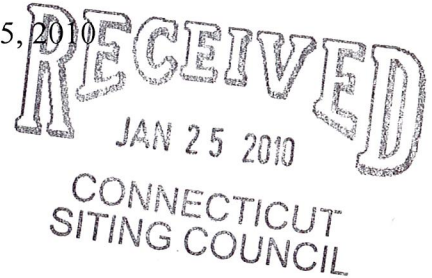


280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

ORIGINAL

January 25, 2010



Via Hand Delivery

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Antenna Swap
200 Stanley Street, New Britain, Connecticut**

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains wireless telecommunications antennas at the 102-foot level on the existing 192-foot tower at the above-referenced address. The tower is owned by Crown Castle. The Council approved Cellco’s use of the existing tower in 2002 in Petition No. 544. Cellco now intends to modify its installation by replacing six (6) of its PCS antennas with three (3) model BXA-185090/8CF_2 PCS antennas; two (2) model LNX-6512DS-T4M LTE (700MHz) antennas; and one (1) model BXA-70063/6CF_2 LTE (700 MHz) antenna, all at the same 102-foot level on the tower. Attached behind Tab 1 are the specifications for the proposed replacement antennas.

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 Timothy T. Stewart, Mayor for the City of New Britain. A copy of this letter is also being sent to Downes Investments LLC, the owners of the property on which the tower is located.

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 any increase in the overall height of the existing tower. Cellco’s antennas will be located at the same 102-foot level on the existing 192-foot tower.



Law Offices

BOSTON

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STAMFORD

WHITE PLAINS

NEW YORK CITY

ALBANY

SARASOTA

www.rc.com

ROBINSON & COLE_{LLP}

S. Derek Phelps
January 25, 2010
Page 2

2. The proposed modifications will not involve any modifications to ground-mounted equipment and, therefore, will not require the extension of the site boundaries.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The operation of the replacement antennas will not increase radio frequency (RF) power density levels at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative power density table for Cellco's modified facility is included behind Tab 2.

Also attached is a Structural Analysis Report confirming that the tower and foundation can support Cellco's proposed antennas modification. (See Tab 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:

Timothy T. Stewart, New Britain Mayor
Downes Investments LLC
Sandy M. Carter



BXA-185090/8CF __ 2°

When ordering replace " __ " with connector type.

Mechanical specifications

Length	1225 mm	48.2 in
Width	154 mm	6.1 in
Depth	105 mm	4.1 in
Depth with t-bracket	133 mm	5.2 in
4) Weight	5.0 kg	11.0 lbs
Wind Area		
Fore/Aft	0.19 m ²	2.0 ft ²
Side	0.13 m ²	1.4 ft ²
Rated Wind Velocity (Safety factor 2.0)		
	>322 km/hr	>200 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	283 N	64.0 lbs
Side	211 N	47.5 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in).

Mounting bracket kit #26799997

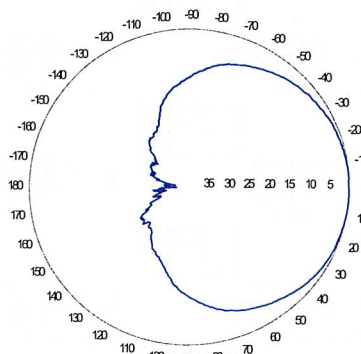
Downtilt bracket kit #26799999

The downtilt bracket kit includes the mounting bracket kit.

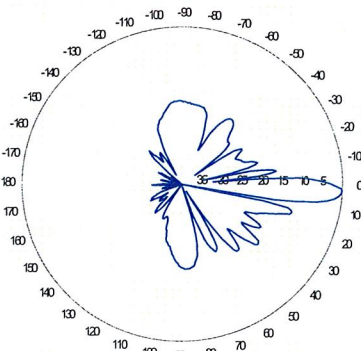
Electrical specifications

Frequency Range	1850-1990 MHz
Impedance	50Ω
3) Connector(s)	NE or E-DIN 2 ports / center
1) VSWR	≤ 1.4:1
Polarization	Slant ± 45°
1) Isolation Between Ports	< -30 dB
1) Gain	16.5 dBi
2) Power Rating	250 W
1) Half Power Angle	
H-Plane	90°
E-Plane	7°
1) Electrical Downtilt	2°
1) Null Fill	5%
Lightning Protection	Direct Ground

Radiation pattern¹⁾



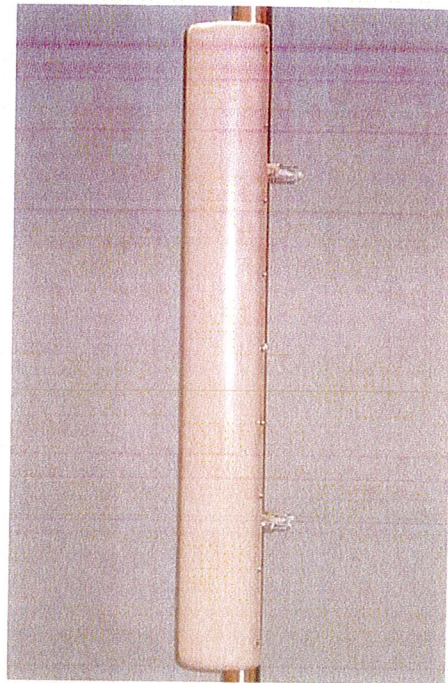
Horizontal



Vertical

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back ratio.



Amphenol Antel's Exclusive 3T (True Transmission Line Technology) Antenna Design:

- Watercut brass feedline assembly for consistent performance.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

This Amphenol Antel antenna is under a five-year limited warranty for repair or replacement.

Antenna available with center-fed connectors only.

Patented Dipole Design: U.S. Patent No. 6,597,324 B2

- 1) Typical values.
- 2) Power rating limited by connector only.
- 3) NE indicates an elongated N connector. E-DIN indicates an elongated DIN connector.
- 4) The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

CF Denotes a Center-Fed Connector.

1850-1990 MHz

Product Specifications



LNX-6512DS-T4M

DualPol® Antenna, 698–896 MHz, 65° horizontal beamwidth, fixed electrical tilt



- Continuous wideband operation
- Great solution to maximize network coverage and capacity
- Excellent gain, VSWR, front-to-back ratio, and PIM specifications for robust network performance
- Patented DualPol® technology
- Ideal choice for site collocations and tough zoning restrictions

CHARACTERISTICS

General Specifications

Antenna Type	DualPol®
Brand	DualPol®
Operating Frequency Band	698 – 896 MHz

Electrical Specifications

Frequency Band, MHz	698–806	806–896
Beamwidth, Horizontal, degrees	65	65
Gain, dBd	12.4	13.3
Gain, dBi	14.5	15.4
Beamwidth, Vertical, degrees	18.7	16.2
Beam Tilt, degrees	4	4
Upper Sidelobe Suppression (USLS), typical, dB	20	20
Front-to-Back Ratio at 180°, dB	30	32
Isolation, dB	30	30
VSWR Return Loss, db	1.35:1 16.5	1.35:1 16.5
Intermodulation Products, 3rd Order, 2 x 20 W, dBc	-150	-150
Input Power, maximum, watts	500	500
Polarization	±45°	±45°
Impedance, ohms	50	50
Lightning Protection	dc Ground	dc Ground

Product Specifications

INX-6512DS-T4M



Mechanical Specifications

Color	Light gray
Connector Interface	7-16 DIN Female
Connector Location	Bottom
Connector Quantity	2
Wind Loading, maximum	379.8 N @ 150 km/h 85.4 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h 149.8 mph

Dimensions

Depth	181.0 mm 7.1 in
Length	1232.0 mm 48.5 in
Width	301.0 mm 11.9 in
Net Weight	12.3 kg 27.1 lb

Regulatory Compliance/Certifications

Agency

RoHS 2002/95/EC
China RoHS SJ/T 11364-2006

Classification

Compliant by Exemption
Above Maximum Concentration Value (MCV)



INCLUDED PRODUCTS



MTG-L-STD

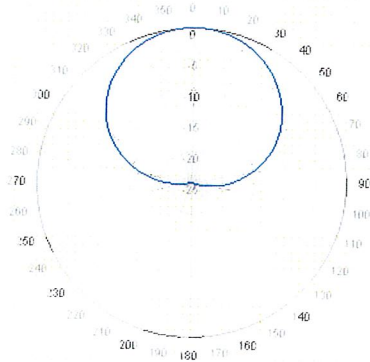
Downtilt Mounting Kit for panel Antennas

Product Specifications

INX-6512DS-T4M

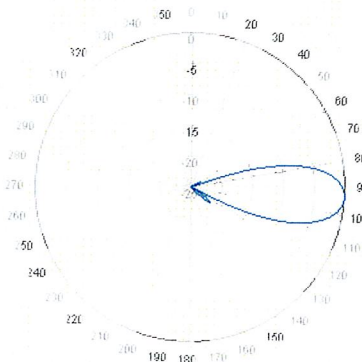


Horizontal Pattern

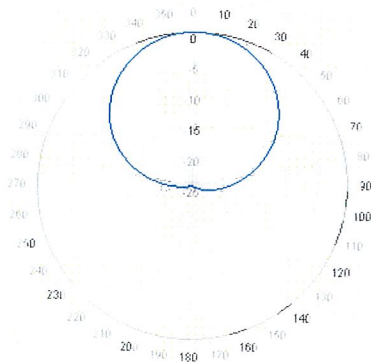


Freq: 750, Tilt: 4

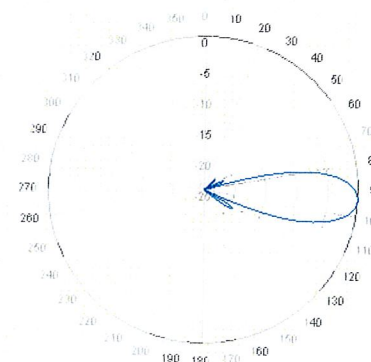
Vertical Pattern



Freq: 750, Tilt: 4



Freq: 850, Tilt: 4



Freq: 850, Tilt: 4

Slant $\pm 45^\circ$ Dual Polarized FET Panel $63^\circ / 14.5$ dBd 696-900 MHz

Mechanical specifications

Length	1804 mm	71.0 in
Width	285 mm	11.2 in
Depth	114 mm	4.5 in
Depth with z-bracket	154 mm	6.1 in
Weight ⁴⁾	7.9 kg	17.0 lbs
Wind Area Fore/Aft	0.51 m ²	5.5 ft ²
Wind Area Side	0.21 m ²	2.2 ft ²
Max Wind Survivability	>201 km/hr	>125 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	753 N	169 lbf
Side	351 N	79 lbf

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting & Downtilting

Mounting hardware attaches to pipe diameter $\varnothing 50$ -160 mm; $\varnothing 2.0$ -6.3 in

Mounting Bracket Kit	36210002
Downtilt Bracket Kit	36114003

Electrical specifications

Frequency Range	696-900 MHz
Impedance	50 Ω
Connector ³⁾	NE or E-DIN Female 2 ports / Center
VSWR ¹⁾	$\leq 1.35:1$
Polarization	Slant $\pm 45^\circ$
Isolation Between Ports ¹⁾	< -25 dB
Gain ¹⁾	14.5 dBd 16.5 dBi
Power Rating ²⁾	500 W
Half Power Angle ¹⁾	
Horizontal Beamwidth	63°
Vertical Beamwidth	11°
Electrical downtilt ⁵⁾	2°
Null fill ¹⁾	5%
Lightning protection	Direct ground

Patented Dipole Design: U.S. Patent No. 6,608,600 B2

1) Typical values.

2) Power rating limited by connector only.

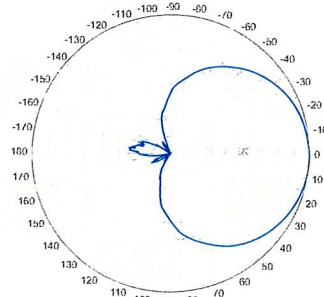
3) NE indicates an elongated N connector.
E-DIN indicates an elongated DIN connector.

4) Antenna weight does not include brackets.

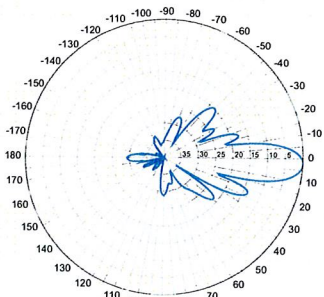
5) Add'l downtilts may be available. Check website for details.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation-pattern¹⁾
750 MHz

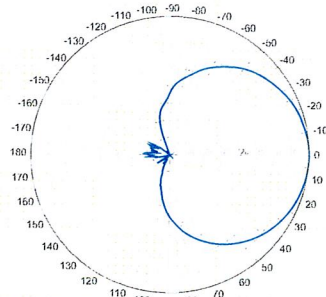


Horizontal

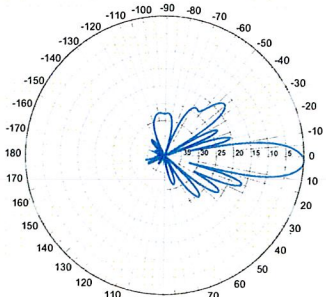


Vertical

850 MHz



Horizontal

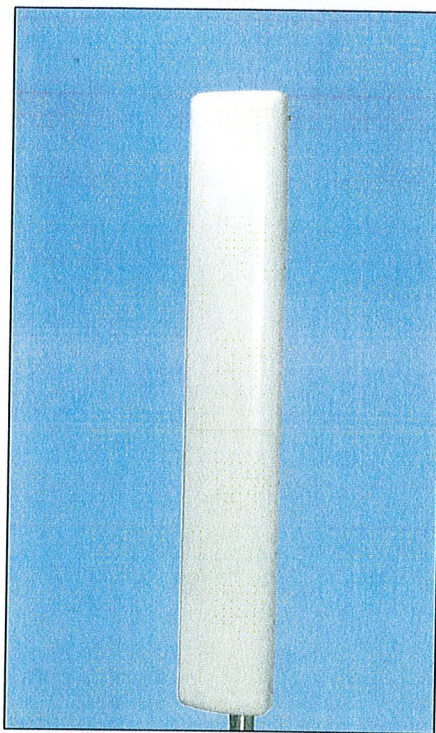


Vertical

696-900 MHz

BXA-70063/6CF __ 2°

When ordering replace "__" with connector type.



Featuring our Exclusive
3T Technology™
Antenna Design:

- Watercut brass feedline assembly for consistent performance.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

Warranty:

This antenna is under a five-year limited warranty for repair or replacement.

Revision Date 04/07/09

Date: **December 30, 2009**

Veronica Harris
Crown Castle USA Inc.
1200 McArthur Blvd
Mahwah, NJ 07430
(201) 236-9094



GPD Associates
520 South Main St. Suite 2531
Akron, OH 44311
(614) 859-1623
cburton@gpdgroup.com

Subject: **Structural Analysis Report**

Carrier Designation: **Verizon Wireless Co-Locate**
Carrier Site Number: 119669
Carrier Site Name: New Britain 4

Crown Castle Designation: **Crown Castle BU Number:** 803843
Crown Castle Site Name: CT New Britain 4 CAC 803843
Crown Castle JDE Job Number: 128980
Crown Castle Work Order Number: 311048

Engineering Firm Designation: **GPD Associates Project Number:** 2009282.46

Site Data: **Stanley St., New Britain, CT 06053, Hartford County**
Latitude 41° 39' 16.4", Longitude -72° 46' 9.59"
192 Foot – Summit Monopole

Dear Ms. Veronica Harris,

GPD Associates 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 357405, in accordance with application 92865, revision 4.

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:

LC1: Existing + Reserved + Proposed Equipment

Sufficient Capacity

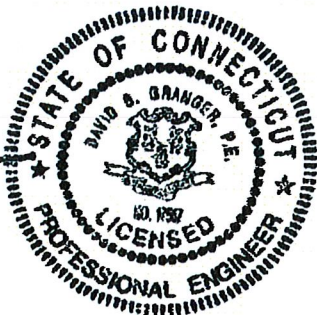
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and the Connecticut Building Code based upon a wind speed of 80 mph fastest mile.

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

Respectfully submitted by:

David B. Granger, P.E.
Connecticut #: 17557



1) INTRODUCTION

The existing monopole has an 18-sided cross-section and is evenly tapered from 84.78" (flat-flat) at the base to 26.00" (flat-flat) at the top. It has five major sections connected by slip joints. The structure is galvanized and has no tower lighting.

This tower is a 192 ft Monopole tower designed by Summit in April of 2001. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F.

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 80 mph with no ice, 69.3 mph with 0.5 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
		2	Andrew	LNx-6512DS-T4M			
100	102	1	Antel	BXA-70063/6CFx2			
		3	Antel	BXA-185090/8CFx2			

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
	195	3	Powerwave	7770.00			
193		6	Powerwave	LGP21401 TMA	6	1-5/8	
	193	1		Platform Mount [LP 601-1]			
185	185	3	RFS/Celwave	APXV18-206517S-C	6	1-5/8	1
		1		Platform Mount [LP 601-1]			
	177	2	Dragonwave	A-ANT-18G-2-C			
		2	Dragonwave	Horizon Compact TMA			
175	175	1	Motorola	Timing 2000 GPS	3	1/2	
		3		Side-Arm Mount [SO 702-1]	3	1/4	1
		3			3	5/8	
	173	3	Argus	LLPX310R	1	5/16	
		3	Samsung	Wimax DAP Head			
100	102	6	Decibel	DB948F85T2E-M			2
		6	Antel	WPA-80090/4CF			
	100	3		T-Arm Mount [TA 701-1]	12	1-5/8	

Notes:

- 1) Reserved Equipment.
- 2) Antennas to be removed and replaced by proposed loading.

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	192 - 151.25	Pole	TP39.245x26x0.3125	1	-7.81	1923.73	17.9	Pass	
L2	151.25 - 111.25	Pole	TP51.621x36.9948x0.4375	2	-16.75	3542.45	20.1	Pass	
L3	111.25 - 72.75	Pole	TP63.259x48.6333x0.5	3	-31.38	4963.31	22.5	Pass	
L4	72.75 - 35.75	Pole	TP74.285x59.6589x0.5625	4	-49.01	6563.60	23.5	Pass	
L5	35.75 - 0	Pole	TP84.78x70.1535x0.5625	5	-75.09	7816.75	26.2	Pass	
							Summary:		
							Pole (L5)	26.2	Pass
							Rating =	26.2	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC1

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	36.2%	Pass
1	Base Plate	0	31.8%	Pass
2	Base Foundation	0	37.6%	Pass

Structure Rating (max from all components) =	37.6%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Foundation capacity determined by comparing analysis reactions to original design reactions.

4.1) Recommendations

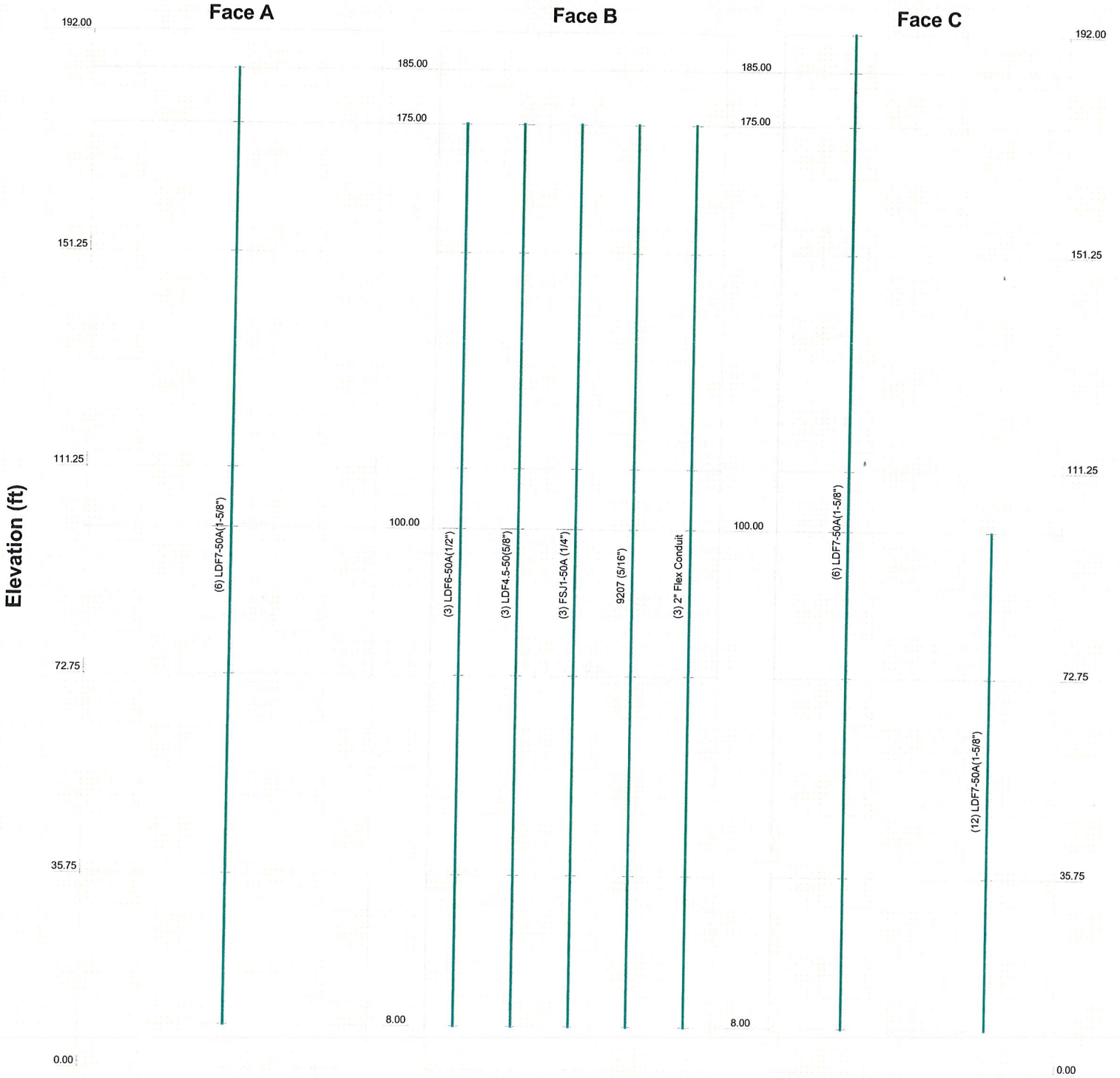
The design of the tower and its foundation are sufficient for the proposed loads and do not require modifications.

APPENDIX A
RISA TOWER OUTPUT

Feedline Distribution Chart

0' - 192'

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



<p>GPD Associates 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101</p>	Job: New Britain BU # 803843		
	Project: 2009282.46		
	Client: Crown Castle, USA	Drawn by: cburton	App'd:
	Code: TIA/EIA-222-F	Date: 12/30/09	Scale: NTS
	Path: N:\2009\2009282\46\RISA\803843.dwg		Dwg No. E-7

RISATower GPD Associates 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job New Britain BU # 803843	Page 2 of 9
	Project 2009282.46	Date 11:00:59 12/30/09
	Client Crown Castle, USA	Designed by cburton

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	26.4011	25.4788	2124.0264	9.1191	13.2080	160.8136	4250.8477	12.7418	4.0260	12.883
	39.8504	38.6162	7394.8824	13.8210	19.9365	370.9225	14799.4952	19.3118	6.3571	20.343
L2	39.2158	50.7644	8571.2950	12.9779	18.7934	456.0805	17153.8684	25.3870	5.7411	13.122
	52.4173	71.0747	23524.0650	18.1701	26.2235	897.0616	47079.0836	35.5441	8.3153	19.006
L3	51.5288	76.3876	22358.9901	17.0873	24.7057	905.0122	44747.4007	38.2011	7.6795	15.359
	64.2349	99.5985	49561.2695	22.2794	32.1356	1542.2557	99187.7529	49.8087	10.2536	20.507
L4	63.2195	105.5092	46553.2019	20.9792	30.3067	1536.0691	93167.6598	52.7646	9.5100	16.907
	75.4310	131.6223	90378.9022	26.1715	37.7368	2394.9818	180876.727	65.8237	12.0842	21.483
L5	74.2887	124.2461	76019.7620	24.7048	35.6380	2133.1104	152139.552	62.1348	11.3570	20.19
	86.0879	150.3598	134732.986	29.8972	43.0682	3128.3606	269643.257	75.1942	13.9313	24.767

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft ²	in					in	in
L1 192.00-151.25				1	1	1		
L2 151.25-111.25				1	1	1		
L3 111.25-72.75				1	1	1		
L4 72.75-35.75				1	1	1		
L5 35.75-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number	C _A A _A	Weight
				ft		ft ² /ft	plf
LDF7-50A(1-5/8")	A	No	Inside Pole	185.00 - 8.00	6	No Ice 1/2" Ice	0.00 0.82
LDF6-50A(1/2")	B	No	Inside Pole	175.00 - 8.00	3	No Ice 1/2" Ice	0.00 0.66
LDF4.5-50(5/8")	B	No	Inside Pole	175.00 - 8.00	3	No Ice 1/2" Ice	0.00 0.15
FSJ1-50A (1/4")	B	No	Inside Pole	175.00 - 8.00	3	No Ice 1/2" Ice	0.00 0.05
9207 (5/16")	B	No	Inside Pole	175.00 - 8.00	1	No Ice 1/2" Ice	0.00 0.06
2" Flex Conduit	B	No	Inside Pole	175.00 - 8.00	3	No Ice 1/2" Ice	0.00 0.32
LDF7-50A(1-5/8")	C	No	Inside Pole	192.00 - 8.00	6	No Ice 1/2" Ice	0.00 0.82
LDF7-50A(1-5/8")	C	No	Inside Pole	100.00 - 8.00	12	No Ice 1/2" Ice	0.00 0.82

RISATower GPD Associates 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job	New Britain BU # 803843	Page	4 of 9
	Project	2009282.46	Date	11:00:59 12/30/09
	Client	Crown Castle, USA	Designed by	cburton

Discrete Tower Loads

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	K
7770.00 w/Mount Pipe	A	From Leg	4.00	0.0000	193.00	No Ice	6.58	4.94	0.08
			0.00			1/2" Ice	7.21	5.86	0.13
			2.00						
7770.00 w/Mount Pipe	B	From Leg	4.00	0.0000	193.00	No Ice	6.58	4.94	0.08
			0.00			1/2" Ice	7.21	5.86	0.13
			2.00						
7770.00 w/Mount Pipe	C	From Leg	4.00	0.0000	193.00	No Ice	6.58	4.94	0.08
			0.00			1/2" Ice	7.21	5.86	0.13
			2.00						
(2) LGP21401	A	From Leg	4.00	0.0000	193.00	No Ice	0.00	0.23	0.01
			0.00			1/2" Ice	0.00	0.31	0.02
			2.00						
(2) LGP21401	B	From Leg	4.00	0.0000	193.00	No Ice	0.00	0.23	0.01
			0.00			1/2" Ice	0.00	0.31	0.02
			2.00						
(2) LGP21401	C	From Leg	4.00	0.0000	193.00	No Ice	0.00	0.23	0.01
			0.00			1/2" Ice	0.00	0.31	0.02
			2.00						
(3) 6'x2 1/2" Pipe Mount	A	From Leg	4.00	0.0000	193.00	No Ice	1.73	1.73	0.04
			0.00			1/2" Ice	2.09	2.09	0.05
			2.00						
(3) 6'x2 1/2" Pipe Mount	B	From Leg	4.00	0.0000	193.00	No Ice	1.73	1.73	0.04
			0.00			1/2" Ice	2.09	2.09	0.05
			2.00						
(3) 6'x2 1/2" Pipe Mount	C	From Leg	4.00	0.0000	193.00	No Ice	1.73	1.73	0.04
			0.00			1/2" Ice	2.09	2.09	0.05
			2.00						
Platform Mount [LP 601-1]	C	None		0.0000	193.00	No Ice	28.47	28.47	1.12
APXV18-206517S-C w/ Mount Pipe	A	From Leg	3.46	30.0000	185.00	1/2" Ice	33.59	33.59	1.51
			2.00			No Ice	5.40	4.70	0.05
			0.00			1/2" Ice	5.96	5.86	0.09
APXV18-206517S-C w/ Mount Pipe	B	From Leg	3.46	30.0000	185.00	No Ice	5.40	4.70	0.05
			2.00			1/2" Ice	5.96	5.86	0.09
			0.00						
APXV18-206517S-C w/ Mount Pipe	C	From Leg	3.46	30.0000	185.00	No Ice	5.40	4.70	0.05
			2.00			1/2" Ice	5.96	5.86	0.09
			0.00						
(3) 6'x2 1/2" Pipe Mount	A	From Leg	3.46	30.0000	185.00	No Ice	1.73	1.73	0.04
			2.00			1/2" Ice	2.09	2.09	0.05
			0.00						
(3) 6'x2 1/2" Pipe Mount	B	From Leg	3.46	30.0000	185.00	No Ice	1.73	1.73	0.04
			2.00			1/2" Ice	2.09	2.09	0.05
			0.00						
(3) 6'x2 1/2" Pipe Mount	C	From Leg	3.46	30.0000	185.00	No Ice	1.73	1.73	0.04
			2.00			1/2" Ice	2.09	2.09	0.05
			0.00						
Platform Mount [LP 601-1]	C	None		0.0000	185.00	No Ice	28.47	28.47	1.12
TIMING 2000	A	From Leg	3.46	-90.0000	175.00	1/2" Ice	33.59	33.59	1.51
			-2.00			No Ice	0.13	0.13	0.00
			0.00			1/2" Ice	0.18	0.18	0.00
Horizon Compact	A	From Leg	3.46	-90.0000	175.00	No Ice	0.00	0.43	0.01
			-2.00			1/2" Ice	0.00	0.52	0.02

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	Client	Crown Castle, USA	Designed by	cburton

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	K
T-Arm Mount [TA 701-1]	A	From Leg	2.00						
			1.73	30.0000	100.00	No Ice	14.16	9.13	0.36
			1.00			1/2" Ice	14.16	12.17	0.47
T-Arm Mount [TA 701-1]	B	From Leg	0.00						
			1.73	30.0000	100.00	No Ice	14.16	9.13	0.36
			1.00			1/2" Ice	14.16	12.17	0.47
T-Arm Mount [TA 701-1]	C	From Leg	0.00						
			1.73	30.0000	100.00	No Ice	14.16	9.13	0.36
			1.00			1/2" Ice	14.16	12.17	0.47
			0.00						

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	K		
A-ANT-18G-2-C	A	Paraboloid w/Shroud (HP)	From Leg	3.46		-90.0000		175.00	2.17	No Ice	3.72	0.03
				-2.00						1/2" Ice	4.01	0.06
				2.00								
A-ANT-18G-2-C	C	Paraboloid w/Shroud (HP)	From Leg	3.46	30.0000			175.00	2.17	No Ice	3.72	0.03
				-2.00						1/2" Ice	4.01	0.06
				2.00								

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
		in		°	°
L1	192 - 151.25	11.353	30	0.5643	0.0018
L2	156.25 - 111.25	7.385	30	0.4695	0.0010
L3	117.75 - 72.75	4.103	30	0.3359	0.0005
L4	80.75 - 35.75	1.916	30	0.2198	0.0002
L5	45 - 0	0.610	30	0.1202	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
193.00	7770.00 w/Mount Pipe	30	11.353	0.5643	0.0018	99283
185.00	APXV18-206517S-C w/ Mount Pipe	30	10.542	0.5473	0.0017	70917
177.00	A-ANT-18G-2-C	30	9.625	0.5275	0.0015	33094

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	Client Crown Castle, USA	Designed by cburton

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	192 - 151.25 (1)	TP39.245x26x0.3125	257.42	9.073	39.000	0.233	0.00	0.000	39.000	0.000
L2	151.25 - 111.25 (2)	TP51.621x36.9948x0.4375	698.95	10.176	39.000	0.261	0.00	0.000	39.000	0.000
L3	111.25 - 72.75 (3)	TP63.259x48.6333x0.5	1344.43	11.388	39.000	0.292	0.00	0.000	39.000	0.000
L4	72.75 - 35.75 (4)	TP74.285x59.6589x0.5625	2174.14	11.843	39.000	0.304	0.00	0.000	39.000	0.000
L5	35.75 - 0 (5)	TP84.78x70.1535x0.5625	3424.67	13.137	39.000	0.337	0.00	0.000	39.000	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	192 - 151.25 (1)	TP39.245x26x0.3125	9.60	0.260	26.000	0.020	1.01	0.017	26.000	0.001
L2	151.25 - 111.25 (2)	TP51.621x36.9948x0.4375	13.44	0.197	26.000	0.015	1.01	0.007	26.000	0.000
L3	111.25 - 72.75 (3)	TP63.259x48.6333x0.5	21.10	0.221	26.000	0.017	1.07	0.004	26.000	0.000
L4	72.75 - 35.75 (4)	TP74.285x59.6589x0.5625	25.26	0.200	26.000	0.015	1.07	0.003	26.000	0.000
L5	35.75 - 0 (5)	TP84.78x70.1535x0.5625	30.33	0.202	26.000	0.016	1.07	0.002	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P P_a	Ratio f_{bx} F_{bx}	Ratio f_{by} F_{by}	Ratio f_v F_v	Ratio f_{vt} F_{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	192 - 151.25 (1)	0.005	0.233	0.000	0.020	0.001	0.238 ✓	1.333	H1-3+VT ✓
L2	151.25 - 111.25 (2)	0.006	0.261	0.000	0.015	0.000	0.267 ✓	1.333	H1-3+VT ✓
L3	111.25 - 72.75 (3)	0.008	0.292	0.000	0.017	0.000	0.301 ✓	1.333	H1-3+VT ✓
L4	72.75 - 35.75 (4)	0.010	0.304	0.000	0.015	0.000	0.314 ✓	1.333	H1-3+VT ✓
L5	35.75 - 0 (5)	0.013	0.337	0.000	0.016	0.000	0.350 ✓	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	192 - 151.25	Pole	TP39.245x26x0.3125	1	-7.81	1923.73	17.9	Pass

APPENDIX B
BASE LEVEL DRAWING

APPENDIX C
ADDITIONAL CALCULATIONS