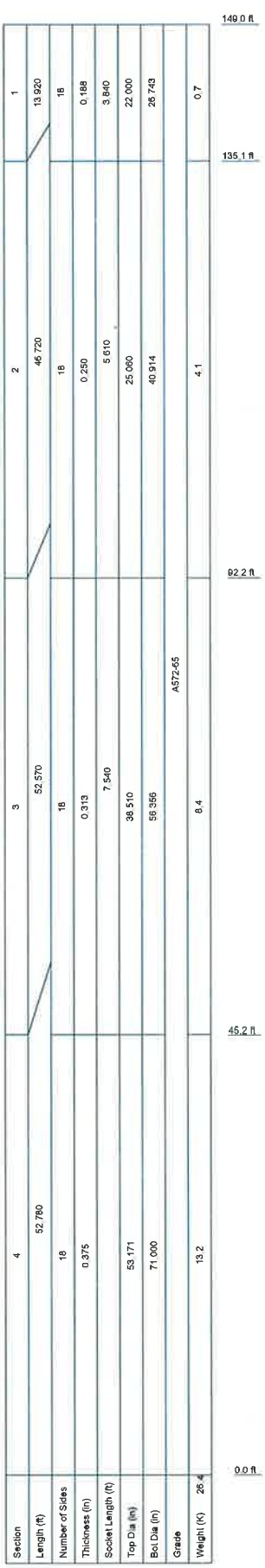
Notes:
1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
2) The percent capacities shown above (excluding foundations) include the 1/3 increase in allowable stresses as allowed by TIA/EIA-222-F.

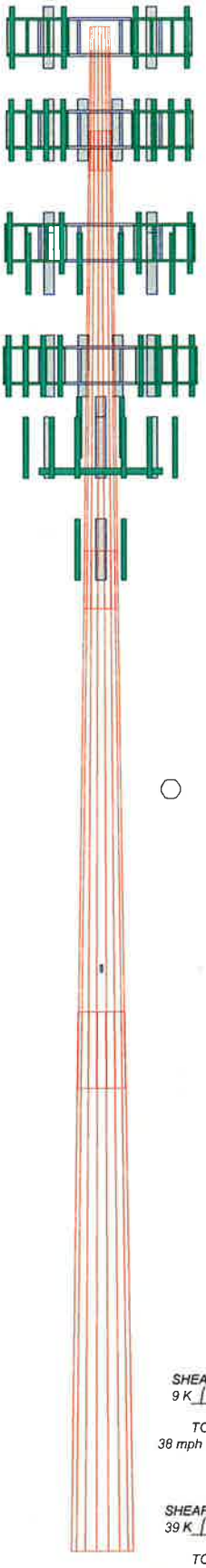
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT





DESIGNED APPURTENANCE LOADING

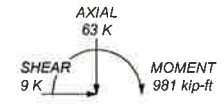
TYPE	ELEVATION	TYPE	ELEVATION
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	148	BXA-171063-8BF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	148	BXA-171085-12BF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	148	BXA-171063-12BF w/ Mount Pipe (E)	116
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	148	BXA-70063/6CF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	148	BXA-70063/6CF-2 w/ Mount Pipe (E)	116
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	148	BXA-70063/6CF-2 w/ Mount Pipe (E)	116
KRY 112 144/1 (R)	148	GPS-TMG-26NMS (E)	116
KRY 112 144/1 (R)	148	(2) FD9R6004/2C-3L (E)	116
KRY 112 144/1 (R)	148	(2) FD9R6004/2C-3L (E)	116
(2) 7' x 2" Pipe Mount (E)	148	(2) FD9R6004/2C-3L (E)	116
(2) 7' x 2" Pipe Mount (E)	148	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (P)	116
(2) 7' x 2" Pipe Mount (E)	148	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (P)	116
Sector Mount [SM 901-3] (E)	148	BXA-171063-12CF-EDIN-2 w/ Mount Pipe (P)	116
(4) DB848H90E-XY w/ Mount Pipe (E)	139	DB-T1-6Z-8AB-0Z (P)	116
(4) DB848H90E-XY w/ Mount Pipe (E)	139	RRH2x40-AWS (P)	116
(4) DB848H90E-XY w/ Mount Pipe (E)	139	RRH2x40-AWS (P)	116
Sector Mount [SM 901-3] (E)	139	RRH2x40-AWS (P)	116
APXVSPP18-C-A20 w/ Mount Pipe (E)	128	Sector Mount [SM 901-3] (E)	116
APXVSPP18-C-A20 w/ Mount Pipe (E)	128	RRUS 11 (E)	110
APXVSPP18-C-A20 w/ Mount Pipe (E)	128	RRUS 11 (E)	110
(3) ACU-A20-N (E)	128	RRUS 11 (E)	110
(3) ACU-A20-N (E)	128	4' x 2" Pipe Mount (E)	110
(3) ACU-A20-N (E)	128	4' x 2" Pipe Mount (E)	110
800 EXTERNAL NOTCH FILTER (E)	128	4' x 2" Pipe Mount (E)	110
800 EXTERNAL NOTCH FILTER (E)	128	Side Arm Mount [SO 102-3] (E)	110
800 EXTERNAL NOTCH FILTER (E)	128	(2) 7200.40 w/ Mount Pipe (E)	106
APXVTM14-C-120 w/ Mount Pipe (R)	128	(2) 7200.40 w/ Mount Pipe (E)	106
APXVTM14-C-120 w/ Mount Pipe (R)	128	(2) 7200.40 w/ Mount Pipe (E)	106
APXVTM14-C-120 w/ Mount Pipe (R)	128	AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	106
TD-RRH8x20-25 (R)	128	AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	106
TD-RRH8x20-25 (R)	128	AM-X-CD-14-65-00T-RET w/ Mount Pipe (E)	106
TD-RRH8x20-25 (R)	128	DC6-48-60-18-8F (E)	106
(2) 7' x 2" Pipe Mount (E)	128	(4) LGP 21403 (E)	106
(2) 7' x 2" Pipe Mount (E)	128	(4) LGP 21403 (E)	106
(2) 7' x 2" Pipe Mount (E)	128	(4) LGP 21403 (E)	106
Sector Mount [SM 901-3] (E)	128	RRUS-11 (E)	106
1900MHz RRH (65MHz) w/Mount pipe (E)	128	RRUS-11 (E)	106
1900MHz RRH (65MHz) w/Mount pipe (E)	128	RRUS-11 (E)	106
1900MHz RRH (65MHz) w/Mount pipe (E)	128	7'x2" Pipe Mount (E)	106
800MHZ RRH (E)	128	7'x2" Pipe Mount (E)	106
800MHZ RRH (E)	128	7'x2" Pipe Mount (E)	106
800MHZ RRH (E)	128	Sector Mount [SM 901-3] (E)	106
6' x 2" Mount Pipe (E)	128	APXV18-206517S-C w/ Mount Pipe (E)	98
6' x 2" Mount Pipe (E)	128	APXV18-206517S-C w/ Mount Pipe (E)	98
6' x 2" Mount Pipe (E)	128	APXV18-206517S-C w/ Mount Pipe (E)	98
Side Arm Mount [SO 102-3] (E)	128	KS24019-L112A (E)	55
(2) DB846F65ZAXY w/ Mount Pipe (E)	116	Side Arm Mount [SO 701-1] (E)	55
(2) DB846F65ZAXY w/ Mount Pipe (E)	116		
(2) DB846H80E-SX w/ Mount Pipe (E)	116		

MATERIAL STRENGTH

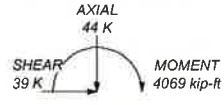
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 77.3%



TORQUE 0 kip-ft
38 mph WIND - 0.750 in ICE



TORQUE 1 kip-ft
REACTIONS - 85 mph WIND

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

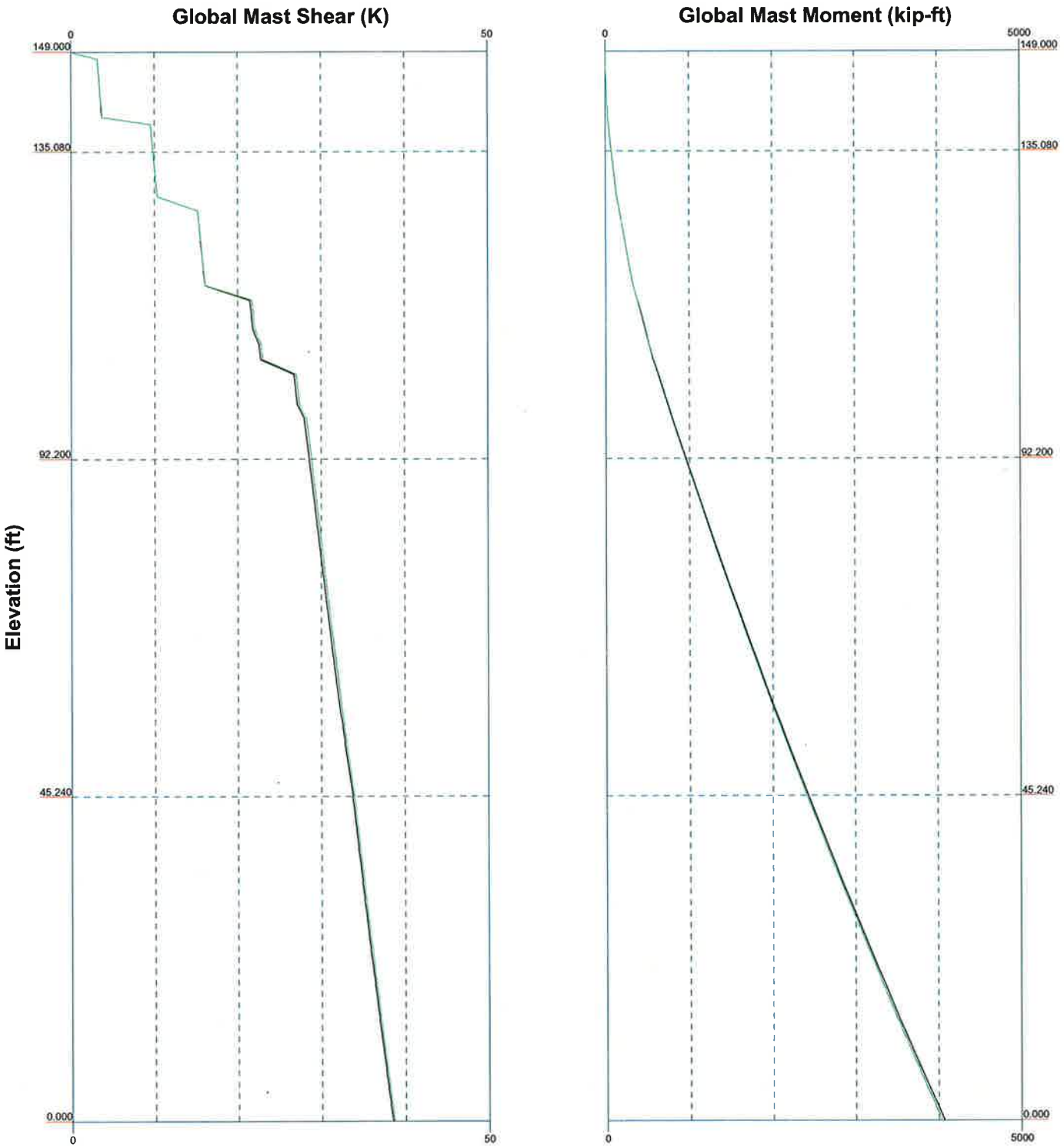
Job: 84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 87634
Project:
Client: Crown Castle | Drawn by: J. Landon | App'd:
Code: TIA/EIA-222-F | Date: 03/24/14 | Scale: NTS
Path: | Dwg No. E-1

TIA/EIA-222-F - 85 mph/38 mph 0.750 in Ice

Vx Vz

Maximum Values

Mx Mz

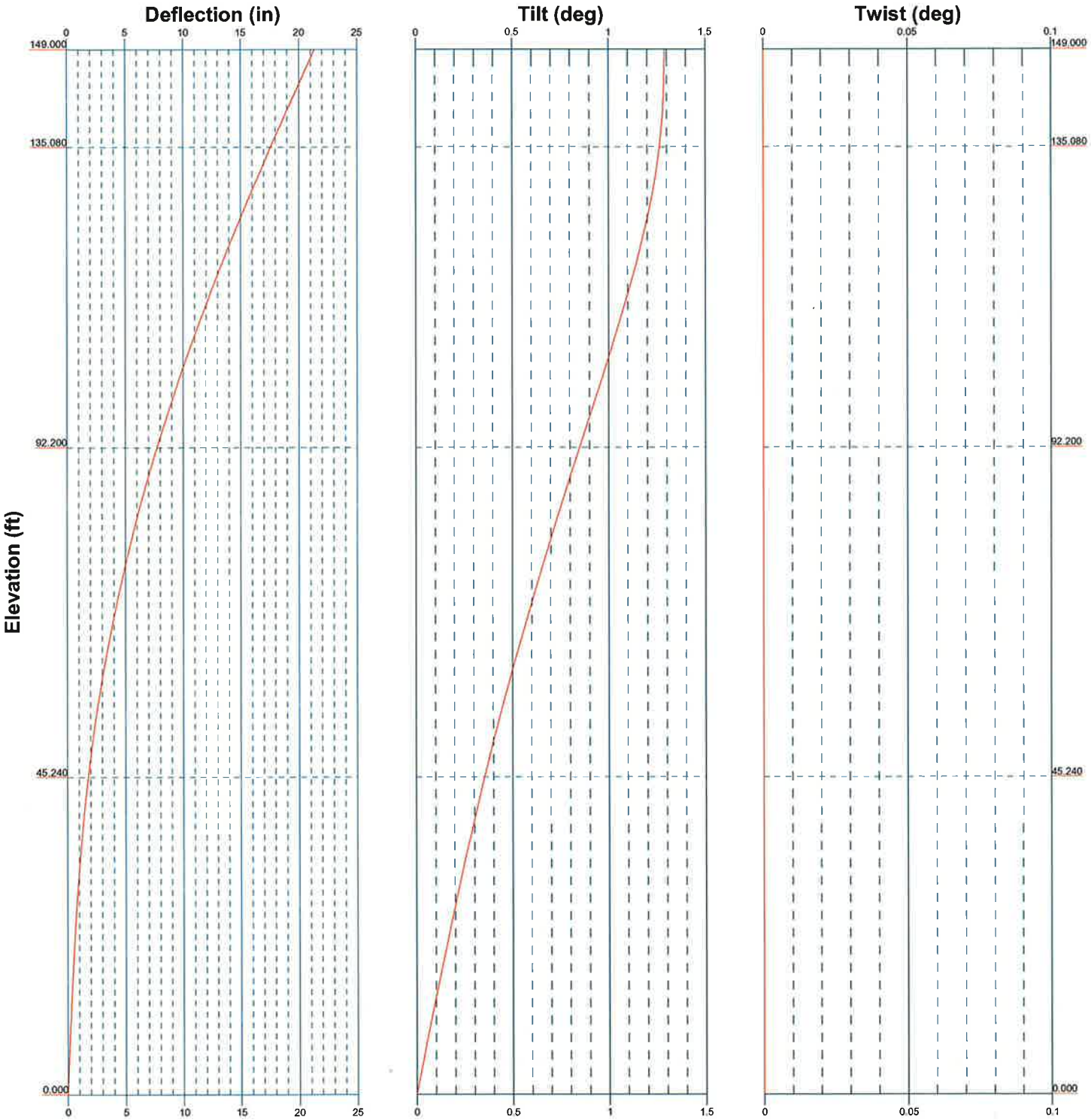


B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 87634			
Project:			
Client: Crown Castle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS	
Path:		Dwg No. E-4	

TIA/EIA-222-F - Service - 50 mph

Maximum Values

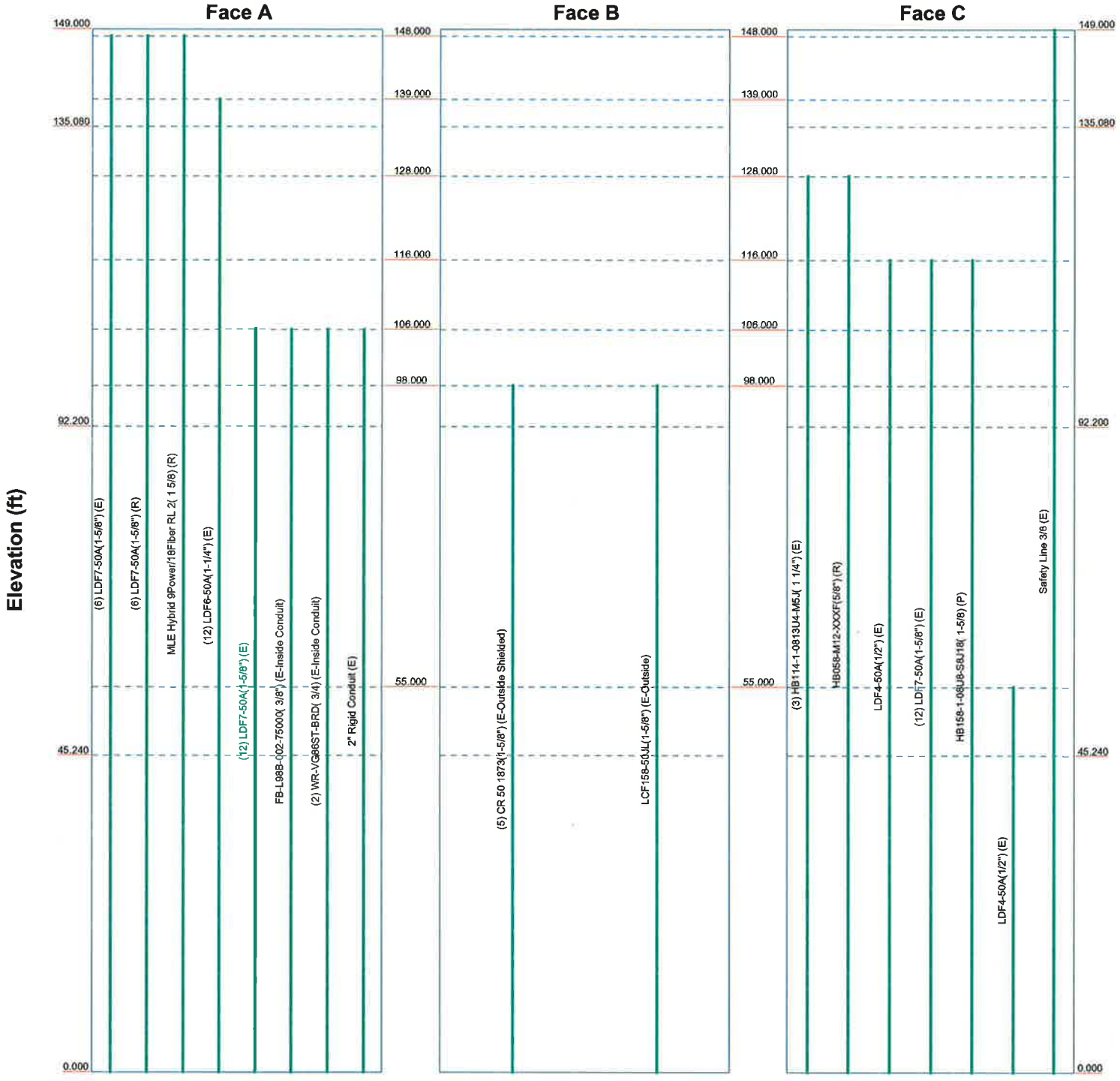


B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 87634			
Project:			
Client: Crown Casstle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 149'

Round | Flat | App In Face | App Out Face | Truss Leg



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 87634			
Project:			
Client: Crown Casstle	Drawn by: J. Landon	App'd:	
Code: TIA/EIA-222-F	Date: 03/24/14	Scale: NTS	
Path:		Dwg No. E-7	

tnxTower	Job	Page
	84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 876343)	1 of 17
B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Project	Date 11:25:16 03/24/14
	Client Crown Casstle	Designed by J. Landon

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Treat Feedline Bundles As Cylinder
	Consider Moments - Horizontals		Assume Legs Pinned		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Calculate Redundant Bracing Forces
	Use Moment Magnification	√	Use Clear Spans For Wind Area		Ignore Redundant Members in FEA
√	Use Code Stress Ratios		Use Clear Spans For KL/r		SR Leg Bolts Resist Compression
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		All Leg Panels Have Same Allowable
√	Escalate Ice	√	Bypass Mast Stability Checks		Offset Girt At Foundation
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Consider Feedline Torque
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Include Angle Block Shear Check
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Poles
	Leg Bolts Are At Top Of Section		SR Members Have Cut Ends	√	Include Shear-Torsion Interaction
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component		Always Use Sub-Critical Flow
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Use Top Mounted Sockets
	Add IBC .6D+W Combination		Use TIA-222-G Tension Splice Capacity Exemption		

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	149.000-135.080	13.920	3.840	18	22.000	26.743	0.188	0.750	A572-65 (65 ksi)
L2	135.080-92.200	46.720	5.610	18	25.060	40.914	0.250	1.000	A572-65 (65 ksi)
L3	92.200-45.240	52.570	7.540	18	38.510	56.356	0.313	1.250	A572-65 (65 ksi)
L4	45.240-0.000	52.780		18	53.171	71.000	0.375	1.500	A572-65 (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	It/Q in^2	w in	w/t
L1	22.339	12.981	780.301	7.743	11.176	69.819	1561.628	6.492	3.542	18.891
	27.155	15.804	1408.005	9.427	13.585	103.641	2817.863	7.903	4.377	23.343
L2	26.769	19.686	1530.873	8.807	12.730	120.255	3063.760	9.845	3.970	15.882
	41.545	32.267	6740.950	14.436	20.784	324.327	13490.769	16.137	6.761	27.044
L3	41.038	37.888	6984.147	13.560	19.563	357.003	13977.485	18.947	6.228	19.929
	57.225	55.588	22058.204	19.895	28.629	770.489	44145.432	27.799	9.369	29.98
L4	56.578	62.841	22130.424	18.743	27.011	819.309	44289.967	31.426	8.698	23.195
	72.095	84.061	52972.567	25.072	36.068	1468.686	106014.838	42.039	11.836	31.563

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 149.000-135.080				1	1	1		
L2 135.080-92.200				1	1	1		
L3 92.200-45.240				1	1	1		
L4 45.240-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
$$$										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF7-50A(1-5/8") (E)	A	No	Inside Pole	148.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
LDF7-50A(1-5/8") (R)	A	No	Inside Pole	148.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
MLE Hybrid 9Power/18Fiber RL 2(1	A	No	Inside Pole	148.000 - 0.000	1	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
5/8)						1" Ice	0.000	0.001
(R)						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
$$$								
LDF6-50A(1-1/4")	A	No	Inside Pole	139.000 - 0.000	12	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
$$$								
HB114-1-0813U4-M5J(	C	No	Inside Pole	128.000 - 0.000	3	No Ice	0.000	0.001
1 1/4")						1/2" Ice	0.000	0.001
(E)						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
HB058-M12-XXXF(5/8"	C	No	CaAa (Out Of	128.000 - 0.000	1	No Ice	0.084	0.000
)			Face)			1/2" Ice	0.184	0.001
(R)						1" Ice	0.284	0.002
						2" Ice	0.484	0.007
						4" Ice	0.884	0.024
$$$								
LDF4-50A(1/2")	C	No	Inside Pole	116.000 - 0.000	1	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF7-50A(1-5/8")	C	No	Inside Pole	116.000 - 0.000	12	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
HB158-1-08U8-S8J18(	C	No	Inside Pole	116.000 - 0.000	1	No Ice	0.000	0.001
1-5/8)						1/2" Ice	0.000	0.001
(P)						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
$$$								
LDF7-50A(1-5/8")	A	No	Inside Pole	106.000 - 0.000	12	No Ice	0.000	0.001
(E)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
FB-L98B-002-75000(	A	No	Inside Pole	106.000 - 0.000	1	No Ice	0.000	0.000
3/8")						1/2" Ice	0.000	0.000
(E-Inside Conduit)						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	A	No	Inside Pole	106.000 - 0.000	2	No Ice	0.000	0.001
(E-Inside Conduit)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
2" Rigid Conduit	A	No	Inside Pole	106.000 - 0.000	1	No Ice	0.000	0.003
(E)						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.003
						2" Ice	0.000	0.003
						4" Ice	0.000	0.003
$$$								
CR 50 1873(1-5/8")	B	No	CaAa (Out Of	98.000 - 0.000	5	No Ice	0.000	0.001
(E-Outside Shielded)			Face)			1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030
LCF158-50JL(1-5/8") (E-Outside)	B	No	CaAa (Out Of Face)	98.000 - 0.000	1	No Ice	0.198	0.001
						1/2" Ice	0.298	0.002
						1" Ice	0.398	0.004
						2" Ice	0.598	0.010
						4" Ice	0.998	0.030
$$$								
LDF4-50A(1/2") (E)	C	No	Inside Pole	55.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
$$$								
Safety Line 3/8 (E)	C	No	CaAa (Out Of Face)	149.000 - 0.000	1	No Ice	0.037	0.000
						1/2" Ice	0.137	0.001
						1" Ice	0.238	0.001
						2" Ice	0.437	0.002
						4" Ice	0.838	0.004
$$$								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	149.000-135.080	A	0.000	0.000	0.000	0.000	0.172
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.522	0.003
L2	135.080-92.200	A	0.000	0.000	0.000	0.000	0.999
		B	0.000	0.000	0.000	1.148	0.027
		C	0.000	0.000	0.000	4.615	0.416
L3	92.200-45.240	A	0.000	0.000	0.000	0.000	1.536
		B	0.000	0.000	0.000	9.298	0.219
		C	0.000	0.000	0.000	5.706	0.722
L4	45.240-0.000	A	0.000	0.000	0.000	0.000	1.480
		B	0.000	0.000	0.000	8.958	0.211
		C	0.000	0.000	0.000	5.497	0.701

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_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	149.000-135.080	A	0.893	0.000	0.000	0.000	0.000	0.172
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	3.009	0.016
L2	135.080-92.200	A	0.869	0.000	0.000	0.000	0.000	0.999
		B		0.000	0.000	0.000	2.185	0.138
		C		0.000	0.000	0.000	18.674	0.526
L3	92.200-45.240	A	0.818	0.000	0.000	0.000	0.000	1.536
		B		0.000	0.000	0.000	17.458	1.088
		C		0.000	0.000	0.000	22.025	0.854
L4	45.240-0.000	A	0.750	0.000	0.000	0.000	0.000	1.480
		B		0.000	0.000	0.000	16.359	0.990

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.000	20.299	0.819

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	149.000-135.080	-0.048	0.028	-0.238	0.137
L2	135.080-92.200	-0.097	0.102	-0.405	0.308
L3	92.200-45.240	0.092	0.222	-0.102	0.507
L4	45.240-0.000	0.094	0.226	-0.096	0.515

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	A	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	B	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (R)	C	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	A	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	B	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
ERICSSON AIR 21 B4A B2P w/ Mount Pipe (R)	C	From Leg	4.000 0.000 0.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
KRY 112 144/1	A	From Leg	4.000	0.000	148.000	No Ice	0.408	0.204	0.011

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(R)			0.000 0.000			1/2" Ice	0.497	0.273	0.014
						1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	B	From Leg	4.000	0.000	148.000	No Ice	0.408	0.204	0.011
(R)			0.000 0.000			1/2" Ice	0.497	0.273	0.014
						1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	C	From Leg	4.000	0.000	148.000	No Ice	0.408	0.204	0.011
(R)			0.000 0.000			1/2" Ice	0.497	0.273	0.014
						1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
(2) 7' x 2" Pipe Mount	A	From Leg	4.000	0.000	148.000	No Ice	1.663	1.663	0.026
(E)			0.000 0.000			1/2" Ice	2.391	2.391	0.038
						1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	B	From Leg	4.000	0.000	148.000	No Ice	1.663	1.663	0.026
(E)			0.000 0.000			1/2" Ice	2.391	2.391	0.038
						1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	C	From Leg	4.000	0.000	148.000	No Ice	1.663	1.663	0.026
(E)			0.000 0.000			1/2" Ice	2.391	2.391	0.038
						1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
Sector Mount [SM 901-3]	C	None		0.000	148.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
(4) DB848H90E-XY w/	A	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(E)			1.000			1" Ice	8.816	13.564	0.219
						2" Ice	10.151	15.911	0.419
						4" Ice	12.921	20.786	0.995
(4) DB848H90E-XY w/	B	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(E)			1.000			1" Ice	8.816	13.564	0.219
						2" Ice	10.151	15.911	0.419
						4" Ice	12.921	20.786	0.995
(4) DB848H90E-XY w/	C	From Leg	4.000	0.000	139.000	No Ice	7.426	10.493	0.061
Mount Pipe			0.000			1/2" Ice	8.116	12.016	0.135
(E)			1.000			1" Ice	8.816	13.564	0.219
						2" Ice	10.151	15.911	0.419
						4" Ice	12.921	20.786	0.995
Sector Mount [SM 901-3]	C	None		0.000	139.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
APXVSPP18-C-A20 w/	A	From Leg	4.000	0.000	128.000	No Ice	8.498	6.946	0.083

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mount Pipe			0.000			1/2" Ice	9.149	8.127	0.151
(E)			2.000			1" Ice	9.767	9.021	0.227
						2" Ice	11.031	10.844	0.406
						4" Ice	13.679	14.851	0.909
APXVSPP18-C-A20 w/	B	From Leg	4.000	0.000	128.000	No Ice	8.498	6.946	0.083
Mount Pipe			0.000			1/2" Ice	9.149	8.127	0.151
(E)			2.000			1" Ice	9.767	9.021	0.227
						2" Ice	11.031	10.844	0.406
						4" Ice	13.679	14.851	0.909
APXVSPP18-C-A20 w/	C	From Leg	4.000	0.000	128.000	No Ice	8.498	6.946	0.083
Mount Pipe			0.000			1/2" Ice	9.149	8.127	0.151
(E)			2.000			1" Ice	9.767	9.021	0.227
						2" Ice	11.031	10.844	0.406
						4" Ice	13.679	14.851	0.909
(3) ACU-A20-N	A	From Leg	4.000	0.000	128.000	No Ice	0.078	0.136	0.001
(E)			0.000			1/2" Ice	0.121	0.189	0.002
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
(3) ACU-A20-N	B	From Leg	4.000	0.000	128.000	No Ice	0.078	0.136	0.001
(E)			0.000			1/2" Ice	0.121	0.189	0.002
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
(3) ACU-A20-N	C	From Leg	4.000	0.000	128.000	No Ice	0.078	0.136	0.001
(E)			0.000			1/2" Ice	0.121	0.189	0.002
			0.000			1" Ice	0.173	0.251	0.004
						2" Ice	0.302	0.400	0.012
						4" Ice	0.665	0.802	0.045
800 EXTERNAL NOTCH	A	From Leg	4.000	0.000	128.000	No Ice	0.770	0.375	0.011
FILTER			0.000			1/2" Ice	0.890	0.465	0.017
(E)			0.000			1" Ice	1.018	0.563	0.024
						2" Ice	1.301	0.787	0.045
						4" Ice	1.970	1.337	0.114
800 EXTERNAL NOTCH	B	From Leg	4.000	0.000	128.000	No Ice	0.770	0.375	0.011
FILTER			0.000			1/2" Ice	0.890	0.465	0.017
(E)			0.000			1" Ice	1.018	0.563	0.024
						2" Ice	1.301	0.787	0.045
						4" Ice	1.970	1.337	0.114
800 EXTERNAL NOTCH	C	From Leg	4.000	0.000	128.000	No Ice	0.770	0.375	0.011
FILTER			0.000			1/2" Ice	0.890	0.465	0.017
(E)			0.000			1" Ice	1.018	0.563	0.024
						2" Ice	1.301	0.787	0.045
						4" Ice	1.970	1.337	0.114
APXVTM14-C-120 w/	A	From Leg	4.000	0.000	128.000	No Ice	7.134	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.662	5.754	0.131
(R)			2.000			1" Ice	8.183	6.472	0.193
						2" Ice	9.256	8.010	0.338
						4" Ice	11.526	11.412	0.752
APXVTM14-C-120 w/	B	From Leg	4.000	0.000	128.000	No Ice	7.134	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.662	5.754	0.131
(R)			2.000			1" Ice	8.183	6.472	0.193
						2" Ice	9.256	8.010	0.338
						4" Ice	11.526	11.412	0.752
APXVTM14-C-120 w/	C	From Leg	4.000	0.000	128.000	No Ice	7.134	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.662	5.754	0.131
(R)			2.000			1" Ice	8.183	6.472	0.193

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	9.256	8.010	0.338
						4" Ice	11.526	11.412	0.752
TD-RRH8x20-25	A	From Leg	4.000	0.000	128.000	No Ice	4.720	1.703	0.070
(R)			0.000			1/2" Ice	5.014	1.920	0.097
			2.000			1" Ice	5.316	2.145	0.128
						2" Ice	5.948	2.622	0.201
						4" Ice	7.314	3.680	0.397
TD-RRH8x20-25	B	From Leg	4.000	0.000	128.000	No Ice	4.720	1.703	0.070
(R)			0.000			1/2" Ice	5.014	1.920	0.097
			2.000			1" Ice	5.316	2.145	0.128
						2" Ice	5.948	2.622	0.201
						4" Ice	7.314	3.680	0.397
TD-RRH8x20-25	C	From Leg	4.000	0.000	128.000	No Ice	4.720	1.703	0.070
(R)			0.000			1/2" Ice	5.014	1.920	0.097
			2.000			1" Ice	5.316	2.145	0.128
						2" Ice	5.948	2.622	0.201
						4" Ice	7.314	3.680	0.397
(2) 7' x 2" Pipe Mount	A	From Leg	4.000	0.000	128.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	B	From Leg	4.000	0.000	128.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
(2) 7' x 2" Pipe Mount	C	From Leg	4.000	0.000	128.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.038
			0.000			1" Ice	2.825	2.825	0.055
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
Sector Mount [SM 901-3]	C	None		0.000	128.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
1900MHz RRH (65MHz)	A	From Leg	4.000	0.000	128.000	No Ice	2.698	2.929	0.064
w/Mount pipe			0.000			1/2" Ice	2.936	3.255	0.090
(E)			-2.000			1" Ice	3.183	3.600	0.121
						2" Ice	3.703	4.350	0.196
						4" Ice	4.846	6.088	0.412
1900MHz RRH (65MHz)	B	From Leg	4.000	0.000	128.000	No Ice	2.698	2.929	0.064
w/Mount pipe			0.000			1/2" Ice	2.936	3.255	0.090
(E)			-2.000			1" Ice	3.183	3.600	0.121
						2" Ice	3.703	4.350	0.196
						4" Ice	4.846	6.088	0.412
1900MHz RRH (65MHz)	C	From Leg	4.000	0.000	128.000	No Ice	2.698	2.929	0.064
w/Mount pipe			0.000			1/2" Ice	2.936	3.255	0.090
(E)			-2.000			1" Ice	3.183	3.600	0.121
						2" Ice	3.703	4.350	0.196
						4" Ice	4.846	6.088	0.412
800MHZ RRH	A	From Leg	4.000	0.000	128.000	No Ice	2.490	2.068	0.053
(E)			0.000			1/2" Ice	2.706	2.271	0.074
			2.000			1" Ice	2.931	2.481	0.098
						2" Ice	3.407	2.928	0.157

tnxTower	Job 84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 876343)	Page 9 of 17
B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Project	Date 11:25:16 03/24/14
	Client Crown Casstle	Designed by J. Landon

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	4.462	3.927	0.318
800MHZ RRH	B	From Leg	4.000	0.000	128.000	No Ice	2.490	2.068	0.053
(E)			0.000			1/2" Ice	2.706	2.271	0.074
			2.000			1" Ice	2.931	2.481	0.098
						2" Ice	3.407	2.928	0.157
						4" Ice	4.462	3.927	0.318
800MHZ RRH	C	From Leg	4.000	0.000	128.000	No Ice	2.490	2.068	0.053
(E)			0.000			1/2" Ice	2.706	2.271	0.074
			2.000			1" Ice	2.931	2.481	0.098
						2" Ice	3.407	2.928	0.157
						4" Ice	4.462	3.927	0.318
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	128.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Side Arm Mount [SO 102-3)	C	None		0.000	128.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
						2" Ice	4.920	4.920	0.201
						4" Ice	6.840	6.840	0.321
$$$									
(2) DB846F65ZAXY w/	A	From Leg	4.000	0.000	116.000	No Ice	7.271	7.821	0.047
Mount Pipe			0.000			1/2" Ice	7.877	9.010	0.114
(E)			2.000			1" Ice	8.484	9.912	0.189
						2" Ice	9.724	11.812	0.367
						4" Ice	12.325	15.978	0.867
(2) DB846F65ZAXY w/	C	From Leg	4.000	0.000	116.000	No Ice	7.271	7.821	0.047
Mount Pipe			0.000			1/2" Ice	7.877	9.010	0.114
(E)			2.000			1" Ice	8.484	9.912	0.189
						2" Ice	9.724	11.812	0.367
						4" Ice	12.325	15.978	0.867
(2) DB846H80E-SX w/	B	From Leg	4.000	0.000	116.000	No Ice	5.331	7.735	0.041
Mount Pipe			0.000			1/2" Ice	5.888	8.930	0.099
(E)			2.000			1" Ice	6.412	9.843	0.165
						2" Ice	7.481	11.711	0.323
						4" Ice	9.828	15.894	0.782
BXA-171063-8BF-2 w/	A	From Leg	4.000	0.000	116.000	No Ice	3.179	3.353	0.029
Mount Pipe			0.000			1/2" Ice	3.555	3.971	0.061
(E)			2.000			1" Ice	3.964	4.595	0.099
						2" Ice	4.853	5.893	0.193
						4" Ice	6.767	8.885	0.488
BXA-171085-12BF-2 w/	B	From Leg	4.000	0.000	116.000	No Ice	4.971	5.228	0.040
Mount Pipe			0.000			1/2" Ice	5.521	6.389	0.086
(E)			2.000			1" Ice	6.036	7.261	0.139
						2" Ice	7.091	9.046	0.271
						4" Ice	9.359	12.817	0.671

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
BXA-171063-12BF w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.971 5.521 6.036 7.091 9.359	5.228 6.389 7.261 9.046 12.817	0.040 0.086 0.139 0.271 0.671
BXA-70063/6CF-2 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.101 0.168 0.327 0.787
BXA-70063/6CF-2 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.101 0.168 0.327 0.787
BXA-70063/6CF-2 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.101 0.168 0.327 0.787
GPS-TMG-26NMS (E)	B	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.156 0.213 0.279 0.437 0.857	0.156 0.213 0.279 0.437 0.857	0.001 0.002 0.005 0.014 0.052
(2) FD9R6004/2C-3L (E)	A	From Leg	4.000 0.000 0.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (E)	B	From Leg	4.000 0.000 0.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (E)	C	From Leg	4.000 0.000 0.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (P)	A	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.029 5.583 6.103 7.166 9.438	5.289 6.459 7.348 9.148 12.947	0.041 0.087 0.140 0.273 0.677
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (P)	B	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.029 5.583 6.103 7.166 9.438	5.289 6.459 7.348 9.148 12.947	0.041 0.087 0.140 0.273 0.677
BXA-171063-12CF-EDIN-2 w/ Mount Pipe (P)	C	From Leg	4.000 0.000 2.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.029 5.583 6.103 7.166 9.438	5.289 6.459 7.348 9.148 12.947	0.041 0.087 0.140 0.273 0.677
DB-T1-6Z-8AB-0Z (P)	A	From Leg	4.000 0.000	0.000	116.000	No Ice 1/2" Ice	5.600 5.915	2.333 2.558	0.044 0.080

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.000			1" Ice	6.240	2.791	0.120
						2" Ice	6.914	3.284	0.213
						4" Ice	8.365	4.373	0.455
RRH2x40-AWS	A	From Leg	4.000	0.000	116.000	No Ice	2.522	1.589	0.044
(P)			0.000			1/2" Ice	2.753	1.795	0.061
			2.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
RRH2x40-AWS	B	From Leg	4.000	0.000	116.000	No Ice	2.522	1.589	0.044
(P)			0.000			1/2" Ice	2.753	1.795	0.061
			2.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
RRH2x40-AWS	C	From Leg	4.000	0.000	116.000	No Ice	2.522	1.589	0.044
(P)			0.000			1/2" Ice	2.753	1.795	0.061
			2.000			1" Ice	2.993	2.010	0.082
						2" Ice	3.499	2.465	0.132
						4" Ice	4.615	3.479	0.275
Sector Mount [SM 901-3]	C	None		0.000	116.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
RRUS 11	A	From Leg	1.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			0.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS 11	B	From Leg	1.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			0.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS 11	C	From Leg	1.000	0.000	110.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			0.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
4' x 2" Pipe Mount	A	From Leg	0.500	0.000	110.000	No Ice	0.866	0.866	0.015
(E)			0.000			1/2" Ice	1.111	1.111	0.022
			0.000			1" Ice	1.365	1.365	0.032
						2" Ice	1.901	1.901	0.062
						4" Ice	3.228	3.228	0.161
4' x 2" Pipe Mount	B	From Leg	0.500	0.000	110.000	No Ice	0.866	0.866	0.015
(E)			0.000			1/2" Ice	1.111	1.111	0.022
			0.000			1" Ice	1.365	1.365	0.032
						2" Ice	1.901	1.901	0.062
						4" Ice	3.228	3.228	0.161
4' x 2" Pipe Mount	C	From Leg	0.500	0.000	110.000	No Ice	0.866	0.866	0.015
(E)			0.000			1/2" Ice	1.111	1.111	0.022
			0.000			1" Ice	1.365	1.365	0.032
						2" Ice	1.901	1.901	0.062
						4" Ice	3.228	3.228	0.161
Side Arm Mount [SO 102-3]	C	None		0.000	110.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	4.920	4.920	0.201
						4" Ice	6.840	6.840	0.321
$$$									
(2) 7200.40 w/ Mount Pipe	A	From Leg	4.000	0.000	106.000	No Ice	4.354	4.612	0.049
(E)			0.000			1/2" Ice	4.900	5.772	0.090
			2.000			1" Ice	5.411	6.645	0.137
						2" Ice	6.458	8.424	0.258
						4" Ice	8.655	12.183	0.634
(2) 7200.40 w/ Mount Pipe	B	From Leg	4.000	0.000	106.000	No Ice	4.354	4.612	0.049
(E)			0.000			1/2" Ice	4.900	5.772	0.090
			2.000			1" Ice	5.411	6.645	0.137
						2" Ice	6.458	8.424	0.258
						4" Ice	8.655	12.183	0.634
(2) 7200.40 w/ Mount Pipe	C	From Leg	4.000	0.000	106.000	No Ice	4.354	4.612	0.049
(E)			0.000			1/2" Ice	4.900	5.772	0.090
			2.000			1" Ice	5.411	6.645	0.137
						2" Ice	6.458	8.424	0.258
						4" Ice	8.655	12.183	0.634
AM-X-CD-16-65-00T-RET	A	From Leg	4.000	0.000	106.000	No Ice	8.498	6.304	0.074
w/ Mount Pipe			0.000			1/2" Ice	9.149	7.479	0.139
(E)			2.000			1" Ice	9.767	8.368	0.212
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
AM-X-CD-16-65-00T-RET	B	From Leg	4.000	0.000	106.000	No Ice	8.498	6.304	0.074
w/ Mount Pipe			0.000			1/2" Ice	9.149	7.479	0.139
(E)			2.000			1" Ice	9.767	8.368	0.212
						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
AM-X-CD-14-65-00T-RET	C	From Leg	4.000	0.000	106.000	No Ice	5.744	4.015	0.035
w/ Mount Pipe			0.000			1/2" Ice	6.198	4.633	0.080
(E)			2.000			1" Ice	6.661	5.276	0.131
						2" Ice	7.618	6.678	0.254
						4" Ice	9.668	9.744	0.610
DC6-48-60-18-8F	A	From Leg	4.000	0.000	106.000	No Ice	2.567	2.567	0.019
(E)			0.000			1/2" Ice	2.798	2.798	0.041
			2.000			1" Ice	3.038	3.038	0.067
						2" Ice	3.543	3.543	0.129
						4" Ice	4.658	4.658	0.299
(4) LGP 21403	A	From Leg	4.000	0.000	106.000	No Ice	1.288	0.364	0.014
(E)			0.000			1/2" Ice	1.445	0.479	0.021
			2.000			1" Ice	1.611	0.602	0.030
						2" Ice	1.969	0.874	0.055
						4" Ice	2.788	1.522	0.135
(4) LGP 21403	B	From Leg	4.000	0.000	106.000	No Ice	1.288	0.364	0.014
(E)			0.000			1/2" Ice	1.445	0.479	0.021
			2.000			1" Ice	1.611	0.602	0.030
						2" Ice	1.969	0.874	0.055
						4" Ice	2.788	1.522	0.135
(4) LGP 21403	C	From Leg	4.000	0.000	106.000	No Ice	1.288	0.364	0.014
(E)			0.000			1/2" Ice	1.445	0.479	0.021
			2.000			1" Ice	1.611	0.602	0.030
						2" Ice	1.969	0.874	0.055
						4" Ice	2.788	1.522	0.135
RRUS-11	A	From Leg	4.000	0.000	106.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	5.426	3.042	0.310
RRUS-11	B	From Leg	4.000	0.000	106.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS-11	C	From Leg	4.000	0.000	106.000	No Ice	3.249	1.373	0.048
(E)			0.000			1/2" Ice	3.491	1.551	0.068
			2.000			1" Ice	3.741	1.738	0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
7'x2" Pipe Mount	A	From Leg	4.000	0.000	106.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.039
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
7'x2" Pipe Mount	B	From Leg	4.000	0.000	106.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.039
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
7'x2" Pipe Mount	C	From Leg	4.000	0.000	106.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.039
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
Sector Mount [SM 901-3]	C	None		0.000	106.000	No Ice	12.900	12.900	1.257
(E)						1/2" Ice	12.900	12.900	1.432
						1" Ice	12.900	12.900	1.607
						2" Ice	12.900	12.900	1.956
						4" Ice	12.900	12.900	2.654
$$$									
APXV18-206517S-C w/	A	From Leg	1.000	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	B	From Leg	1.000	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	C	From Leg	1.000	0.000	98.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
$$$									
KS24019-L112A	A	From Leg	2.000	0.000	55.000	No Ice	0.156	0.156	0.005
(E)			0.000			1/2" Ice	0.225	0.225	0.007
			2.000			1" Ice	0.302	0.302	0.009
						2" Ice	0.484	0.484	0.018
						4" Ice	0.951	0.951	0.056
Side Arm Mount [SO 701-1]	A	From Leg	1.000	0.000	55.000	No Ice	0.850	1.670	0.065
(E)			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
						2" Ice	2.010	4.350	0.121

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
$$$						4" Ice	3,170	7,030	0.177

Load Combinations

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

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 135.08	21.340	28	1.291	0.001
L2	138.92 - 92.2	18.623	28	1.279	0.001
L3	97.81 - 45.24	8.815	28	0.919	0.001
L4	52.78 - 0	2.383	28	0.421	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	28	21.069	1.291	0.001	29712
139.000	(4) DB848H90E-XY w/ Mount Pipe	28	18.644	1.279	0.001	15464
128.000	APXVSPP18-C-A20 w/ Mount Pipe	28	15.766	1.225	0.001	9516
116.000	(2) DB846F65ZAXY w/ Mount Pipe	28	12.802	1.122	0.001	6830
110.000	RRUS 11	28	11.410	1.059	0.001	5985
106.000	(2) 7200.40 w/ Mount Pipe	28	10.522	1.015	0.001	5529
98.000	APXV18-206517S-C w/ Mount Pipe	28	8.852	0.922	0.001	4860
55.000	KS24019-L112A	28	2.584	0.443	0.000	4967

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	149 - 135.08	61.570	2	3.727	0.003
L2	138.92 - 92.2	53.732	2	3.690	0.003
L3	97.81 - 45.24	25.442	2	2.653	0.002
L4	52.78 - 0	6.881	2	1.216	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	60.788	3.725	0.003	10383
139.000	(4) DB848H90E-XY w/ Mount Pipe	2	53.794	3.690	0.003	5403
128.000	APXVSPP18-C-A20 w/ Mount Pipe	2	45.492	3.535	0.003	3321
116.000	(2) DB846F65ZAXY w/ Mount Pipe	2	36.943	3.239	0.002	2382
110.000	RRUS 11	2	32.929	3.057	0.002	2086
106.000	(2) 7200.40 w/ Mount Pipe	2	30.367	2.928	0.002	1927
98.000	APXV18-206517S-C w/ Mount Pipe	2	25.551	2.660	0.002	1692
55.000	KS24019-L112A	2	7.461	1.279	0.001	1722

tnxTower	Job: 84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 876343)	Page: 16 of 17
B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Project	Date: 11:25:16 03/24/14
	Client: Crown Casstle	Designed by: J. Landon

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	149 - 135.08 (1)	TP26.743x22x0.188	13.920	0.000	0.0	39.000	15.025	-4.109	585.980	0.007
L2	135.08 - 92.2 (2)	TP40.914x25.06x0.25	46.720	0.000	0.0	38.444	30.756	-15.727	1182.390	0.013
L3	92.2 - 45.24 (3)	TP56.356x38.51x0.313	52.570	0.000	0.0	36.640	53.049	-26.230	1943.750	0.013
L4	45.24 - 0 (4)	TP71x53.171x0.375	52.780	0.000	0.0	34.716	84.061	-44.303	2918.310	0.015

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	149 - 135.08 (1)	TP26.743x22x0.188	36.691	4.702	39.000	0.121	0.000	0.000	39.000	0.000
L2	135.08 - 92.2 (2)	TP40.914x25.06x0.25	798.887	32.543	38.444	0.847	0.000	0.000	38.444	0.000
L3	92.2 - 45.24 (3)	TP56.356x38.51x0.313	2176.692	37.233	36.640	1.016	0.000	0.000	36.640	0.000
L4	45.24 - 0 (4)	TP71x53.171x0.375	4068.733	33.244	34.716	0.958	0.000	0.000	34.716	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	149 - 135.08 (1)	TP26.743x22x0.188	9.540	0.635	26.000	0.049	0.002	0.000	26.000	0.000
L2	135.08 - 92.2 (2)	TP40.914x25.06x0.25	28.262	0.919	26.000	0.071	0.453	0.009	26.000	0.000
L3	92.2 - 45.24 (3)	TP56.356x38.51x0.313	33.035	0.623	26.000	0.048	0.479	0.004	26.000	0.000
L4	45.24 - 0 (4)	TP71x53.171x0.375	38.708	0.460	26.000	0.035	0.048	0.000	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	149 - 135.08 (1)	0.007	0.121	0.000	0.049	0.000	0.128 ✔	1.333	H1-3+VT ✔
L2	135.08 - 92.2	0.013	0.847	0.000	0.071	0.000	0.861	1.333	H1-3+VT ✔

tnxTower	Job: 84701.003.01- GUILFORD WEST STONE PROPERTY,CT (BU# 876343)	Page: 17 of 17
B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Project	Date: 11:25:16 03/24/14
	Client: Crown Casstle	Designed by: J. Landon

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{bv}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	(2) 92.2 - 45.24 (3)	0.013	1.016	0.000	0.048	0.000	1.030 ✔	1.333	H1-3+VT ✔
L4	45.24 - 0 (4)	0.015	0.958	0.000	0.035	0.000	0.973 ✔	1.333	H1-3+VT ✔

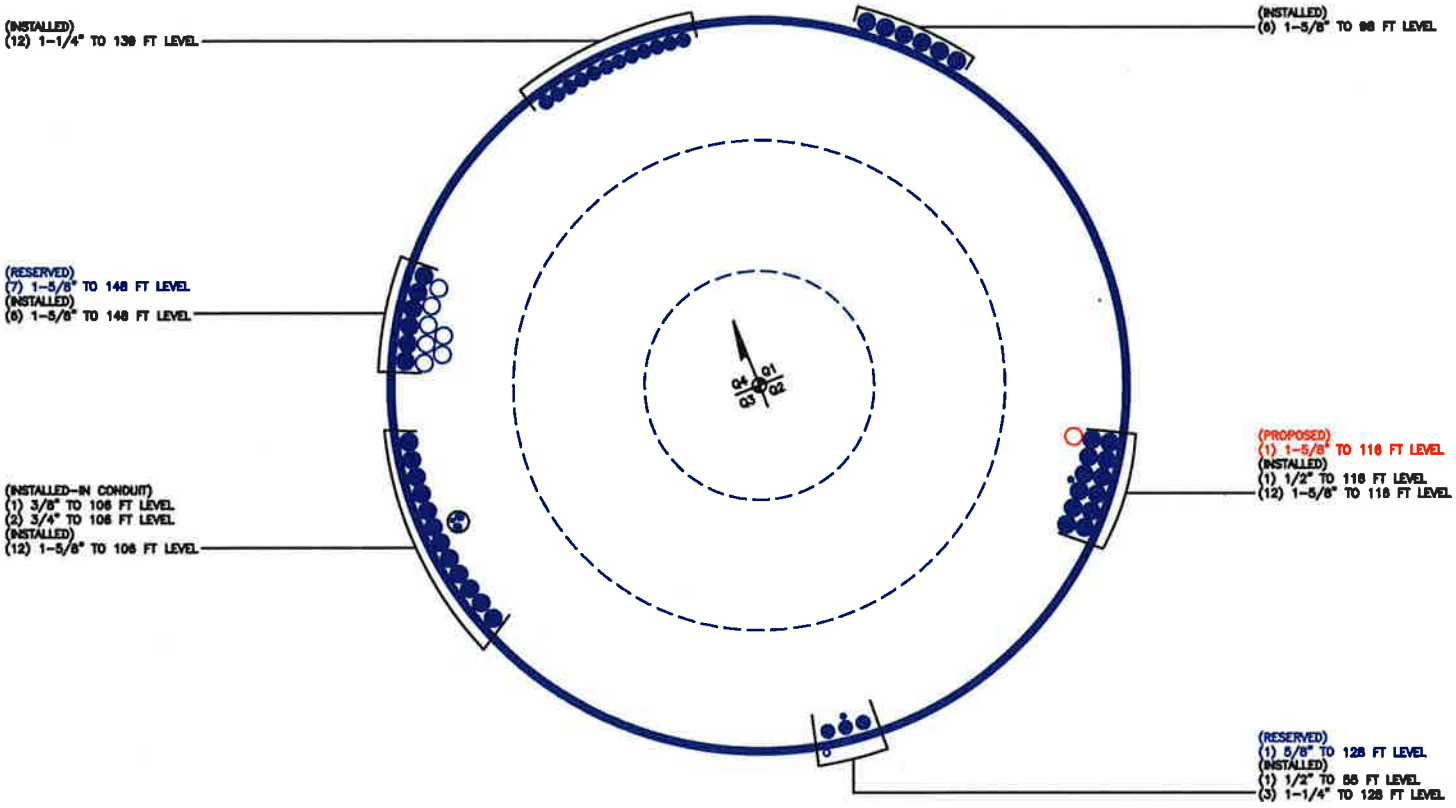
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	149 - 135.08	Pole	TP26.743x22x0.188	1	-4.109	781.111	9.6	Pass
L2	135.08 - 92.2	Pole	TP40.914x25.06x0.25	2	-15.727	1576.126	64.6	Pass
L3	92.2 - 45.24	Pole	TP56.356x38.51x0.313	3	-26.230	2591.019	77.3	Pass
L4	45.24 - 0	Pole	TP71x53.171x0.375	4	-44.303	3890.107	73.0	Pass
							Summary	
						Pole (L3)	77.3	Pass
						RATING =	**77.3**	**Pass**

Program Version 6.1.4.1

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876343

APPENDIX C

ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#: *876343*
Site Name: *GUILFORD WEST STONE*
App #: *216659 Rev # 1*

Pole Manufacturer:	*Other*

Reactions		
Moment:	4069	ft-kips
Axial:	44	kips
Shear:	39	kips

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Data		
Qty:	28	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	79	in

Anchor Rod Results

		Rigid
Maximum Rod Tension:	86.7 Kips	Service, ASD
Allowable Tension:	195.0 Kips	Fty*ASIF
Anchor Rod Stress Ratio:	44.5% **Pass**	

Plate Data		
Diam:	85	in
Thick:	2.75	in
Grade:	50	ksi
Single-Rod B-eff:	8.05	in

Base Plate Results Flexural Check

		Rigid
Base Plate Stress:	22.3 ksi	Service ASD
Allowable Plate Stress:	50.0 ksi	0.75*Fy*ASIF
Base Plate Stress Ratio:	44.6% **Pass**	Y.L. Length: 34.64

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

n/a

Stiffener Results

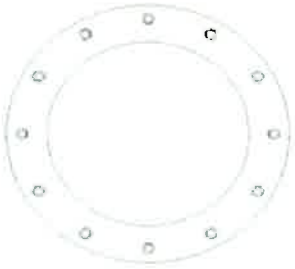
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Diam:	71	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	



* 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

PROJECT	**876343 - GUILFORD WEST STONE PROPERTY, CT**				
SUBJECT	**Foundation Analysis**				
DATE	**03/24/14**	PAGE	1	OF	1

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Monopole Pad & Pier Foundation Analysis

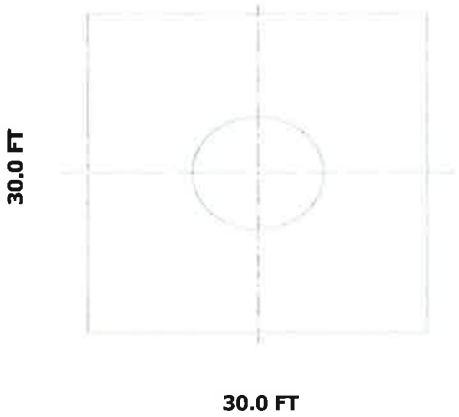
Rev. Type: F

Design Loads:

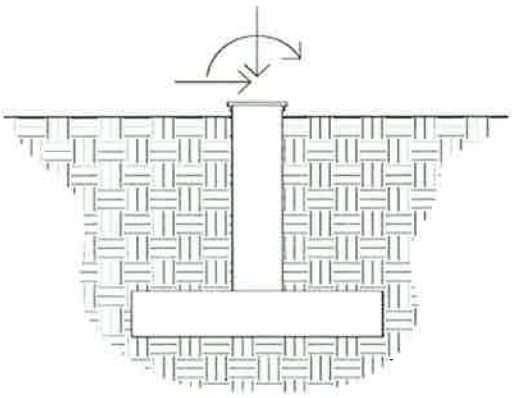
	Input unfactored loads	
Shear:	39.0	kips
Moment:	4,069.0	ft-kips
Tower Height:	149.0	ft
Tower Weight:	44.0	kips

Pad & Pier Dimensions / Properties:

Pole Diameter at Base:	71.00	in
Bearing Depth:	12.0	ft
Pad Width:	30.0	ft
Neglected Depth:	3.3	ft
Thickness:	3.0	ft
Pier Diameter:	8.5	ft
Pier Height Above Grade:	1.0	ft
BP Dist. Above Pier:	3.0	in
Clear Cover:	3.0	in
Pier Rebar Size:	9	
Pier Rebar Quanity:	48	
Pad Rebar Size:	8	
Pad Rebar Quanity:	34	
Pier Tie Size:	4	
Tie Quanity:	20	
Rebar Yield Strength:	60000	psi
Concrete Strength:	3000	psi
Concrete Unit Weight:	0.15	kcf



Elevation Overview



Soil Data:

	Allowable Values	
Soil Unit Weight:	0.120	kcf
Ult. Bearing Capacity:	10.700	ksf
Angle of Friction:	30.000	deg
Cohesion:	0.000	ksf
Passive Pressure:	0.000	ksf
Base Friction:	0.300	

** Notes:

Summary of Results

Req'd Pier Diam.	OK
Overturning	29.3%
Shear Capacity	14.3%
Bearing	35.3%
Pad Shear - 1-way	90.3%
Pad Shear - 2-way	8.9%
Pad Moment Capacity	48.5%
Pier Moment Capacity	61.5%