ROBINSON & CO

EM-VER-069-120607

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June 6, 2012

Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Antenna Swap**
1375 North Road, Killingly, Connecticut

Dear Ms. Roberts:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 262-foot level of the existing 288-foot tower at the above-referenced address. The tower and underlying property are owned by American Tower Corporation. The Council approved Cellco's shared use of this tower in 2005. Cellco now intends to replace all of its existing antennas with six (6) model LPA-80063-4CF cellular antennas; three (3) model BXA-171063-8BF PCS antennas; and three (3) model BXA-70063-6CF LTE antennas, all at the same 262-foot level. Cellco also intends to install six (6) coax cable diplexers on its antenna platform. Attached behind Tab 1 are the specifications for the 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 Bruce E. Benway, Town Manager for the Town of Killingly.

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 replacement antennas and diplexers will be located at the 262-foot level on the 288-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 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) emissions 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 facility modifications. (See Tab 3). Contrary to the note below the Proposed Antenna table on page 2 of the Structural Analysis Report, Cellco is not proposing to add or replace any coax cables at this site.

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:
Bruce E. Benway, Killingly Town Manager
Sandy M. Carter

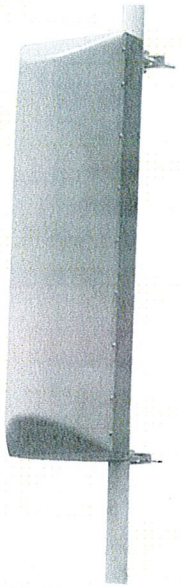
Amphenol ANTENNA SOLUTIONS

LPA-80063-4CF-EDIN-X

V-Pol | Log Periodic | 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.

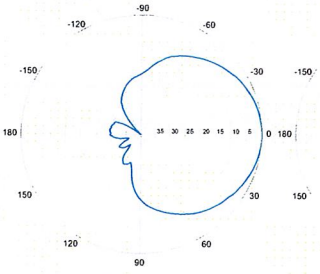


Electrical Characteristics	
Frequency bands	806-960 MHz
Polarization	Vertical
Horizontal beamwidth	63°
Vertical beamwidth	15°
Gain	13.0 dBd (15.1 dBi)
Electrical downtilt (X)	0, 2, 4, 5, 6, 8, 10, 12, 14
Impedance	50Ω
VSWR	≤1.4:1
Upper sidelobe suppression (0°)	-15.7 dB
Front-to-back ratio (+/-30°)	-31.7 dB
Null fill	5% (-26.02 dB)
Input power	500 W
Lightning protection	Direct Ground
Connector(s)	1 Port / EDIN or NE / Female / Center (Back)

Mechanical Characteristics		
Dimensions Length x Width x Depth	1205 x 385 x 332 mm	47.4 x 15.2 x 13.1 in
Depth of antenna with z-bracket	372 mm	14.6 in
Weight without mounting brackets	9.1 kg	20 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.46 m² Side: 0.39 m²	Front: 5.0 ft² Side: 4.2 ft²
Wind load @ 161 km/hr (100 mph)	Front: 660 N Side: 550 N	Front: 149 lbf Side: 124 lbf

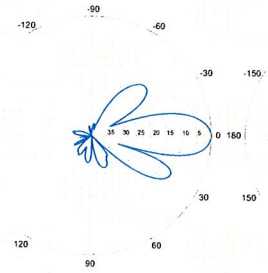
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting & Downtilt Bracket Kit (0-20°)	21699999	50-102 mm 2.0-4.0 in	5.4 kg 12 lbs
Lock-Down Brace	If the lock-down brace is used, the maximum diameter of the mounting pipe is 88.9 mm or 3.5 in.		

LPA-80063-4CF-EDIN-X



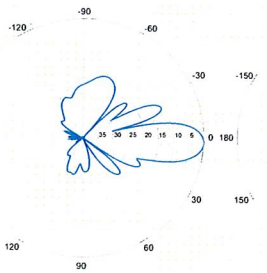
Horizontal

LPA-80063-4CF-EDIN-0



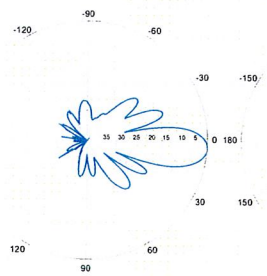
0° | Vertical

LPA-80063-4CF-EDIN-2



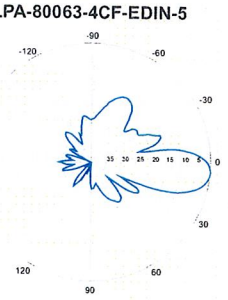
2° | Vertical

LPA-80063-4CF-EDIN-4



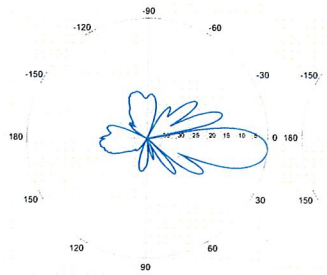
4° | Vertical

LPA-80063-4CF-EDIN-5



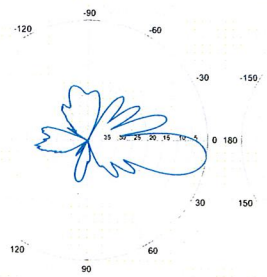
5° | Vertical

LPA-80063-4CF-EDIN-6



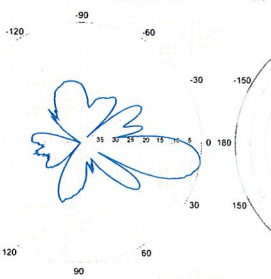
6° | Vertical

LPA-80063-4CF-EDIN-8



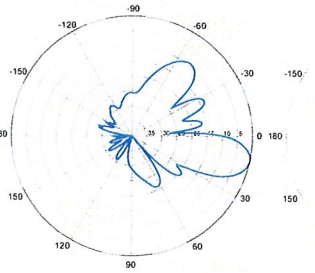
8° | Vertical

LPA-80063-4CF-EDIN-10



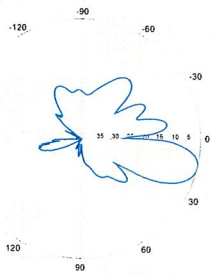
10° | Vertical

LPA-80063-4CF-EDIN-12



12° | Vertical

LPA-80063-4CF-EDIN-14



14° | Vertical

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.

Amphenol ANTENNA SOLUTIONS

BXA-171063-8BF-EDIN-X

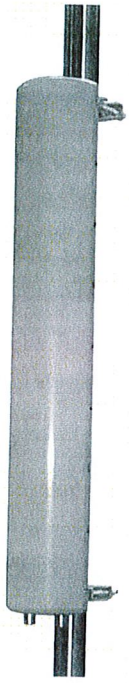
Replace "X" with desired electrical downtilt.

X-Pol | FET Panel | 63° | 17.4 dBi

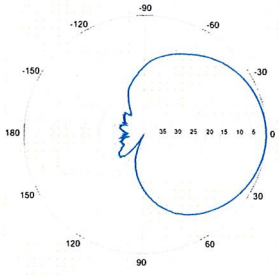
Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	7°	7°	7°
Gain	14.5 dBd / 16.6 dBi	14.9 dBd / 17.0 dBi	15.3 dBd / 17.4 dBi
Electrical downtilt (X)	0, 2, 4, 8		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back isolation	> 30 dB		
In-band isolation	> 28 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN / Female / Bottom		
Operating temperature	-40° to +60° C / -40° to +140° F		

Mechanical Characteristics		
Dimensions Length x Width x Depth	1232 x 154 x 105 mm	48.5 x 6.1 x 4.1 in
Depth with t-brackets	133 mm	5.2 in
Weight without mounting brackets	4.8 kg	10.5 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-171063-8BF-EDIN-X-FP		

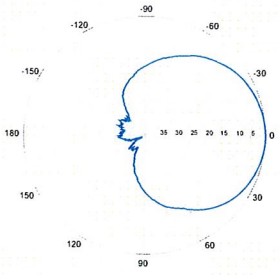


BXA-171063-8BF-EDIN-X



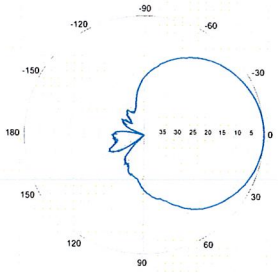
Horizontal | 1710-1880 MHz

BXA-171063-8BF-EDIN-X



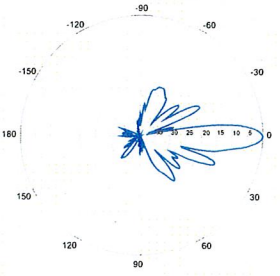
Horizontal | 1850-1990 MHz

BXA-171063-8BF-EDIN-X



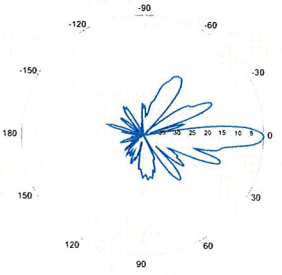
Horizontal | 1920-2170 MHz

BXA-171063-8BF-EDIN-0



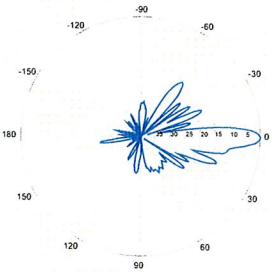
0° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-0



0° | Vertical | 1920-2170 MHz

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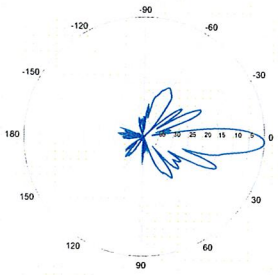
BXA-171063-8BF-EDIN-X

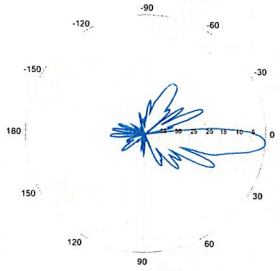
X-Pol | FET Panel | 63° | 17.4 dBi

BXA-171063-8BF-EDIN-2



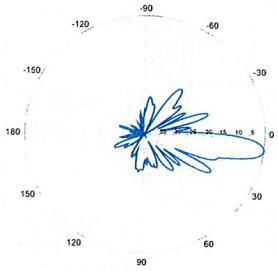
2° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-4



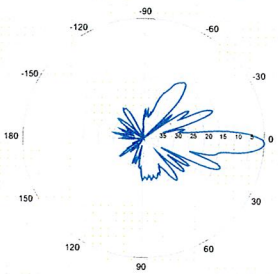
4° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-8



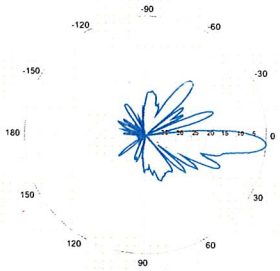
8° | Vertical | 1710-1880 MHz

BXA-171063-8BF-EDIN-2



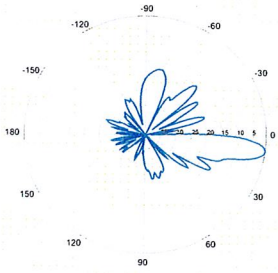
2° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-4



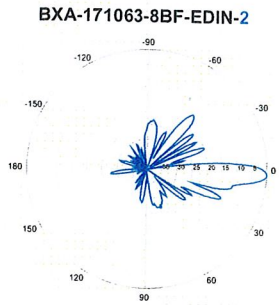
4° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-8



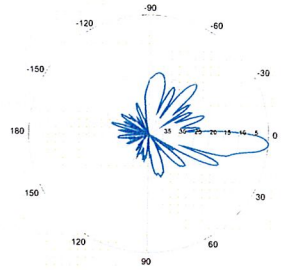
8° | Vertical | 1850-1990 MHz

BXA-171063-8BF-EDIN-2



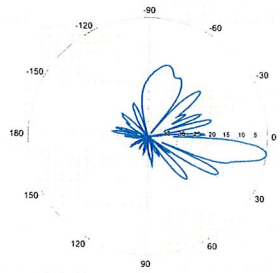
2° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-4



4° | Vertical | 1920-2170 MHz

BXA-171063-8BF-EDIN-8



8° | Vertical | 1920-2170 MHz

Amphenol ANTENNA SOLUTIONS

BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

Replace "X" with desired electrical downtilt.

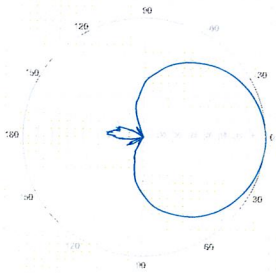
Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	13°	11°
Gain	14.0 dBd (16.1 dBi)	14.5 dBd (16.6 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-18.3 dB	-18.2 dB
Front-to-back ratio (+/-30°)	-33.4 dB	-36.3 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -25 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)	

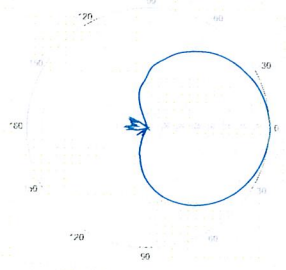
Mechanical Characteristics		
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in
Depth with z-brackets	172 mm	6.8 in
Weight without mounting brackets	7.9 kg	17 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.51 m² Side: 0.24 m²	Front: 5.5 ft² Side: 2.6 ft²
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf

Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-6CF-EDIN-X-FP		

BXA-70063-6CF-EDIN-X

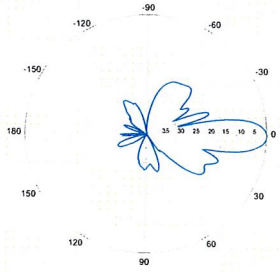


Horizontal | 750 MHz

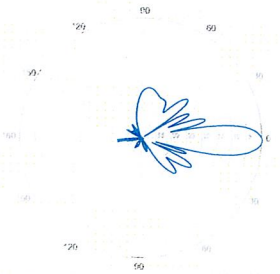


Horizontal | 850 MHz

BXA-70063-6CF-EDIN-0

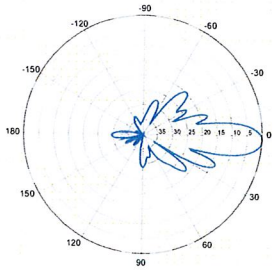


0° | Vertical | 750 MHz

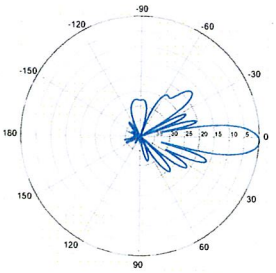


0° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-2



2° | Vertical | 750 MHz

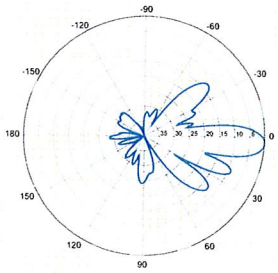


2° | Vertical | 850 MHz

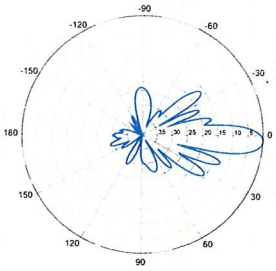
BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

BXA-70063-6CF-EDIN-3

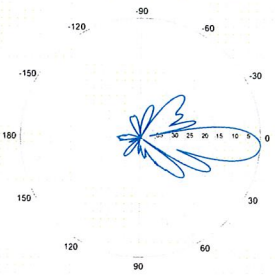


3° | Vertical | 750 MHz

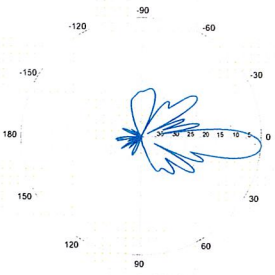


3° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-4

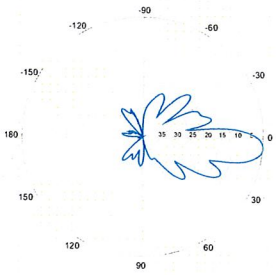


4° | Vertical | 750 MHz

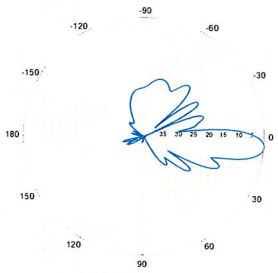


4° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-5

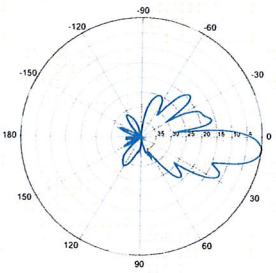


5° | Vertical | 750 MHz

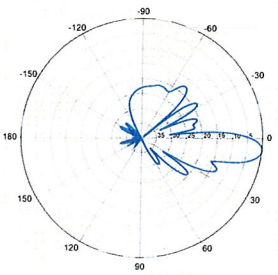


5° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-6

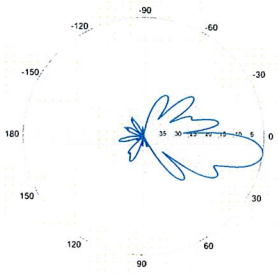


6° | Vertical | 750 MHz

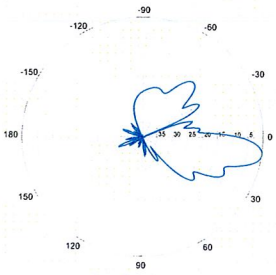


6° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-8

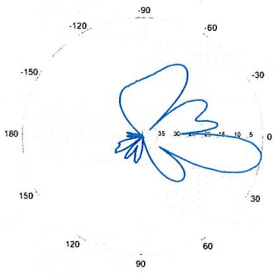


8° | Vertical | 750 MHz

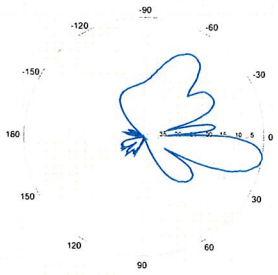


8° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-10



10° | Vertical | 750 MHz



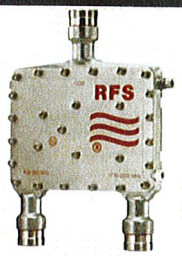
10° | Vertical | 850 MHz

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

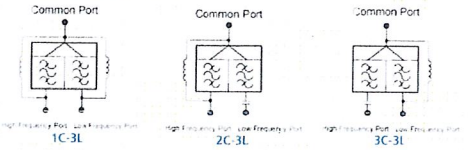
Notes

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

Other Documentation

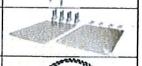
FD9R6004/2C-3L Installation Instructions: Wideband_Diplexer_Installation_Rev5.pdf

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)	

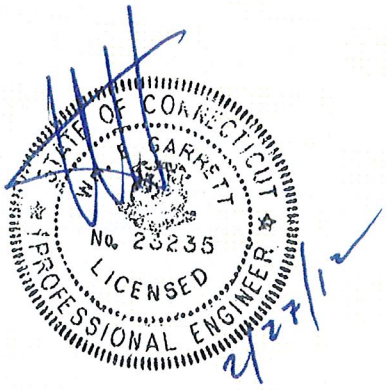
	General	Power	Density					
Site Name: Killingly								
Tower Height: Verizon @ 262Ft.								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Sprint/Nextel iDEN	12	100	300	0.0048	851	0.5673	0.85%	
*Sprint/Nextel CDMA	11	411	300	0.0181	1962	1.0000	1.81%	
*Cingular GSM	2	296	254	0.0033	880	0.5867	0.56%	
*Cingular UMTS	1	500	254	0.0028	880	0.5867	0.47%	
*Cingular UMTS	1	500	254	0.0028	1900	1.0000	0.28%	
Verizon PCS	**11**	**186**	**262**	**0.0107**	**1970**	**1.0000**	**1.07%**	
Verizon Cellular	**9**	**213**	**262**	**0.0100**	**869**	**0.5793**	**1.73%**	
Verizon AWS	**1**	**605**	**262**	**0.0032**	**2145**	**1.0000**	**0.32%**	
Verizon 700	**1**	**715**	**262**	**0.0037**	**698**	**0.4653**	**0.80%**	
								7.89%
* Source: Siting Council								

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**287.5 ft AT&T Tag Self Supported Tower**
ATC Site Name	:	**East Killingly North, CT**
ATC Site Number	:	**88011**
Proposed Carrier	:	**Verizon**
Carrier Site Name	:	**Killingly Relo CT**
Carrier Site Number	:	**118646/2012710828**
County	:	**Windham**
Eng. Number	:	**48651022**
Date	:	**February 24, 2012***
Usage	:	**99%**

Submitted by:
Scott Wirgau
Senior Design Engineer



American Tower Engineering Services
400 Regency Forest Drive
Cary, NC 27518
Phone: 919-468-0112

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
262.0	3	Antel BXA-70063-6CF-EDIN-X	Sector Frame	(12) 1 5/8"	Verizon
	6	Antel LPA-80063-4CF-EDIN-X			
	3	Antel BXA-171063-8BF-EDIN-X			
	6	RFS FD9R6004/2C-3L			

Install proposed coax in same location as existing.

Results

The maximum structure usage is: 99%

Leg Forces	Current Analysis Reactions
Uplift (Kips)	324.1
Axial (Kips)	418.5

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required. These calculations are located after the software output within this analysis. The foundation and anchorages for this tower have factors of safety consistent with TIA-222-F.

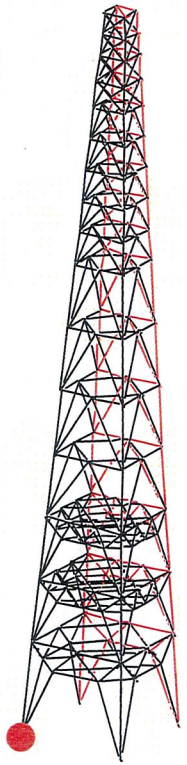
Conclusion

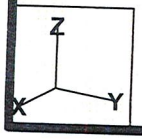
Based on the analysis results, the structure meets the requirements per TIA/EIA-222-F and 2003 IBC standards with 2005 CT supplements.

The tower and foundation can support the existing and proposed antennas with the transmission line distribution as described in this report.

If you have any questions or require additional information, please call 919-466-5086.

American Tower Corp., Project: "88011-l2-Verizon-02_24_12"
Tower Version 11.00, 10:27:28 AM Friday, February 24, 2012
Undeformed geometry displayed





W 0	0P	1P	L 1P	281.094	19.088	19.126	19.115	0.653	-36.09	-17.63	278.86
W 0	0X	1X	L 1X	278.876	18.534	18.573	18.533	-1.215	-35.37	18.05	276.65
W 0	0XY	1XY	L 1XY	-185.898	16.518	16.560	16.257	3.153	-27.46	-14.36	-184.04
W 0	0Y	1Y	L 1Y	-186.258	17.011	17.052	16.836	-2.705	-28.06	13.93	-184.39
W 180	0P	1P	L 1P	-185.204	17.066	17.107	-16.893	-2.702	28.05	13.86	-183.34
W 180	0X	1X	L 1X	-185.097	16.544	16.586	-16.292	3.107	27.45	-14.26	-183.24
W 180	0XY	1XY	L 1XY	278.076	18.567	18.605	-18.567	-1.193	35.36	17.98	275.86
W 180	0Y	1Y	L 1Y	280.044	19.188	19.226	-19.214	0.674	36.12	-17.58	277.81
W 45	0P	1P	L 1P	421.813	20.716	20.793	14.703	14.703	-40.18	-40.18	418.48
W 45	0X	1X	L 1X	46.442	18.118	18.118	12.359	13.248	-15.18	-10.43	46.32
W 45	0XY	1XY	L 1XY	-327.268	23.539	23.626	16.706	16.706	-36.43	-36.43	-324.04
W 45	0Y	1Y	L 1Y	46.442	18.118	18.118	13.248	12.359	-10.43	-15.18	46.32
W -45	0P	1P	L 1P	48.320	18.711	18.711	12.774	-13.673	-15.71	10.74	48.20
W -45	0X	1X	L 1X	419.940	20.736	20.813	14.305	-15.118	-39.66	40.48	416.61
W -45	0XY	1XY	L 1XY	46.462	17.610	17.610	12.837	-12.056	-10.02	14.88	46.34
W -45	0Y	1Y	L 1Y	-327.291	23.602	23.690	17.100	-16.395	-36.83	36.12	-324.06
W 90	0P	1P	L 1P	281.094	19.088	19.126	0.653	19.115	-17.63	-36.09	278.86
W 90	0X	1X	L 1X	-186.258	17.011	17.052	-2.705	16.836	13.93	-28.06	-184.39
W 90	0XY	1XY	L 1XY	-185.898	16.518	16.560	3.153	16.257	-14.36	-27.46	-184.04
W 90	0Y	1Y	L 1Y	278.876	18.534	18.573	-1.215	18.533	18.05	-35.37	276.65
W -90	0P	1P	L 1P	-185.204	17.066	17.107	-2.702	-16.893	13.86	28.05	-183.34
W -90	0X	1X	L 1X	280.044	19.188	19.226	0.674	-19.214	-17.58	36.12	277.81
W -90	0XY	1XY	L 1XY	278.076	18.567	18.605	-1.193	-18.567	17.98	35.36	275.86
W -90	0Y	1Y	L 1Y	-185.097	16.544	16.586	3.107	-16.292	-14.26	27.45	-183.24
W 0 Ice	0P	1P	L 1P	267.815	16.716	16.750	16.730	0.805	-32.91	-16.98	265.77
W 0 Ice	0X	1X	L 1X	265.190	16.185	16.220	16.162	-1.369	-32.18	17.39	263.15
W 0 Ice	0XY	1XY	L 1XY	-148.604	14.658	14.696	14.386	3.003	-23.33	-11.95	-147.01
W 0 Ice	0Y	1Y	L 1Y	-148.661	15.116	15.153	14.929	-2.596	-23.88	11.55	-147.05
W 180 Ice	0P	1P	L 1P	-147.201	15.198	15.235	-15.014	-2.589	23.88	11.45	-145.60
W 180 Ice	0X	1X	L 1X	-147.498	14.695	14.733	-14.437	2.940	23.32	-11.82	-145.90
W 180 Ice	0XY	1XY	L 1XY	264.086	16.231	16.266	-16.210	-1.340	32.16	17.29	262.05
W 180 Ice	0Y	1Y	L 1Y	266.360	16.844	16.878	-16.857	0.833	32.95	-16.92	264.31
W 45 Ice	0P	1P	L 1P	396.258	23.295	23.381	16.533	16.533	-40.44	-40.44	392.80
W 45 Ice	0X	1X	L 1X	58.488	13.905	13.906	10.838	8.712	-14.38	-5.17	58.14
W 45 Ice	0XY	1XY	L 1XY	-277.093	21.541	21.620	15.288	15.288	-31.98	-31.98	-274.22
W 45 Ice	0Y	1Y	L 1Y	58.488	13.905	13.906	8.712	10.838	-5.17	-14.38	58.14
W -45 Ice	0P	1P	L 1P	60.773	14.483	14.484	11.244	-9.130	-14.92	5.45	60.42
W -45 Ice	0X	1X	L 1X	393.978	23.328	23.414	16.127	-16.975	-39.90	40.75	390.53
W -45 Ice	0XY	1XY	L 1XY	58.203	13.467	13.468	8.349	-10.568	-4.83	14.09	57.85
W -45 Ice	0Y	1Y	L 1Y	-276.812	21.607	21.687	15.652	-15.011	-32.33	31.69	-273.94
W 90 Ice	0P	1P	L 1P	267.815	16.716	16.750	0.805	16.730	-16.98	-32.91	265.77
W 90 Ice	0X	1X	L 1X	-148.661	15.116	15.153	-2.596	14.929	11.55	-23.88	-147.05
W 90 Ice	0XY	1XY	L 1XY	-148.604	14.658	14.696	3.003	14.386	-11.95	-23.33	-147.01
W 90 Ice	0Y	1Y	L 1Y	265.190	16.185	16.220	-1.369	16.162	17.39	-32.18	263.15
W -90 Ice	0P	1P	L 1P	-147.201	15.198	15.235	-2.589	-15.014	11.45	23.88	-145.60
W -90 Ice	0X	1X	L 1X	266.360	16.844	16.878	0.833	-16.857	-16.92	32.95	264.31
W -90 Ice	0XY	1XY	L 1XY	264.086	16.231	16.266	-1.340	-16.210	17.29	32.16	262.05
W -90 Ice	0Y	1Y	L 1Y	-147.498	14.695	14.733	2.940	-14.437	-11.82	23.32	-145.90

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Resultant Moment (ft-k)
W 0	40.876	20326.894	20326.936
W 180	40.874	-20245.496	20245.537
W 45	16335.562	16335.562	23101.973
W -45	-16254.003	16335.763	23044.517
W 90	20326.894	40.876	20326.936
W -90	-20245.496	40.874	20245.537
W 0 Ice	56.474	18105.620	18105.708
W 180 Ice	56.471	-17992.968	17993.057
W 45 Ice	14674.551	14674.551	20752.949
W -45 Ice	-14561.764	14674.715	20673.467
W 90 Ice	18105.620	56.474	18105.708
W -90 Ice	-17992.968	56.471	17993.057

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft^2)	Face Af Adjust Factor	Face Ar Adjust Factor	Dead Load Factor
278.9-287.5	287.500	278.917	8	20	9.00	10.04	81.73	1.1670	1.1670	1.284
270.3-278.9	278.917	270.333	8	16	10.04	11.09	90.70	1.2150	1.2150	1.336
260.2-270.3	270.333	260.167	8	16	11.09	12.33	119.04	1.1960	1.1960	1.316
250.0-260.2	260.167	250.000	12	24	12.33	13.57	131.62	1.2030	1.2030	1.323
237.5-250.0	250.000	237.500	16	24	13.57	15.09	179.08	1.2010	1.2010	1.441
225.0-237.5	237.500	225.000	16	24	15.09	16.61	198.10	1.2070	1.2070	1.448
212.5-225.0	225.000	212.500	16	24	16.61	18.13	217.12	1.2130	1.2130	1.455
200.0-212.5	212.500	200.000	16	24	18.13	19.65	236.14	1.2190	1.2190	1.463

DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00	0.00	BR 9XY	-0.998	W 45	0.215	0.000	0.000	1.000	1.000	1.000	2.31	2.31	19.276	1	0									

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes	Hole Diameter (in)
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	93.99	50.32	L 1XY	242.448	W 45	361.367	0.000	0.000	0.000	37.639	0	0.000	0
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	73.01	46.99	L 2XY	226.402	W 45	361.367	0.000	0.000	0.000	25.092	0	0.000	0
Leg S3	L 8" x 8" x 1"	SAE	8X8X1	36.0	69.72	44.98	L 3XY	194.295	W 45	323.999	0.000	0.000	0.000	25.092	0	0.000	0
Leg S4	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	80.38	50.07	L 4XY	190.782	W 45	285.768	0.000	0.000	0.000	25.092	0	0.000	0
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	67.80	41.91	L 5XY	159.681	W 45	285.768	0.000	0.000	0.000	25.092	0	0.000	0
Leg S6	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	63.77	39.05	L 6Y	128.655	W -45	247.104	0.000	0.000	0.000	25.092	0	0.000	0
Leg S7	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	59.36	35.25	L 7Y	97.561	W -45	207.576	0.000	0.000	0.000	25.092	0	0.000	0
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	58.13	34.04	L 8Y	82.747	W -45	182.304	0.000	0.000	0.000	25.092	0	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	48.56	28.51	L 9Y	69.287	W -45	182.304	0.000	0.000	0.000	25.092	0	0.000	0
Leg S10	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	51.81	29.57	L 10Y	54.764	W -45	182.304	0.000	0.000	0.000	12.546	0	0.000	0
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	40.20	21.66	L 11Y	40.115	W -45	138.888	0.000	0.000	0.000	12.546	0	0.000	0
Leg S12	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	35.86	17.55	L 12Y	25.574	W -45	138.888	0.000	0.000	0.000	12.546	0	0.000	0
Leg S13	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	33.45	15.92	L 13Y	19.165	W -45	109.296	0.000	0.000	0.000	12.546	0	0.000	0
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	20.83	8.13	L 14Y	9.783	W -45	90.288	0.000	0.000	0.000	12.546	0	0.000	0
Leg S15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	14.08	4.89	L 15Y	4.270	W -45	90.288	0.000	0.000	0.000	10.204	0	0.000	0
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	6.88	0.48	L 16XY	0.416	W 45	65.448	0.000	0.000	0.000	10.204	0	0.000	0
Diag S1	B/B L3"x5"x0.3125"	DAS	5X3X0.31	36.0	99.92	33.97	D 1Y	46.953	W -45	65.448	0.000	0.000	0.000	8.615	0	0.000	0
Diag S2	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	88.80	42.91	D 3P	35.591	W -45	103.680	0.000	0.000	0.000	8.615	0	0.000	0
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	86.26	41.75	D 6P	34.631	W 180	62.208	0.000	0.000	0.000	30.677	0	0.000	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	99.19	32.51	D 7P	24.621	W -90	62.208	0.000	0.000	0.000	20.504	0	0.000	0
Diag S5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	95.10	32.27	D 9P	24.445	W -90	56.808	0.000	0.000	0.000	20.165	0	0.000	0
Diag S6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	99.19	31.19	D 11P	23.624	W -90	56.808	0.000	0.000	0.000	30.089	0	0.000	0
Diag S7	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	93.25	30.97	D 13P	23.459	W -90	56.808	0.000	0.000	0.000	29.273	0	0.000	0
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	67.07	19.76	D 15P	13.546	W -90	56.808	0.000	0.000	0.000	28.515	0	0.000	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	60.72	18.72	D 17P	12.831	W -90	51.408	0.000	0.000	0.000	27.820	0	0.000	0
Diag S10	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	88.04	20.26	D 19P	12.425	W -90	51.408	0.000	0.000	0.000	16.399	0	0.000	0
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	84.49	20.37	D 21P	12.495	W -90	46.008	0.000	0.000	0.000	15.918	0	0.000	0
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	79.17	19.92	D 23P	12.219	W -90	46.008	0.000	0.000	0.000	15.460	0	0.000	0
Diag S13	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	47.01	14.00	D 25Y	6.813	W 0	46.008	0.000	0.000	0.000	15.026	0	0.000	0
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	32.20	10.28	D 27Y	5.002	W 0	36.504	0.000	0.000	0.000	14.620	0	0.000	0
Diag S15	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	21.86	6.53	D 29Y	2.708	W 0	36.504	0.000	0.000	0.000	16.473	0	0.000	0
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	17.90	5.69	D 32X	2.358	W 90	31.104	0.000	0.000	0.000	15.519	0	0.000	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	78.85	43.79	H 1X	36.324W	-45 Ic	31.104	0.000	0.000	0.000	13.624	0	0.000	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	78.07	40.28	H 3X	33.407	W -45	62.208	0.000	0.000	0.000	12.831	0	0.000	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	82.46	38.02	H 5X	28.799	W -45	62.208	0.000	0.000	0.000	19.717	0	0.000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	75.43	17.79	H 8Y	13.477	W 180	56.808	0.000	0.000	0.000	12.130	0	0.000	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	59.39	16.34	H 9P	12.373	W 90	56.808	0.000	0.000	0.000	11.116	0	0.000	0
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	66.16	15.61	H 11X	10.699	W -90	56.808	0.000	0.000	0.000	15.152	0	0.000	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	49.12	14.66	H 13P	10.047	W 90	51.408	0.000	0.000	0.000	13.630	0	0.000	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	37.81	12.68	H 15X	8.694	W -90	51.408	0.000	0.000	0.000	12.109	0	0.000	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	30.64	11.67	H 17P	8.002	W 90	51.408	0.000	0.000	0.000	10.587	0	0.000	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	23.87	10.52	H 19X	7.209	W -90	51.408	0.000	0.000	0.000	9.826	0	0.000	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	20.51	10.25	H 21P	7.025	W 90	51.408	0.000	0.000	0.000	9.065	0	0.000	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	14.83	9.47	H 23X	6.488	W -90	51.408	0.000	0.000	0.000	8.304	0	0.000	0
Horiz 13	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	8.46	7.04	H 25P	2.656	W 0 Ice	28.296	0.000	0.000	0.000	7.543	0	0.000	0
Horiz 14	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	2.06	2.06	H 27P	1.563	W 0 Ice	56.808	0.000	0.000	0.000	6.783	0	0.000	0
Horiz 15	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.79	2.79	H 30P	1.054W	90 Ice	28.296	0.000	0.000	0.000	12.328	0	0.000	0
Horiz 16	C8x11.5	CHN	C8x11.5	36.0	2.04	0.71	H 31Y	0.687	W 90	73.008	0.000	0.000	0.000	11.090	0	0.000	0
LD 1	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	68.40	28.24	LD 2Y	27.485	W -45	73.008	0.000	0.000	0.000	10.045	0	0.000	0
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	99.69	46.78	LD 4P	45.533	W 180	73.008	0.000	0.000	0.000	9.000	0	0.000	0
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	98.88	31.22	LD 8Y	19.152	W -45	73.008	0.000	0.000	0.000	13.620	0	0.000	0
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	82.74	38.25	LD 9P	23.462	W -90	46.008	0.000	0.000	0.000	13.620	0	0.000	0
LD 6	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	81.05	43.03	LD 11X	29.494	W -90	46.008	0.000	0.000	0.000	10.879	0	0.000	0
LD 7	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	92.76	32.16	LD 14Y	19.727	W -45	51.408	0.000	0.000	0.000	8.021	0	0.000	0
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	79.61	37.33	LD 16P	22.901	W 180	46.008	0.000	0.000	0.000	9.295	0	0.000	0
LD 9	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	98.87	46.15	LD 18Y	28.311	W 180	46.008	0.000	0.000	0.000	10.334	0	0.000	0
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	72.91	21.40	LH 1Y	14.665	W 0	51.408	0.000	0.000	0.000	7.889	0	0.000	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	98.25	27.05	LH 4Y	20.490	W -45	56.808	0.000	0.000	0.000	8.972	0	0.000	0
LH 3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	84.62	26.94	LH 6Y	20.406	W -45	56.808	0.000	0.000	0.000	19.717	0	0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00	0.00	BR 9X	0.880	W -45	0.216	0.000	0.000	0.000	9.904	0	0.000	0
													0.000	9.112	0	0.000	0
													0.000	19.276	0	0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type

Site #:	88011
Name:	East Killingly North, CT

Engineer:	SAW
Date:	02/24/12

Windspeed:	No Ice:	85 mph	Ice: 74 mph
Carrier	Verizon		

Taper:	-0.121739		
FW @ Base:	44	ft	

Taper Change:	287.5	ft	
FW @ Top:	9	ft	

Spreadsheet Version Last Updated: 2/16/2012

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)
0	XY-Symmetry	22	22	0 Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	
1	XY-Symmetry	19.7173913	19.7173913	37.5 Free	Free	Free	Free	Free	Free	Free	
2	XY-Symmetry	18.19565217	18.19565217	62.5 Free	Free	Free	Free	Free	Free	Free	
3	XY-Symmetry	16.67391304	16.67391304	87.5 Free	Free	Free	Free	Free	Free	Free	
4	XY-Symmetry	15.15217391	15.15217391	112.5 Free	Free	Free	Free	Free	Free	Free	
5	XY-Symmetry	13.63043478	13.63043478	137.5 Free	Free	Free	Free	Free	Free	Free	
6	XY-Symmetry	12.10869565	12.10869565	162.5 Free	Free	Free	Free	Free	Free	Free	
7	XY-Symmetry	10.58695652	10.58695652	187.5 Free	Free	Free	Free	Free	Free	Free	
8	XY-Symmetry	9.826086957	9.826086957	200 Free	Free	Free	Free	Free	Free	Free	
9	XY-Symmetry	9.065217391	9.065217391	212.5 Free	Free	Free	Free	Free	Free	Free	
10	XY-Symmetry	8.304347826	8.304347826	225 Free	Free	Free	Free	Free	Free	Free	
11	XY-Symmetry	7.543478261	7.543478261	237.5 Free	Free	Free	Free	Free	Free	Free	
12	XY-Symmetry	6.782608696	6.782608696	250 Free	Free	Free	Free	Free	Free	Free	
13	XY-Symmetry	6.163766087	6.163766087	260.1667 Free	Free	Free	Free	Free	Free	Free	
14	XY-Symmetry	5.544923478	5.544923478	270.3334 Free	Free	Free	Free	Free	Free	Free	
15	XY-Symmetry	5.022461739	5.022461739	278.9167 Free	Free	Free	Free	Free	Free	Free	
16	XY-Symmetry	4.5	4.5	287.5 Free	Free	Free	Free	Free	Free	Free	
A1	Y-Symmetry	19.7173913	0	37.5 Free	Free	Free	Free	Free	Free	Free	
A2	X-Symmetry	0	19.7173913	37.5 Free	Free	Free	Free	Free	Free	Free	
A3	XY-Symmetry	18.19565217	6.065217391	62.5 Free	Free	Free	Free	Free	Free	Free	
A4	XY-Symmetry	6.065217391	18.19565217	62.5 Free	Free	Free	Free	Free	Free	Free	
A5	XY-Symmetry	16.67391304	5.557971014	87.5 Free	Free	Free	Free	Free	Free	Free	
A6	XY-Symmetry	5.557971014	16.67391304	87.5 Free	Free	Free	Free	Free	Free	Free	
A7	Y-Symmetry	15.15217391	0	112.5 Free	Free	Free	Free	Free	Free	Free	
A8	X-Symmetry	0	15.15217391	112.5 Free	Free	Free	Free	Free	Free	Free	
A9	Y-Symmetry	13.63043478	0	137.5 Free	Free	Free	Free	Free	Free	Free	
A10	X-Symmetry	0	13.63043478	137.5 Free	Free	Free	Free	Free	Free	Free	
A11	Y-Symmetry	12.10869565	0	162.5 Free	Free	Free	Free	Free	Free	Free	
A12	X-Symmetry	0	12.10869565	162.5 Free	Free	Free	Free	Free	Free	Free	
A13	Y-Symmetry	10.58695652	0	187.5 Free	Free	Free	Free	Free	Free	Free	
A14	X-Symmetry	0	10.58695652	187.5 Free	Free	Free	Free	Free	Free	Free	
A15	Y-Symmetry	9.826086957	0	200 Free	Free	Free	Free	Free	Free	Free	
A16	X-Symmetry	0	9.826086957	200 Free	Free	Free	Free	Free	Free	Free	
A17	Y-Symmetry	9.065217391	0	212.5 Free	Free	Free	Free	Free	Free	Free	
A18	X-Symmetry	0	9.065217391	212.5 Free	Free	Free	Free	Free	Free	Free	
A19	Y-Symmetry	8.304347826	0	225 Free	Free	Free	Free	Free	Free	Free	
A20	X-Symmetry	0	8.304347826	225 Free	Free	Free	Free	Free	Free	Free	
A21	Y-Symmetry	7.543478261	0	237.5 Free	Free	Free	Free	Free	Free	Free	
A22	X-Symmetry	0	7.543478261	237.5 Free	Free	Free	Free	Free	Free	Free	
A23	Y-Symmetry	6.782608696	0	250 Free	Free	Free	Free	Free	Free	Free	
A24	X-Symmetry	0	6.782608696	250 Free	Free	Free	Free	Free	Free	Free	
H1	XY-Symmetry	20.28834783	9.858695652	28.12 Free	Free	Free	Free	Free	Free	Free	
H2	XY-Symmetry	9.858695652	20.28834783	28.12 Free	Free	Free	Free	Free	Free	Free	
H5	XY-Symmetry	18.62356522	9.904208696	55.47 Free	Free	Free	Free	Free	Free	Free	
H6	XY-Symmetry	9.904208696	18.62356522	55.47 Free	Free	Free	Free	Free	Free	Free	
H7	Y-Symmetry	18.62356522	0	55.47 Free	Free	Free	Free	Free	Free	Free	
H8	X-Symmetry	0	18.62356522	55.47 Free	Free	Free	Free	Free	Free	Free	
H9	XY-Symmetry	17.10182609	9.111686957	80.47 Free	Free	Free	Free	Free	Free	Free	
H10	XY-Symmetry	9.111686957	17.10182609	80.47 Free	Free	Free	Free	Free	Free	Free	
H11	Y-Symmetry	17.10182609	0	80.47 Free	Free	Free	Free	Free	Free	Free	
H12	X-Symmetry	0	17.10182609	80.47 Free	Free	Free	Free	Free	Free	Free	

# Vert	Drop (ft)	Height (ft)	Type
3	9.38	37.5	1
	7.03	25	2
	7.03	25	2
		25	A
		25	A
		25	A
		25	A
		12.5	A
		12.5	A
		12.5	A
		12.5	A
		12.5	A
1		10.1667	X
1		10.1667	X
1		8.5833	X
1		8.5833	X

Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
1	0	44	3
2	37.5	39.43478261	3
3	62.5	36.39130435	3
4	87.5	33.34782609	2
5	112.5	30.30434783	2
6	137.5	27.26086957	2
7	162.5	24.2173913	2
8	187.5	21.17391304	1
9	200	19.65217391	1
10	212.5	18.13043478	1
11	225	16.60869565	1
12	237.5	15.08695652	1
13	250	13.56521739	1
14	260.1667	12.32753217	1
15	270.3334	11.08984696	1
16	278.9167	10.04492348	1
17	287.5	9	

NOTES	
Types:	
1:	Built up Horizs. w/ A
2:	Built up Horizs. w/ M
A:	Typical A brace
X:	Typical X brace
Drop:	Use only for types 1 & 2
# Sections:	16

Diagonals

Site No.:	88011
Engineer:	SAW
Date:	02/24/2012
Carrier:	Verizon

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-37.50	2L		3	5	0.3125	36	
2	37.50-62.50	2L		2.5	3.5	0.25	36	
3	62.50-87.50	2L		2.5	3.5	0.25	36	
4	87.50-112.5	2L		2.5	3	0.25	36	
5	112.5-137.5	2L		2.5	3	0.25	36	
6	137.5-162.5	2L		2.5	3	0.25	36	
7	162.5-187.5	2L		2.5	3	0.25	36	
8	187.5-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-260.2	L		3.5	3.5	0.25	36	
14	260.2-270.3	L		3.5	3.5	0.25	36	
15	270.3-278.9	L		3	3	0.25	36	
16	278.9-287.5	L		3	3	0.25	36	

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88011
Engineer:	SAW
Date:	02/24/2012
Carrier:	Verizon

When inputting thickness values, include all decimal places.
Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)
1	0.000-37.50	2L		3.5	3.5	0.25	36
2	0.000-37.50	2L		4	3	0.25	36
3	37.50-62.50	2L		2.5	2	0.25	36
4	37.50-62.50	2L		2.5	2	0.25	36
5	37.50-62.50	2L		3	2	0.25	36
6	62.50-87.50	2L		2.5	2	0.25	36
7	62.50-87.50	2L		2.5	2	0.25	36
8	62.50-87.50	2L		2.5	2	0.25	36

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

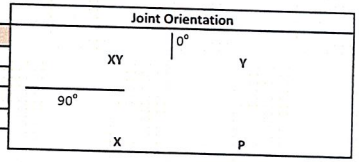
[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Coax & Dishes

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Joint Orientation



Site No.:	88011
Engineer:	SAW
Date:	02/24/12
Carrier:	Verizon

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle *(deg)*

Description	From *(ft)*	To *(ft)*	Quantity	Shape	Width or Diameter *(in)*	Perimeter *(in)*	Unit Weight *(lb/ft)*	Part of Face Solidity Ratio *(Yes/No)*	Include in Wind Load *(Yes/No)*
Sprint-287.5	5	287.5	6	Round	1.98	6.22	1.64	No	No
Sprint2-287.5	5	287.5	3	Round	1.98	6.22	1.64	Yes	Yes
Verizon-262	5	262	12	Round	1.98	6.22	0.82	Yes	Yes
AT&T-254	5	254	6	Round	2.38	7.48	2.44	No	No
US Treasury-210	5	210.5	1	Round	1.11	3.49	0.33	No	No
Verizon-50	5	50	1	Round	0.63	1.98	0.14	No	No
WG	5	287.5	4	Flat	3	9.42	6.00	No	No

Coax	Dia. (in)	Weight(lb/ft)
1/4"	0.3	0.064
3/8"	0.44	0.084
1/2"	0.63	0.144
7/8"	1.11	0.33
EW90	1.32	0.32
1-1/4"	1.55	0.664
1-5/8"	1.98	0.82
EW63	2.01	0.51
EW52	2.25	0.59
Ladder	3	6
WC281	3.11	5.39

Site #:	88011
Name:	Verizon

Engineer:	SAW
Date:	02/24/12

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S3	L 8" x 8" x 1"	SAE	8X8X1	A 36	Beam	Leg	None
Leg S4	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S6	L 8" x 8" x 0.75"	SAE	8X8X0.75	A 36	Beam	Leg	None
Leg S7	L 8" x 8" x 0.625"	SAE	8X8X0.63	A 36	Beam	Leg	None
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S10	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S12	L 6" x 6" x 0.4375"	SAE	6X6X0.44	A 36	Beam	Leg	None
Leg S13	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Diag S1	B/B L3"x5"x0.3125"	DAS	5X3X0.31	A 36	Beam	Leg	None
Diag S2	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
Diag S5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
Diag S6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
Diag S7	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S10	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S13	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S15	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 13	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 14	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 15	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 16	C8x11.5	CHN	C8x11.5	A 36	Beam	Other	None
LD 1	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	A 36	Beam	Other	None
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	A 36	Beam	Other	None
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 6	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 7	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 9	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	T-Only	Other	None
LH 3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	A 36	Beam	Other	None
						Fictitious	None

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	5	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	5	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P	1	5	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P	1	5	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P	1	5	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P	1	5	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P	1	5	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P	1	5	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P	1	5	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P	1	5	1	1	1
H 25	Horiz 13		Y-Symmetry	13P	13X	1	5	0.5	0.5	0.5
H 26	Horiz 13		X-Symmetry	13P	13Y	1	5	0.5	0.5	0.5
H 27	Horiz 14		Y-Symmetry	14P	14X	1	5	0.5	0.5	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y	1	5	0.5	0.5	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X	1	5	0.5	0.5	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y	1	5	0.5	0.5	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X	1	5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y	1	5	0.5	1	0.5
H 35	Horiz 2		Y-Symmetry	A3P	A3X	1	5	1	1	1
H 36	Horiz 2		X-Symmetry	A4P	A4Y	1	5	1	1	1
H 37	Horiz 3		Y-Symmetry	A5P	A5X	1	5	1	1	1
H 38	Horiz 3		X-Symmetry	A6P	A6Y	1	5	1	1	1
LH 1	LH 1		Y-Symmetry	H1P	H1X	1	6	0.5	1	0.5
LH 2	LH 1		X-Symmetry	H2P	H2Y	1	6	0.5	1	0.5
LH 3	LH 2		XY-Symmetry	H5P	H7P	1	6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P	1	6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P	1	6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P	1	6	1	2	1
LD 1	LD 1		XY-Symmetry	H1P	1P	1	6	0.91	0.91	0.91
LD 2	LD 1		XY-Symmetry	H2P	1P	1	6	0.91	0.91	0.91
LD 3	LD 2		XY-Symmetry	H1P	A1P	1	6	0.91	0.91	0.91
LD 4	LD 2		XY-Symmetry	H2P	A2P	1	6	0.91	0.91	0.91
LD 7	LD 4		XY-Symmetry	H5P	2P	1	6	0.91	0.91	0.91
LD 8	LD 4		XY-Symmetry	H6P	2P	1	6	0.91	0.91	0.91
LD 9	LD 5		XY-Symmetry	H5P	A3P	1	6	0.91	0.91	0.91
LD 10	LD 5		XY-Symmetry	H6P	A4P	1	6	0.91	0.91	0.91
LD 11	LD 6		XY-Symmetry	A3P	H7P	1	6	0.91	0.91	0.91
LD 12	LD 6		XY-Symmetry	A4P	H8P	1	6	0.91	0.91	0.91
LD 13	LD 7		XY-Symmetry	H9P	3P	1	6	0.91	0.91	0.91
LD 14	LD 7		XY-Symmetry	H10P	3P	1	6	0.91	0.91	0.91
LD 15	LD 8		XY-Symmetry	H9P	A5P	1	6	0.91	0.91	0.91
LD 16	LD 8		XY-Symmetry	H10P	A6P	1	6	0.91	0.91	0.91
LD 17	LD 9		XY-Symmetry	A5P	H11P	1	6	0.91	0.91	0.91
LD 18	LD 9		XY-Symmetry	A6P	H12P	1	6	0.91	0.91	0.91
BR 1	DUM 1		XY-Symmetry	A1P	A2P	1	4	1	1	1
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1

Site #:	88011
Name:	Verizon

Engineer:	SAW
Date:	02/24/12

Ar: 1 (No round members)

Taper: -0.12173913
Base FW: 44

Leg	Lower H
37.56940647	19.7173913
25.04627098	19.80841739
25.04627098	18.22337391
25.04627098	0
25.04627098	0
25.04627098	0
25.04627098	0
12.52313549	0
12.52313549	0
12.52313549	0
12.52313549	0
12.52313549	0
10.18551693	0
10.18551693	0
8.599186308	0
8.599186308	0
	0
	0
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	0
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	0
	0
	0
	0

Top H	Diag	Diag 1	Diag 2	Diag 3	Face Width Base	Face Width Top
39.43478261	30.62916374	13.60802263	13.60802263	0	44	39.43478261
36.39130435	20.47484928	10.87055357	8.009915994	9.284813515	39.43478261	36.39130435
33.34782609	20.13552393	10.32512292	7.877169352	8.961693021	36.39130435	33.34782609
30.30434783	30.0502808	0	0	0	33.34782609	30.30434783
27.26086957	29.23334354	0	0	0	30.30434783	27.26086957
24.2173913	28.47435254	0	0	0	27.26086957	24.2173913
21.17391304	27.77805807	0	0	0	24.2173913	21.17391304
19.65217391	16.38089278	0	0	0	21.17391304	19.65217391
18.13043478	15.89974795	0	0	0	19.65217391	18.13043478
16.60869565	15.44111934	0	0	0	18.13043478	16.60869565
15.08695652	15.00707143	0	0	0	16.60869565	15.08695652
13.56521739	14.59979672	0	0	0	15.08695652	13.56521739
12.32753217	16.46117884	0	0	0	13.56521739	12.32753217
11.08984696	15.50661795	0	0	0	12.32753217	11.08984696
10.04492348	13.61406145	0	0	0	11.08984696	10.04492348
9	12.81991874	0	0	0	10.04492348	9
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
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		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		
		0	0	0		

Area Total	Area Modeled	Area Ratio	Drop Sub-Brace
126.0681574	98.02675357	1.286058681	0
85.19780635	69.17636831	1.231602763	0
80.32395002	65.23664957	1.231270314	0
69.05524077	53.49206526	1.290943627	0
66.91179853	52.39080517	1.277166829	0
63.81027432	50.30463138	1.268477128	0
61.90172672	49.38045072	1.253567471	0
28.70671169	23.44271038	1.22454747	0
27.94026455	22.92520438	1.21875749	0
27.18877692	22.41708014	1.212859871	0
26.45358824	21.91919786	1.206868445	0
25.7361074	21.43247108	1.20079982	0
25.46779309	21.17216814	1.202890177	0
24.29212329	20.30591965	1.196307467	0
20.02019024	16.48425019	1.214504149	0
22.85065714	19.57594796	1.167282279	0

Taper change: 287.5
Top FW: 9

	$H_{@Base}$	$H_{Section}$	Type	Leg	Lower H	Top H	Diag	Diag 1	Diag 2	Diag 3
1	0	37.5	1	8	2.5	3.5	3	3.5	4	0
2	37.5	25	2	8	2.5	3.5	2.5	2.5	2.5	3
3	62.5	25	2	8	2.5	3	2.5	2.5	2.5	2.5
4	87.5	25	A	8	0	3	2.5	0	0	0
5	112.5	25	A	8	0	3	2.5	0	0	0
6	137.5	25	A	8	0	2.5	2.5	0	0	0
7	162.5	25	A	8	0	2.5	2.5	0	0	0
8	187.5	12.5	A	6	0	2.5	2.5	0	0	0
9	200	12.5	A	6	0	2.5	2.5	0	0	0
10	212.5	12.5	A	6	0	2.5	2.5	0	0	0
11	225	12.5	A	6	0	2.5	2.5	0	0	0
12	237.5	12.5	A	6	0	2.5	2.5	0	0	0
13	250	10.1667	X	5	0	3	3.5	0	0	0
14	260.1667	10.1667	X	5	0	3	3.5	0	0	0
15	270.3334	8.5833	X	5	0	3	3	0	0	0
16	278.9167	8.5833	X	5	0	8	3	0	0	0
17				0	0	0	0	0	0	0
18				0	0	0	0	0	0	0
19				0	0	0	0	0	0	0
20				0	0	0	0	0	0	0
21				0	0	0	0	0	0	0
22				0	0	0	0	0	0	0
23				0	0	0	0	0	0	0
24				0	0	0	0	0	0	0
25				0	0	0	0	0	0	0
26				0	0	0	0	0	0	0
27				0	0	0	0	0	0	0
28				0	0	0	0	0	0	0
29				0	0	0	0	0	0	0
30				0	0	0	0	0	0	0
31				0	0	0	0	0	0	0
32				0	0	0	0	0	0	0
33				0	0	0	0	0	0	0
34				0	0	0	0	0	0	0
35				0	0	0	0	0	0	0
36				0	0	0	0	0	0	0
37				0	0	0	0	0	0	0
38				0	0	0	0	0	0	0
39				0	0	0	0	0	0	0
40				0	0	0	0	0	0	0

$FW_{@Base}$	Area Modeled
	98.02675357
	69.17636831
	65.23664957
	53.49206526
	52.39080517
	50.30463138
	49.38045072
	23.44271038
	22.92520438
	22.41708014
	21.91919786
	21.43247108
	21.17216814
	20.30591965
	16.48425019
	19.57594796

H1	H2	H3	H4	H5	H6	D1	D2	D3	D4	D5	V1	Drop	Face Width @H1	@H2	@H3	@H4	@H5	@H6
10.42965217	6.953101449	3.476550725	0	0	0	11.34003225	9.813471036	0	0	0	9.38	9.38	40.57669565	41.7177971	42.85889855			
8.719356522	5.812904348	2.906452174	0	0	0	8.097161571	6.507001481	0	0	0	0	7.03	37.24713043	37.97634783	38.70556522			
7.99013913	5.32675942	2.66337971	0	0	0	7.778369997	6.415952632	0	0	0	0	7.03	34.20365217	34.93286957	35.66208696			
10.10144928	5.050724638	0	0	0	0	12.70799645	9.491450845	0	0	0	0		31.31884058	32.33333333				
9.086956522	4.543478261	0	0	0	0	11.96059658	9.259352692	0	0	0	0		28.27536232	29.28985507				
8.072463768	4.036231884	0	0	0	0	11.2550859	9.049761497	0	0	0	0		25.23188406	26.24637681				
7.057971014	3.528985507	0	0	0	0	10.59983197	8.864273902	0	0	0	0		22.1884058	23.20289855				
4.913043478	0	0	0	0	0	7.720559668	0	0	0	0	0		20.41304348					
4.532608696	0	0	0	0	0	7.503535714	0	0	0	0	0		18.89130435					
4.152173913	0	0	0	0	0	7.29989836	0	0	0	0	0		17.36956522					
3.77173913	0	0	0	0	0	7.110797788	0	0	0	0	0		15.84782609					
3.391304348	0	0	0	0	0	6.937422831	0	0	0	0	0		14.32608696					
6.473187391	0	0	0	0	0	0	0	0	0	0	5.08335		12.94637478					
5.854344783	0	0	0	0	0	0	0	0	0	0	5.08335		11.70868957					
5.283692609	0	0	0	0	0	0	0	0	0	0	4.29165		10.56738522					
4.76123087	0	0	0	0	0	0	0	0	0	0	4.29165		9.522461739					
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							
0	0	0	0	0	0	0	0	0	0	0	0							

: Yellow Shade Denotes Value Assumed

	$H_{at Base}$	$H_{Section}$	Section	$FW_{at Base}$	$FW_{at Top}$	H1	H2	H3	H4	H5	H6	D1	D2	D3	D4	D5	V1	Area Missing	Sub FW
1	0	37.5	1	44	39.43478261	3	3	3	3	3	3	3	3	3	3	3	3	28.04140382	
2	37.5	25	2	39.43478261	36.39130435	3	3	3	3	3	3	3	3	3	3	3	3	16.02143805	
3	62.5	25	3	36.39130435	33.34782609	3	3	3	3	3	3	3	3	3	3	3	3	15.08730045	
4	87.5	25	4	33.34782609	30.30434783	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	15.5631755	
5	112.5	25	5	30.30434783	27.26086957	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	14.52099336	
6	137.5	25	6	27.26086957	24.2173913	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	13.50564294	
7	162.5	25	7	24.2173913	21.17391304	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	12.521276	
8	187.5	12.5	8	21.17391304	19.65217391	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.264001311	
9	200	12.5	9	19.65217391	18.13043478	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.01506017	
10	212.5	12.5	10	18.13043478	16.60869565	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4.77169678	
11	225	12.5	11	16.60869565	15.08695652	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4.534390383	
12	237.5	12.5	12	15.08695652	13.56521739	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4.303636325	
13	250	10.1667	13	13.56521739	12.32753217	3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4.295624946	
14	260.1667	10.1667	14	12.32753217	11.08984696	3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.986203641	
15	270.3334	8.5833	15	11.08984696	10.04492348	3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.535940054	
16	278.9167	8.5833	16	10.04492348	9	3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.274709185	
17			17	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
18			18	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
19			19	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
20			20	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
21			21	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
22			22	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
23			23	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
24			24	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
25			25	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
26			26	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
27			27	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
28			28	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
29			29	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
30			30	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
31			31	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
32			32	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
33			33	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
34			34	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
35			35	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
36			36	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
37			37	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
38			38	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
39			39	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	
40			40	9	9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	0	

No.	Elevation (ft)	C_AA_C (ft^2)	C_AA_C (Ice) (ft^2)	Force (k)	Force (Ice) (k)	Weight (k)	Weight (Ice) (k)	Σ Force (k)	Σ Force (Ice) (k)	Σ Weight (k)	Σ Weight (Ice) (k)
1	287.5	0.00	0.00	0.000	0.000	0.000	0.000	2.25	2.27	6.00	7.80
		60.00	81.00	2.246	2.274	6.000	7.800				
2	270	0.00	0.00	0.000	0.000	0.000	0.000	1.84	1.86	4.50	5.85
		50.00	67.50	1.838	1.861	4.500	5.850				
3	237.5	0.00	0.00	0.000	0.000	0.000	0.000	0.53	0.54	0.50	0.65
		15.00	20.25	0.532	0.538	0.500	0.650				
4	200	0.00	0.00	0.000	0.000	0.000	0.000	1.35	1.37	4.50	5.85
		40.00	54.00	1.350	1.367	4.500	5.850				
5	187.5	0.00	0.00	0.000	0.000	0.000	0.000	0.50	0.50	0.50	0.65
		15.00	20.25	0.497	0.503	0.500	0.650				
6	137.5	0.00	0.00	0.000	0.000	0.000	0.000	0.45	0.46	0.50	0.65
		15.00	20.25	0.455	0.460	0.500	0.650				
7	87.5	0.00	0.00	0.000	0.000	0.000	0.000	1.07	1.08	4.50	5.85
		40.00	54.00	1.066	1.079	4.500	5.850				
8	37.5	0.00	0.00	0.000	0.000	0.000	0.000	0.31	0.32	0.50	0.65
		15.00	20.25	0.314	0.318	0.500	0.650				
9											
10	306	5.63	6.51	0.214	0.186	0.060	0.110	1.59	1.57	1.56	2.06
		35.98	48.57	1.371	1.388	1.500	1.950				
11	306	16.88	18.55	0.643	0.530	0.135	0.277	0.64	0.53	0.14	0.28
		0.00	0.00	0.000	0.000	0.000	0.000				
12	306	3.68	4.38	0.140	0.125	0.060	0.117	0.14	0.13	0.06	0.12
		0.00	0.00	0.000	0.000	0.000	0.000				
13	306	39.60	45.17	1.509	1.291	0.139	0.484	1.51	1.29	0.14	0.48
		0.00	0.00	0.000	0.000	0.000	0.000				
14	267	15.31	16.91	0.561	0.465	0.051	0.178	1.88	1.80	1.55	2.13
		35.98	48.57	1.319	1.335	1.500	1.950				
15	267	31.52	34.30	1.155	0.943	0.120	0.434	1.16	0.94	0.12	0.43
		0.00	0.00	0.000	0.000	0.000	0.000				
16	267	6.27	7.44	0.230	0.205	0.032	0.088	0.23	0.20	0.03	0.09
		0.00	0.00	0.000	0.000	0.000	0.000				
17	267	1.10	1.49	0.040	0.041	0.016	0.029	0.04	0.04	0.02	0.03
		0.00	0.00	0.000	0.000	0.000	0.000				
18	254	84.26	91.46	3.045	2.478	0.420	1.125	4.34	3.79	1.92	3.08
		35.98	48.57	1.300	1.316	1.500	1.950				
19	254	3.68	4.38	0.133	0.119	0.060	0.117	0.13	0.12	0.06	0.12
		0.00	0.00	0.000	0.000	0.000	0.000				
20	210.5	6.45	8.63	0.221	0.222	0.036	0.095	0.40	0.40	0.34	0.49
		5.20	7.02	0.178	0.180	0.300	0.390				
21	50	0.09	0.14	0.002	0.002	0.001	0.002	0.07	0.07	0.10	0.13
		3.00	4.05	0.068	0.069	0.100	0.130				
22											
23											
24											
25											
26											
27											
28											
29											
30											

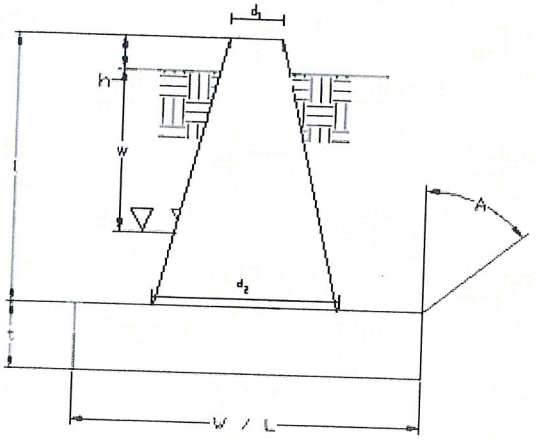
Foundation

Site No.:	88011
Engineer:	SAW
Date:	02/24/12
Carrier:	Verizon

Design Loads (Unfactored)

Compression/Leg:	418.48	k
Uplift/Leg:	324.06	k

Face Width @ Top of Pier (d_1):	3.50	ft
Face Width @ Bottom of Pier (d_2):	7.50	ft
Total Length of Pier (l):	8.50	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	14.75	ft
Length of Pad (L):	14.75	ft
Thickness of Pad (t):	3.25	ft
Water Table Depth (w):	30	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	110.0	pcf
Unit Weight of Soil (Below Water Table):	55.0	pcf
Friction Angle of Uplift (A):	30	°
Allowable Compressive Bearing Pressure:	2000	psf



Volume Pier (Total):	268.46	ft³
Volume Pad (Total):	707.08	ft³
Volume Soil (Total):	2747.35	ft³
Volume Pier (Buoyant):	0.00	ft³
Volume Pad (Buoyant):	0.00	ft³
Volume Soil (Buoyant):	0.00	ft³
Weight Pier:	40.27	k
Weight Pad:	106.06	k
Weight Soil:	302.21	k

Uplift Check

TIA Case 1: $\frac{\text{Wt. Soil} + \text{Wt. Concrete}}{1.5}$

TIA Case 2: $\frac{\text{Wt. Soil}}{2.0} + \frac{\text{Wt. Concrete}}{1.25}$

	Allowable Uplift (k)	Ratio	Result
TIA Case 1:	356.55	0.91	OK
TIA Case 2:	325.69	0.99	OK

Axial Check

Allowable Axial: Allowable Bearing Pressure * W * L

	Allowable Axial (k)	Ratio	Result
	435.13	0.96	OK

Anchor Bolt Check

Bolt Description	Allowable Uplift (k)	Ratio	Result
(6) 2 1/4" A36	456.61	0.71	OK