Robinson+Cole

KENNETH C. BALDWIN

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Also admitted in Massachusetts

ORIGINAL

November 10, 2014

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

Re: **EM-VER-081-130717 – 1021 Straits Turnpike, Middlebury, Connecticut**
EM-VER-056-130726 – 150 Lost Acres Road, Granby, Connecticut
EM-VER-025-130722 – 500 Highland Avenue, Cheshire, Connecticut
EM-VER-135-130726B – 300 Tresser Boulevard, Stamford, Connecticut
EM-VER-008-130802 – 719 Amity Road, Bethany, Connecticut
EM-VER-015-130805 – 2 Kaechele Place, Bridgeport, Connecticut
EM-VER-155-130805 – South Quaker Lane, West Hartford, Connecticut
EM-VER-155-130806 – 570 New Park Avenue, West Hartford, Connecticut

Completion of Construction Activity

Dear Ms. Bachman:

The purpose of this letter is to notify the Siting Council that construction activity associated with the above-referenced Cellco Partnership d/b/a Verizon Wireless telecommunications facilities has been completed.

If you have any questions or need any additional information regarding these facilities please do not hesitate to contact me.

Sincerely,

Kenneth C. Baldwin

Copy to:
Sandy M. Carter

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

August 20, 2013

Kenneth C. Baldwin, Esq.
Robinson & Cole
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-015-130805** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 2 Kaechele Place, Bridgeport, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated August 2, 2013. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Melanie A. Bachman
Acting Executive Director

MAB/CDM/jb

c: The Honorable Bill Finch, Mayor, City of Bridgeport
David Kooris, Planning Director, City of Bridgeport
Christopher B. Fisher, Esq., AT&T

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
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www.ct.gov/csc

August 6, 2013

The Honorable Bill Finch
Mayor
City of Bridgeport
City Hall Annex
999 Broad Street
Bridgeport, CT 06604

RE: **EM-VER-015-130805** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 2 Kaechele Place, Bridgeport, Connecticut.

Dear Mayor Finch:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72, a copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by August 20, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

Melanie Bachman
Acting Executive Director

MB/jb

c: David Kooris, Planning Director, City of Bridgeport

ROBINSON & COLE LLP

EM-VER-015-130805

KENNETH C. BALDWIN

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Also admitted in Massachusetts

August 2, 2013

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

Re: **Notice of Exempt Modification – Facility Modification**
2 Kaechele Place, Bridgeport, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 100-foot level of the existing 150-foot tower at the above-referenced address. The tower and underlying property are owned by AT&T. The Council approved Cellco's shared use of this tower in 2001. Cellco now intends to replace all of its existing antennas with three (3) model BXA-80063-4CF cellular antennas; three (3) model BXA-171063-8CF PCS antennas; three (3) model BXA-70063-6CF LTE antennas; and three (3) model BXA-171063-8CF AWS antennas, all at the same 100-foot level on the tower. Cellco also intends to install six (6) coax cable diplexers behind its antennas. Attached behind Tab 1 are the specifications for Cellco's replacement antennas and cable diplexers.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to William Finch, Mayor for the City of Bridgeport.

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 proposed replacement antennas and cable diplexers will be located at the 100-foot level of the 150-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 modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included behind Tab 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 attached behind 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:
William Finch, Mayor
Sandy M. Carter

TAB 1

Amphenol ANTENNA SOLUTIONS

BXA-70063-4CF-EDIN-X

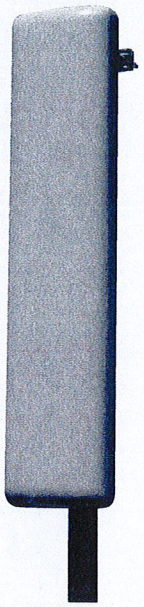
X-Pol | FET Panel | 63° | 13.0 dBd

Replace "X" with desired electrical downtilt.

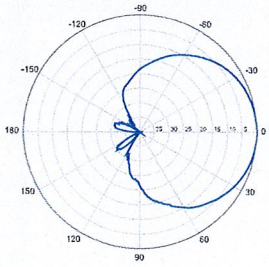
Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	17°	15°
Gain	12.5 dBd (14.6 dBi)	13.0 dBd (15.1 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 9, 10, 12, 14	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-16.3 dB	-22.1 dB
Front-to-back ratio (+/-30°)	-36.1 dB	-34.9 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -30 dB	
Input power with EDIN connectors	500 W	
Input power with NE connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1205 x 285 x 133 mm	47.4 x 11.2 x 5.2 in
Depth with z-brackets	173 mm	6.8 in
Weight without mounting brackets	4.5 kg	9.9 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.34 m^2 Side: 0.16 m^2	Front: 3.7 ft^2 Side: 1.7 ft^2
Wind load @ 161 km/hr (100 mph)	Front: 498 N Side: 260 N	Front: 111 lbf Side: 55 lbf

Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting & Downtilt Bracket Kit	36210006	40-115 mm 1.57-4.5 in	4.1 kg 9 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-4CF-EDIN-X-FP		

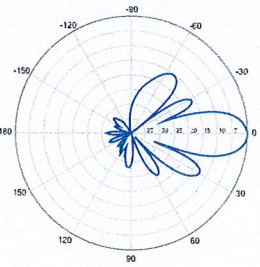


BXA-70063-4CF-EDIN-X



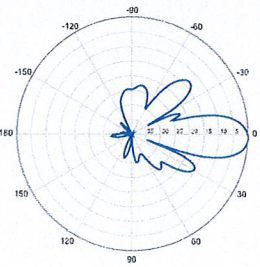
Horizontal | 750 MHz

BXA-70063-4CF-EDIN-0



0° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-2

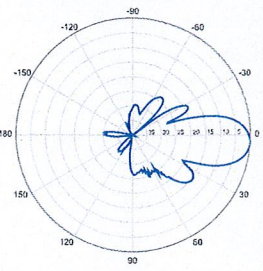


2° | Vertical | 750 MHz

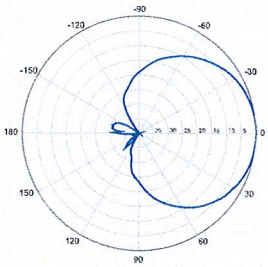
BXA-70063-4CF-EDIN-3

3° | Vertical | 750 MHz

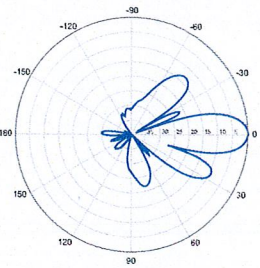
BXA-70063-4CF-EDIN-4



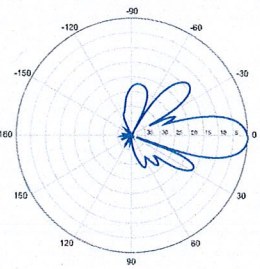
4° | Vertical | 750 MHz



Horizontal | 850 MHz

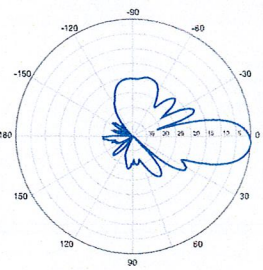


0° | Vertical | 850 MHz



2° | Vertical | 850 MHz

3° | Vertical | 850 MHz



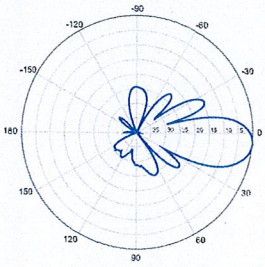
4° | Vertical | 850 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

BXA-70063-4CF-EDIN-X

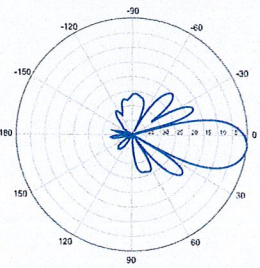
X-Pol | FET Panel | 63° | 13.0 dBd

BXA-70063-4CF-EDIN-5



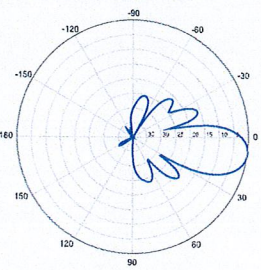
5° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-6



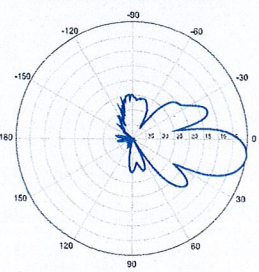
6° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-8



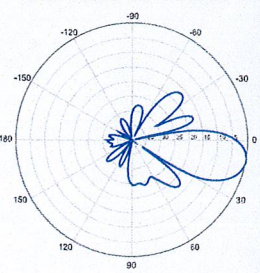
8° | Vertical | 750 MHz

BXA-70063-4CF-EDIN-9

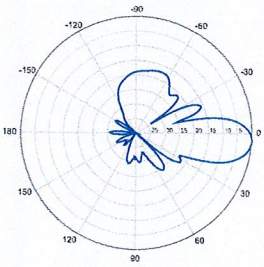


9° | Vertical | 750 MHz

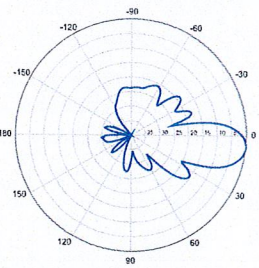
BXA-70063-4CF-EDIN-10



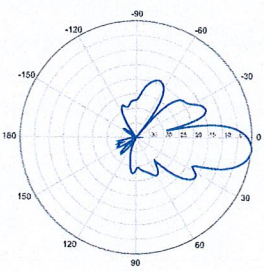
10° | Vertical | 750 MHz



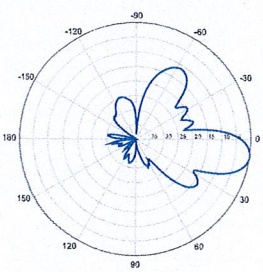
5° | Vertical | 850 MHz



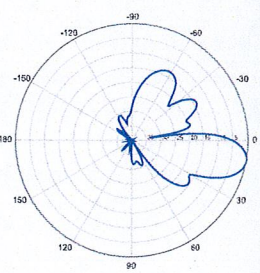
6° | Vertical | 850 MHz



8° | Vertical | 850 MHz

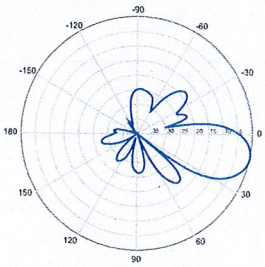


9° | Vertical | 850 MHz

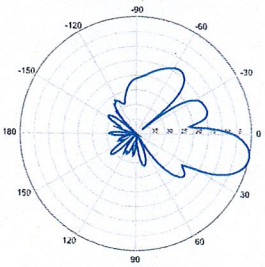


10° | Vertical | 850 MHz

BXA-70063-4CF-EDIN-12

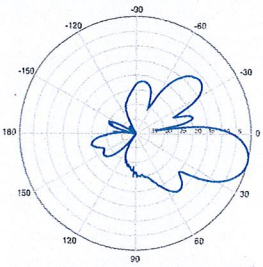


12° | Vertical | 750 MHz

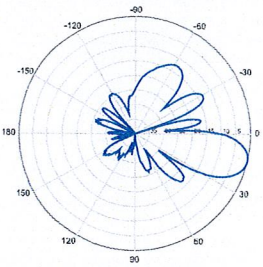


12° | Vertical | 850 MHz

BXA-70063-4CF-EDIN-14



14° | Vertical | 750 MHz



14° | Vertical | 850 MHz

BXA-171063-8CF-EDIN-X

X-Pol | FET Panel | 63° | 17.4 dBi

Replace "X" with desired electrical downtilt.

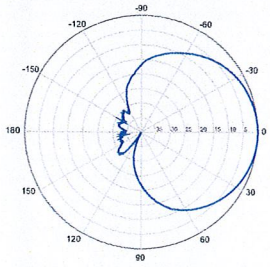
Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

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	7°	7°	7°
Gain	14.5 dBd / 16.6 dBi	14.9 dBd / 17.0 dBi	15.3 dBd / 17.4 dBi
Electrical downtilt (X)	0, 2, 4, 6, 8		
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	1225 x 154 x 105 mm	48.2 x 6.1 x 4.1 in
Depth with t-brackets	133 mm	5.2 in
Weight without mounting brackets	4.2 kg	9.2 lbs
Survival wind speed	296 km/hr	184 mph
Wind area	Front: 0.19 m² Side: 0.14 m²	Front: 2.0 ft² Side: 1.5 ft²
Wind load @ 161 km/hr (100 mph)	Front: 281 N Side: 223 N	Front: 63 lbf Side: 50 lbf

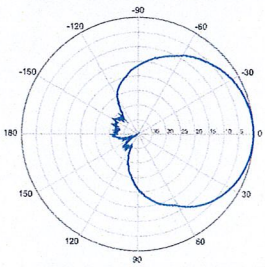
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171063-8CF-EDIN-X-FP		

BXA-171063-8CF-EDIN-X



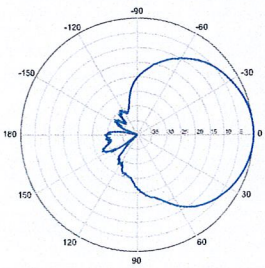
Horizontal | 1710-1880 MHz

BXA-171063-8CF-EDIN-X



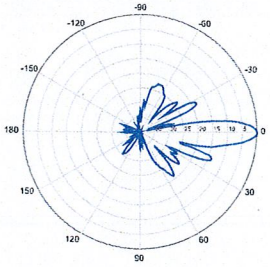
Horizontal | 1850-1990 MHz

BXA-171063-8CF-EDIN-X



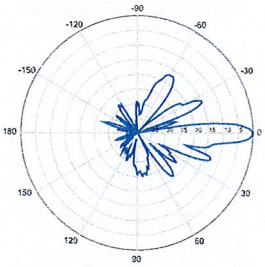
Horizontal | 1920-2170 MHz

BXA-171063-8CF-EDIN-0



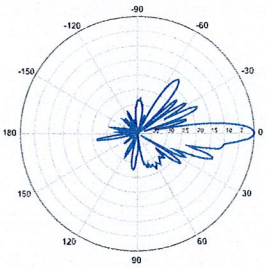
0° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-0

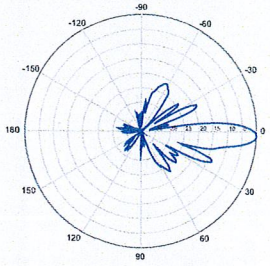


0° | Vertical | 1920-2170 MHz

BXA-171063-8CF-EDIN-X

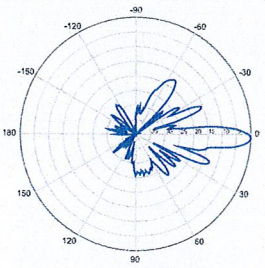
X-Pol | FET Panel | 63° | 17.4 dBi

BXA-171063-8CF-EDIN-2



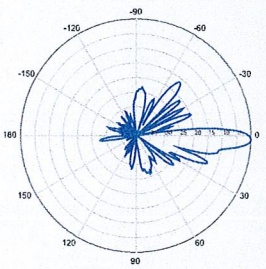
2° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-2



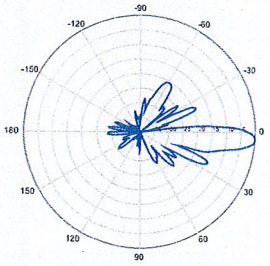
2° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-2



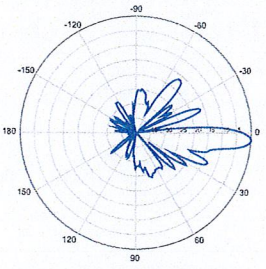
2° | Vertical | 1920-2170 MHz

BXA-171063-8CF-EDIN-4



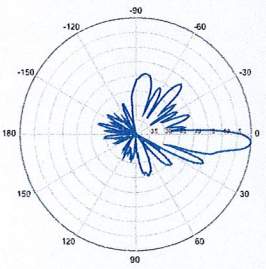
4° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-4



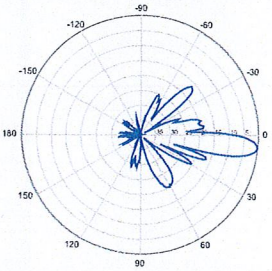
4° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-4



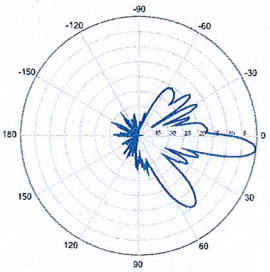
4° | Vertical | 1920-2170 MHz

BXA-171063-8CF-EDIN-6



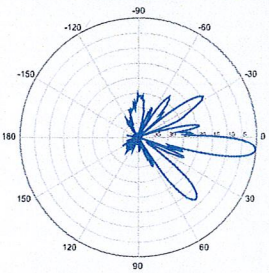
6° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-6



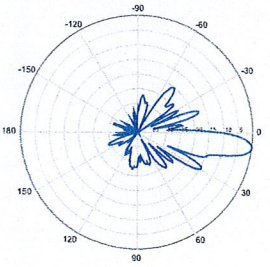
6° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-6



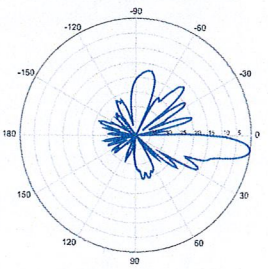
6° | Vertical | 1920-2170 MHz

BXA-171063-8CF-EDIN-8



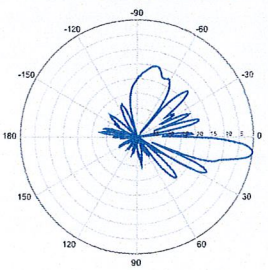
8° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-8



8° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-8



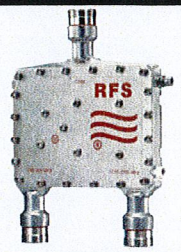
8° | Vertical | 1920-2170 MHz

Product Data Sheet | **FD9R6004/2C-3L**

ShareLite Wideband Diplexer – In-line 698-960 MHz/1710-2200 MHz, DC pass in high frequency path

Product Description

The ShareLite FD9R6004 Series of diplexers are designed to enable feeder sharing between systems in the 698-960 MHz range and in the 1710-2200 MHz range. The diplexer is equipped with in-line connector placement so it can be installed in the BTS cabinet or at the tower top. This is especially valuable in crowded sites or when the feeders are not easily accessible. Due to its wideband design, the FD9R6004 Series can accommodate many combining solutions between 698-960 MHz and 1710-2200 MHz systems such as LTE 700 MHz, Cellular 800 MHz with PCS, GSM900 with GSM1800, or GSM900 with UMTS. This diplexer features a highly selective filter. It provides a high level of isolation between ports, while keeping the insertion loss on both paths at an extremely low level. The FD9R6004 diplexers are available with various DC pass options, helpful in configurations with or without the Tower Mount Amplifiers installed.



Features/Benefits

- **LTE ready design**
- **Extremely Low Insertion Loss**
- **High level of Rejection between bands – Protection against interferences**
- **Extremely High Power Handling Capability**
- **Integrated DC block/bypass versions available**
- **Very compact & small size design – Easy installation and reduced tower load**
- **In-line long-neck connectors for easy connection & waterproofing**
- **Exceptional reliability & environmental protection (IP 67)**
- **Equipped with 1 * Breathable Vent – Prevent any humidity inside the product**
- **Mounting hardware for Wall and Pole mount provided (P/N SEM2-1A)**
- **Grounding already provided through the mounting bracket**
- **Kit available for easy dual mount**

Technical Specifications

Product Type	Diplexer/Cross Band Coupler
Application	LTE700, GSM900, UMTS, GSM1800, Cellular 800, PCS
Frequency Range 1, MHz	698-960
Frequency Range 2, MHz	1710-2200
Configuration	Sharelite Single diplexer, outdoor, DC pass in the 1710-2170MHz path, with mounting hardware SEM2-1A
Mounting	Wall Mounting: With 4 screws (maximum 6mm diameter); Pole Mounting: With included clamp set 40-110mm (1.57-4.33)
Return Loss All Ports Min/Typ, dB	19/23
Power Handling Continuous, Max, W	1250 at common port; 750 in low frequency path & 500 in high frequency path
Power Handling Peak, Max, W	15000 in low frequency path & 8000 in high frequency path
Impedance, Ohms	50
Insertion Loss, Path 1, dB	0.07 typ.
Insertion Loss, Path 2, dB	0.13 typ.
Rejection Between Bands Min/Typ, dB	58/64@698-960MHz; 57/70@1710-2200MHz
IMP Level at the COM Port, Typ, dBm	-112 @ 2x43
DC Pass in Low Frequency Path	No
DC Pass in High Frequency Path	Yes
Temperature Range, °C (°F)	-40 to +60 (-40 to +140)
Environmental	ETSI 300-019-2-4 Class 4.1E
Ingress Protection	IP 67
Lightning Protection	EN/IEC61000-4-5 Level 4
Connectors	In-line long-neck 7-16-Female
Weight, kg (lb)	1.2 (2.6)
Shipping Weight, kg (lb)	3.2 (7) for 2 * single units in 1 * box, 9.8 (21.6) for 6 * units = 3 * Boxes in 1 * overwrap
Dimensions, H x W x D, mm (in)	147 x 164 x 37 (5.8 x 6.5 x 1.5)
Shipping Dimensions, H x W x D, mm (in)	254 x 406 x 82 (10 x 16 x 3.2) for 2 * Single Units in 1 * box, 280 x 406 x 241 (11 x 16 x 9.5) for 6 * units = 3 * Boxes in 1 * overwrap
Volume, L	0.43
Housing	Aluminum

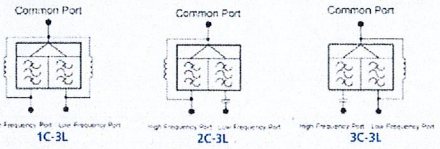
Notes

ShareLite Wideband Diplexer – In-line 698-960 MHz/1710-2200 MHz, DC pass in high frequency path

Other Documentation

FD9R6004/2C-3L Installation Instructions: Wideband_Diplexer_Installation_Rev5.pdf

Selection Guide Diplexer 698-960 / 1710-2200MHz					
	Model Number	Full DC Pass	DC Pass High Band	DC Pass Low Band	Mounting Hardware Included
Single	FD9R6004/1C-3L				X
	FD9R6004/2C-3L				X
	FD9R6004/3C-3L				X
Dual	KIT-FD9R6004/1C-DL				X
	KIT-FD9R6004/2C-DL				X
	KIT-FD9R6004/3C-DL				X



1C-3L 2C-3L 3C-3L

The FD9R6004 Series is upgradeable to a Dual Diplexer kit by means of 2 diplexers and mounting hardware kits SEM2-1A and SEM2-3

Mounting Hardware and Ground Cable Ordering Information		
Model Number	**Description**	
SEM2-1A	Mounting Hardware, Pole mount ø40-110mm (Included with the Single and Dual Diplexer) Wall Screws M6 (Not included with the product)	
SEM2-3	Assembly kit for 2 pcs of FD9R6004/xC-3L (Can be ordered separately but included with the Dual Diplexer Kit)	
CA020-2	Ground Cable, 2m, includes lugs (Optional)	
CA030-2	Ground Cable, 2m, includes lugs (Optional)	
SEM6	Mounting Hardware for 6 Diplexers, Tower Base (Optional)	

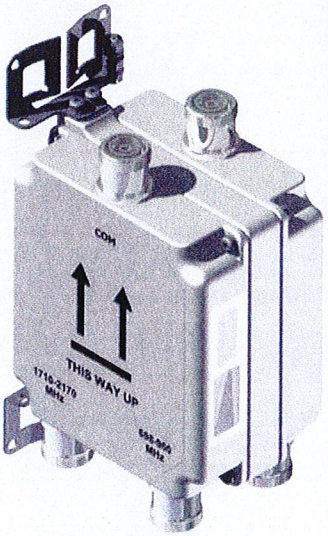
DPX-02x

Diplexer | 700 / AWS | Single and Dual Units | Outdoor

- Suitable for UMTS and LTE systems
- DC/AISG bypass with built-in lightning protection
- Suitable for BTS or antenna-end of the feeder
- Single or dual units available for indoor or outdoor use

Ordering Options	
DPX-027	Single unit, no DC/AISG bypass, with single wall/pole mounting kit
DPX-021	Single unit, DC/AISG bypass COM to 1800/2100 only, with single wall/pole mounting kit
DPX-023	Single unit, DC/AISG bypass COM to 800/900 only, with single wall/pole mounting kit
DPX-025	Single unit, DC/AISG bypass COM to both ports, with single wall/pole mounting kit
DPX-028	Dual unit, no DC/AISG bypass with dual wall/pole mounting kit
DPX-022	Dual unit, DC/AISG bypass COM to 1800/2100 only, dual wall/pole mounting kit
DPX-024	Dual unit, DC/AISG bypass COM to 800/900 only, with dual wall/pole mounting kit
DPX-026	Dual unit, DC/AISG bypass COM to both ports, with dual wall/pole mounting kit
Electrical Specifications	
700 MHz Channel	
Pass-band	698-960 MHz
Insertion loss	0.2 dB max, 0.11 dB typical
Return loss all ports	20 dB min
Phase linearity variation	0.1° max over any 180 kHz within the pass-band
Group delay variation	0.1 ns max over any 180 kHz within the pass-band
AWS Channel	
Pass-band	1710-2170 MHz
Insertion loss	0.2 dB max, 0.12 dB typical
Return loss all ports	20 dB min
Phase linearity variation	1° max over any 180 kHz
Group delay variation	0.1 ns max over any 180 kHz within the pass-band
General Characteristics	
Maximum average input power	500 W
Maximum PEP input power	5000 W
Isolation 698-960 port to 1710-2170 port	50 dB min
Intermodulation	< -155 dBc all ports (2 x 43 dBm carriers)
DC/AISG paths	Factory configured, see **Ordering Options** listed above
DC current rating	2A continuous, 4A peak
Voltage drop through device	0.1V max at 2A
Environmental Characteristics	
Operating temperature	-40° to +65° C / -40° to +149° F
Environmental sealing	IP67, ETSI EN 300 019 class 4.1
Lightning protection	5kA (8/20us) on all ports

DPX-02x Single Unit



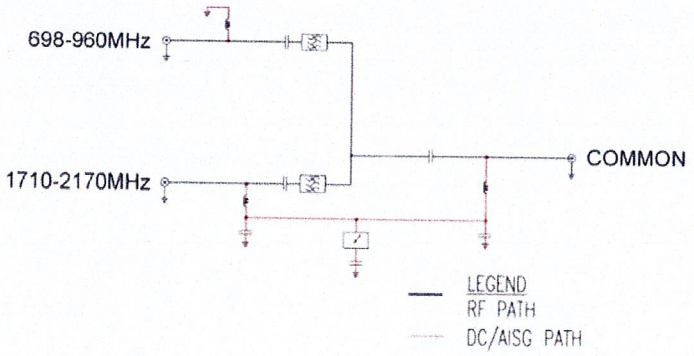
DPX-02x Dual Unit

DPX-02x

Diplexer | 700 / AWS | Single and Dual Units | Outdoor

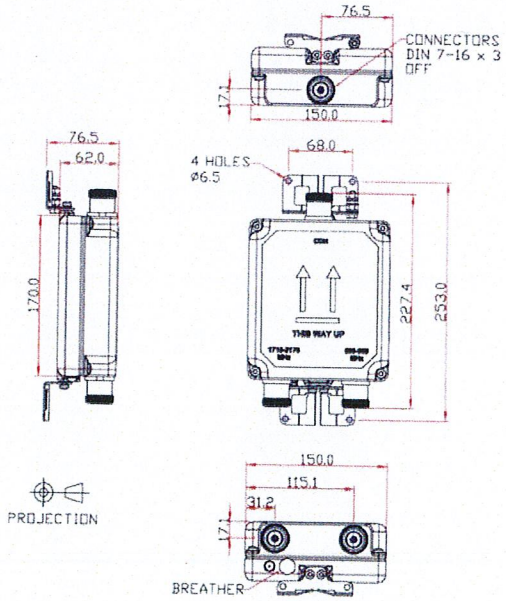
Mechanical Characteristics	
Dimensions of Single Unit - height x width x depth	170 x 150 x 62 mm / 6.7 x 5.9 x 2.4 in (excludes mounting kits and connectors)
Dimensions of Dual Unit - height x width x depth	170 x 150 x 97.5 mm / 6.7 x 5.9 x 3.8 in (excludes mounting kits and connectors)
Finish	Painted, light grey (RAL7035)
Weight	3 kg / 6.6 lbs
Connectors	3 / 7-16 DIN / Female / Long-neck
Mounting	Wall or pole mount
RoHS Compliance	Yes

Electrical Block Diagram

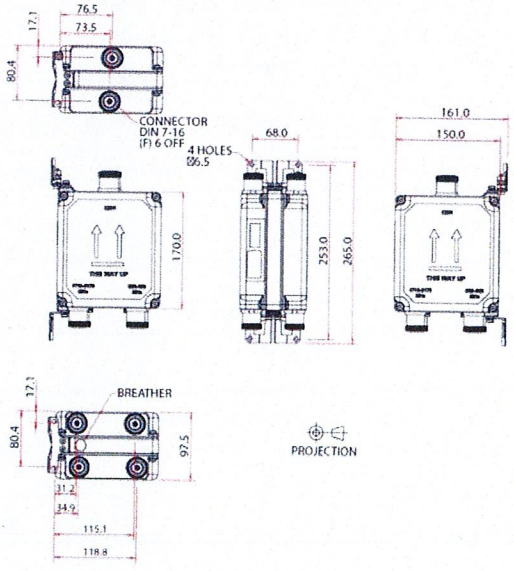


Mechanical Diagram

DPX-02x Single Unit



DPX-02x Dual Unit



Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

TAB 2

	General	Power	Density					
Site Name: Trumbull SW								
Tower Height: Verizon @ 100ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Clearwire	2	153	110	0.0091	2496	1.0000	0.91%	
*Clearwire	1	211	110	0.0063	18 GHz	1.0000	0.63%	
*MetroPCS	7	881	120	0.1540	2130	1.0000	15.40%	
*AT&T UMTS	1	500	154	0.0076	880	0.5867	1.29%	
*AT&T UMTS	1	500	154	0.0076	1900	1.0000	0.76%	
*AT&T GSM	3	296	154	0.0135	880	0.5867	2.29%	
*AT&T GSM	1	427	154	0.0065	1900	1.0000	0.65%	
*AT&T LTE	1	500	154	0.0076	734	0.4893	1.55%	
Verizon PCS	**15**	**269**	**100**	**0.1451**	**1970**	**1.0000**	**14.51%**	
Verizon Cellular	**9**	**269**	**100**	**0.0871**	**869**	**0.5793**	**15.03%**	
Verizon AWS	**1**	**1750**	**100**	**0.0629**	**2145**	**1.0000**	**6.29%**	
Verizon 700	**1**	**856**	**100**	**0.0308**	**698**	**0.4653**	**6.61%**	
								65.92%
* Source: Siting Council								

TAB 3

AT&T Towers
5405 Windward Pkwy
Alpharetta, GA 30004
(770) 708-6100

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.

Kevin Clements
1117 Perimeter Center West, Suite W303
Atlanta, GA 30338
(678) 781-5061
kclements@gpdgroup.com

GPD# 2013723.01.60393.01
June 5, 2013

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	**Site USID:**	**60393**
	Site FA:	**10034977**
	Client Site Name:	**Trumbull, SW, CT**
	Site Name:	**BRIDGEPORT NORTH**
	AT&T Project:	**2_Verizon Mod Pre-NTP 3-5-13**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CBC** **85-mph (fastest-mile) with 0" ice** **37-mph (fastest-mile) with 0.75" ice**
SITE DATA:		**2 Kaechele Place, Bridgeport, CT 06606, Fairfield County** **Latitude 41° 13' 23.97" N, Longitude 73° 13' 0.397" W** **Market: New England** **150' Modified Monopole**

Ms. Charlotte Malone,

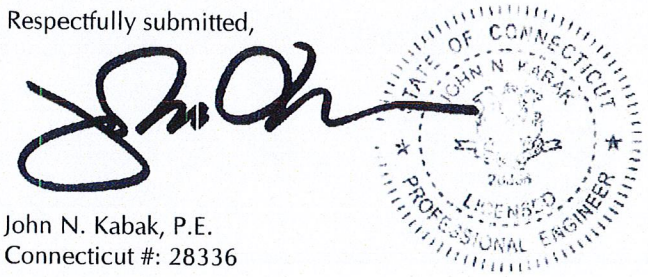
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	99.6%	Pass
Foundation Ratio with Proposed Equipment:	74.7%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T Towers. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



John N. Kabak, P.E.
Connecticut #: 28336

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by Verizon to AT&T Towers. This report was commissioned by Ms. Charlotte Malone of AT&T Towers.

The tower has been previously modified with (8) 2-1/2" diameter rods from 0'-50', (4) 2-1/2" diameter threaded rods from 50'-95' and (3) 5"x3/4" mod plates from 95'-115'. In addition, triangular stiffener plates have been installed on the base plate and bridge stiffeners on the flange plate at 109'. Additional concrete has also been poured atop the existing foundation.

Previous modifications designed by GPD Group (Project #: 2010288.04, dated 11/30/10), (Project #: 2011261.96, dated 9/23/11), and (Project #: 2012801.30, dated 6/22/12) have not been installed and were not considered in the analysis.

Previous modifications designed by GPD Group (Project #: 2008264.38, dated 10/16/08) have been installed and were considered in the analysis.

All modifications designed by GPD (Project #: 2013801.02, dated 4/3/13) were considered in the analysis. They consist of installing reinforcing plates to the monopole and installing rock anchors to the foundation.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	99.6%	Pass
Anchor Rods	78.7%	Pass
Base Plate	65.2%	Pass
Flange Plates	40.8%	Pass
Flange Bolts	30.3%	Pass
Foundation	74.7%	Pass

ANALYSIS METHOD

tnxTower (Version 6.1.0.9), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a recent site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Notice of Co-lo Form (Part 2)	Verizon co-location form, uploaded 4/4/2013	Siterra
Site Lease Application	Verizon application, uploaded 3/5/2013	Siterra
Tower Design	Not Provided	N/A
Foundation Design	Not Provided	N/A
Geotechnical Report	FDH Project #: 08-09065E G1, dated 9/23/2008	Siterra
Previous Structural Analysis	GPD Job #: 2013801.02, dated 4/3/2013	Siterra
Tower Mapping	GPD & MTSI, dated 2/23/2011	Siterra
Foundation Mapping	FDH Project #: 08-09065E N1, dated 9/23/2008	Siterra
Modification Drawings	GPD Job #: 2010288.04, dated 11/30/2010	Siterra
Modification Drawings	GPD Job #: 2012801.30, dated 6/22/2012	Siterra
Modification Drawings	GPD Job #: 2013801.02, dated 4/3/2013	Siterra
Modification Drawings	GPD Job #: 2011261.96, dated 9/23/2011	Siterra
Modification Drawings	GPD Job #: 2008264.38, dated 10/16/2008	Siterra

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower shaft sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous structural analysis by GPD (Job #: 2013801.02, dated 4/3/2013), the tower mapping by GPD & MTSI, site photos, the notice of co-location form and the site least application and is assumed to be accurate.
12. All modifications designed by GPD (Project #: 2013801.02, dated 4/3/13) were considered in the analysis.
13. The existing Verizon loading was obtained from the tower mapping by GPD & MTSI (dated 2/23/2011).
14. The existing AT&T loading has been modeled based on the final loading configuration of the internal modification project (1_MOD LTE 4-4-11) located on Siterra.
15. The future AT&T loading has been modeled based on the generic AT&T future loading scenario.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a recent site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the specified code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	BRIDGEPORT NORTH
Site Number	60393
FA Number	10034977
Date of Analysis	6/5/2013
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	150'	
Tower Manufacturer	n/a	
Tower Model	n/a	
Tower Design	n/a	
Foundation Design	n/a	
Geotech Report	FDH Project #: 08-09065E G1	9/23/2008
Tower Mapping	GPD & MTSI	2/23/2011
Modification Drawings	GPD Job #: 2008264.38	10/16/2008
Modification Drawings	GPD Job #: 2011261.96	9/23/2011
Modification Drawings	GPD Job #: 2013801.02	4/3/2013
Previous Structural Analysis	GPD Job #: 2013801.02	4/3/2013
Foundation Mapping	FDH Project #: 08-09065E N1	9/23/2008

Design Parameters

Design Code Used	TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CBC
Location of Tower (County, State)	Fairfield, CT
Basic Wind Speed (mph)	85 (fastest mile)
Ice Thickness (in)	0.75
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	99.6%
Tower Base (%)	78.7%
Foundation (%)	74.7%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Pole	65
Flange Plates	36
Flange Bolts	A325
Base Plate	50
Anchor Rods	75
Modification Rods	75

Note: Steel grades were assumed based on the previous structural analysis.

The tower has been previously modified with (8) 2-1/2" diameter rods from 0'-50', (4) 2-1/2" diameter threaded rods from 50'-95' and (3) 5"x3/4" mod plates from 95'-115'. In addition, triangular stiffener plates have been installed on the base plate and bridge stiffeners on the flange plate at 109'. Additional concrete has also been poured atop the existing foundation.

Modifications designed by GPD (Project #: 2013801.02, dated 4/3/13) and (Project #: 2008264.38, dated 10/16/08) were considered in the analysis.

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	153	155	1	Omni	Unknown	12' Omni		1	Unknown	10'-8" Platform w/ Rails	1	Unknown	1-1/4"	Internal
AT&T Mobility	153	153	6	Panel	Powerwave	RA21.7770.00	30/150/270			on same mount	12	Unknown	1-5/8"	Internal
AT&T Mobility	153	154	3	Panel	Powerwave	PWP65-16	30/150/270			on same mount				
AT&T Mobility	153	154	6	RRU	Ericsson	RRUS-11				on same mount	2	DC Line	7/8"	Internal
AT&T Mobility	153	154	1	Surge	Raycap	DC6-48-60-18-8F				on same mount	1	Fiber Line	1/2"	Internal
AT&T Mobility	153	153	12	TMA	Powerwave	TT19-08BP111-001				behind the antennas				
AT&T Mobility	153	150.5	6	RET	Powerwave	7020.00				below the antennas	1	RET Line	1/2"	Internal
Clearwire	138	144	1	Dish	Andrew	VHLP2-18	264	1	Unknown	13' LP Platform	1	Unknown	1/2"	Internal
Clearwire	138	144	1	Dish	Andrew	VHLP2-23	188			on same mount	1	Unknown	1/2"	Internal
Clearwire	138	144	2	ODU	Dragonwave	Horizon ODU				on same mount				
Clearwire	138	142	1	Power Box	Unknown	Power Box (2'x2'x8")				on same mount	2	Conduit	2"	External
Clearwire	138	141	3	Panel	Argus	LLPX310R-V1	25/145/265			on same mount	6	Unknown	5/16"	within conduit
Clearwire	138	141	3	RRH	Motorola	RRH-2WB0				behind the antennas				
Metro PCS	119	119	3	Panel	Kathrein	800 10504	60/180/300	3	Unknown	12' T-Arms	6	Unknown	1-5/8"	External
Metro PCS	119	119	3	RET	Kathrein	860 10025				below the antennas	1	RET Line	1/2"	External
Metro PCS	119	119									1	Ground Line	1/2"	External
Verizon Wireless	99	101	1	GPS	Unknown	GPS		3	Unknown	12' T-Arms	1	Unknown	1/2"	Internal
Verizon Wireless	99	99	6	Panel	Antel	LPD-6513	60/180/300			on same mounts	6	Unknown	1-5/8"	Internal
Verizon Wireless	99	99	6	Panel	Antel	BSA-185065/10CF	60/180/300			on same mounts	6	Unknown	1-5/8"	External

Note: Prior to the installation of the proposed loading, all antennas and the GPS unit at 99' shall be removed. All other loading shall remain and be reused.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
Verizon Wireless	99	100	6	Panel	Antel	BXA-70063-4CF	60/180/300			on existing mounts				
Verizon Wireless	99	100	6	Panel	Antel	BXA-171063-8CF	60/180/300			on existing mounts				
Verizon Wireless	99	100	6	Diplexer	RFS	FD9R6004/2C-3L				on existing mounts				
Verizon Wireless	99	100	6	Diplexer	Amphenal	DPX-021				on existing mounts				

Note: The proposed loading shall be installed in addition to the remaining existing loading at the same elevation.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	153	153	3	Panel	Powerwave	PWP65-16	30/150/270			on existing mounts	6	LDF7-50A	1-5/8"	Internal

Note: The future loading shall be installed in addition to the existing loading at the same elevation.

APPENDIX B

tnxTower Output File

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 Fairfield County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 37 mph is used in combination with ice.
Temperature drop of 50 °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, feedline supports, and appurtenance mounts are not considered.

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 plf
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	150.00 - 8.00	18	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF6-50A (1-1/4 FOAM)	C	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
1/2" Fiber Cable	C	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
7/8" DC Run	C	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
LDF4-50A (1/2 FOAM)	A	No	Inside Pole	144.00 - 8.00	2	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
9207 (5/16")	A	No	CaAa (Out Of Face)	141.00 - 8.00	6	No Ice	0.00	0.06
						1/2" Ice	0.00	0.57
						1" Ice	0.00	1.68
						2" Ice	0.00	5.75
						4" Ice	0.00	21.22
2" Flex Conduit	A	No	CaAa (Out Of Face)	141.00 - 98.00	1	No Ice	0.00	0.32
						1/2" Ice	0.00	1.85
						1" Ice	0.00	3.98
						2" Ice	0.00	10.09
						4" Ice	0.00	29.64

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
2" Flex Conduit	A	No	CaAa (Out Of Face)	141.00 - 98.00	1	No Ice	0.20	0.32
						1/2" Ice	0.30	1.85
						1" Ice	0.40	3.98
						2" Ice	0.60	10.09
						4" Ice	1.00	29.64
2" Flex Conduit	A	No	CaAa (Out Of Face)	98.00 - 8.00	2	No Ice	0.00	0.32
						1/2" Ice	0.00	1.85
						1" Ice	0.00	3.98
						2" Ice	0.00	10.09
						4" Ice	0.00	29.64
LDF7-50A (1-5/8 FOAM)	B	No	CaAa (Out Of Face)	119.00 - 8.00	1	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04
LDF7-50A (1-5/8 FOAM)	B	No	CaAa (Out Of Face)	119.00 - 8.00	5	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF4-50A (1/2 FOAM)	B	No	CaAa (Out Of Face)	119.00 - 8.00	2	No Ice	0.00	0.15
						1/2" Ice	0.00	0.84
						1" Ice	0.00	2.14
						2" Ice	0.00	6.58
						4" Ice	0.00	22.78
LDF7-50A (1-5/8 FOAM)	B	No	Inside Pole	99.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	B	No	CaAa (Out Of Face)	99.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
2.5" threaded rod	A	No	CaAa (Out Of Face)	98.00 - 0.00	1	No Ice	0.25	0.00
						1/2" Ice	0.35	0.00
						1" Ice	0.45	0.00
						2" Ice	0.65	0.00
						4" Ice	1.05	0.00
2.5" threaded rod	A	No	CaAa (Out Of Face)	98.00 - 52.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
2.5" threaded rod	A	No	CaAa (Out Of Face)	52.00 - 0.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
2.5" threaded rod	B	No	CaAa (Out Of Face)	98.00 - 52.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
2.5" threaded rod	B	No	CaAa (Out Of Face)	52.00 - 0.00	3	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
2.5" threaded rod	C	No	CaAa (Out Of	98.00 - 52.00	1	No Ice	0.00	0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
			Face)			1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
2.5" threaded rod	C	No	CaAa (Out Of Face)	52.00 - 0.00	2	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 0.75" mod plate	A	No	CaAa (Out Of Face)	115.00 - 95.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 0.75" mod plate	B	No	CaAa (Out Of Face)	115.00 - 95.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 0.75" mod plate	C	No	CaAa (Out Of Face)	115.00 - 95.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	69.00 - 47.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 1-1/4" Mod Plate	B	No	CaAa (Out Of Face)	69.00 - 47.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 1-1/4" Mod Plate	C	No	CaAa (Out Of Face)	69.00 - 47.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
4" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	82.00 - 67.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
4" x 1-1/4" Mod Plate	B	No	CaAa (Out Of Face)	82.00 - 67.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
4" x 1-1/4" Mod Plate	C	No	CaAa (Out Of Face)	82.00 - 67.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	109.50 - 93.50	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 1-1/4" Mod Plate	B	No	CaAa (Out Of Face)	109.50 - 93.50	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
5" x 1-1/4" Mod Plate	C	No	CaAa (Out Of Face)	109.50 - 93.50	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
4" x 1-1/4" Mod Plate	A	No	CaAa (Out Of Face)	130.00 - 110.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
4" x 1-1/4" Mod Plate	B	No	CaAa (Out Of Face)	130.00 - 110.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00
4" x 1-1/4" Mod Plate	C	No	CaAa (Out Of Face)	130.00 - 110.00	1	No Ice	0.00	0.00
						1/2" Ice	0.00	0.00
						1" Ice	0.00	0.00
						2" Ice	0.00	0.00
						4" Ice	0.00	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
10'-8" Central Platform w/ 42" tower extension	C	None		0.0000	153.00	No Ice	43.32	43.32	2.50
						1/2" Ice	46.28	46.28	3.25
						1" Ice	49.24	49.24	4.00
						2" Ice	55.16	55.16	5.50
						4" Ice	67.00	67.00	8.50
12' Omni	C	From Centroid-Le g	3.00 0.00 2.00	0.0000	153.00	No Ice	1.60	1.60	0.02
						1/2" Ice	2.42	2.42	0.03
						1" Ice	3.24	3.24	0.05
						2" Ice	4.23	4.23	0.10
						4" Ice	6.32	6.32	0.27
(2) RA21.7770.00 w/ Mount Pipe	A	From Centroid-Le g	3.00 0.00 0.00	30.0000	153.00	No Ice	6.79	3.51	0.04
						1/2" Ice	7.28	3.90	0.07
						1" Ice	7.78	4.30	0.12
						2" Ice	8.79	5.13	0.22
						4" Ice	10.93	6.92	0.50
(2) RA21.7770.00 w/ Mount Pipe	B	From Centroid-Le g	3.00 0.00 0.00	30.0000	153.00	No Ice	6.79	3.51	0.04
						1/2" Ice	7.28	3.90	0.07
						1" Ice	7.78	4.30	0.12
						2" Ice	8.79	5.13	0.22
						4" Ice	10.93	6.92	0.50
(2) RA21.7770.00 w/ Mount Pipe	C	From Centroid-Le g	3.00 0.00 0.00	30.0000	153.00	No Ice	6.79	3.51	0.04
						1/2" Ice	7.28	3.90	0.07
						1" Ice	7.78	4.30	0.12
						2" Ice	8.79	5.13	0.22
						4" Ice	10.93	6.92	0.50
(4) TT19-08BP111-001	A	From	3.00	30.0000	153.00	No Ice	0.00	0.52	0.02

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
		Centroid-Leg	0.00 0.00			1/2" Ice	0.00	0.62	0.02
						1" Ice	0.00	0.74	0.03
						2" Ice	0.00	0.99	0.05
						4" Ice	0.00	1.59	0.12
(4) TT19-08BP111-001	B	From Centroid-Leg	3.00 0.00 0.00	30.0000	153.00	No Ice	0.00	0.52	0.02
						1/2" Ice	0.00	0.62	0.02
						1" Ice	0.00	0.74	0.03
						2" Ice	0.00	0.99	0.05
						4" Ice	0.00	1.59	0.12
(4) TT19-08BP111-001	C	From Centroid-Leg	3.00 0.00 0.00	30.0000	153.00	No Ice	0.00	0.52	0.02
						1/2" Ice	0.00	0.62	0.02
						1" Ice	0.00	0.74	0.03
						2" Ice	0.00	0.99	0.05
						4" Ice	0.00	1.59	0.12
(2) 7020.00 RET	A	From Centroid-Leg	3.00 0.00 -2.50	30.0000	153.00	No Ice	0.12	0.20	0.00
						1/2" Ice	0.17	0.28	0.01
						1" Ice	0.23	0.36	0.01
						2" Ice	0.38	0.56	0.02
						4" Ice	0.78	1.05	0.07
(2) 7020.00 RET	B	From Centroid-Leg	3.00 0.00 -2.50	30.0000	153.00	No Ice	0.12	0.20	0.00
						1/2" Ice	0.17	0.28	0.01
						1" Ice	0.23	0.36	0.01
						2" Ice	0.38	0.56	0.02
						4" Ice	0.78	1.05	0.07
(2) 7020.00 RET	C	From Centroid-Leg	3.00 0.00 -2.50	30.0000	153.00	No Ice	0.12	0.20	0.00
						1/2" Ice	0.17	0.28	0.01
						1" Ice	0.23	0.36	0.01
						2" Ice	0.38	0.56	0.02
						4" Ice	0.78	1.05	0.07
(2) PWP65-16 w/ Mount Pipe	A	From Centroid-Leg	3.00 0.00 1.00	30.0000	153.00	No Ice	8.40	4.70	0.05
						1/2" Ice	8.95	5.15	0.10
						1" Ice	9.51	5.60	0.15
						2" Ice	10.65	6.53	0.28
						4" Ice	13.03	8.52	0.61
(2) PWP65-16 w/ Mount Pipe	B	From Centroid-Leg	3.00 0.00 1.00	30.0000	153.00	No Ice	8.40	4.70	0.05
						1/2" Ice	8.95	5.15	0.10
						1" Ice	9.51	5.60	0.15
						2" Ice	10.65	6.53	0.28
						4" Ice	13.03	8.52	0.61
(2) PWP65-16 w/ Mount Pipe	C	From Centroid-Leg	3.00 0.00 1.00	30.0000	153.00	No Ice	8.40	4.70	0.05
						1/2" Ice	8.95	5.15	0.10
						1" Ice	9.51	5.60	0.15
						2" Ice	10.65	6.53	0.28
						4" Ice	13.03	8.52	0.61
(2) RRUS 11	A	From Centroid-Leg	3.00 0.00 1.00	30.0000	153.00	No Ice	3.25	1.37	0.05
						1/2" Ice	3.49	1.55	0.07
						1" Ice	3.74	1.74	0.10
						2" Ice	4.27	2.14	0.15
						4" Ice	5.43	3.04	0.31
(2) RRUS 11	B	From Centroid-Leg	3.00 0.00 1.00	30.0000	153.00	No Ice	3.25	1.37	0.05
						1/2" Ice	3.49	1.55	0.07
						1" Ice	3.74	1.74	0.10
						2" Ice	4.27	2.14	0.15
						4" Ice	5.43	3.04	0.31
(2) RRUS 11	C	From Centroid-Leg	3.00 0.00 1.00	30.0000	153.00	No Ice	3.25	1.37	0.05
						1/2" Ice	3.49	1.55	0.07
						1" Ice	3.74	1.74	0.10

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	4.27	2.14	0.15
						4" Ice	5.43	3.04	0.31
DC6-48-60-18-8F Surge Suppression Unit	A	From Centroid-Leg	3.00 0.00 1.00	30.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	0.03 0.05 0.07 0.12 0.25
Valmont 13' Platform w/o rails (GPD)	C	None		0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	24.80 26.20 27.60 30.40 36.00	24.80 26.20 27.60 30.40 36.00	1.50 2.50 3.50 5.50 9.50
LLPX310R-V1 w/ Mount Pipe	A	From Centroid-Leg	3.63 1.69 3.00	25.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.84 5.19 5.55 6.30 7.91	1.96 2.22 2.50 3.13 4.55	0.03 0.05 0.08 0.16 0.36
LLPX310R-V1 w/ Mount Pipe	B	From Centroid-Leg	3.63 1.69 3.00	25.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.84 5.19 5.55 6.30 7.91	1.96 2.22 2.50 3.13 4.55	0.03 0.05 0.08 0.16 0.36
LLPX310R-V1 w/ Mount Pipe	C	From Centroid-Leg	3.63 1.69 3.00	25.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.84 5.19 5.55 6.30 7.91	1.96 2.22 2.50 3.13 4.55	0.03 0.05 0.08 0.16 0.36
RRH-2WB0	A	From Centroid-Leg	3.63 1.69 3.00	25.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.85 1.01 1.18 1.55 2.38	0.04 0.06 0.08 0.12 0.25
RRH-2WB0	B	From Centroid-Leg	3.63 1.69 3.00	25.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.85 1.01 1.18 1.55 2.38	0.04 0.06 0.08 0.12 0.25
RRH-2WB0	C	From Centroid-Leg	3.63 1.69 3.00	25.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.85 1.01 1.18 1.55 2.38	0.04 0.06 0.08 0.12 0.25
Horizon ODU	A	From Centroid-Leg	3.63 1.69 6.00	-90.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.87 1.00 1.13 1.43 2.12	0.43 0.53 0.63 0.87 1.44	0.01 0.02 0.03 0.05 0.12
Horizon ODU	C	From Centroid-Leg	3.63 1.69 6.00	-77.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.87 1.00 1.13 1.43 2.12	0.43 0.53 0.63 0.87 1.44	0.01 0.02 0.03 0.05 0.12
Power Box (2'x2'x8")	A	From Centroid-Leg	3.63 1.69 4.00	25.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.60 5.92 6.24 6.91 8.37	1.87 2.08 2.30 2.77 3.80	0.05 0.08 0.12 0.21 0.43

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
Pipe Mount 5'x2.375"	A	From Centroid-Leg	3.63 1.69 0.00	0.0000	138.00	No Ice	1.19	1.19	0.02
						1/2" Ice	1.50	1.50	0.03
						1" Ice	1.81	1.81	0.04
						2" Ice	2.46	2.46	0.08
						4" Ice	3.92	3.92	0.20
Pipe Mount 5'x2.375"	B	From Centroid-Leg	3.63 1.69 0.00	0.0000	138.00	No Ice	1.19	1.19	0.02
						1/2" Ice	1.50	1.50	0.03
						1" Ice	1.81	1.81	0.04
						2" Ice	2.46	2.46	0.08
						4" Ice	3.92	3.92	0.20
Pipe Mount 5'x2.375"	C	From Centroid-Leg	3.63 1.69 0.00	0.0000	138.00	No Ice	1.19	1.19	0.02
						1/2" Ice	1.50	1.50	0.03
						1" Ice	1.81	1.81	0.04
						2" Ice	2.46	2.46	0.08
						4" Ice	3.92	3.92	0.20
12' T-Arm (1)	A	From Face	2.50 0.00 0.00	0.0000	119.00	No Ice	4.70	2.33	0.33
						1/2" Ice	5.33	2.96	0.40
						1" Ice	6.00	3.60	0.47
						2" Ice	6.67	4.87	0.53
						4" Ice	8.33	7.41	0.60
12' T-Arm (1)	B	From Face	2.50 0.00 0.00	0.0000	119.00	No Ice	4.70	2.33	0.33
						1/2" Ice	5.33	2.96	0.40
						1" Ice	6.00	3.60	0.47
						2" Ice	6.67	4.87	0.53
						4" Ice	8.33	7.41	0.60
12' T-Arm (1)	C	From Face	2.50 0.00 0.00	0.0000	119.00	No Ice	4.70	2.33	0.33
						1/2" Ice	5.33	2.96	0.40
						1" Ice	6.00	3.60	0.47
						2" Ice	6.67	4.87	0.53
						4" Ice	8.33	7.41	0.60
800 10504 w/ Mount Pipe	A	From Face	5.00 0.00 0.00	0.0000	119.00	No Ice	3.35	1.87	0.02
						1/2" Ice	3.70	2.20	0.04
						1" Ice	4.05	2.53	0.06
						2" Ice	4.84	3.22	0.12
						4" Ice	6.61	4.70	0.29
800 10504 w/ Mount Pipe	B	From Face	5.00 0.00 0.00	0.0000	119.00	No Ice	3.35	1.87	0.02
						1/2" Ice	3.70	2.20	0.04
						1" Ice	4.05	2.53	0.06
						2" Ice	4.84	3.22	0.12
						4" Ice	6.61	4.70	0.29
800 10504 w/ Mount Pipe	C	From Face	5.00 0.00 0.00	0.0000	119.00	No Ice	3.35	1.87	0.02
						1/2" Ice	3.70	2.20	0.04
						1" Ice	4.05	2.53	0.06
						2" Ice	4.84	3.22	0.12
						4" Ice	6.61	4.70	0.29
860 10025	A	From Face	5.00 0.00 0.00	0.0000	119.00	No Ice	0.18	0.15	0.00
						1/2" Ice	0.25	0.21	0.00
						1" Ice	0.33	0.29	0.01
						2" Ice	0.51	0.47	0.01
						4" Ice	0.98	0.93	0.05
860 10025	B	From Face	5.00 0.00 0.00	0.0000	119.00	No Ice	0.18	0.15	0.00
						1/2" Ice	0.25	0.21	0.00
						1" Ice	0.33	0.29	0.01
						2" Ice	0.51	0.47	0.01
						4" Ice	0.98	0.93	0.05
860 10025	C	From Face	5.00 0.00	0.0000	119.00	No Ice	0.18	0.15	0.00
						1/2" Ice	0.25	0.21	0.00

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
			0.00			1" Ice	0.33	0.29	0.01
						2" Ice	0.51	0.47	0.01
						4" Ice	0.98	0.93	0.05
12' T-Arm (1)	A	From Face	2.50	0.0000	99.00	No Ice	4.70	2.33	0.33
			0.00			1/2" Ice	5.33	2.96	0.40
			0.00			1" Ice	6.00	3.60	0.47
						2" Ice	6.67	4.87	0.53
						4" Ice	8.33	7.41	0.60
12' T-Arm (1)	B	From Face	2.50	0.0000	99.00	No Ice	4.70	2.33	0.33
			0.00			1/2" Ice	5.33	2.96	0.40
			0.00			1" Ice	6.00	3.60	0.47
						2" Ice	6.67	4.87	0.53
						4" Ice	8.33	7.41	0.60
12' T-Arm (1)	C	From Face	2.50	0.0000	99.00	No Ice	4.70	2.33	0.33
			0.00			1/2" Ice	5.33	2.96	0.40
			0.00			1" Ice	6.00	3.60	0.47
						2" Ice	6.67	4.87	0.53
						4" Ice	8.33	7.41	0.60
(2) BXA-70063-4CF w/ Mount Pipe	A	From Face	5.00	0.0000	99.00	No Ice	5.75	4.24	0.04
			0.00			1/2" Ice	6.26	4.91	0.09
			1.00			1" Ice	6.78	5.59	0.15
						2" Ice	7.85	7.06	0.28
						4" Ice	10.14	10.28	0.65
(2) BXA-70063-4CF w/ Mount Pipe	B	From Face	5.00	0.0000	99.00	No Ice	5.75	4.24	0.04
			0.00			1/2" Ice	6.26	4.91	0.09
			1.00			1" Ice	6.78	5.59	0.15
						2" Ice	7.85	7.06	0.28
						4" Ice	10.14	10.28	0.65
(2) BXA-70063-4CF w/ Mount Pipe	C	From Face	5.00	0.0000	99.00	No Ice	5.75	4.24	0.04
			0.00			1/2" Ice	6.26	4.91	0.09
			1.00			1" Ice	6.78	5.59	0.15
						2" Ice	7.85	7.06	0.28
						4" Ice	10.14	10.28	0.65
(2) BXA-171063/8CF w/ Mount Pipe	A	From Face	5.00	0.0000	99.00	No Ice	3.37	3.74	0.03
			0.00			1/2" Ice	3.84	4.54	0.07
			1.00			1" Ice	4.30	5.22	0.11
						2" Ice	5.31	6.64	0.21
						4" Ice	7.47	9.85	0.53
(2) BXA-171063/8CF w/ Mount Pipe	B	From Face	5.00	0.0000	99.00	No Ice	3.37	3.74	0.03
			0.00			1/2" Ice	3.84	4.54	0.07
			1.00			1" Ice	4.30	5.22	0.11
						2" Ice	5.31	6.64	0.21
						4" Ice	7.47	9.85	0.53
(2) BXA-171063/8CF w/ Mount Pipe	C	From Face	5.00	0.0000	99.00	No Ice	3.37	3.74	0.03
			0.00			1/2" Ice	3.84	4.54	0.07
			1.00			1" Ice	4.30	5.22	0.11
						2" Ice	5.31	6.64	0.21
						4" Ice	7.47	9.85	0.53
(2) FD9R6004/2C-3L	A	From Face	5.00	0.0000	99.00	No Ice	0.37	0.08	0.00
			0.00			1/2" Ice	0.45	0.14	0.01
			1.00			1" Ice	0.54	0.20	0.01
						2" Ice	0.75	0.34	0.02
						4" Ice	1.28	0.74	0.06
(2) FD9R6004/2C-3L	B	From Face	5.00	0.0000	99.00	No Ice	0.37	0.08	0.00
			0.00			1/2" Ice	0.45	0.14	0.01
			1.00			1" Ice	0.54	0.20	0.01
						2" Ice	0.75	0.34	0.02

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) FD9R6004/2C-3L	C	From Face	5.00 0.00 1.00	0.0000	99.00	4" Ice No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.28 0.37 0.45 0.54 0.75 1.28	0.74 0.08 0.14 0.20 0.34 0.74	0.06 0.00 0.01 0.01 0.02 0.06
(2) DPX-021	A	From Face	5.00 0.00 1.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.51 0.61 0.83 1.39	0.20 0.27 0.36 0.55 1.04	0.01 0.01 0.02 0.03 0.08
(2) DPX-021	B	From Face	5.00 0.00 1.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.51 0.61 0.83 1.39	0.20 0.27 0.36 0.55 1.04	0.01 0.01 0.02 0.03 0.08
(2) DPX-021	C	From Face	5.00 0.00 1.00	0.0000	99.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.51 0.61 0.83 1.39	0.20 0.27 0.36 0.55 1.04	0.01 0.01 0.02 0.03 0.08

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2-18	A	Paraboloid w/Shroud (HP)	From Centroid -Leg	3.63 1.69 6.00	-90.0000		138.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.72 4.01 4.31 4.94 6.34	0.03 0.07 0.11 0.20 0.43
VHLP2-23	C	Paraboloid w/Shroud (HP)	From Centroid -Leg	3.63 1.69 6.00	-77.0000		138.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.72 4.01 4.30 4.88 6.04	0.03 0.05 0.08 0.13 0.22

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
153.00	10'-8" Central Platform w/ 42" tower extension	28	47.646	3.1434	0.0145	7017
144.00	VHLP2-18	28	43.828	2.9704	0.0119	5847
138.00	Valmont 13' Platform w/o rails (GPD)	28	40.084	2.8055	0.0094	2923
119.00	12' T-Arm (1)	28	29.477	2.4060	0.0049	2293
99.00	12' T-Arm (1)	28	20.310	2.0264	0.0032	3818

tnxTower	Job: 60393 BRIDGEPORT NORTH	Page: 10 of 10
GPD Group 520 South Main St, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2013723.01.60393.01	Date: 16:31:31 06/05/13
	Client: AT&T Towers	Designed by: kliccar

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	150 - 128.5	Pole	TP18.205x15x0.2188	1	-5.33	658.63	92.7	Pass
L2	128.5 - 109.75	Pole	TP21x18.205x0.5889	2	-8.74	*	82.6*	Pass
L3	109.75 - 107.25	Pole	TP21.3728x21x0.5162	3	-9.00	*	88.4*	Pass
L4	107.25 - 100.5	Pole	TP22.3795x21.3728x0.9946	4	-10.54	*	74.0*	Pass
L5	100.5 - 98.25	Pole	TP22.7151x22.3795x0.9754	5	-12.26	*	77.1*	Pass
L6	98.25 - 95	Pole	TP23.1998x22.7151x0.9027	6	-13.06	*	86.2*	Pass
L7	95 - 93.5	Pole	TP23.4235x23.1998x1.2382	7	-13.53	*	60.9*	Pass
L8	93.5 - 80.5	Pole	TP25.3622x23.4235x0.5091	8	-15.88	*	92.4*	Pass
L9	80.5 - 69.25	Pole	TP27.04x25.3622x0.7892	9	-17.93	*	87.6*	Pass
L10	69.25 - 66.5	Pole	TP27.0177x26.0926x0.8492	10	-20.06	*	88.4*	Pass
L11	66.5 - 50	Pole	TP29.6723x27.0177x0.8574	11	-24.82	*	90.2*	Pass
L12	50 - 47	Pole	TP30.1549x29.6723x1.0898	12	-25.92	*	73.0*	Pass
L13	47 - 30	Pole	TP32.89x30.1549x0.7222	13	-29.68	*	97.8*	Pass
L14	30 - 0	Pole	TP37.36x31.6215x0.7583	14	-41.61	*	99.6*	Pass

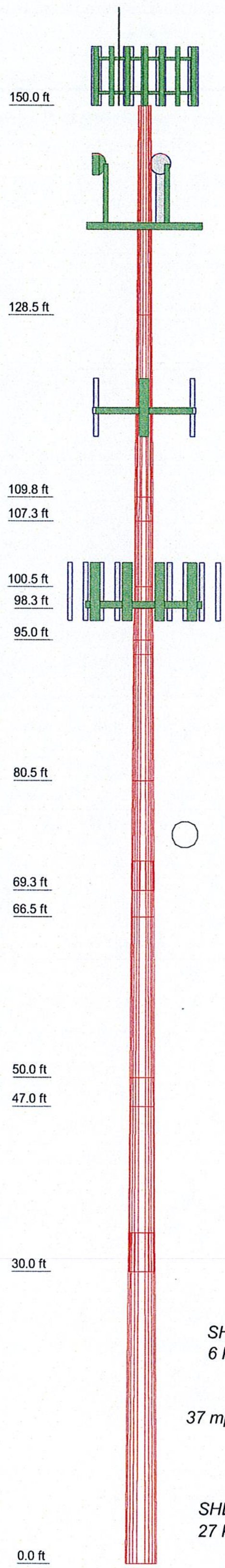
Summary	ELC:	Future
Pole (L8)	99.6*	Pass
Rating =	99.6*	Pass

*See Appendix D for Monopole Reinforcement Calculations.

APPENDIX C

Tower Elevation Drawing

Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Length (ft)	21.50	18.75	2.50	6.75	2.25	3.25	1.50	13.00	11.25	5.75	16.50	3.00	17.00	34.00
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.2188	0.5889	0.5162	0.9946	[illegible]	[illegible]	[illegible]	0.5091	0.7892	0.8492	0.8574	1.0898	0.7222	0.7583
Socket Length (ft)									3.00				4.00	
Top Dia (in)	15.0000	18.2050	21.0000	21.3728	[illegible]	[illegible]	[illegible]	23.4235	25.3622	26.0926	27.0177	29.6723	30.1549	31.6215
Bot Dia (in)	18.2050	21.0000	21.3728	22.3795	[illegible]	[illegible]	[illegible]	25.3622	27.0400	27.0177	29.6723	30.1549	32.8900	37.3600
Grade	A572-65	42.766854ksi	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	48.14647ksi	52.10314ksi	44.226706ksi	44.326948ksi	48.811752ksi	48.928331ksi	52.6271ksi / 52.662004ksi
Weight (K) 29.6	0.8	2.1	0.2	1.4	0.5	0.7	0.4	1.7	2.3	1.3	4.0	1.0	4.0	9.3



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
10'-8" Central Platform w/ 42" tower extension	153	Pipe Mount 5'x2.375"	138
		Pipe Mount 5'x2.375"	138
12' Omni	153	Pipe Mount 5'x2.375"	138
(2) RA21.7770.00 w/ Mount Pipe	153	VHLP2-18	138
(2) RA21.7770.00 w/ Mount Pipe	153	VHLP2-23	138
(2) RA21.7770.00 w/ Mount Pipe	153	12' T-Arm (1)	119
(4) TT19-08BP111-001	153	800 10504 w/ Mount Pipe	119
(4) TT19-08BP111-001	153	800 10504 w/ Mount Pipe	119
(4) TT19-08BP111-001	153	800 10504 w/ Mount Pipe	119
(2) 7020.00 RET	153	860 10025	119
(2) 7020.00 RET	153	860 10025	119
(2) 7020.00 RET	153	860 10025	119
(2) PWP65-16 w/ Mount Pipe	153	12' T-Arm (1)	119
(2) PWP65-16 w/ Mount Pipe	153	12' T-Arm (1)	119
(2) PWP65-16 w/ Mount Pipe	153	12' T-Arm (1)	99
(2) RRUS 11	153	(2) BXA-70063-4CF w/ Mount Pipe	99
(2) RRUS 11	153	(2) BXA-70063-4CF w/ Mount Pipe	99
(2) RRUS 11	153	(2) BXA-70063-4CF w/ Mount Pipe	99
DC6-48-60-18-8F Surge Suppression Unit	153	(2) BXA-171063/8CF w/ Mount Pipe	99
		(2) BXA-171063/8CF w/ Mount Pipe	99
Valmont 13' Platform w/o rails (GPD)	138	(2) BXA-171063/8CF w/ Mount Pipe	99
LLPX310R-V1 w/ Mount Pipe	138	(2) FD9R6004/2C-3L	99
LLPX310R-V1 w/ Mount Pipe	138	(2) FD9R6004/2C-3L	99
LLPX310R-V1 w/ Mount Pipe	138	(2) FD9R6004/2C-3L	99
RRH-2WB0	138	(2) DPX-021	99
RRH-2WB0	138	(2) DPX-021	99
RRH-2WB0	138	(2) DPX-021	99
Horizon ODU	138	12' T-Arm (1)	99
Horizon ODU	138	12' T-Arm (1)	99
Power Box (2'x2'x8")	138		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	52.10314ksi	52 ksi	67 ksi
42.766854ksi	43 ksi	58 ksi	44.226706ksi	44 ksi	59 ksi
60.230473ksi	60 ksi	75 ksi	44.326948ksi	44 ksi	59 ksi
47.953241ksi	48 ksi	63 ksi	48.811752ksi	49 ksi	64 ksi
48.215818ksi	48 ksi	63 ksi	48.928331ksi	49 ksi	64 ksi
47.98538ksi	48 ksi	63 ksi	52.6271ksi	53 ksi	68 ksi
48.14647ksi	48 ksi	63 ksi	52.662004ksi	53 ksi	68 ksi

TOWER DESIGN NOTES

1. Tower is located in Fairfield 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 37 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: 99.6%

AXIAL 58 K

SHEAR 6 K *MOMENT 682 kip-ft*

TORQUE 0 kip-ft
37 mph WIND - 0.7500 in ICE

AXIAL 42 K

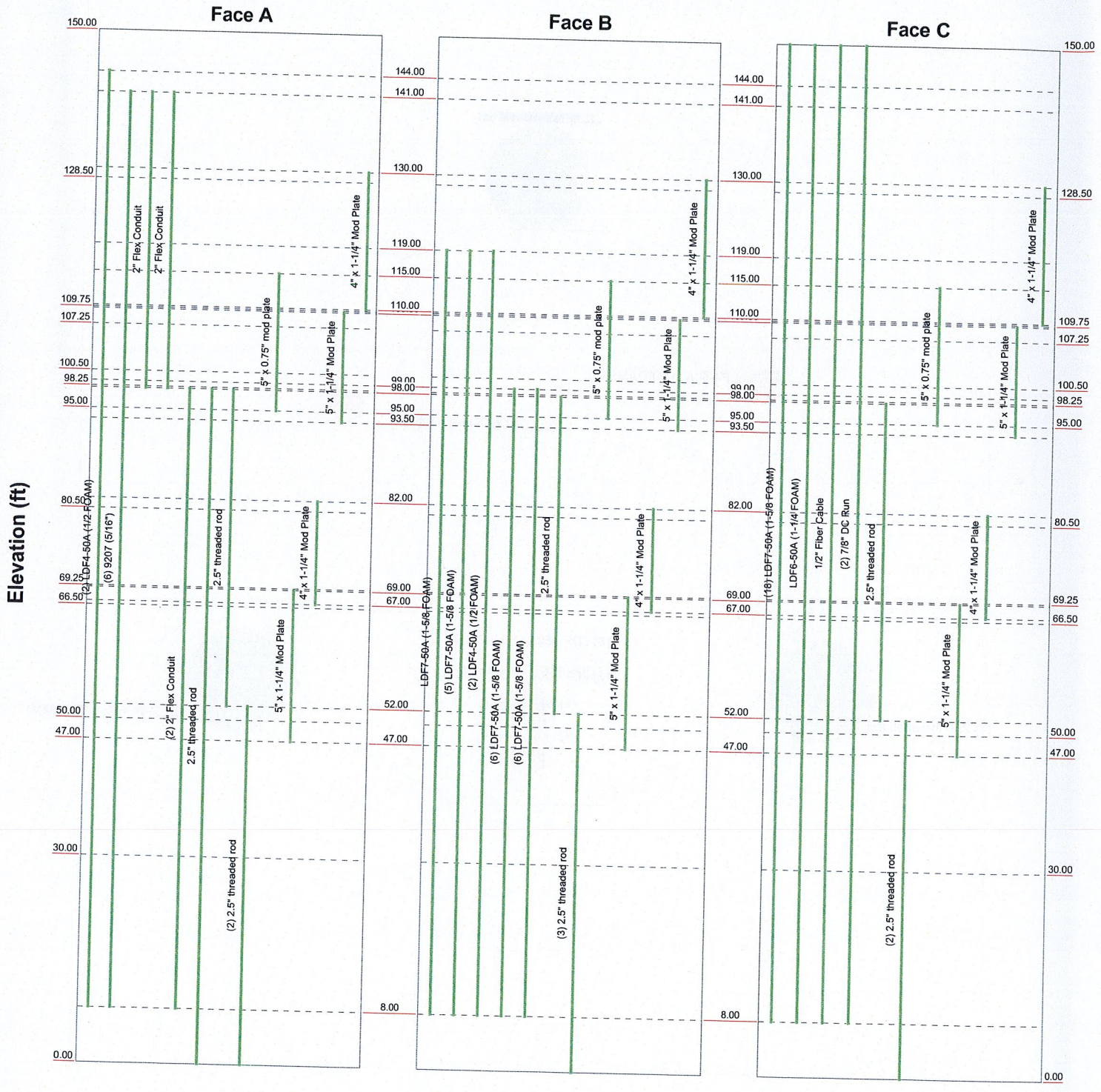
SHEAR 27 K *MOMENT 2917 kip-ft*

TORQUE 2 kip-ft
REACTIONS - 85 mph WIND

GPD Group		
GPD GROUP — 520 South Main St, Suite 2531, Akron, OH 44311, Phone: (330) 572-2100, FAX: (330) 572-2101	Job: 60393 BRIDGEPORT NORTH	
	Project: 2013723.01.60393.01	
	Client: AT&T Towers	Drawn by: klicar — App'd:
	Code: TIA/EIA-222-F	Date: 06/05/13 — Scale: NTS
	Path:	Dwg No. E-1

Feedline Distribution Chart
0' - 150'

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



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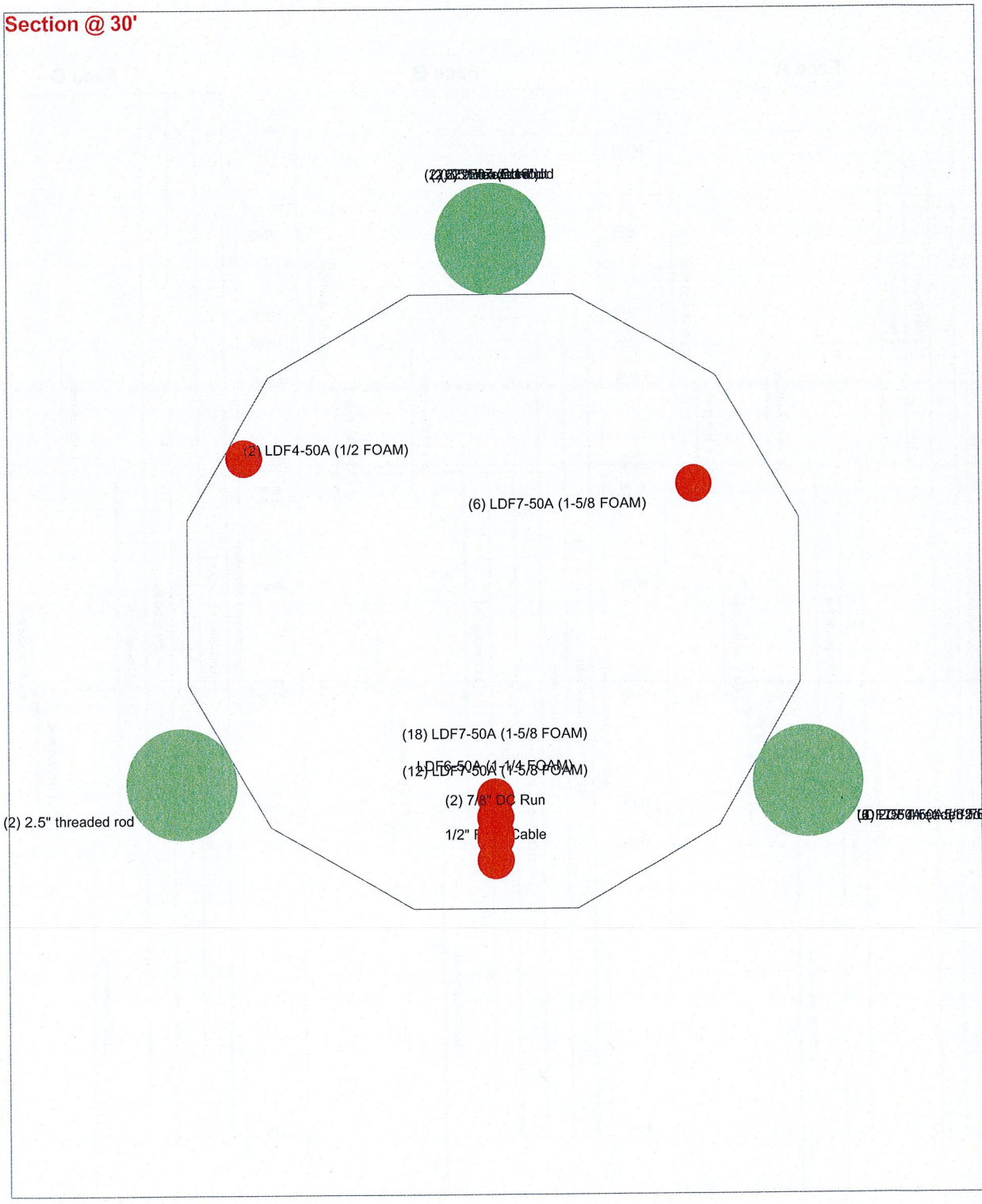
Job: ***60393 BRIDGEPORT NORTH***		
Project: ***2013723.01.60393.01***		
Client: AT&T Towers	Drawn by: kliccar	App'd:
Code: TIA/EIA-222-F	Date: 06/05/13	Scale: NTS
Path:		Dwg No. E-7

Feedline Plan
30'

Round Flat App In Face App Out Face



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Job: ***60393 BRIDGEPORT NORTH***		
Project: ***2013723.01.60393.01***		
Client: AT&T Towers	Drawn by: kliccar	App'd:
Code: TIA/EIA-222-F	Date: 06/05/13	Scale: NTS
Path:		Dwg No. E-7

APPENDIX D

Monopole Reinforcement Calculations

Reinforcement 1						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	50	8	SR 2.5	F	0	T&C
50	95	4	SR 2.5	F	0	T&C
109.75	128.5	4	PL1.25x4-18	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 2						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
47	66.5	4	PL1.25x5-18	F	0	T&C
66.5	80.5	4	PL1.25x4-18	F	0	T&C
93.5	107.25	3	PL1.25x5-18	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 3						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
93.5	100.5	1	PL1.25x5-18	F	0	T&C
98.25	109.75	1	PL1.25x5-18	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Bottom Elevation	Top Elevation	Original Thickness	Original Yield Stress	Original Ultimate Stress	Reinforced Shaft Capacity	Reinf. 1 QTY	Reinf. 1 Type	Rein. 1 Capacity	Reinf. 2 QTY	Reinf. 2 Type	Rein. 2 Capacity	Reinf. 3 QTY	Reinf. 3 Type	Rein. 3 Capacity	Control Stress Ratio	Top Height	Section Length	Lap Splice	# of Sides	Top Diameter	Bottom Diameter	Equivalent Shaft Thickness	Equivalent Shaft Fy	Equivalent Weight Mult.		Top Elevation Failure	Bottom Elevation Failure	Section Failure %
128.5000	150.0000	0.2188	65	80	92.7%										**92.7%**	150.0000	21.5000	0.0000	12	15.0000	18.2050	0.2188	65.0	1.00	1			
109.7500	128.5000	0.2188	65	80	55.4%	4	PL1.25x4-18	82.6%							**82.6%**	128.5000	18.7500	0.0000	12	18.2050	21.0000	0.5889	42.8	0.89	2			
107.2500	109.7500	0.2500	65	80	82.9%							1	PL1.25x5-18	88.4%	**88.4%**	109.7500	2.5000	0.0000	12	21.0000	21.3728	0.5162	60.2	0.67	3			
100.5000	107.2500	0.2500	65	80	54.8%				3	PL1.25x5-18	74.0%	1	PL1.25x5-18	74.0%	**74.0%**	107.2500	6.7500	0.0000	12	21.3728	22.3795	0.6876	47.2	0.89	4			
98.2500	100.5000	0.2500	65	80	57.6%				3	PL1.25x5-18	77.1%	1	PL1.25x5-18	77.1%	**77.1%**	100.5000	2.2500	0.0000	12	22.3795	22.7151	0.6789	47.4	0.89	5			
95.0000	98.2500	0.2500	65	80	66.5%				3	PL1.25x5-18	86.2%	1	PL1.25x5-18	79.1%	**86.2%**	98.2500	3.2500	0.0000	12	22.7151	23.1998	0.6211	48.3	0.96	6			
93.5000	95.0000	0.2500	65	80	47.2%	4	SR 2.5	47.2%	3	PL1.25x5-18	60.9%	1	PL1.25x5-18	56.1%	**60.9%**	95.0000	1.5000	0.0000	12	23.1998	23.4235	0.9384	48.3	0.93	7			
80.5000	93.5000	0.2500	65	80	92.4%	4	SR 2.5	92.1%							**92.4%**	93.5000	13.0000	0.0000	12	23.4235	25.3622	0.5091	52.1	0.98	8			
69.2500	80.5000	0.2500	65	80	66.3%	4	SR 2.5	64.5%	4	PL1.25x4-18	87.6%				**87.6%**	80.5000	11.2500	3.0000	12	25.3622	27.0400	0.7892	44.2	0.93	9			
66.5000	72.2500	0.3125	65	80	66.3%	4	SR 2.5	63.8%	4	PL1.25x4-18	88.4%				**88.4%**	72.2500	5.7500	0.0000	12	26.0926	27.0177	0.8492	44.3	0.93	10			
50.0000	66.5000	0.3125	65	80	70.1%	4	SR 2.5	66.2%	4	PL1.25x5-18	90.2%				**90.2%**	66.5000	16.5000	0.0000	12	27.0177	29.6723	0.8574	48.8	0.93	11			
47.0000	50.0000	0.3125	65	80	57.4%	8	SR 2.5	65.0%	4	PL1.25x5-18	73.0%				**73.0%**	50.0000	3.0000	0.0000	12	29.6723	30.1549	1.0898	48.9	0.92	12			
30.0000	47.0000	0.3125	65	80	85.4%	8	SR 2.5	97.8%							**97.8%**	47.0000	17.0000	4.0000	12	30.1549	32.8900	0.7222	52.6	0.97	13			
0.0000	34.0000	0.4063	65	80	86.4%	8	SR 2.5	99.6%							**99.6%**	34.0000	34.0000	0.0000	12	31.6215	37.3600	0.7583	52.7	0.98	14			
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APPENDIX E

Anchor Rod & Base Plate Analysis

520 South Main Street • Suite 2531 • Akron, Ohio 44311• PHONE 330-572-2100 • FAX 330-572-2101

GPD GROUP

Engineers • Architects • Planners

Job #: 2013723.01.60393.01

Sheet No 1 Of 1

Calculated By: KL Date: 6/5/2013

Checked By: BD Date: 6/5/2013

ANCHOR ROD CALCULATIONS

@ Base

Moment from RISA (M) = 2917.48 kip-ft

Axial from RISA (P) = 41.63 kip

ASIF = 1.333

Inner Rod Diameter = 2.25 in

Inner Rod Area (A_{inner}) = 3.25 in^2

Inner Rod MOI ($I_{o.inner}$) = 1.26 in^4

Number Inner Rods (N_{inner}) = 8

Inner Bolt Circle (BC_{inner}) = 43 in

Total Area ($A_{tot.in}$) = 26.00 in^2

Percent Total Area (n_{in}) = 39.8%

Axial, Inner Rods ($P*n_{in}$) = 16.58 kips

Outer Rod Diameter = 2.5 in

Outer Rod Area (A_{outer}) = 4.91 in^2

Outer Rod MOI ($I_{o.outer}$) = 1.92 in^4

Number Outer Rods (N_{outer}) = 8

Outer Bolt Circle (BC_{outer}) = 43 in

Total Area ($A_{tot.out}$) = 39.27 in^2

Percent Total Area (n_{out}) = 60.2%

Axial, Outer Rods ($P*n_{out}$) = 25.05 kips

I_{inner} = 6019.31 $in.^4$ $(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$

I_{outer} = 9091.60 $in.^4$ $(N_{outer}*A_{outer}*BC_{outer}^2/8 + N_{outer}*I_{o.outer})$

I_{tot} = 15110.91 $in.^4$ $(I_{inner} + I_{outer})$

F_{inner} = 163.96 kips $(M*(BC_{inner}/2)*A_{inner})/I_{total} + P*n_{in}/N_{inner})$

F_{outer} = 247.65 kips $(M*(BC_{outer}/2)*A_{outer})/I_{total} + P*n_{out}/N_{outer})$

Rnt.outer / Ω = 368.3 kips

Modified Anchor Rod Rating

% = 50.4% OK

GPD GROUP

Anchor Rod and Base Plate Stresses
60393 BRIDGEPORT NORTH
2013723.01.60393.01

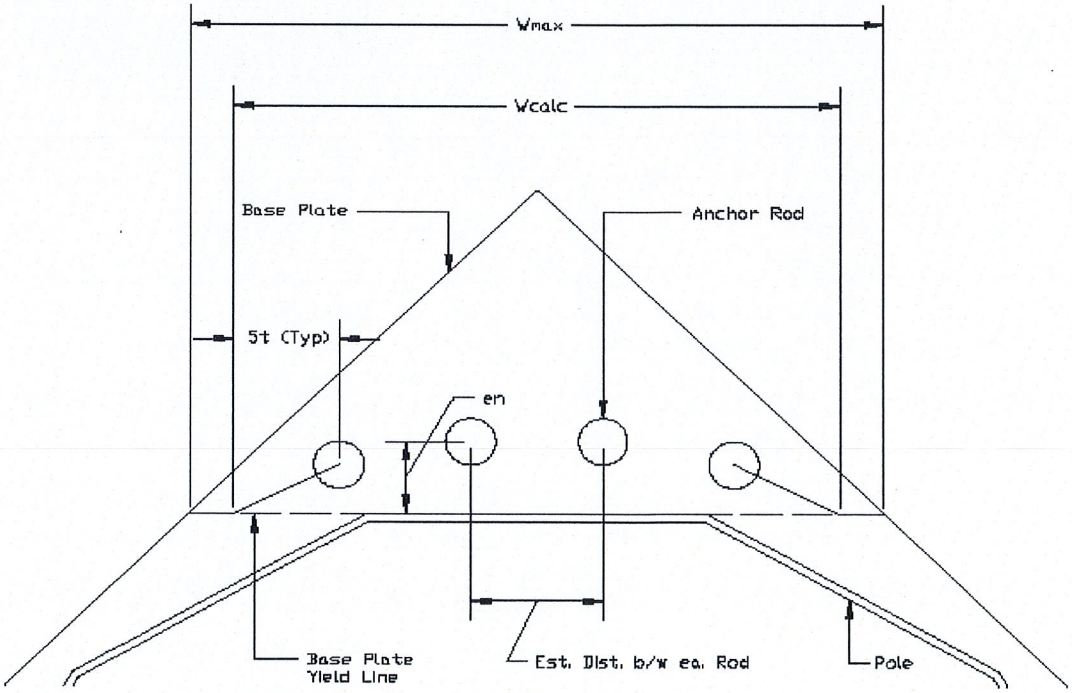
*Overturning Moment =	1139.31	k*ft
Axial Force =	41.63	k
Shear Force =	27.36	k

Acceptable Stress Ratio =	105.0%

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of anchor rod forces in the analysis.

Anchor Rods		
Pole Diameter =	37.36	in
Number of Rods =	8	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	43	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in^2
Max Tension on Rod =	153.55	kips
Max Compression on Rod =	163.96	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	**78.7%**	**OK**

Base Plate		
Plate Strength (Fy) =	50	ksi
Plate Thickness =	2.75	in
Plate Width =	41	in
Est. Dist. b/w ea. Rod =	6	in
w_{calc} =	33.500	in
w_{max} =	20.623	in
w =	20.62	in
S =	25.99	in^3
fb =	32.61	ksi
Fb =	50	ksi
Base Plate Capacity =	**65.2%**	**OK**



APPENDIX F

Flange Bolts & Flange Plate Analysis

520 South Main Street • Suite 2531 • Akron, Ohio 44311• PHONE 330-572-2100 • FAX 330-572-2101

GPD GROUP

Engineers • Architects • Planners

Job #: 2013723.01.60393.01
Sheet No 1 Of 1

Calculated By: KL Date: 6/5/2013
Checked By: BD Date: 6/5/2013

BOLT AND BRIDGE STIFFENER CALCULATIONS

@ 109.75'

Moment from RISA (M) =	460.30 kip-ft	ASIF =	1.333		
Axial from RISA (P) =	8.73 kip				
Bolt Diameter =	1 in				
Bolt Area (A_{inner}) =	0.79 in^2	Inner Bolt Circle (BC_{inner}) =	26 in		
Bolt MOI ($I_{o.inner}$) =	0.05 in^4	Total Area ($A_{tot.in}$) =	9.42 in^2		
Number Bolts (N_{inner}) =	12	Percent Total Area (n_{in}) =	32.0%	Axial, Inner Bolts ($P*n_{in}$) =	2.80 kips
Bridge Stiffener Width =	4.00 in				
Bridge Stiffener Thickness =	1.25 in				
Bridge Stiffener Unbraced Length =	15.00 in				
Bridge Stiffener Area (A_{pl}) =	5.00 in^2	Bridge Stiffener Circle (BC_{pl}) =	37 in		
Bridge Stiffener MOI (I_o) =	6.67 in^4	Total Area ($A_{tot.pl}$) =	20.00 in^2		
Number Bridge Stiffeners (N_{pl})	4	Percent Total Area (n_{pl}) =	68.0%	Axial, Bridge Stiffener ($P*n_{pl}$) =	5.93 kips

I_{inner} =	796.98 $in.^4$	$(N_{inner}*A_{inner}*BC_{inner}^2/8 + N_{inner}*I_{o.inner})$	f_y =	50	ksi	
I_{pl} =	3449.17 $in.^4$	$(N_{pl}*A_{pl}*BC_{pl}^2/8 + N_{pl}*I_{o.pl})$	E =	29000	ksi	
I_{tot} =	4246.15 $in.^4$	$(I_{inner} + I_{pl})$	K =	1.0		
			KL/r =	12.990		
F_{inner} =	13.5 kips	$(M*(BC_{inner}/2)*A_{inner})/I_{total} + P*n_{in}/N_{inner})$	C_c =	107.00		
F_{pl} =	121.8 kips	$(M*(BC_{pl}/2)*A_{pl})/I_{total} + P*n_{pl}/N_{pl})$	$F_{a(pl)}$ =	28.99	ksi	
			$R_{a(pl)}$ =	193.27	kips	
			Bridge Stiffener Rating =	63.0%	OK	

GPD GROUP

Existing Flange Connection @ 109.75'
60393 Bridgeport North
2013723.01.60393.01

*O.T. Moment =	95.44179	k*ft
Axial =	8.73	kips
Shear =	14.16	kips

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of flange bolt forces used in the analysis.

Acceptable Stress Ratio	
=	100.0%

Flange Bolts

# Bolts =	12	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	26	in
Bolt Diameter =	1	in

Tension & Shear (ASD, Section J3.5)

F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	1.50	ksi
Applied Shear =	1.18	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.89	ksi
Allowable Bolt Stress =	58.51633	ksi
B =	45.96	kips

Prying Action Check

N/A for stiffened flange

Max Comp. on Bolt =	15.40	kips
Max Tension on Bolt =	13.95	kips
Shear Capacity =	5.4%	
Tensile Capacity =	30.3%	
Bolt Capacity =	**30.3%**	**OK**

Pole Information

Shaft Diam. (Upper) =	21	in
Thickness (Upper)=	0.21875	in
# of Sides (Upper) =	12	
F_y (Upper) =	65	ksi
Shaft Diam. (Lower) =	21	in
Thickness (Lower)=	0.25	in
# of Sides (Lower) =	12	
F_y (Lower) =	65	ksi

Upper Flange Plate

Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1	in
Outer Diameter =	28.5	in
b =	6.31	in
Le =	3.00	in
f_b =	14.69	ksi
F_b =	36	ksi
UP Capacity =	**40.8%**	**OK**

Lower Flange Plate

Location =	External	
Plate Strength (F_y) =	36	ksi
Plate Thickness =	1	in
Outer Diameter =	28.5	in
b =	6.31	in
Le =	3.00	in
f_b =	14.69	ksi
F_b =	36	ksi
LP Capacity =	**40.8%**	**OK**

UpperStiffeners

Configuration =	Every Bolt	
Thickness =	0.5	in
Width =	3	in
Notch =	0.75	in
Height =	5	in
Stiffener Strength (F_y) =	70	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	8.99	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	22.6%	kips
Controlling Capacity =	**22.6%**	**OK**

Lower Stiffeners

Configuration =	Every Bolt	
Thickness =	0.5	in
Width =	3	in
Notch =	0.75	in
Height =	5	in
Stiffener Strength (F_y) =	70	ksi
Weld Info. Known? =	No	
Stiffener Vertical Force =	8.48	kips
Vert. Weld Capacity =	*Not Verified*	kips
Horiz. Weld Capacity =	*Not Verified*	kips
Stiffener Capacity =	21.3%	kips
Controlling Capacity =	**21.3%**	**OK**

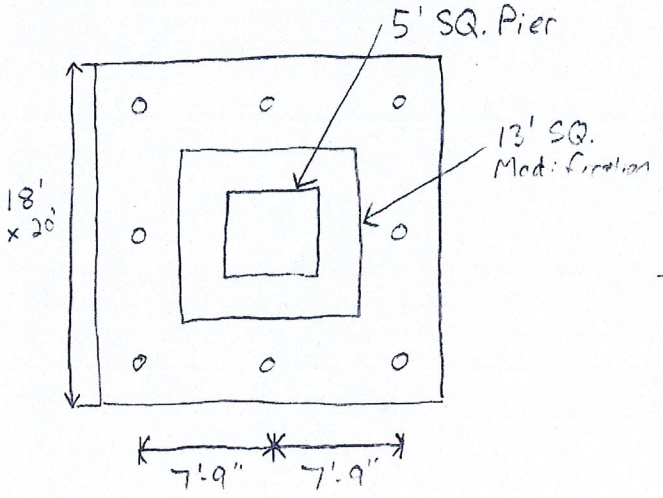
APPENDIX G

Foundation Analysis

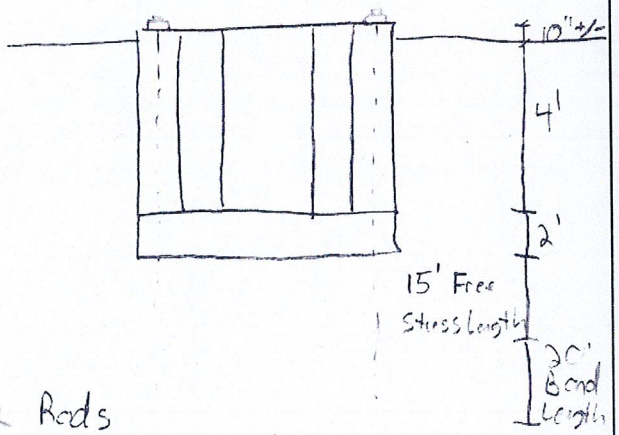
GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.

Job 2013723.01.(03993.01
Sheet No. 1 of 2
Calculated by KL Date 6/5/13
Checked by BD Date 6/5/13

Foundation Analysis - Pad w/ Rock Anchors



t_{nx} = M = 2915.69 K-ft
P = 41.63 K
V = 27.63 K



Rock Anchors: 1.75" ϕ A722 Rods
5" ϕ hole in rock filled w/ f'c = 5000 psi grout

Force in Anchors

$$I = 2(10.96\,ft)^2 + 4(5.48\,ft)^2 = 360.38\,ft^2$$

Weight of concrete = 0.15 kcf (18' x 20' x 6.8') = 367.2 K.p.

$$P_t = \frac{M_y}{I} - \frac{P}{n} = \frac{[2915.69\,K\,ft + 27.63(6.8)](10.96\,ft)}{360.38\,ft^2} - \frac{(41.63 + 367.2)}{8}$$

$$= 43.2032\,K$$

Includes F_s of 2 for modified foundations per CBC

$$P_t = \frac{2(2915.69\,K\,ft + 27.63(6.8))10.96}{360.38\,ft^2} - \frac{(41.63 + 367.2)}{8}$$

$$= 137.67\,K$$

GPD GROUP
Gluck, Pyle, Schemer, Burns & DeStefano, Inc.

Job 2012723.01. 60393.01
Sheet No. 2 of 2
Calculated by KL Date 6/5/13
Checked by BD Date 6/5/13

Anchor Capacity

Steel: $R_a = 0.6 F_y A_g = 0.6(127.7\ ksi)\left(\frac{\pi(1.75\ in)^2}{4}\right) = 184.29\ K$

Anchor/Grout Bond: $R_a = \frac{1}{2} L \pi D_{bar} \sqrt{f_c'}\ (4)$

$R_a = \frac{1}{2}(20')(12''/ft)\pi(1.75'')\sqrt{5000}(4) = 186.691\ K$

Grout/Rock Bond: $R_a = \frac{1}{2} L \pi D_{hole} \tau_{Bond}$

$R_a = \frac{1}{2}(20')(12''/ft)\pi(5'')(100\ psi) = 188.496\ K$

Rock uplift: Cone Volume $= \frac{1}{3}\pi r^2 h$ $\quad h$ = free stress length + 0.5 bond length

$r = h \tan 30$

$V = \frac{1}{3}\pi(25 + \tan(30)^2(25) = 5454.15\ ft^3$

$R_a = 1/2\ V\ \gamma_{rock} = 1/2(5454\ ft^3)(0.14\ kcf) = 381.78\ K$

Rating = 137.67 K / 184.29 K = **74.7%**