



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](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

March 15, 2013

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

RE: **EM-VER-007-130226** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 260 Beckley Road, Berlin, 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 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 February 22, 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,

Linda Roberts  
Executive Director

LR/CDM/jb

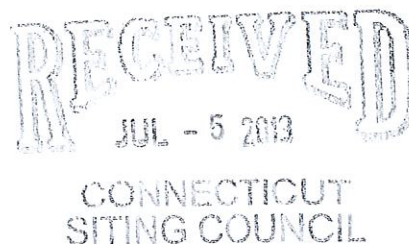
c: The Honorable Adam P. Salina, Mayor, Town of Berlin  
Denise McNair, Town Manager, Town of Berlin  
Arthur Simonian, Town Engineer, Town of Berlin  
American Towers



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

Also admitted in Massachusetts

July 3, 2013



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

Re: **EM-VER-146-130123- 777 Talcottville Road, Vernon, Connecticut**  
**EM-VER-096-110425- Hilltop View Lane, New Milford, Connecticut**  
**EM-VER-105-121101- Boggy Hole Road, Old Lyme, Connecticut**  
**EM-VER-107-130226- 260 Beckley Road, Berlin, Connecticut**  
**EM-VER-057-130214- Butternut Hollow Road, Greenwich, Connecticut**  
**EM-VER-096-130125- 586 Danbury Road, New Milford, Connecticut**  
**EM-VER-033-121128- 179 Shunpike Road, Cromwell, 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 this facility please do not hesitate to contact me.

Sincerely,

Kenneth C. Baldwin

Copy to:  
Sandy M. Carter



Law Offices

BOSTON

PROVIDENCE

HARTFORD

NEW LONDON

STAMFORD

WHITE PLAINS

NEW YORK CITY

ALBANY

SARASOTA

www.rc.com

12012147-v1

# ROBINSON & COL

EM-VER-007-130226

KENNETH C. BALDWIN

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

Also admitted in Massachusetts

February 22, 2013

**RECEIVED**  
FEB 26 2013  
CONNECTICUT  
SITING COUNCIL

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

Re: **Notice of Exempt Modification – Antenna Swap  
260 Beckley Road, Berlin, Connecticut**

Dear Ms. Roberts:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) wireless telecommunications antennas at the 116-foot level of an existing 150-foot tower at the above-referenced address. The tower is owned by American Tower Corporation. The Council approved Cellco’s shared use of this tower in 2002. Cellco now intends to replace six (6) of its antennas with three (3) model BXA-171063-8CF PCS antennas and three (3) model BXA-171063-8CF AWS antennas, at the same 116-foot level on the tower. Cellco also intends to install three (3) remote radio heads (“RRHs”) behind its antennas and one (1) HYBRIFLEX™ fiber cable attached to the outside of the monopole. Attached behind Tab 1 are the specifications for the replacement antennas, RRHs and HYBRIFLEX™ cable.



*Law Offices*

BOSTON

PROVIDENCE

HARTFORD

NEW LONDON

STAMFORD

WHITE PLAINS

NEW YORK CITY

ALBANY

SARASOTA

*www.rc.com*

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 Denise McNair, Town Manager for the Town of Berlin. A copy of this letter is being sent to Elaine and John Matulis, the owners of the property on which the tower is located.

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

12097455-v1

# ROBINSON & COLE<sup>LLP</sup>

Linda Roberts  
February 22, 2013  
Page 2

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be located at the 116-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 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 worst-case 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:

Denise McNair, Town Manager  
Elaine and John Matulis  
Sandy M. Carter







Mixed Sources  
Product Group: Certified Sourced  
of 100% Forest Management Control



## BXA-171063-8CF-EDIN-X

X-Pol | FET Panel | 63° | 17.4 dBi

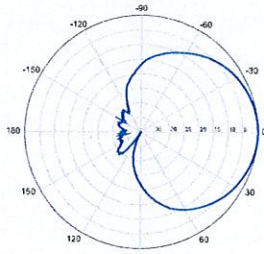
Replace "X" with desired electrical downtilt.

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

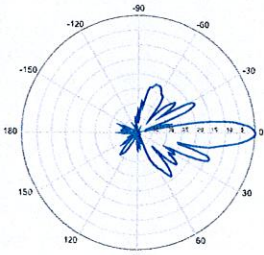
Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	7°	7°	7°
Gain	14.5 dBd / 16.6 dBi	14.9 dBd / 17.0 dBi	15.3 dBd / 17.4 dBi
Electrical downtilt (X)	0, 2, 4, 8		
Impedance	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 m <sup>2</sup> Side: 0.14 m <sup>2</sup>	Front: 2.0 ft <sup>2</sup> Side: 1.5 ft <sup>2</sup>	
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

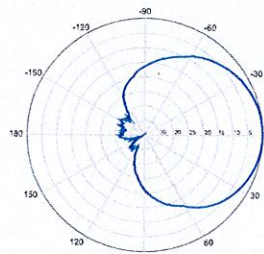


Horizontal | 1710-1880 MHz  
BXA-171063-8CF-EDIN-0

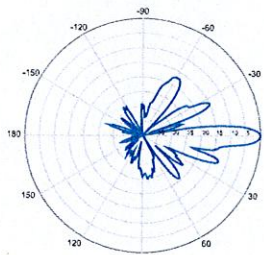


0° | Vertical | 1710-1880 MHz

BXA-171063-8CF-EDIN-X

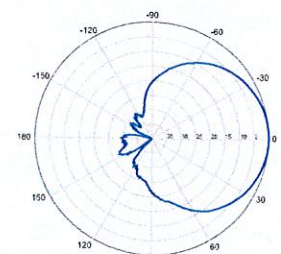


Horizontal | 1850-1990 MHz  
BXA-171063-8CF-EDIN-0

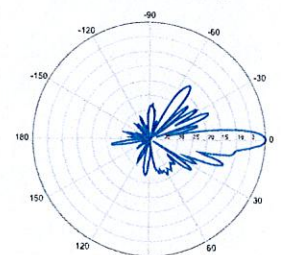


0° | Vertical | 1850-1990 MHz

BXA-171063-8CF-EDIN-X



Horizontal | 1920-2170 MHz  
BXA-171063-8CF-EDIN-0



0° | Vertical | 1920-2170 MHz

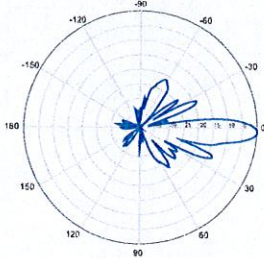
Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product.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



## BXA-171063-8CF-EDIN-X

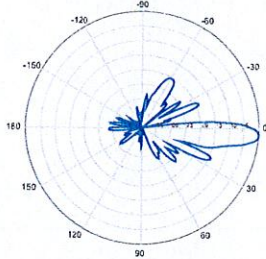
X-Pol | FET Panel | 63° | 17.4 dBi

**BXA-171063-8CF-EDIN-2**



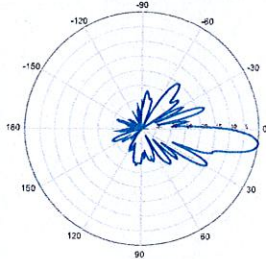
2° | Vertical | 1710-1880 MHz

**BXA-171063-8CF-EDIN-4**



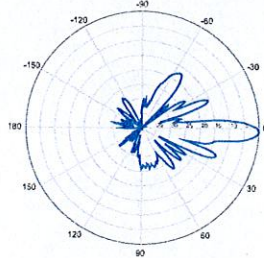
4° | Vertical | 1710-1880 MHz

**BXA-171063-8CF-EDIN-8**



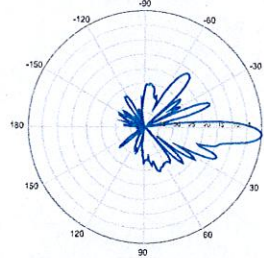
8° | Vertical | 1710-1880 MHz

**BXA-171063-8CF-EDIN-2**



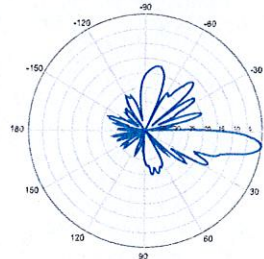
2° | Vertical | 1850-1990 MHz

**BXA-171063-8CF-EDIN-4**



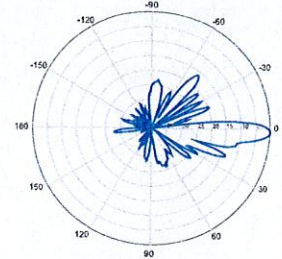
4° | Vertical | 1850-1990 MHz

**BXA-171063-8CF-EDIN-8**



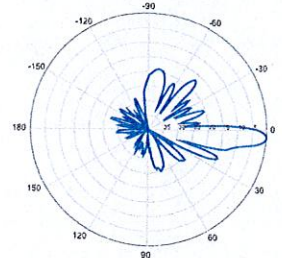
8° | Vertical | 1850-1990 MHz

**BXA-171063-8CF-EDIN-2**



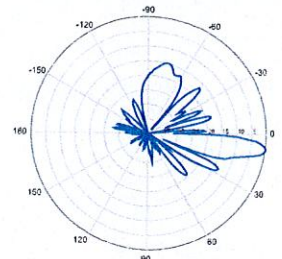
2° | Vertical | 1920-2170 MHz

**BXA-171063-8CF-EDIN-4**



4° | Vertical | 1920-2170 MHz

**BXA-171063-8CF-EDIN-8**



8° | Vertical | 1920-2170 MHz

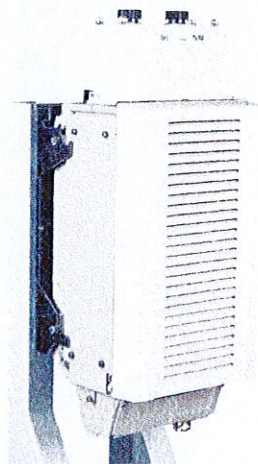
Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product.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



## Alcatel-Lucent RRH2x40-AWS

### REMOTE RADIO HEAD

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



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

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

The Alcatel-Lucent RRH2x40-AWS is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low

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

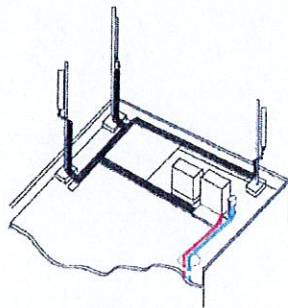
#### Fast, low-cost installation and deployment

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



## Excellent RF performance

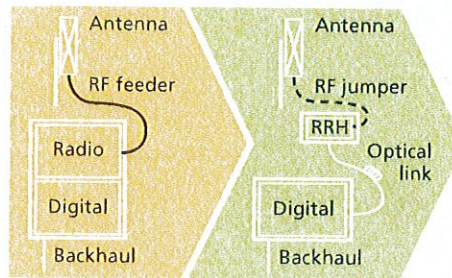
Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation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



Macro

## Features

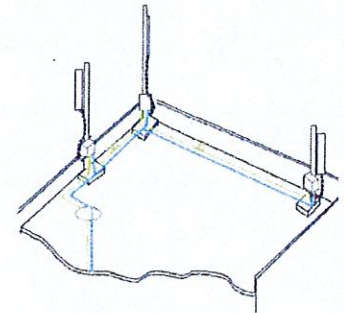
- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption



RRH for space-constrained cell sites

## Benefits

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



Distributed

## Technical specifications

### Physical dimensions

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

### Power

- Power supply: -48VDC

### Operating environment

- Outdoor temperature range:
  - With solar load: -40°C to +50°C (-40°F to +122°F)
  - Without solar load: -40°C to +55°C (-40°F to +131°F)

- Passive convection cooling (no fans)
- Enclosure protection
  - IP65 (International Protection rating)

### RF characteristics

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

### Optical characteristics

#### Type/number of fibers

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

### Optical fiber length

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

### Digital Ports and Alarms

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

[www.alcatel-lucent.com](http://www.alcatel-lucent.com) Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein. Copyright © 2010 Alcatel-Lucent. All rights reserved. CPG2809100912 (09)





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

**Product Description**

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

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

**Features/Benefits**

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

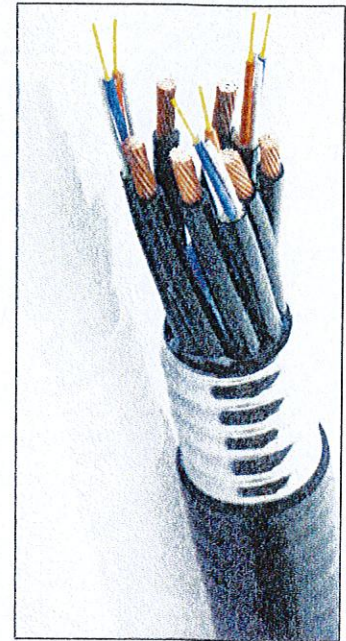


Figure 1: HYBRIFLEX Series

**Technical Specifications**

**Structure**

Outer Conductor Armor:	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket:	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection:	Individual and External Jacket		Yes

**Mechanical Properties**

Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)

**Electrical Properties**

DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm <sup>2</sup> (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)

**Fiber Optic Properties**

Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[μm]	50/125
Primary Coating (Acrylate)		[μm]	245
Buffer Diameter, Nominal		[μm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant

**DC Power Cable Properties**

Size (Power)		[mm <sup>2</sup> (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm <sup>2</sup> (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant

**Environment**

Installation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to 149)

\* This data is provisional and subject to change.

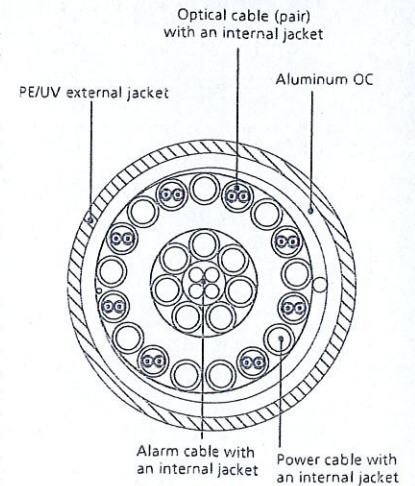


Figure 2: Construction Detail

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

Wired Sources  
Investigation - Cont No: SP/2008/02300  
of 1998/1999/2000/2001/2002/2003/2004/2005/2006/2007/2008/2009/2010/2011/2012/2013/2014/2015/2016/2017/2018/2019/2020/2021/2022/2023/2024/2025/2026/2027/2028/2029/2030/2031/2032/2033/2034/2035/2036/2037/2038/2039/2040/2041/2042/2043/2044/2045/2046/2047/2048/2049/2050/2051/2052/2053/2054/2055/2056/2057/2058/2059/2060/2061/2062/2063/2064/2065/2066/2067/2068/2069/2070/2071/2072/2073/2074/2075/2076/2077/2078/2079/2080/2081/2082/2083/2084/2085/2086/2087/2088/2089/2090/2091/2092/2093/2094/2095/2096/2097/2098/2099/2100/2101/2102/2103/2104/2105/2106/2107/2108/2109/2110/2111/2112/2113/2114/2115/2116/2117/2118/2119/2120/2121/2122/2123/2124/2125/2126/2127/2128/2129/2130/2131/2132/2133/2134/2135/2136/2137/2138/2139/2140/2141/2142/2143/2144/2145/2146/2147/2148/2149/2150/2151/2152/2153/2154/2155/2156/2157/2158/2159/2160/2161/2162/2163/2164/2165/2166/2167/2168/2169/2170/2171/2172/2173/2174/2175/2176/2177/2178/2179/2180/2181/2182/2183/2184/2185/2186/2187/2188/2189/2190/2191/2192/2193/2194/2195/2196/2197/2198/2199/2200/2201/2202/2203/2204/2205/2206/2207/2208/2209/2210/2211/2212/2213/2214/2215/2216/2217/2218/2219/2220/2221/2222/2223/2224/2225/2226/2227/2228/2229/2230/2231/2232/2233/2234/2235/2236/2237/2238/2239/2240/2241/2242/2243/2244/2245/2246/2247/2248/2249/2250/2251/2252/2253/2254/2255/2256/2257/2258/2259/2260/2261/2262/2263/2264/2265/2266/2267/2268/2269/2270/2271/2272/2273/2274/2275/2276/2277/2278/2279/2280/2281/2282/2283/2284/2285/2286/2287/2288/2289/2290/2291/2292/2293/2294/2295/2296/2297/2298/2299/2300/2301/2302/2303/2304/2305/2306/2307/2308/2309/2310/2311/2312/2313/2314/2315/2316/2317/2318/2319/2320/2321/2322/2323/2324/2325/2326/2327/2328/2329/2330/2331/2332/2333/2334/2335/2336/2337/2338/2339/2340/2341/2342/2343/2344/2345/2346/2347/2348/2349/2350/2351/2352/2353/2354/2355/2356/2357/2358/2359/2360/2361/2362/2363/2364/2365/2366/2367/2368/2369/2370/2371/2372/2373/2374/2375/2376/2377/2378/2379/2380/2381/2382/2383/2384/2385/2386/2387/2388/2389/2390/2391/2392/2393/2394/2395/2396/2397/2398/2399/2400/2401/2402/2403/2404/2405/2406/2407/2408/2409/2410/2411/2412/2413/2414/2415/2416/2417/2418/2419/2420/2421/2422/2423/2424/2425/2426/2427/2428/2429/2430/2431/2432/2433/2434/2435/2436/2437/2438/2439/2440/2441/2442/2443/2444/2445/2446/2447/2448/2449/2450/2451/2452/2453/2454/2455/2456/2457/2458/2459/2460/2461/2462/2463/2464/2465/2466/2467/2468/2469/2470/2471/2472/2473/2474/2475/2476/2477/2478/2479/2480/2481/2482/2483/2484/2485/2486/2487/2488/2489/2490/2491/2492/2493/2494/2495/2496/2497/2498/2499/2500/2501/2502/2503/2504/2505/2506/2507/2508/2509/2510/2511/2512/2513/2514/2515/2516/2517/2518/2519/2520/2521/2522/2523/2524/2525/2526/2527/2528/2529/2530/2531/2532/2533/2534/2535/2536/2537/2538/2539/2540/2541/2542/2543/2544/2545/2546/2547/2548/2549/2550/2551/2552/2553/2554/2555/2556/2557/2558/2559/2560/2561/2562/2563/2564/2565/2566/2567/2568/2569/2570/2571/2572/2573/2574/2575/2576/2577/2578/2579/2580/2581/2582/2583/2584/2585/2586/2587/2588/2589/2590/2591/2592/2593/2594/2595/2596/2597/2598/2599/2600/2601/2602/2603/2604/2605/2606/2607/2608/2609/2610/2611/2612/2613/2614/2615/2616/2617/2618/2619/2620/2621/2622/2623/2624/2625/2626/2627/2628/2629/2630/2631/2632/2633/2634/2635/2636/2637/2638/2639/2640/2641/2642/2643/2644/2645/2646/2647/2648/2649/2650/2651/2652/2653/2654/2655/2656/2657/2658/2659/2660/2661/2662/2663/2664/2665/2666/2667/2668/2669/2670/2671/2672/2673/2674/2675/2676/2677/2678/2679/2680/2681/2682/2683/2684/2685/2686/2687/2688/2689/2690/2691/2692/2693/2694/2695/2696/2697/2698/2699/2700/2701/2702/2703/2704/2705/2706/2707/2708/2709/2710/2711/2712/2713/2714/2715/2716/2717/2718/2719/2720/2721/2722/2723/2724/2725/2726/2727/2728/2729/2730/2731/2732/2733/2734/2735/2736/2737/2738/2739/2740/2741/2742/2743/2744/2745/2746/2747/2748/2749/2750/2751/2752/2753/2754/2755/2756/2757/2758/2759/2760/2761/2762/2763/2764/2765/2766/2767/2768/2769/2770/2771/2772/2773/2774/2775/2776/2777/2778/2779/2780/2781/2782/2783/2784/2785/2786/2787/2788/2789/2790/2791/2792/2793/2794/2795/2796/2797/2798/2799/2800/2801/2802/2803/2804/2805/2806/2807/2808/2809/2810/2811/2812/2813/2814/2815/2816/2817/2818/2819/2820/2821/2822/2823/2824/2825/2826/2827/2828/2829/2830/2831/2832/2833/2834/2835/2836/2837/2838/2839/2840/2841/2842/2843/2844/2845/2846/2847/2848/2849/2850/2851/2852/2853/2854/2855/2856/2857/2858/2859/2860/2861/2862/2863/2864/2865/2866/2867/2868/2869/2870/2871/2872/2873/2874/2875/2876/2877/2878/2879/2880/2881/2882/2883/2884/2885/2886/2887/2888/2889/2890/2891/2892/2893/2894/2895/2896/2897/2898/2899/2900/2901/2902/2903/2904/2905/2906/2907/2908/2909/2910/2911/2912/2913/2914/2915/2916/2917/2918/2919/2920/2921/2922/2923/2924/2925/2926/2927/2928/2929/2930/2931/2932/2933/2934/2935/2936/2937/2938/2939/2940/2941/2942/2943/2944/2945/2946/2947/2948/2949/2950/2951/2952/2953/2954/2955/2956/2957/2958/2959/2960/2961/2962/2963/2964/2965/2966/2967/2968/2969/2970/2971/2972/2973/2974/2975/2976/2977/2978/2979/2980/2981/2982/2983/2984/2985/2986/2987/2988/2989/2990/2991/2992/2993/2994/2995/2996/2997/2998/2999/3000/3001/3002/3003/3004/3005/3006/3007/3008/3009/3010/3011/3012/3013/3014/3015/3016/3017/3018/3019/3020/3021/3022/3023/3024/3025/3026/3027/3028/3029/3030/3031/3032/3033/3034/3035/3036/3037/3038/3039/3040/3041/3042/3043/3044/3045/3046/3047/3048/3049/3050/3051/3052/3053/3054/3055/3056/3057/3058/3059/3060/3061/3062/3063/3064/3065/3066/3067/3068/3069/3070/3071/3072/3073/3074/3075/3076/3077/3078/3079/3080/3081/3082/3083/3084/3085/3086/3087/3088/3089/3090/3091/3092/3093/3094/3095/3096/3097/3098/3099/3100/3101/3102/3103/3104/3105/3106/3107/3108/3109/3110/3111/3112/3113/3114/3115/3116/3117/3118/3119/3120/3121/3122/3123/3124/3125/3126/3127/3128/3129/3130/3131/3132/3133/3134/3135/3136/3137/3138/3139/3140/3141/3142/3143/3144/3145/3146/3147/3148/3149/3150/3151/3152/3153/3154/3155/3156/3157/3158/3159/3160/3161/3162/3163/3164/3165/3166/3167/3168/3169/3170/3171/3172/3173/3174/3175/3176/3177/3178/3179/3180/3181/3182/3183/3184/3185/3186/3187/3188/3189/3190/3191/3192/3193/3194/3195/3196/3197/3198/3199/3200/3201/3202/3203/3204/3205/3206/3207/3208/3209/3210/3211/3212/3213/3214/3215/3216/3217/3218/3219/3220/3221/3222/3223/3224/3225/3226/3227/3228/3229/3230/3231/3232/3233/3234/3235/3236/3237/3238/3239/3240/3241/3242/3243/3244/3245/3246/3247/3248/3249/3250/3251/3252/3253/3254/3255/3256/3257/3258/3259/3260/3261/3262/3263/3264/3265/3266/3267/3268/3269/3270/3271/3272/3273/3274/3275/3276/3277/3278/3279/3280/3281/3282/3283/3284/3285/3286/3287/3288/3289/3290/3291/3292/3293/3294/3295/3296/3297/3298/3299/3300/3301/3302/3303/3304/3305/3306/3307/3308/3309/3310/3311/3312/3313/3314/3315/3316/3317/3318/3319/3320/3321/3322/3323/3324/3325/3326/3327/3328/3329/3330/3331/3332/3333/3334/3335/3336/3337/3338/3339/3340/3341/3342/3343/3344/3345/3346/3347/3348/3349/3350/3351/3352/3353/3354/3355/3356/3357/3358/3359/3360/3361/3362/3363/3364/3365/3366/3367/3368/3369/3370/3371/3372/3373/3374/3375/3376/3377/3378/3379/3380/3381/3382/3383/3384/3385/3386/3387/3388/3389/3390/3391/3392/3393/3394/3395/3396/3397/3398/3399/3400/3401/3402/3403/3404/3405/3406/3407/3408/3409/3410/3411/3412/3413/3414/3415/3416/3417/3418/3419/3420/3421/3422/3423/3424/3425/3426/3427/3428/3429/3430/3431/3432/3433/3434/3435/3436/3437/3438/3439/3440/3441/3442/3443/3444/3445/3446/3447/3448/3449/3450/3451/3452/3453/3454/3455/3456/3457/3458/3459/3460/3461/3462/3463/3464/3465/3466/3467/3468/3469/3470/3471/3472/3473/3474/3475/3476/3477/3478/3479/3480/3481/3482/3483/3484/3485/3486/3487/3488/3489/3490/3491/3492/3493/3494/3495/3496/3497/3498/3499/3500/3501/3502/3503/3504/3505/3506/3507/3508/3509/3510/3511/3512/3513/3514/3515/3516/3517/3518/3519/3520/3521/3522/3523/3524/3525/3526/3527/3528/3529/3530/3531/3532/3533/3534/3535/3536/3537/3538/3539/3540/3541/3542/3543/3544/3545/3546/3547/3548/3549/3550/3551/3552/3553/3554/3555/3556/3557/3558/3559/3560/3561/3562/3563/3564/3565/3566/3567/3568/3569/3570/3571/3572/3573/3574/3575/3576/3577/3578/3579/3580/3581/3582/3583/3584/3585/3586/3587/3588/3589/3590/3591/3592/3593/3594/3595/3596/3597/3598/3599/3600/3601/3602/3603/3604/3605/3606/3607/3608/3609/3610/3611/3612/3613/3614/3615/3616/3617/3618/3619/3620/3621/3622/3623/3624/3625/3626/3627/3628/3629/3630/3631/3632/3633/3634/3635/3636/3637/3638/3639/3640/3641/3642/3643/3644/3645/3646/3647/3648/3649/3650/3651/3652/3653/3654/3655/3656/3657/3658/3659/3660/3661/3662/3663/3664/3665/3666/3667/3668/3669/3670/3671/3672/3673/3674/3675/3676/3677/3678/3679/3680/3681/3682/3683/3684/3685/3686/3687/3688/3689/3690/3691/3692/3693/3694/3695/3696/3697/3698/3699/3700/3701/3702/3703/3704/3705/3706/3707/3708/3709/3710/3711/3712/3713/3714/3715/3716/3717/3718/3719/3720/3721/3722/3723/3724/3725/3726/3727/3728/3729/3730/3731/3732/3733/3734/3735/3736/3737/3738/3739/3740/3741/3742/3743/3744/3745/3746/3747/3748/3749/3750/3751/3752/3753/3754/3755/3756/3757/3758/3759/3760/3761/3762/3763/3764/3765/3766/3767/3768/3769/3770/3771/3772/3773/3774/3775/3776/3777/3778/3779/3780/3781/3782/3783/3784/3785/3786/3787/3788/3789/3790/3791/3792/3793/3794/3795/3796/3797/3798/3799/3800/3801/3802/3803/3804/3805/3806/3807/3808/3809/3810/3811/3812/3813/3814/3815/3816/3817/3818/3819/3820/3821/3822/3823/3824/3825/3826/3827/3828/3829/3830/3831/3832/3833/3834/3835/3836/3837/3838/3839/3840/3841/3842/3843/3844/3845/3846/3847/3848/3849/3850/3851/3852/3853/3854/3855/3856/3857/3858/3859/3860/3861/3862/3863/3864/3865/3866/3867/3868/3869/3870/3871/3872/3873/3874/3875/3876/3877/3878/3879/3880/3881/3882/3883/3884/3885/3886/3887/3888/3889/3890/3891/3892/3893/3894/3895/3896/3897/3898/3899/3900/3901/3902/3903/3904/3905/3906/3907/3908/3909/3910/3911/3912/3913/3914/3915/3916/3917/3918/3919/3920/3921/3922/3923/3924/3925/3926/3927/3928/3929/3930/3931/3932/3933/3934/3935/3936/3937/3938/3939/3940/3941/3942/3943/3944/3945/3946/3947/3948/3949/3950/3951/3952/3953/3954/3955/3956/3957/3958/3959/3960/3961/3962/3963/3964/3965/3966/3967/3968/3969/3970/3971/3972/3973/3974/3975/3976/3977/3978/3979/3980/3981/3982/3983/3984/3985/3986/3987/3988/3989/3990/3991/3992/3993/3994/3995/3996/3997/3998/3999/4000/4001/4002/4003/4004/4005/4006/4007/4008/4009/4010/4011/4012/4013/4014/4015/4016/4017/4018/4019/4020/4021/4022/4023/4024/4025/4026/4027/4028/4029/4030/4031/4032/4033/4034/4035/4036/4037/4038/4039/4040/4041/4042/4043/4044/4045/4046/4047/4048/4049/4050/4051/4052/4053/4054/4055/4056/4057/4058/4059/4060/4061/4062/4063/4064/4065/4066/4067/4068/4069/4070/4071/4072/4073/4074/4075/4076/4077/4078/4079/4080/4081/4082/4083/4084/4085/4086/4087/4088/4089/4090/4091/4092/4093/4094/4095/4096/4097/4098/4099/4100/4101/4102/4103/4104/4105/4106/4107/4108/4109/4110/4111/4112/4113/4114/4115/4116/4117/4118/4119/4120/4121/4122/4123/4124/4125/4126/4127/4128/4129/4130/4131/4132/4133/4134/4135/4136/4137/4138/4139/4140/4141/4142/4143/4144/4145/4146/4147/4148/4149/4150/4151/4152/4153/4154/4155/4156/4157/4158/4159/4160/4161/4162/4163/4164/4165/4166/4167/4168/4169/4170/4171/4172/4173/4174/4175/4176/4177/4178/4179/4180/4181/4182/4183/4184/4185/4186/4187/4188/4189/4190/4191/4192/4193/4194/4195/4196/4197/4198/4199/4200/4201/4202/4203/4204/4205/4206/4207/4208/4209/4210/4211/4212/4213/4214/4215/4216/4217/4218/4219/4220/4221/4222/4223/4224/4225/4226/4227/4228/4229/4230/4231/4232/4233/4234/4235/4236/4237/4238/4239/4240/4241/4242/4243/4244/4245/4246/4247/4248/4249/4250/4251/4252/4253/4254/4255/4256/4257/4258/4259/4260/4261/4262/4263/4264/4265/4266/4267/4268/4269/4270/4271/4272/4273/4274/4275/4276/4277/4278/4279/4280/4281/4282/4283/4284/4285/4286/4287/4288/4289/4290/4291/4292/4293/4294/4295/4296/4297/4298/4299/4300/4301/4302/4303/4304/4305/4306/4307/4308/4309/4310/4311/4312/4313/4314/4315/4316/4317/4318/4319/4320/4321/4322/4323/4324/4325/4326/4327/4328/4329/4330/4331/4332/4333/4334/4335/4336/4337/4338/4339/4340/4341/4342/4343/4344/4345/4346/4347/4348/4349/4350/4351/4352/4353/4354/4355/4356/4357/4358/4359/4360/4361/4362/4363/4364/4365/4366/4367/4368/4369/4370/4371/4372/4373/4374/4375/4376/4377/4378/4379/4380/4381/4382/4383/4384/4385/4386/4387/4388/4389/4390/4391/4392/4393/4394/4395/4396/4397/4398/4399/4400/4401/4402/4403/4404/4405/4406/4407/4408/4409/4410/4411/4412/4413/4414/4415/4416/4417/4418/4419/4420/4421/4422/4423/4424/4425/4426/4427/4428/4429/4430/4431/4432/4433/4434/4435/4436/4437/4438/4439/4440/4441/4442/4443/4444/4445/4446/4447/4448/4449/4450/4451/4452/4453/4454/4455/4456/4457/4458/4459/4460/4461/4462/

Site Name: Berlin 2		General		Power		Density							
Tower Height: Verizon @ 116ft													
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total					
*AT&T UMTS	2	565	152	0.0176	880	0.5867	3.00%						
*AT&T UMTS	2	875	152	0.0272	1900	1.0000	2.72%						
*AT&T GSM	1	283	152	0.0044	880	0.5867	0.75%						
*AT&T GSM	4	525	152	0.0327	1900	1.0000	3.27%						
*AT&T LTE	1	1313	152	0.0204	734	0.4893	4.18%						
*MetroPCS CDMA	3	727	142	0.0389	2135	1.0000	3.89%						
*MetroPCS LTE	1	1200	142	0.0214	2130	1.0000	2.14%						
*Berlin FD	1	25.12	94.5	0.0010	953.55	0.6357	0.16%						
*T-Mobile GSM	8	171	162	0.0187	1945	1.0000	1.87%						
*T-Mobile UMTS	2	683	162	0.0187	2100	1.0000	1.87%						
*Sprint	11	122	125	0.0309	1962.5	1.0000	3.09%						
*Nextel	12	100	90	0.0533	851	0.5673	9.39%						
Verizon PCS	9	296	116	0.0712	1970	1.0000	7.12%						
Verizon Cellular	9	345	116	0.0830	869	0.5793	14.32%						
Verizon AWS	1	1750	116	0.0468	2145	1.0000	4.68%						
Verizon 700	1	1000	116	0.0267	698	0.4653	5.74%						
								<b>68.19%</b>					
* Source: Siting Council													





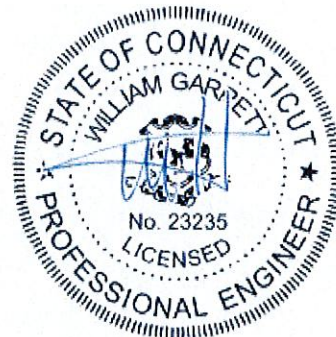
**AMERICAN TOWER®**  
CORPORATION

---

## Structural Analysis Report

**Structure** : 150 ft Monopole  
**ATC Site Name** : Brln - Berlin, CT  
**ATC Site Number** : 302483  
**Engineering Number** : 51665222  
**Proposed Carrier** : Verizon  
**Carrier Site Name** : Berlin 2, CT  
**Carrier Site Number** : N/A  
**Site Location** : 260 Beckley Road  
Kensington, CT 06037-2419  
41.631722,-72.729900  
**County** : Hartford  
**Date** : January 25, 2013  
**Max Usage** : 97%  
**Result** : Pass

Esha Modi  
Project Engineer



Jan 28 2013 12:08 PM



Eng. Number 51665222  
January 25, 2013

**Table of Contents**

Introduction .....	1
Supporting Documents .....	1
Analysis .....	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Proposed Equipment .....	2
Structure Usages .....	3
Foundations .....	3
Deflection, Twist, and Sway.....	3
Standard Conditions .....	4
Calculations .....	Attached





### Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by Verizon.

### Supporting Documents

<b>Tower Drawings</b>	ITT Meyer Type "B", dated July 21, 2001 Smith Cullum Mapping Acq. #CT-0019, dated July 21, 2001
<b>Geotechnical Report</b>	Daniel G. Loucks Project #CT-0019, dated 21 December 2001
<b>Modifications</b>	Scientel Project Berlin-CT0019, dated July 30 2002

### Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

<b>Basic Wind Speed:</b>	80 mph (Fastest Mile)
<b>Basic Wind Speed w/ Ice:</b>	69 mph (Fastest Mile)w/ 1/2" radial ice concurrent
<b>Code:</b>	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (4) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

### Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact me via email at [esha.modi@americantower.com](mailto:esha.modi@americantower.com) or call 919-466-5017.





**Existing and Reserved Equipment**

Mount Elev. <sup>1</sup> (ft)	Qty.	Antenna	Mount Type	Lines	Carrier
163.0	6	Andrew ETW200VA12UB	Conceal Canister	(12) 1 5/8" Coax	T-Mobile
	3	RFS APX16DWV-16DWV-S-E-ACU			
152.0	6	KMW AM-X-CD-16-65-00T-RET	Platform w/ Handrials	(2) 0.78" 8 AWG 6 (12) 1 1/4" Coax (1) 3" conduit (1) 0.39" Cable	AT&T Mobility
	1	Raycap DC6-48-60-18-8F			
	6	Ericsson RRU5 11 (Band 12)			
	3	Powerwave 7770.00			
	6	Powerwave LGP21401			
142.0	3	RFS APXV18-206517LS-C	Flush	(6) 1 5/8" Coax	Metro PCS
127.0	2	RFS APXVSP18-C-A20	Low Profile Platform	(6) 1 5/8" Coax (3) 1 1/4" Hybriflex	Sprint Nextel
	3	Powerwave 7184.14 / M-1900-90-16.5I-2-D			
	1	RFS APXV9ERR18-C-A20			
	6	Alcatel-Lucent 4x40W RRH			
	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter			
	3	RFS IBC1900HG-2A			
	3	RFS IBC1900BB-1			
116.0	6	Antel LPA-80063-6CF-EDIN-X	Low Profile Platform	(12) 1 5/8" Coax	Verizon Wireless
	1	RFS APX75-866514-CTO			
	2	Andrew LNX-6514DS-T4M			
106.0	3	48" x 6" Panel	Flush	(6) 1 1/4" Coax	AT&T Mobility
96.0	12	Decibel 844G65VTZASX	Low Profile Platform	(15) 1 5/8" Coax	Sprint Nextel

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty.	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
116.0	116.0	6	Antel BXA-171063-8CF-EDIN-X	Low Profile Platform	(7) 1 5/8" Coax	Verizon Wireless
		1	RFS DB-T1-6Z-8AB-OZ			
		3	Alcatel-Lucent RRH2x40-AWS			

<sup>1</sup>Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax outside the pole shaft in same location as existing.





**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	62%	Pass
Shaft	97%	Pass
Base Plate	68%	Pass

**Foundations**

Reaction Component	Analysis Reactions
Moment (Kips-Ft)	3669.2
Axial (Kips)	63.4
Shear (Kips)	37.2

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.

**Deflection and Sway\***

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
116.0	1.226	-1.193

\*Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.





### Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

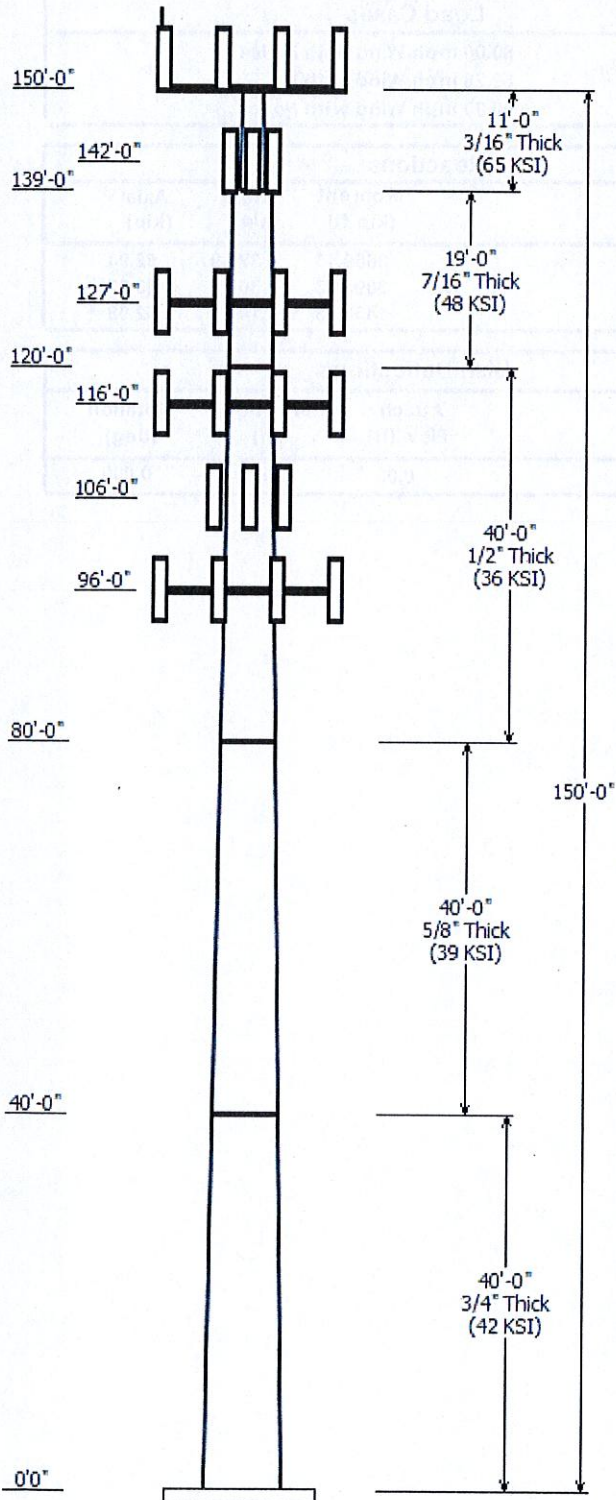
It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



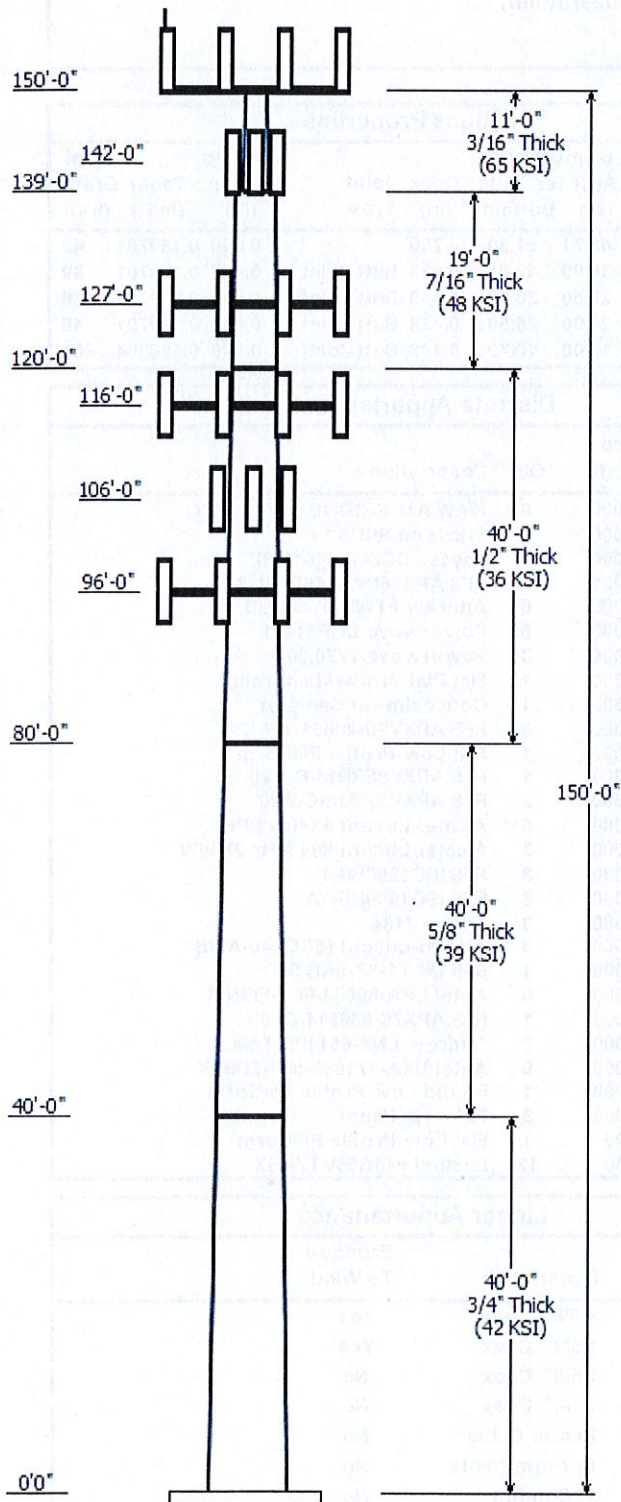
Job Information	
Pole : 302483	Code: TIA/EIA-222 Rev F
Description : 150 ft ITT Meyer Monopole	
Client : Verizon Wireless	
Location : BrIn - Berlin, CT	
Shape : 12 Sides	
Height : 150.00 (ft)	
Base Elev (ft): 0.00	
Taper: 0.18970 (in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Top	Bottom				
1	40.000	43.71	51.30	0.750	0.000	0.189701	42
2	40.000	36.09	43.68	0.625	0.000	0.189701	39
3	40.000	28.50	36.09	0.500	0.000	0.189701	36
4	19.000	24.90	28.50	0.438	0.000	0.189701	48
5	11.000	15.00	16.72	0.188	0.000	0.156364	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	152.000	6	KMW AM-X-CD-16-65-00T-RET
150.000	152.000	6	Ericsson RRUS 11
150.000	152.000	1	Raycap DC6-48-60-18-8F
150.000	163.000	3	RFS APXV16DWV-16DWV-S-E-
150.000	163.000	6	Andrew ETW200VS12UB
150.000	152.000	6	Powerwave LGP21401
150.000	152.000	3	Powerwave 7770.00
150.000	150.000	1	Flat Platform w/ Handrails
150.000	156.500	1	Concealment Canister
142.000	142.000	3	RFS APXV18-206517LS-C
127.000	127.000	1	Flat Low Profile Platform
127.000	127.000	1	RFS APXV9ERR18-C-A20
127.000	127.000	2	RFS APXVSP18-C-A20
127.000	127.000	6	Alcatel-Lucent 4X40W RRH
127.000	127.000	3	Alcatel-Lucent 800 MHz 2X50W
127.000	127.000	3	RFS IBC1900BB-1
127.000	127.000	3	RFS IBC1900HG-2A
127.000	127.000	3	Allgon 7184
116.000	116.000	3	Alcatel-Lucent RRH2x40-AWS
116.000	116.000	1	RFS DB-T1-6Z-8AB-0Z
116.000	116.000	6	Antel LPA-80063-6CF-EDIN-X
116.000	116.000	1	RFS APX75-866514-CT0
116.000	116.000	2	Andrew LNX-6514DS-T4M
116.000	116.000	6	Antel BXA-171063-8BF-EDIN-X
116.000	116.000	1	Round Low Profile Platform
106.000	106.000	3	72" x 12" Panel
96.000	96.000	1	Flat Low Profile Platform
96.000	96.000	12	Decibel 844G65VTZASX

Linear Appurtenance				
Elev (ft) From	To	Description	Exposed To Wind	
142.0	150.0	1 5/8" Coax	Yes	
127.0	142.0	1 5/8" Coax	Yes	
0.000	150.0	1 5/8" Coax	No	
0.000	152.0	1 1/4" Coax	No	
0.000	152.0	10 mm Cable	No	
0.000	152.0	19.7 mm Cable	No	
0.000	152.0	3" Conduit	No	





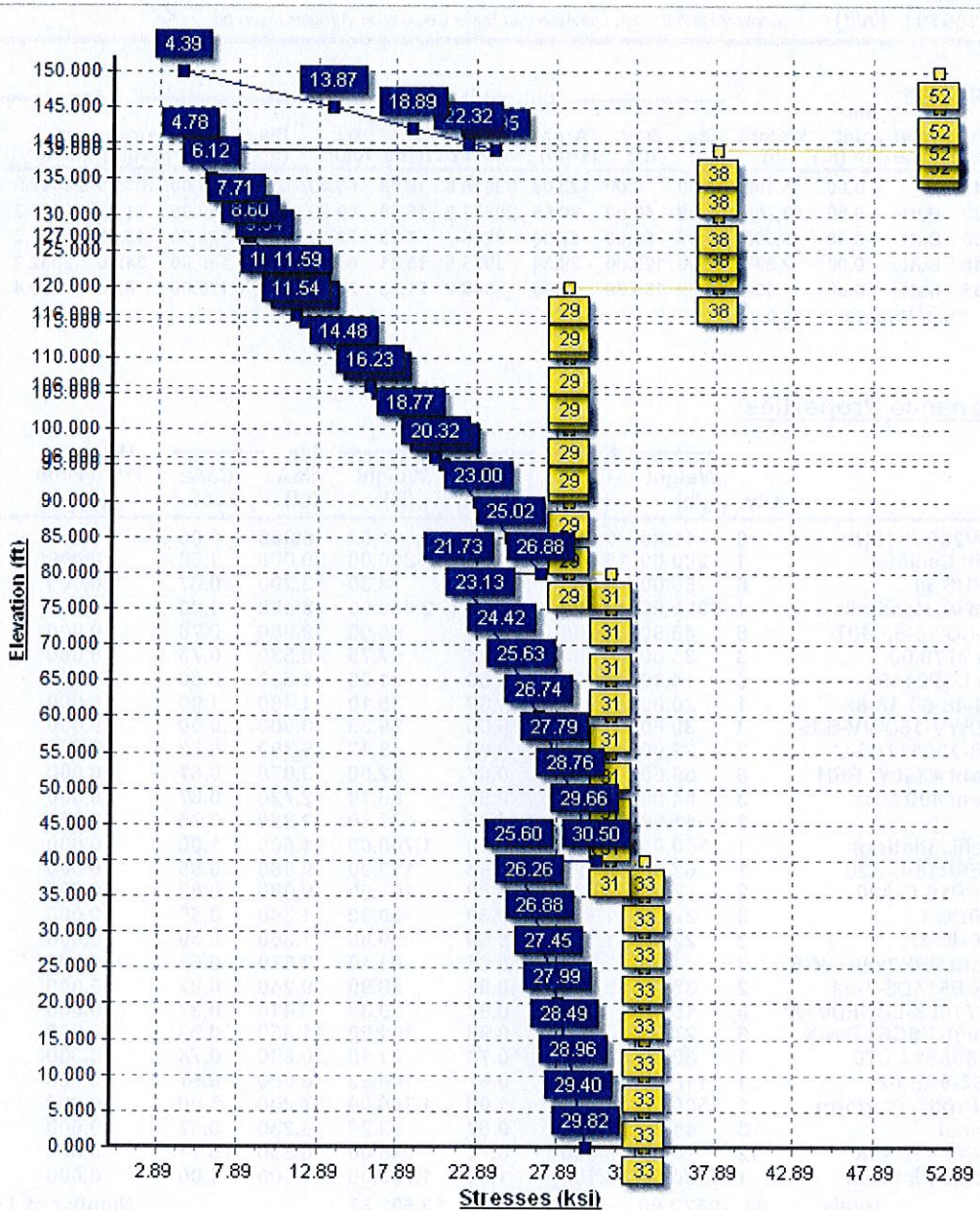
0.000	96.000	1 5/8" Coax	Yes
0.000	96.000	1 5/8" Coax	No
0.000	106.0	1 1/4" Coax	No
0.000	116.0	1 5/8" Coax	Yes
0.000	127.0	1 1/4" Hybriflex	Yes
0.000	127.0	1 5/8" Coax	No
0.000	127.0	1 5/8" Coax	Yes
0.000	142.0	1 5/8" Coax	Yes

Load Cases	
No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	3669.15	37.19	52.94
Ice	3095.73	30.71	63.37
Twist/Sway	1433.83	14.53	52.98

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000





From (ft)	To (ft)	Weight (lb)	Area (sq ft)	Volume (cu ft)	Weight (lb)
150.00	145.00	1.00	0.00	0.00	1.00
145.00	140.00	1.00	0.00	0.00	1.00
140.00	135.00	1.00	0.00	0.00	1.00
135.00	130.00	1.00	0.00	0.00	1.00
130.00	125.00	1.00	0.00	0.00	1.00
125.00	120.00	1.00	0.00	0.00	1.00
120.00	115.00	1.00	0.00	0.00	1.00
115.00	110.00	1.00	0.00	0.00	1.00
110.00	105.00	1.00	0.00	0.00	1.00
105.00	100.00	1.00	0.00	0.00	1.00
100.00	95.00	1.00	0.00	0.00	1.00
95.00	90.00	1.00	0.00	0.00	1.00
90.00	85.00	1.00	0.00	0.00	1.00
85.00	80.00	1.00	0.00	0.00	1.00
80.00	75.00	1.00	0.00	0.00	1.00
75.00	70.00	1.00	0.00	0.00	1.00
70.00	65.00	1.00	0.00	0.00	1.00
65.00	60.00	1.00	0.00	0.00	1.00
60.00	55.00	1.00	0.00	0.00	1.00
55.00	50.00	1.00	0.00	0.00	1.00
50.00	45.00	1.00	0.00	0.00	1.00
45.00	40.00	1.00	0.00	0.00	1.00
40.00	35.00	1.00	0.00	0.00	1.00
35.00	30.00	1.00	0.00	0.00	1.00
30.00	25.00	1.00	0.00	0.00	1.00
25.00	20.00	1.00	0.00	0.00	1.00
20.00	15.00	1.00	0.00	0.00	1.00
15.00	10.00	1.00	0.00	0.00	1.00
10.00	5.00	1.00	0.00	0.00	1.00
5.00	0.00	1.00	0.00	0.00	1.00

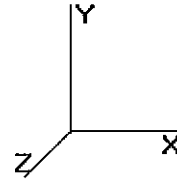
Pole : 302483  
 Location : Brin - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:35 AM

Page: 1

Base Elev : 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (sqin)	Ix (In^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (In^4)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-12	40.000	0.7500	42		0.00	15,369	51.30	0.00	122.08	39816.6	16.18	68.40	43.71	40.00	103.75	24442.9	13.47	58.28	0.189701
2-12	40.000	0.6250	39	Butt	0.00	10,755	43.68	40.00	86.65	20501.8	16.58	69.89	36.09	80.00	71.38	11460.3	13.33	57.75	0.189701
3-12	40.000	0.5000	36	Butt	0.00	6,968	36.09	80.00	57.30	9265.7	17.20	72.18	28.50	120.00	45.09	4513.2	13.13	57.01	0.189701
4-12	19.000	0.4375	48	Butt	0.00	2,392	28.50	120.00	39.54	3975.5	15.31	65.15	24.90	139.00	34.46	2632.2	13.11	56.91	0.189701
5-12	11.000	0.1875	65	Butt	0.00	354	16.72	139.00	9.98	348.2	21.75	89.17	15.00	150.00	8.94	250.4	19.29	80.00	0.156364
Shaft Weight						35,838													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAa (sf)	CaAa Factor	Weight (lb)	Ice CaAa (sf)	CaAa Factor	Distance From Face (ft)	Vert Ecc (ft)
150.00	Andrew ETW200VS12UB	6	11.00	0.000	0.00	14.52	0.000	0.00	0.000	13.000
150.00	Concealment Canister	1	200.00	15.000	1.00	300.00	20.000	1.00	0.000	6.500
150.00	Ericsson RRUS 11	6	55.00	2.940	0.67	74.30	3.290	0.67	0.000	2.000
150.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	2,450.00	48.400	1.00	0.000	0.000
150.00	KMW AM-X-CD-16-65-00T-	6	48.50	8.260	0.78	95.00	9.080	0.78	0.000	2.000
150.00	Powerwave 7770.00	3	35.00	5.880	0.75	67.75	6.530	0.76	0.000	2.000
150.00	Powerwave LGP21401	6	14.10	1.290	0.50	21.26	1.530	0.50	0.000	2.000
150.00	Raycap DC6-48-60-18-8F	1	20.00	1.260	1.00	35.10	1.460	1.00	0.000	2.000
150.00	RFS APX16DWV-16DWV-S-E-	3	39.60	0.000	0.00	69.38	0.000	0.00	0.000	13.000
142.00	RFS APXV18-206517LS-C	3	22.00	5.020	0.80	48.13	5.700	0.82	0.000	0.000
127.00	Alcatel-Lucent 4X40W RRH	6	59.50	2.710	0.67	82.60	3.070	0.67	0.000	0.000
127.00	Alcatel-Lucent 800 MHz	3	64.00	2.400	0.67	86.10	2.720	0.67	0.000	0.000
127.00	Allgon 7184	3	11.20	2.680	0.75	27.10	3.280	0.75	0.000	0.000
127.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
127.00	RFS APXV9ERR18-C-A20	1	62.00	8.020	0.85	113.90	9.080	0.85	0.000	0.000
127.00	RFS APXVSP18-C-A20	2	57.00	8.020	0.82	106.50	9.080	0.82	0.000	0.000
127.00	RFS IBC1900BB-1	3	22.00	1.130	0.50	59.80	1.360	0.50	0.000	0.000
127.00	RFS IBC1900HG-2A	3	22.00	1.130	0.50	59.80	1.360	0.50	0.000	0.000
116.00	Alcatel-Lucent RRH2x40-AWS	3	44.00	2.520	0.67	61.40	2.870	0.67	0.000	0.000
116.00	Andrew LNX-6514DS-T4M	2	38.40	8.170	0.82	88.90	9.240	0.82	0.000	0.000
116.00	Antel BXA-171063-8BF-EDIN-X	6	10.50	2.940	0.87	29.30	3.410	0.87	0.000	0.000
116.00	Antel LPA-80063-6CF-EDIN-X	6	27.00	9.730	0.93	101.90	11.350	0.93	0.000	0.000
116.00	RFS APX75-866514-CT0	1	30.80	9.760	0.74	81.10	10.690	0.74	0.000	0.000
116.00	RFS DB-T1-6Z-8AB-0Z	1	110.00	4.800	0.67	144.50	6.080	0.67	0.000	0.000
116.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
106.00	72" x 12" Panel	3	45.00	8.400	0.67	92.28	9.230	0.67	0.000	0.000
96.00	Decibel 844G65VTZASX	12	16.00	5.890	0.71	55.00	6.500	0.71	0.000	0.000
96.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
Totals		94	9573.60			13,503.87			Number of Loadings : 28	

**Linear Appurtenance Properties**

Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
0.00	152.00	(12) 1 1/4" Coax	7.56	0.00	0.00	0.00	N
0.00	152.00	(1) 10 mm Cable	0.07	0.00	0.00	0.00	N
0.00	152.00	(2) 19.7 mm Cable	1.18	0.00	0.00	0.00	N
0.00	152.00	(1) 3" Conduit	7.58	0.00	0.00	0.00	N
0.00	150.00	(6) 1 5/8" Coax	4.92	0.00	0.00	0.00	N
142.00	150.00	(6) 1 5/8" Coax	4.92	0.20	9.46	0.25	Y

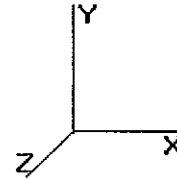
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:35 AM

Page: 2

Base Elev: 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

0.00	142.00	(6) 1 5/8" Coax	4.92	0.00	9.46	0.00	Y
127.00	142.00	(6) 1 5/8" Coax	4.92	0.20	9.46	0.25	Y
0.00	127.00	(3) 1 1/4" Hybriflex	1.89	0.16	3.77	0.21	Y
0.00	127.00	(6) 1 5/8" Coax	2.46	0.00	0.00	0.00	N
0.00	127.00	(6) 1 5/8" Coax	4.92	0.00	9.46	0.00	Y
0.00	116.00	(19) 1 5/8" Coax	9.84	0.59	18.93	0.64	Y
0.00	106.00	(6) 1 1/4" Coax	0.63	0.00	0.00	0.00	N
0.00	96.00	(6) 1 5/8" Coax	4.92	0.39	9.46	0.44	Y
0.00	96.00	(9) 1 5/8" Coax	7.38	0.00	0.00	0.00	N
Total Weight			7,607.39 (lb)		6,345.15 (lb)		





Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

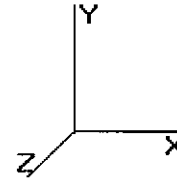
Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:35 AM

Page: 4

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Shaft Segment Forces**

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 16.384	27.68 341.99	1.030	0.000	0.00	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00 16.384	27.68 335.67	1.030	0.000	5.00	21.177	21.81	604.0	0.0	0.0	2,057.5
10.00		0.00	1.00 16.384	27.68 329.35	1.030	0.000	5.00	20.782	21.41	592.7	0.0	0.0	2,018.6
15.00		0.00	1.00 16.384	27.68 323.02	1.030	0.000	5.00	20.387	21.00	581.4	0.0	0.0	1,979.6
20.00		0.00	1.00 16.384	27.68 316.70	1.030	0.000	5.00	19.992	20.59	570.2	0.0	0.0	1,940.6
25.00		0.00	1.00 16.384	27.68 310.38	1.030	0.000	5.00	19.597	20.18	558.9	0.0	0.0	1,901.6
30.00		0.00	1.00 16.384	27.68 304.05	1.030	0.000	5.00	19.201	19.78	547.6	0.0	0.0	1,862.7
35.00		0.00	1.01 16.662	28.15 300.24	1.030	0.000	5.00	18.806	19.37	545.4	0.0	0.0	1,823.7
40.00	Top - Section 1	0.00	1.05 17.310	29.25 299.53	1.030	0.000	5.00	18.411	18.96	554.7	0.0	0.0	1,784.7
45.00		0.00	1.09 17.902	30.25 297.78	1.030	0.000	5.00	18.002	18.54	561.0	0.0	0.0	1,458.0
50.00		0.00	1.12 18.449	31.17 295.58	1.030	0.000	5.00	17.607	18.14	565.4	0.0	0.0	1,425.5
55.00		0.00	1.15 18.959	32.04 292.83	1.030	0.000	5.00	17.212	17.73	568.0	0.0	0.0	1,393.0
60.00		0.00	1.18 19.436	32.84 289.61	1.030	0.000	5.00	16.817	17.32	568.9	0.0	0.0	1,360.6
65.00		0.00	1.21 19.885	33.60 285.97	1.030	0.000	5.00	16.422	16.91	568.4	0.0	0.0	1,328.1
70.00		0.00	1.24 20.311	34.32 281.98	1.030	0.000	5.00	16.026	16.51	566.6	0.0	0.0	1,295.6
75.00		0.00	1.26 20.715	35.00 277.66	1.030	0.000	5.00	15.631	16.10	563.6	0.0	0.0	1,263.1
80.00	Top - Section 2	0.00	1.28 21.101	35.66 273.06	1.030	0.000	5.00	15.236	15.69	559.6	0.0	0.0	1,230.6
85.00		0.00	1.31 21.469	36.28 268.19	1.030	0.000	5.00	14.841	15.29	554.6	0.0	0.0	962.0
90.00		0.00	1.33 21.823	36.88 263.10	1.030	0.000	5.00	14.446	14.88	548.7	0.0	0.0	936.0
95.00		0.00	1.35 22.163	37.45 257.78	1.030	0.000	5.00	14.050	14.47	542.0	0.0	0.0	910.0
96.00	Appertunance(s)	0.00	1.35 22.229	37.56 256.69	1.030	0.000	1.00	2.763	2.85	106.9	0.0	0.0	178.9
100.00		0.00	1.37 22.490	38.00 252.27	1.030	0.000	4.00	10.893	11.22	426.4	0.0	0.0	705.1
105.00		0.00	1.39 22.806	38.54 246.57	1.030	0.000	5.00	13.260	13.66	526.4	0.0	0.0	858.0
106.00	Appertunance(s)	0.00	1.39 22.867	38.64 245.41	1.030	0.000	1.00	2.605	2.68	103.7	0.0	0.0	168.5
110.00		0.00	1.41 23.111	39.05 240.71	1.030	0.000	4.00	10.260	10.57	412.8	0.0	0.0	663.6
115.00		0.00	1.42 23.406	39.55 234.68	1.030	0.000	5.00	12.470	12.84	508.0	0.0	0.0	806.1
116.00	Appertunance(s)	0.00	1.43 23.464	39.65 233.46	1.030	0.000	1.00	2.446	2.52	99.9	0.0	0.0	158.1
120.00	Top - Section 3	0.00	1.44 23.692	40.04 228.51	1.030	0.000	4.00	9.628	9.92	397.1	0.0	0.0	622.0
125.00		0.00	1.46 23.970	40.51 222.20	1.030	0.000	5.00	11.679	12.03	487.3	0.0	0.0	661.3
127.00	Appertunance(s)	0.00	1.47 24.079	40.69 219.63	1.030	0.000	2.00	4.561	4.70	191.2	0.0	0.0	258.2
130.00		0.00	1.48 24.241	40.96 215.75	1.030	0.000	3.00	6.723	6.92	283.7	0.0	0.0	380.4
135.00		0.00	1.49 24.503	41.41 209.19	1.030	0.000	5.00	10.889	11.22	464.4	0.0	0.0	615.9
139.00	Top - Section 4	0.00	1.50 24.709	41.75 203.85	1.030	0.000	4.00	8.426	8.68	362.4	0.0	0.0	476.3
140.00		0.00	1.51 24.759	41.84 135.74	1.030	0.000	1.00	1.387	1.43	59.8	0.0	0.0	33.8
142.00	Appertunance(s)	0.00	1.51 24.860	42.01 133.45	1.030	0.000	2.00	2.735	2.82	118.3	0.0	0.0	66.6
145.00		0.00	1.52 25.009	42.26 129.98	1.030	0.000	3.00	4.004	4.12	174.3	0.0	0.0	97.6
150.00	Appertunance(s)	0.00	1.54 25.252	42.67 124.14	1.030	0.000	5.00	6.413	6.61	281.9	0.0	0.0	156.2
Totals:								150.00			15,726.6	0.0	35,838.1

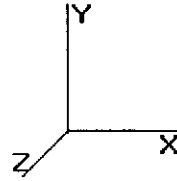
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code : TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:35 AM

Page: 5



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	22 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Discrete Appurtenance Segment Forces**

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
96.00	Decibel	12	22.229	37.567	0.71	50.18	0.000	0.000	1,885.23	0.00	0.00	192.00
96.00	Flat Low Profile Pla	1	22.229	37.567	1.00	26.10	0.000	0.000	980.50	0.00	0.00	1,500.00
106.0	72" x 12" Panel	3	22.867	38.646	0.67	16.88	0.000	0.000	652.50	0.00	0.00	135.00
116.0	Alcatel-Lucent RRH2x	3	23.464	39.654	0.67	5.07	0.000	0.000	200.86	0.00	0.00	132.00
116.0	Andrew LNX-6514DS-	2	23.464	39.654	0.82	13.40	0.000	0.000	531.32	0.00	0.00	76.80
116.0	Antel BXA-171063-8BF	6	23.464	39.654	0.87	15.35	0.000	0.000	608.57	0.00	0.00	63.00
116.0	Antel LPA-80063-6CF-	6	23.464	39.654	0.93	54.29	0.000	0.000	2,152.97	0.00	0.00	162.00
116.0	RFS APX75-866514-	1	23.464	39.654	0.74	7.22	0.000	0.000	286.40	0.00	0.00	30.80
116.0	RFS DB-T1-6Z-8AB-0Z	1	23.464	39.654	0.67	3.22	0.000	0.000	127.53	0.00	0.00	110.00
116.0	Round Low Profile PI	1	23.464	39.654	1.00	21.70	0.000	0.000	860.50	0.00	0.00	1,500.00
127.0	Alcatel-Lucent 4X40W	6	24.079	40.694	0.67	10.89	0.000	0.000	443.33	0.00	0.00	357.00
127.0	Alcatel-Lucent 800 M	3	24.079	40.694	0.67	4.82	0.000	0.000	196.31	0.00	0.00	192.00
127.0	Allgon 7184	3	24.079	40.694	0.75	6.03	0.000	0.000	245.39	0.00	0.00	33.60
127.0	Flat Low Profile Pla	1	24.079	40.694	1.00	26.10	0.000	0.000	1,062.12	0.00	0.00	1,500.00
127.0	RFS APXV9ERR18-C-	1	24.079	40.694	0.85	6.82	0.000	0.000	277.41	0.00	0.00	62.00
127.0	RFS APXVSP18-C-	2	24.079	40.694	0.82	13.15	0.000	0.000	535.24	0.00	0.00	114.00
127.0	RFS IBC1900BB-1	3	24.079	40.694	0.50	1.69	0.000	0.000	68.98	0.00	0.00	66.00
127.0	RFS IBC1900HG-2A	3	24.079	40.694	0.50	1.69	0.000	0.000	68.98	0.00	0.00	66.00
142.0	RFS APXV18-	3	24.860	42.013	0.80	12.05	0.000	0.000	506.17	0.00	0.00	66.00
150.0	Andrew	6	25.859	43.702	0.00	0.00	0.000	13.000	0.00	0.00	0.00	66.00
150.0	Concealment Canister	1	25.560	43.197	1.00	15.00	0.000	6.500	647.95	0.00	4,211.67	200.00
150.0	Ericsson RRUS 11	6	25.348	42.838	0.67	11.82	0.000	2.000	506.29	0.00	1,012.59	330.00
150.0	Flat Platform w/ Han	1	25.252	42.676	1.00	42.40	0.000	0.000	1,809.47	0.00	0.00	2,000.00
150.0	KMW AM-X-CD-16-65-	6	25.348	42.838	0.78	38.66	0.000	2.000	1,655.98	0.00	3,311.96	291.00
150.0	Powerwave 7770.00	3	25.348	42.838	0.75	13.23	0.000	2.000	566.75	0.00	1,133.49	105.00
150.0	Powerwave LGP21401	6	25.348	42.838	0.50	3.87	0.000	2.000	165.78	0.00	331.57	84.60
150.0	Raycap DC6-48-60-18-	1	25.348	42.838	1.00	1.26	0.000	2.000	53.98	0.00	107.95	20.00
150.0	RFS APX16DWV-	3	25.859	43.702	0.00	0.00	0.000	13.000	0.00	0.00	0.00	118.80
									17,096.49			9,573.60

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

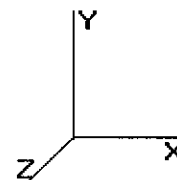
Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:35 AM

Page: 6

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Linear Appurtenance Segment Forces**

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
5.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
5.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
10.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
10.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
15.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
15.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
20.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
20.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
25.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
25.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
30.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
30.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.662	0.00	24.60
35.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.662	22.53	9.45
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.662	0.00	24.60
35.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.662	83.07	49.20
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.662	54.91	24.60
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.310	0.00	24.60
40.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	17.310	23.40	9.45
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.310	0.00	24.60
40.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	17.310	86.30	49.20
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	17.310	57.04	24.60
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.902	0.00	24.60
45.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	17.902	24.20	9.45
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.902	0.00	24.60
45.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	17.902	89.25	49.20
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	17.902	59.00	24.60
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.449	0.00	24.60
50.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	18.449	24.94	9.45
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.449	0.00	24.60
50.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	18.449	91.98	49.20
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	18.449	60.80	24.60
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.959	0.00	24.60

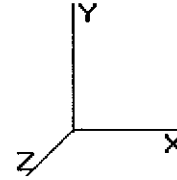
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:35 AM

Page: 7

Base Elev : 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

55.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	18.959	25.63	9.45
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.959	0.00	24.60
55.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	18.959	94.52	49.20
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	18.959	62.48	24.60
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.436	0.00	24.60
60.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	19.436	26.28	9.45
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.436	0.00	24.60
60.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	19.436	96.90	49.20
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	19.436	64.05	24.60
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.885	0.00	24.60
65.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	19.885	26.89	9.45
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.885	0.00	24.60
65.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	19.885	99.14	49.20
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	19.885	65.53	24.60
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.311	0.00	24.60
70.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	20.311	27.46	9.45
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.311	0.00	24.60
70.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	20.311	101.26	49.20
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	20.311	66.93	24.60
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.715	0.00	24.60
75.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	20.715	28.01	9.45
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.715	0.00	24.60
75.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	20.715	103.28	49.20
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	20.715	68.27	24.60
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.101	0.00	24.60
80.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	21.101	28.53	9.45
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.101	0.00	24.60
80.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	21.101	105.20	49.20
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	21.101	69.54	24.60
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.469	0.00	24.60
85.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	21.469	29.03	9.45
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.469	0.00	24.60
85.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	21.469	107.04	49.20
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	21.469	70.75	24.60
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.823	0.00	24.60
90.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	21.823	29.50	9.45
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.823	0.00	24.60
90.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	21.823	108.80	49.20
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	21.823	71.92	24.60
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.163	0.00	24.60
95.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	22.163	29.96	9.45
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.163	0.00	24.60
95.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	22.163	110.49	49.20
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	22.163	73.04	24.60
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	22.229	0.00	4.92
96.00	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	22.229	6.01	1.89
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	22.229	0.00	4.92
96.00	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	22.229	22.16	9.84
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.39	22.229	14.65	4.92
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	22.490	0.00	19.68
100.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	22.490	24.33	7.56
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	22.490	0.00	19.68
100.0	(19) 1 5/8" Coax	Yes	4.00	9.84	0.59	22.490	89.70	39.36
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.806	0.00	24.60
105.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	22.806	30.83	9.45
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.806	0.00	24.60
105.0	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	22.806	113.70	49.20



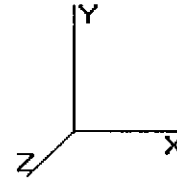
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:36 AM

Page: 8



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

106.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	22.867	0.00	4.92	
106.0	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	22.867	6.18	1.89	
106.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	22.867	0.00	4.92	
106.0	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	22.867	22.80	9.84	
110.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	23.111	0.00	19.68	
110.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	23.111	25.00	7.56	
110.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	23.111	0.00	19.68	
110.0	(19) 1 5/8" Coax	Yes	4.00	9.84	0.59	23.111	92.17	39.36	
115.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	23.406	0.00	24.60	
115.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	23.406	31.65	9.45	
115.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	23.406	0.00	24.60	
115.0	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	23.406	116.69	49.20	
116.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	23.464	0.00	4.92	
116.0	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	23.464	6.34	1.89	
116.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	23.464	0.00	4.92	
116.0	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	23.464	23.40	9.84	
120.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	23.692	0.00	19.68	
120.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	23.692	25.63	7.56	
120.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	23.692	0.00	19.68	
125.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	23.970	0.00	24.60	
125.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	23.970	32.41	9.45	
125.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	23.970	0.00	24.60	
127.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	24.079	0.00	9.84	
127.0	(3) 1 1/4" Hybriflex	Yes	2.00	1.89	0.16	24.079	13.02	3.78	
127.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	24.079	0.00	9.84	
130.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.00	24.241	0.00	14.76	
130.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	24.241	24.58	14.76	
135.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	24.503	0.00	24.60	
135.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	24.503	41.41	24.60	
139.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	24.709	0.00	19.68	
139.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.20	24.709	33.41	19.68	
140.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	24.759	0.00	4.92	
140.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.20	24.759	8.37	4.92	
142.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	24.860	0.00	9.84	
142.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.20	24.860	16.81	9.84	
145.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	25.009	25.36	14.76	
150.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	25.252	42.68	24.60	
							Totals:	4,304.07	3,290.43

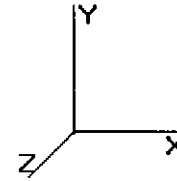
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:36 AM

Page: 9



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Applied Segment Forces Summary**

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	761.80	2,348.89	0.00	0.00
10.00	750.53	2,309.91	0.00	0.00
15.00	739.25	2,270.94	0.00	0.00
20.00	727.98	2,231.97	0.00	0.00
25.00	716.71	2,192.99	0.00	0.00
30.00	705.44	2,154.02	0.00	0.00
35.00	705.94	2,115.05	0.00	0.00
40.00	721.48	2,076.08	0.00	0.00
45.00	733.45	1,749.33	0.00	0.00
50.00	743.17	1,716.86	0.00	0.00
55.00	750.64	1,684.38	0.00	0.00
60.00	756.17	1,651.90	0.00	0.00
65.00	759.98	1,619.43	0.00	0.00
70.00	762.27	1,586.95	0.00	0.00
75.00	763.19	1,554.47	0.00	0.00
80.00	762.88	1,521.99	0.00	0.00
85.00	761.44	1,253.31	0.00	0.00
90.00	758.97	1,227.33	0.00	0.00
95.00	755.54	1,201.35	0.00	0.00
96.00	3,015.46	1,929.15	0.00	0.00
100.0	540.45	889.02	0.00	0.00
105.0	670.92	1,087.89	0.00	0.00
106.0	785.16	349.46	0.00	0.00
110.0	529.93	844.93	0.00	0.00
115.0	656.38	1,032.77	0.00	0.00
116.0	4,897.80	2,278.04	0.00	0.00
120.0	422.69	763.99	0.00	0.00
125.0	519.72	838.84	0.00	0.00
127.0	3,101.95	2,719.77	0.00	0.00
130.0	308.26	473.89	0.00	0.00
135.0	505.85	771.62	0.00	0.00
139.0	395.83	600.93	0.00	0.00
140.0	68.14	64.95	0.00	0.00
142.0	641.31	194.94	0.00	0.00
145.0	199.67	176.25	0.00	0.00
150.0	5,730.76	3,502.72	0.00	10,109.23
<b>Totals:</b>	<b>37,127.11</b>	<b>52,986.32</b>	<b>0.00</b>	<b>10,109.23</b>

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

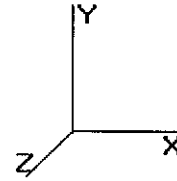
Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:36 AM

Page: 10

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-37.187	-52.944	0.000	0.000	0.000	-3,669.150	0.000	0.000	0.000	0.000
5.00	-36.536	-50.514	0.000	0.000	0.000	-3,483.216	-0.069	0.000	0.069	-0.128
10.00	-35.886	-48.126	0.000	0.000	0.000	-3,300.539	-0.272	0.000	0.272	-0.256
15.00	-35.237	-45.781	0.000	0.000	0.000	-3,121.114	-0.609	0.000	0.609	-0.385
20.00	-34.589	-43.477	0.000	0.000	0.000	-2,944.933	-1.081	0.000	1.081	-0.514
25.00	-33.943	-41.215	0.000	0.000	0.000	-2,771.990	-1.689	0.000	1.689	-0.643
30.00	-33.299	-38.995	0.000	0.000	0.000	-2,602.276	-2.431	0.000	2.431	-0.772
35.00	-32.645	-36.817	0.000	0.000	0.000	-2,435.784	-3.309	0.000	3.309	-0.900
40.00	-31.966	-34.682	0.000	0.000	0.000	-2,272.562	-4.321	0.000	4.321	-1.029
45.00	-31.280	-32.871	0.000	0.000	0.000	-2,112.734	-5.467	0.000	5.467	-1.156
50.00	-30.581	-31.090	0.000	0.000	0.000	-1,956.339	-6.759	0.000	6.759	-1.307
55.00	-29.866	-29.348	0.000	0.000	0.000	-1,803.435	-8.209	0.000	8.209	-1.457
60.00	-29.137	-27.642	0.000	0.000	0.000	-1,654.106	-9.814	0.000	9.814	-1.604
65.00	-28.394	-25.975	0.000	0.000	0.000	-1,508.426	-11.572	0.000	11.572	-1.749
70.00	-27.642	-24.346	0.000	0.000	0.000	-1,366.455	-13.479	0.000	13.479	-1.890
75.00	-26.879	-22.755	0.000	0.000	0.000	-1,228.249	-15.533	0.000	15.533	-2.028
80.00	-26.110	-21.202	0.000	0.000	0.000	-1,093.853	-17.729	0.000	17.729	-2.161
85.00	-25.349	-19.918	0.000	0.000	0.000	-963.305	-20.061	0.000	20.061	-2.289
90.00	-24.587	-18.661	0.000	0.000	0.000	-836.563	-22.539	0.000	22.539	-2.439
95.00	-23.805	-17.460	0.000	0.000	0.000	-713.629	-25.169	0.000	25.169	-2.579
96.00	-20.723	-15.645	0.000	0.000	0.000	-689.824	-25.712	0.000	25.712	-2.606
100.0	-20.171	-14.742	0.000	0.000	0.000	-606.932	-27.941	0.000	27.941	-2.710
105.0	-19.465	-13.664	0.000	0.000	0.000	-506.078	-30.844	0.000	30.844	-2.830
106.0	-18.677	-13.336	0.000	0.000	0.000	-486.613	-31.440	0.000	31.440	-2.854
110.0	-18.125	-12.490	0.000	0.000	0.000	-411.907	-33.868	0.000	33.868	-2.940
115.0	-17.426	-11.476	0.000	0.000	0.000	-321.285	-36.998	0.000	36.998	-3.035
116.0	-12.421	-9.453	0.000	0.000	0.000	-303.860	-37.636	0.000	37.636	-3.053
120.0	-11.968	-8.698	0.000	0.000	0.000	-254.176	-40.221	0.000	40.221	-3.118
125.0	-11.410	-7.880	0.000	0.000	0.000	-194.335	-43.524	0.000	43.524	-3.188
127.0	-8.164	-5.333	0.000	0.000	0.000	-171.515	-44.865	0.000	44.865	-3.217
130.0	-7.834	-4.870	0.000	0.000	0.000	-147.023	-46.899	0.000	46.899	-3.257
135.0	-7.288	-4.123	0.000	0.000	0.000	-107.855	-50.340	0.000	50.340	-3.313
139.0	-6.859	-3.544	0.000	0.000	0.000	-78.705	-53.131	0.000	53.131	-3.350
140.0	-6.791	-3.475	0.000	0.000	0.000	-71.846	-53.833	0.000	53.833	-3.358
142.0	-6.146	-3.306	0.000	0.000	0.000	-58.264	-55.264	0.000	55.264	-3.468
145.0	-5.943	-3.128	0.000	0.000	0.000	-39.826	-57.486	0.000	57.486	-3.599
150.0	-5.731	0.000	0.000	0.000	0.000	-10.109	-61.331	0.000	61.331	-3.720

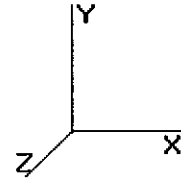


Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:36 AM  
 Page: 11

Base Elev : 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	22 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

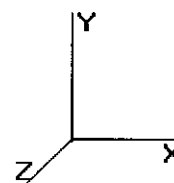
Seg Elev (ft)	Applied Stresses							Combined (ksi)	Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)					
0.00	0.43	0.62	0.00	0.00	0.00	0.00	29.36	29.82	33.4	0.0	0.892
5.00	0.42	0.62	0.00	0.00	0.00	0.00	28.96	29.40	33.4	0.0	0.879
10.00	0.41	0.62	0.00	0.00	0.00	0.00	28.53	28.96	33.4	0.0	0.866
15.00	0.40	0.62	0.00	0.00	0.00	0.00	28.07	28.49	33.4	0.0	0.852
20.00	0.39	0.62	0.00	0.00	0.00	0.00	27.58	27.99	33.4	0.0	0.837
25.00	0.37	0.62	0.00	0.00	0.00	0.00	27.06	27.45	33.4	0.0	0.821
30.00	0.36	0.62	0.00	0.00	0.00	0.00	26.49	26.88	33.4	0.0	0.804
35.00	0.35	0.63	0.00	0.00	0.00	0.00	25.89	26.26	33.4	0.0	0.785
40.00	0.33	0.63	0.00	0.00	0.00	0.00	25.24	25.60	33.4	0.0	0.766
40.00	0.40	0.75	0.00	0.00	0.00	0.00	30.08	30.50	31.4	0.0	0.973
45.00	0.39	0.75	0.00	0.00	0.00	0.00	29.24	29.66	31.4	0.0	0.946
50.00	0.38	0.75	0.00	0.00	0.00	0.00	28.35	28.76	31.4	0.0	0.917
55.00	0.36	0.75	0.00	0.00	0.00	0.00	27.39	27.79	31.4	0.0	0.886
60.00	0.35	0.75	0.00	0.00	0.00	0.00	26.36	26.74	31.4	0.0	0.853
65.00	0.34	0.75	0.00	0.00	0.00	0.00	25.26	25.63	31.4	0.0	0.817
70.00	0.32	0.75	0.00	0.00	0.00	0.00	24.06	24.42	31.4	0.0	0.779
75.00	0.31	0.75	0.00	0.00	0.00	0.00	22.78	23.13	31.4	0.0	0.738
80.00	0.30	0.74	0.00	0.00	0.00	0.00	21.40	21.73	31.4	0.0	0.693
80.00	0.37	0.93	0.00	0.00	0.00	0.00	26.47	26.88	28.7	0.0	0.936
85.00	0.36	0.92	0.00	0.00	0.00	0.00	24.61	25.02	28.7	0.0	0.871
90.00	0.34	0.92	0.00	0.00	0.00	0.00	22.60	23.00	28.7	0.0	0.801
95.00	0.33	0.92	0.00	0.00	0.00	0.00	20.42	20.81	28.7	0.0	0.725
96.00	0.30	0.80	0.00	0.00	0.00	0.00	19.97	20.32	28.7	0.0	0.708
100.00	0.29	0.80	0.00	0.00	0.00	0.00	18.43	18.77	28.7	0.0	0.654
105.00	0.28	0.80	0.00	0.00	0.00	0.00	16.33	16.67	28.7	0.0	0.580
106.00	0.27	0.77	0.00	0.00	0.00	0.00	15.90	16.23	28.7	0.0	0.565
110.00	0.26	0.76	0.00	0.00	0.00	0.00	14.16	14.48	28.7	0.0	0.504
115.00	0.25	0.76	0.00	0.00	0.00	0.00	11.79	12.10	28.7	0.0	0.421
116.00	0.20	0.54	0.00	0.00	0.00	0.00	11.29	11.54	28.7	0.0	0.402
120.00	0.19	0.54	0.00	0.00	0.00	0.00	9.97	10.21	28.7	0.0	0.355
120.00	0.22	0.62	0.00	0.00	0.00	0.00	11.32	11.59	38.1	0.0	0.304
125.00	0.21	0.61	0.00	0.00	0.00	0.00	9.28	9.54	38.1	0.0	0.251
127.00	0.14	0.44	0.00	0.00	0.00	0.00	8.42	8.60	38.1	0.0	0.226
130.00	0.13	0.43	0.00	0.00	0.00	0.00	7.54	7.71	38.1	0.0	0.202
135.00	0.12	0.42	0.00	0.00	0.00	0.00	5.96	6.12	38.1	0.0	0.161
139.00	0.10	0.40	0.00	0.00	0.00	0.00	4.62	4.78	38.1	0.0	0.126
139.00	0.36	1.40	0.00	0.00	0.00	0.00	23.47	23.95	52.0	0.0	0.461
140.00	0.35	1.40	0.00	0.00	0.00	0.00	21.84	22.32	52.0	0.0	0.429
142.00	0.34	1.29	0.00	0.00	0.00	0.00	18.41	18.89	52.0	0.0	0.363
145.00	0.33	1.28	0.00	0.00	0.00	0.00	13.36	13.87	52.0	0.0	0.267
150.00	0.00	1.30	0.00	0.00	0.00	0.00	3.76	4.39	52.0	0.0	0.084

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM  
 Page: 12

**Load Case: Ice**

69.28 mph Wind with Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Shaft Segment Forces**

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00 12.287	20.76 296.17	1.030		0.500	0.00	0.000	0.00	0.0	0.0	0.0	
5.00		0.00	1.00 12.287	20.76 290.69	1.030		0.500	5.00	21.594	22.24	461.9	159.2	2,216.7	
10.00		0.00	1.00 12.287	20.76 285.21	1.030		0.500	5.00	21.199	21.83	453.4	156.2	2,174.8	
15.00		0.00	1.00 12.287	20.76 279.74	1.030		0.500	5.00	20.804	21.43	445.0	153.3	2,132.8	
20.00		0.00	1.00 12.287	20.76 274.26	1.030		0.500	5.00	20.408	21.02	436.5	150.3	2,090.9	
25.00		0.00	1.00 12.287	20.76 268.79	1.030		0.500	5.00	20.013	20.61	428.1	147.3	2,049.0	
30.00		0.00	1.00 12.287	20.76 263.31	1.030		0.500	5.00	19.618	20.21	419.6	144.3	2,007.0	
35.00		0.00	1.01 12.496	21.11 260.01	1.030		0.500	5.00	19.223	19.80	418.1	141.4	1,965.1	
40.00	Top - Section 1	0.00	1.05 12.982	21.93 259.39	1.030		0.500	5.00	18.828	19.39	425.4	138.4	1,923.1	
45.00		0.00	1.09 13.426	22.69 257.88	1.030		0.500	5.00	18.419	18.97	430.5	135.3	1,593.3	
50.00		0.00	1.12 13.836	23.36 255.98	1.030		0.500	5.00	18.024	18.56	434.1	132.4	1,557.9	
55.00		0.00	1.15 14.218	24.02 253.59	1.030		0.500	5.00	17.629	18.16	436.3	129.4	1,522.4	
60.00		0.00	1.18 14.576	24.63 250.80	1.030		0.500	5.00	17.233	17.75	437.3	126.4	1,487.0	
65.00		0.00	1.21 14.913	25.20 247.65	1.030		0.500	5.00	16.838	17.34	437.1	123.5	1,451.5	
70.00		0.00	1.24 15.232	25.74 244.19	1.030		0.500	5.00	16.443	16.94	436.0	120.5	1,416.1	
75.00		0.00	1.26 15.536	26.25 240.45	1.030		0.500	5.00	16.048	16.53	434.0	117.5	1,380.6	
80.00	Top - Section 2	0.00	1.28 15.825	26.74 236.47	1.030		0.500	5.00	15.653	16.12	431.2	114.6	1,345.2	
85.00		0.00	1.31 16.101	27.21 232.26	1.030		0.500	5.00	15.257	15.72	427.6	111.6	1,073.5	
90.00		0.00	1.33 16.366	27.65 227.84	1.030		0.500	5.00	14.862	15.31	423.4	108.6	1,044.6	
95.00		0.00	1.35 16.621	28.09 223.24	1.030		0.500	5.00	14.467	14.90	418.6	105.6	1,015.6	
96.00	Appertunance(s)	0.00	1.35 16.671	28.17 222.30	1.030		0.500	1.00	2.846	2.93	82.6	21.0	199.9	
100.00		0.00	1.37 16.866	28.50 218.46	1.030		0.500	4.00	11.226	11.56	329.6	82.1	787.3	
105.00		0.00	1.39 17.103	28.90 213.53	1.030		0.500	5.00	13.677	14.09	407.2	99.7	957.7	
106.00	Appertunance(s)	0.00	1.39 17.150	28.98 212.53	1.030		0.500	1.00	2.688	2.77	80.2	19.8	188.3	
110.00		0.00	1.41 17.332	29.29 208.45	1.030		0.500	4.00	10.594	10.91	319.6	77.4	741.0	
115.00		0.00	1.42 17.554	29.66 203.23	1.030		0.500	5.00	12.886	13.27	393.7	93.8	899.8	
116.00	Appertunance(s)	0.00	1.43 17.597	29.73 202.18	1.030		0.500	1.00	2.530	2.61	77.5	18.6	176.7	
120.00	Top - Section 3	0.00	1.44 17.768	30.02 197.89	1.030		0.500	4.00	9.961	10.26	308.1	72.6	694.6	
125.00		0.00	1.46 17.977	30.38 192.42	1.030		0.500	5.00	12.096	12.46	378.5	87.8	749.2	
127.00	Appertunance(s)	0.00	1.47 18.058	30.51 190.20	1.030		0.500	2.00	4.728	4.87	148.6	34.7	292.8	
130.00		0.00	1.48 18.179	30.72 186.84	1.030		0.500	3.00	6.973	7.18	220.7	50.9	431.4	
135.00		0.00	1.49 18.376	31.05 181.16	1.030		0.500	5.00	11.305	11.64	361.6	81.9	697.8	
139.00	Top - Section 4	0.00	1.50 18.530	31.31 176.53	1.030		0.500	4.00	8.760	9.02	282.6	63.6	539.9	
140.00		0.00	1.51 18.568	31.38 117.55	1.030		0.500	1.00	1.470	1.51	47.5	10.7	44.5	
142.00	Appertunance(s)	0.00	1.51 18.644	31.50 115.56	1.030		0.500	2.00	2.901	2.99	94.2	21.0	87.6	
145.00		0.00	1.52 18.755	31.69 112.56	1.030		0.500	3.00	4.254	4.38	138.9	30.6	128.1	
150.00	Appertunance(s)	0.00	1.54 18.938	32.00 107.51	1.030		0.500	5.00	6.830	7.03	225.1	48.5	204.7	
Totals:								150.00				12,130.1	3,430.6	39,268.7

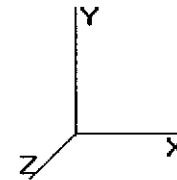


Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

1/25/2013 10:36:36 AM  
 Page: 13



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case:** Ice                      69.28 mph Wind with Ice                      21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
96.00	Decibel	12	16.671	28.174	0.71	55.38	0.000	0.000	1,560.26	0.00	0.00	660.00
96.00	Flat Low Profile Pla	1	16.671	28.174	1.00	31.60	0.000	0.000	890.29	0.00	0.00	1,700.00
106.0	72" x 12" Panel	3	17.150	28.983	0.67	18.55	0.000	0.000	537.70	0.00	0.00	276.84
116.0	Alcatel-Lucent RRH2x	3	17.597	29.739	0.67	5.77	0.000	0.000	171.56	0.00	0.00	184.20
116.0	Andrew LNX-6514DS-	2	17.597	29.739	0.82	15.15	0.000	0.000	450.65	0.00	0.00	177.80
116.0	Antel BXA-171063-8BF	6	17.597	29.739	0.87	17.80	0.000	0.000	529.36	0.00	0.00	175.80
116.0	Antel LPA-80063-6CF-	6	17.597	29.739	0.93	63.33	0.000	0.000	1,883.46	0.00	0.00	611.40
116.0	RFS APX75-866514-	1	17.597	29.739	0.74	7.91	0.000	0.000	235.25	0.00	0.00	81.10
116.0	RFS DB-T1-6Z-8AB-0Z	1	17.597	29.739	0.67	4.07	0.000	0.000	121.14	0.00	0.00	144.50
116.0	Round Low Profile PI	1	17.597	29.739	1.00	27.20	0.000	0.000	808.90	0.00	0.00	1,700.00
127.0	Alcatel-Lucent 4X40W	6	18.058	30.519	0.67	12.34	0.000	0.000	376.65	0.00	0.00	495.60
127.0	Alcatel-Lucent 800 M	3	18.058	30.519	0.67	5.47	0.000	0.000	166.85	0.00	0.00	258.30
127.0	Allgon 7184	3	18.058	30.519	0.75	7.38	0.000	0.000	225.22	0.00	0.00	81.29
127.0	Flat Low Profile Pla	1	18.058	30.519	1.00	31.60	0.000	0.000	964.40	0.00	0.00	1,700.00
127.0	RFS APXV9ERR18-C-	1	18.058	30.519	0.85	7.72	0.000	0.000	235.54	0.00	0.00	113.90
127.0	RFS APXVSP18-C-	2	18.058	30.519	0.82	14.89	0.000	0.000	454.46	0.00	0.00	213.00
127.0	RFS IBC1900BB-1	3	18.058	30.519	0.50	2.04	0.000	0.000	62.26	0.00	0.00	179.40
127.0	RFS IBC1900HG-2A	3	18.058	30.519	0.50	2.04	0.000	0.000	62.26	0.00	0.00	179.40
142.0	RFS APXV18-	3	18.644	31.508	0.82	14.02	0.000	0.000	441.81	0.00	0.00	144.39
150.0	Andrew	6	19.393	32.774	0.00	0.00	0.000	13.000	0.00	0.00	0.00	87.12
150.0	Concealment Canister	1	19.169	32.396	1.00	20.00	0.000	6.500	647.91	0.00	4,211.42	300.00
150.0	Ericsson RRUS 11	6	19.010	32.127	0.67	13.23	0.000	2.000	424.90	0.00	849.80	445.80
150.0	Flat Platform w/ Han	1	18.938	32.005	1.00	48.40	0.000	0.000	1,549.05	0.00	0.00	2,450.00
150.0	KMW AM-X-CD-16-65-	6	19.010	32.127	0.78	42.49	0.000	2.000	1,365.20	0.00	2,730.40	570.00
150.0	Powerwave 7770.00	3	19.010	32.127	0.76	14.89	0.000	2.000	478.31	0.00	956.63	203.24
150.0	Powerwave LGP21401	6	19.010	32.127	0.50	4.59	0.000	2.000	147.46	0.00	294.92	127.56
150.0	Raycap DC6-48-60-18-	1	19.010	32.127	1.00	1.46	0.000	2.000	46.90	0.00	93.81	35.10
150.0	RFS APX16DWV-	3	19.393	32.774	0.00	0.00	0.000	13.000	0.00	0.00	0.00	208.14
									14,837.77			13,503.87

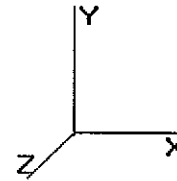
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:36 AM

Page: 14



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> Ice	69.28 mph Wind with Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Linear Appurtenance Segment Forces**

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
5.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
5.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
5.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
5.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
10.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
10.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
10.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
10.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
10.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
15.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
15.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
15.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
15.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
15.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
20.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
20.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
20.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
20.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
20.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
25.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
25.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
25.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
25.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
25.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
30.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
30.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
30.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
30.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
30.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
35.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.496	0.00	47.30
35.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.496	22.17	18.85
35.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.496	0.00	47.30
35.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.496	67.58	94.65
35.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.496	46.46	47.30
40.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.982	0.00	47.30
40.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.982	23.04	18.85
40.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.982	0.00	47.30
40.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.982	70.20	94.65
40.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.982	48.27	47.30
45.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.426	0.00	47.30
45.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	13.426	23.82	18.85
45.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.426	0.00	47.30
45.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	13.426	72.61	94.65
45.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	13.426	49.92	47.30
50.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.836	0.00	47.30
50.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	13.836	24.55	18.85
50.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.836	0.00	47.30
50.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	13.836	74.83	94.65
50.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	13.836	51.44	47.30
55.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	14.218	0.00	47.30





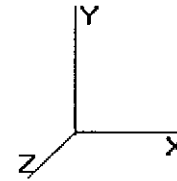
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:36 AM

Page: 16



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case: Ice**

69.28 mph Wind with Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

106.0	(6) 1 5/8" Coax	Yes	1.00	9.46	0.00	17.150	0.00	9.46
106.0	(3) 1 1/4" Hybriflex	Yes	1.00	3.77	0.21	17.150	6.09	3.77
106.0	(6) 1 5/8" Coax	Yes	1.00	9.46	0.00	17.150	0.00	9.46
106.0	(19) 1 5/8" Coax	Yes	1.00	18.93	0.64	17.150	18.55	18.93
110.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.00	17.332	0.00	37.84
110.0	(3) 1 1/4" Hybriflex	Yes	4.00	3.77	0.21	17.332	24.60	15.08
110.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.00	17.332	0.00	37.84
110.0	(19) 1 5/8" Coax	Yes	4.00	18.93	0.64	17.332	74.99	75.72
115.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	17.554	0.00	47.30
115.0	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	17.554	31.15	18.85
115.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	17.554	0.00	47.30
115.0	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	17.554	94.93	94.65
116.0	(6) 1 5/8" Coax	Yes	1.00	9.46	0.00	17.597	0.00	9.46
116.0	(3) 1 1/4" Hybriflex	Yes	1.00	3.77	0.21	17.597	6.25	3.77
116.0	(6) 1 5/8" Coax	Yes	1.00	9.46	0.00	17.597	0.00	9.46
116.0	(19) 1 5/8" Coax	Yes	1.00	18.93	0.64	17.597	19.03	18.93
120.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.00	17.768	0.00	37.84
120.0	(3) 1 1/4" Hybriflex	Yes	4.00	3.77	0.21	17.768	25.22	15.08
120.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.00	17.768	0.00	37.84
125.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	17.977	0.00	47.30
125.0	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	17.977	31.90	18.85
125.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	17.977	0.00	47.30
127.0	(6) 1 5/8" Coax	Yes	2.00	9.46	0.00	18.058	0.00	18.92
127.0	(3) 1 1/4" Hybriflex	Yes	2.00	3.77	0.21	18.058	12.82	7.54
127.0	(6) 1 5/8" Coax	Yes	2.00	9.46	0.00	18.058	0.00	18.92
130.0	(6) 1 5/8" Coax	Yes	3.00	9.46	0.00	18.179	0.00	28.38
130.0	(6) 1 5/8" Coax	Yes	3.00	9.46	0.25	18.179	23.04	28.38
135.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	18.376	0.00	47.30
135.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	18.376	38.82	47.30
139.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.00	18.530	0.00	37.84
139.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.25	18.530	31.32	37.84
140.0	(6) 1 5/8" Coax	Yes	1.00	9.46	0.00	18.568	0.00	9.46
140.0	(6) 1 5/8" Coax	Yes	1.00	9.46	0.25	18.568	7.85	9.46
142.0	(6) 1 5/8" Coax	Yes	2.00	9.46	0.00	18.644	0.00	18.92
142.0	(6) 1 5/8" Coax	Yes	2.00	9.46	0.25	18.644	15.75	18.92
145.0	(6) 1 5/8" Coax	Yes	3.00	9.46	0.25	18.755	23.77	28.38
150.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	18.938	40.01	47.30

Totals: 3,680.09 6,345.15



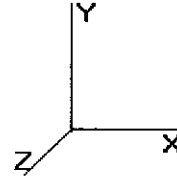
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:36 AM

Page: 18

Base Elev: 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case: Ice**

69.28 mph Wind with Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-30.708	-63.372	0.000	0.000	0.000	-3,095.730	0.000	0.000	0.000	0.000
5.00	-30.224	-60.685	0.000	0.000	0.000	-2,942.194	-0.058	0.000	0.058	-0.108
10.00	-29.739	-58.041	0.000	0.000	0.000	-2,791.076	-0.229	0.000	0.229	-0.216
15.00	-29.254	-55.441	0.000	0.000	0.000	-2,642.381	-0.514	0.000	0.514	-0.325
20.00	-28.768	-52.885	0.000	0.000	0.000	-2,496.114	-0.914	0.000	0.914	-0.434
25.00	-28.281	-50.373	0.000	0.000	0.000	-2,352.276	-1.427	0.000	1.427	-0.544
30.00	-27.794	-47.904	0.000	0.000	0.000	-2,210.872	-2.056	0.000	2.056	-0.653
35.00	-27.297	-45.480	0.000	0.000	0.000	-2,071.905	-2.799	0.000	2.799	-0.763
40.00	-26.779	-43.100	0.000	0.000	0.000	-1,935.421	-3.656	0.000	3.656	-0.872
45.00	-26.255	-41.047	0.000	0.000	0.000	-1,801.529	-4.628	0.000	4.628	-0.981
50.00	-25.722	-39.029	0.000	0.000	0.000	-1,670.256	-5.725	0.000	5.725	-1.110
55.00	-25.173	-37.049	0.000	0.000	0.000	-1,541.650	-6.956	0.000	6.956	-1.237
60.00	-24.610	-35.108	0.000	0.000	0.000	-1,415.789	-8.319	0.000	8.319	-1.363
65.00	-24.035	-33.207	0.000	0.000	0.000	-1,292.740	-9.813	0.000	9.813	-1.487
70.00	-23.450	-31.344	0.000	0.000	0.000	-1,172.564	-11.436	0.000	11.436	-1.608
75.00	-22.855	-29.521	0.000	0.000	0.000	-1,055.317	-13.185	0.000	13.185	-1.727
80.00	-22.251	-27.738	0.000	0.000	0.000	-941.047	-15.055	0.000	15.055	-1.841
85.00	-21.654	-26.225	0.000	0.000	0.000	-829.795	-17.042	0.000	17.042	-1.951
90.00	-21.055	-24.743	0.000	0.000	0.000	-721.528	-19.156	0.000	19.156	-2.080
95.00	-20.431	-23.311	0.000	0.000	0.000	-616.255	-21.400	0.000	21.400	-2.201
96.00	-17.782	-20.751	0.000	0.000	0.000	-595.824	-21.864	0.000	21.864	-2.225
100.0	-17.348	-19.688	0.000	0.000	0.000	-524.696	-23.767	0.000	23.767	-2.315
105.0	-16.785	-18.406	0.000	0.000	0.000	-437.958	-26.248	0.000	26.248	-2.419
106.0	-16.135	-17.889	0.000	0.000	0.000	-421.173	-26.756	0.000	26.756	-2.439
110.0	-15.697	-16.884	0.000	0.000	0.000	-356.633	-28.832	0.000	28.832	-2.514
115.0	-15.135	-15.669	0.000	0.000	0.000	-278.151	-31.510	0.000	31.510	-2.596
116.0	-10.694	-12.544	0.000	0.000	0.000	-263.016	-32.055	0.000	32.055	-2.611
120.0	-10.333	-11.669	0.000	0.000	0.000	-220.241	-34.267	0.000	34.267	-2.667
125.0	-9.884	-10.701	0.000	0.000	0.000	-168.578	-37.093	0.000	37.093	-2.729
127.0	-7.010	-7.224	0.000	0.000	0.000	-148.809	-38.242	0.000	38.242	-2.754
130.0	-6.745	-6.680	0.000	0.000	0.000	-127.781	-39.983	0.000	39.983	-2.788
135.0	-6.305	-5.797	0.000	0.000	0.000	-94.058	-42.929	0.000	42.929	-2.837
139.0	-5.958	-5.111	0.000	0.000	0.000	-68.840	-45.320	0.000	45.320	-2.869
140.0	-5.903	-5.023	0.000	0.000	0.000	-62.882	-45.921	0.000	45.921	-2.876
142.0	-5.345	-4.730	0.000	0.000	0.000	-51.075	-47.147	0.000	47.147	-2.972
145.0	-5.181	-4.507	0.000	0.000	0.000	-35.040	-49.054	0.000	49.054	-3.087
150.0	-4.925	0.000	0.000	0.000	0.000	-9.137	-52.355	0.000	52.355	-3.195



Pole : 302483  
 Location : Brin - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

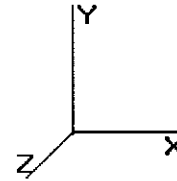
Code: TIA/EIA-222 Rev F

1/25/2013 10:36:36 AM

Page: 19

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



<b>Load Case:</b> Ice	69.28 mph Wind with Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.52	0.51	0.00	0.00	0.00	24.78	25.31	33.4	0.0	0.757
5.00	0.51	0.51	0.00	0.00	0.00	24.46	24.99	33.4	0.0	0.747
10.00	0.49	0.51	0.00	0.00	0.00	24.13	24.64	33.4	0.0	0.737
15.00	0.48	0.52	0.00	0.00	0.00	23.77	24.26	33.4	0.0	0.726
20.00	0.47	0.52	0.00	0.00	0.00	23.38	23.86	33.4	0.0	0.714
25.00	0.46	0.52	0.00	0.00	0.00	22.96	23.43	33.4	0.0	0.701
30.00	0.44	0.52	0.00	0.00	0.00	22.51	22.97	33.4	0.0	0.687
35.00	0.43	0.52	0.00	0.00	0.00	22.02	22.47	33.4	0.0	0.672
40.00	0.42	0.52	0.00	0.00	0.00	21.50	21.93	33.4	0.0	0.656
40.00	0.50	0.63	0.00	0.00	0.00	25.61	26.13	31.4	0.0	0.833
45.00	0.48	0.63	0.00	0.00	0.00	24.94	25.44	31.4	0.0	0.811
50.00	0.47	0.63	0.00	0.00	0.00	24.21	24.70	31.4	0.0	0.788
55.00	0.46	0.63	0.00	0.00	0.00	23.42	23.90	31.4	0.0	0.762
60.00	0.44	0.63	0.00	0.00	0.00	22.56	23.03	31.4	0.0	0.735
65.00	0.43	0.63	0.00	0.00	0.00	21.64	22.10	31.4	0.0	0.705
70.00	0.42	0.63	0.00	0.00	0.00	20.65	21.10	31.4	0.0	0.673
75.00	0.40	0.63	0.00	0.00	0.00	19.57	20.01	31.4	0.0	0.638
80.00	0.39	0.63	0.00	0.00	0.00	18.41	18.83	31.4	0.0	0.600
80.00	0.48	0.79	0.00	0.00	0.00	22.77	23.29	28.7	0.0	0.811
85.00	0.47	0.79	0.00	0.00	0.00	21.20	21.71	28.7	0.0	0.756
90.00	0.46	0.79	0.00	0.00	0.00	19.49	20.00	28.7	0.0	0.696
95.00	0.44	0.79	0.00	0.00	0.00	17.64	18.13	28.7	0.0	0.631
96.00	0.40	0.69	0.00	0.00	0.00	17.25	17.69	28.7	0.0	0.616
100.00	0.38	0.69	0.00	0.00	0.00	15.93	16.36	28.7	0.0	0.570
105.00	0.37	0.69	0.00	0.00	0.00	14.14	14.55	28.7	0.0	0.507
106.00	0.36	0.66	0.00	0.00	0.00	13.76	14.17	28.7	0.0	0.493
110.00	0.35	0.66	0.00	0.00	0.00	12.26	12.66	28.7	0.0	0.441
115.00	0.34	0.66	0.00	0.00	0.00	10.20	10.60	28.7	0.0	0.369
116.00	0.27	0.47	0.00	0.00	0.00	9.78	10.08	28.7	0.0	0.351
120.00	0.26	0.47	0.00	0.00	0.00	8.64	8.94	28.7	0.0	0.311
120.00	0.30	0.53	0.00	0.00	0.00	9.81	10.15	38.1	0.0	0.266
125.00	0.28	0.53	0.00	0.00	0.00	8.05	8.38	38.1	0.0	0.220
127.00	0.19	0.38	0.00	0.00	0.00	7.31	7.53	38.1	0.0	0.198
130.00	0.18	0.37	0.00	0.00	0.00	6.55	6.77	38.1	0.0	0.178
135.00	0.16	0.36	0.00	0.00	0.00	5.20	5.40	38.1	0.0	0.142
139.00	0.15	0.35	0.00	0.00	0.00	4.05	4.24	38.1	0.0	0.111
139.00	0.51	1.21	0.00	0.00	0.00	20.53	21.15	52.0	0.0	0.407
140.00	0.51	1.21	0.00	0.00	0.00	19.12	19.74	52.0	0.0	0.380
142.00	0.49	1.12	0.00	0.00	0.00	16.14	16.74	52.0	0.0	0.322
145.00	0.48	1.12	0.00	0.00	0.00	11.75	12.39	52.0	0.0	0.238
150.00	0.00	1.12	0.00	0.00	0.00	3.40	3.91	52.0	0.0	0.075

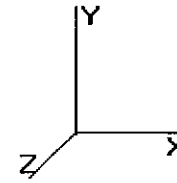
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

1/25/2013 10:36:36 AM

Page: 20



Copyright © 2007- 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Shaft Segment Forces**

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	6.400	10.81	213.75	1.030	0.000	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	6.400	10.81	209.79	1.030	0.000	5.00	21.177	21.81	235.9	0.0	2,057.5
10.00		0.00	1.00	6.400	10.81	205.84	1.030	0.000	5.00	20.782	21.41	231.5	0.0	2,018.6
15.00		0.00	1.00	6.400	10.81	201.89	1.030	0.000	5.00	20.387	21.00	227.1	0.0	1,979.6
20.00		0.00	1.00	6.400	10.81	197.94	1.030	0.000	5.00	19.992	20.59	222.7	0.0	1,940.6
25.00		0.00	1.00	6.400	10.81	193.98	1.030	0.000	5.00	19.597	20.18	218.3	0.0	1,901.6
30.00		0.00	1.00	6.400	10.81	190.03	1.030	0.000	5.00	19.201	19.78	213.9	0.0	1,862.7
35.00		0.00	1.01	6.509	10.99	187.65	1.030	0.000	5.00	18.806	19.37	213.1	0.0	1,823.7
40.00	Top - Section 1	0.00	1.05	6.762	11.42	187.20	1.030	0.000	5.00	18.411	18.96	216.7	0.0	1,784.7
45.00		0.00	1.09	6.993	11.81	186.11	1.030	0.000	5.00	18.002	18.54	219.1	0.0	1,458.0
50.00		0.00	1.12	7.207	12.17	184.74	1.030	0.000	5.00	17.607	18.14	220.9	0.0	1,425.5
55.00		0.00	1.15	7.406	12.51	183.02	1.030	0.000	5.00	17.212	17.73	221.9	0.0	1,393.0
60.00		0.00	1.18	7.592	12.83	181.00	1.030	0.000	5.00	16.817	17.32	222.2	0.0	1,360.6
65.00		0.00	1.21	7.768	13.12	178.73	1.030	0.000	5.00	16.422	16.91	222.0	0.0	1,328.1
70.00		0.00	1.24	7.934	13.40	176.23	1.030	0.000	5.00	16.026	16.51	221.3	0.0	1,295.6
75.00		0.00	1.26	8.092	13.67	173.54	1.030	0.000	5.00	15.631	16.10	220.2	0.0	1,263.1
80.00	Top - Section 2	0.00	1.28	8.242	13.93	170.66	1.030	0.000	5.00	15.236	15.69	218.6	0.0	1,230.6
85.00		0.00	1.31	8.387	14.17	167.62	1.030	0.000	5.00	14.841	15.29	216.7	0.0	962.0
90.00		0.00	1.33	8.525	14.40	164.43	1.030	0.000	5.00	14.446	14.88	214.4	0.0	936.0
95.00		0.00	1.35	8.657	14.63	161.11	1.030	0.000	5.00	14.050	14.47	211.7	0.0	910.0
96.00	Appertunance(s)	0.00	1.35	8.683	14.67	160.43	1.030	0.000	1.00	2.763	2.85	41.8	0.0	178.9
100.00		0.00	1.37	8.785	14.84	157.67	1.030	0.000	4.00	10.893	11.22	166.6	0.0	705.1
105.00		0.00	1.39	8.908	15.05	154.11	1.030	0.000	5.00	13.260	13.66	205.6	0.0	858.0
106.00	Appertunance(s)	0.00	1.39	8.933	15.09	153.38	1.030	0.000	1.00	2.605	2.68	40.5	0.0	168.5
110.00		0.00	1.41	9.028	15.25	150.44	1.030	0.000	4.00	10.260	10.57	161.2	0.0	663.6
115.00		0.00	1.42	9.143	15.45	146.67	1.030	0.000	5.00	12.470	12.84	198.5	0.0	806.1
116.00	Appertunance(s)	0.00	1.43	9.166	15.49	145.91	1.030	0.000	1.00	2.446	2.52	39.0	0.0	158.1
120.00	Top - Section 3	0.00	1.44	9.255	15.64	142.82	1.030	0.000	4.00	9.628	9.92	155.1	0.0	622.0
125.00		0.00	1.46	9.363	15.82	138.87	1.030	0.000	5.00	11.679	12.03	190.4	0.0	661.3
127.00	Appertunance(s)	0.00	1.47	9.406	15.89	137.27	1.030	0.000	2.00	4.561	4.70	74.7	0.0	258.2
130.00		0.00	1.48	9.469	16.00	134.84	1.030	0.000	3.00	6.723	6.92	110.8	0.0	380.4
135.00		0.00	1.49	9.572	16.17	130.74	1.030	0.000	5.00	10.889	11.22	181.4	0.0	615.9
139.00	Top - Section 4	0.00	1.50	9.652	16.31	127.40	1.030	0.000	4.00	8.426	8.68	141.6	0.0	476.3
140.00		0.00	1.51	9.672	16.34	84.840	1.030	0.000	1.00	1.387	1.43	23.3	0.0	33.8
142.00	Appertunance(s)	0.00	1.51	9.711	16.41	83.407	1.030	0.000	2.00	2.735	2.82	46.2	0.0	66.6
145.00		0.00	1.52	9.769	16.51	81.242	1.030	0.000	3.00	4.004	4.12	68.1	0.0	97.6
150.00	Appertunance(s)	0.00	1.54	9.864	16.67	77.592	1.030	0.000	5.00	6.413	6.61	110.1	0.0	156.2
<b>Totals:</b>								150.00			6,143.2	0.0	35,838.1	

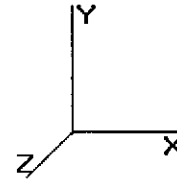
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:37 AM

Page: 21

Base Elev: 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Discrete Appurtenance Segment Forces**

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
96.00	Decibel	12	8.683	14.675	0.71	50.18	0.000	0.000	736.42	0.00	0.00	192.00
96.00	Flat Low Profile Pla	1	8.683	14.675	1.00	26.10	0.000	0.000	383.01	0.00	0.00	1,500.00
106.0	72" x 12" Panel	3	8.933	15.096	0.67	16.88	0.000	0.000	254.88	0.00	0.00	135.00
116.0	Alcatel-Lucent RRH2x	3	9.166	15.490	0.67	5.07	0.000	0.000	78.46	0.00	0.00	132.00
116.0	Andrew LNX-6514DS-	2	9.166	15.490	0.82	13.40	0.000	0.000	207.55	0.00	0.00	76.80
116.0	Antel BXA-171063-8BF	6	9.166	15.490	0.87	15.35	0.000	0.000	237.72	0.00	0.00	63.00
116.0	Antel LPA-80063-6CF-	6	9.166	15.490	0.93	54.29	0.000	0.000	841.00	0.00	0.00	162.00
116.0	RFS APX75-866514-	1	9.166	15.490	0.74	7.22	0.000	0.000	111.87	0.00	0.00	30.80
116.0	RFS DB-T1-6Z-8AB-0Z	1	9.166	15.490	0.67	3.22	0.000	0.000	49.82	0.00	0.00	110.00
116.0	Round Low Profile PI	1	9.166	15.490	1.00	21.70	0.000	0.000	336.13	0.00	0.00	1,500.00
127.0	Alcatel-Lucent 4X40W	6	9.406	15.896	0.67	10.89	0.000	0.000	173.18	0.00	0.00	357.00
127.0	Alcatel-Lucent 800 M	3	9.406	15.896	0.67	4.82	0.000	0.000	76.68	0.00	0.00	192.00
127.0	Allgon 7184	3	9.406	15.896	0.75	6.03	0.000	0.000	95.85	0.00	0.00	33.60
127.0	Flat Low Profile Pla	1	9.406	15.896	1.00	26.10	0.000	0.000	414.89	0.00	0.00	1,500.00
127.0	RFS APXV9ERR18-C-	1	9.406	15.896	0.85	6.82	0.000	0.000	108.36	0.00	0.00	62.00
127.0	RFS APXVSP18-C-	2	9.406	15.896	0.82	13.15	0.000	0.000	209.08	0.00	0.00	114.00
127.0	RFS IBC1900BB-1	3	9.406	15.896	0.50	1.69	0.000	0.000	26.94	0.00	0.00	66.00
127.0	RFS IBC1900HG-2A	3	9.406	15.896	0.50	1.69	0.000	0.000	26.94	0.00	0.00	66.00
142.0	RFS APXV18-	3	9.711	16.411	0.80	12.05	0.000	0.000	197.72	0.00	0.00	66.00
150.0	Andrew	6	10.101	17.071	0.00	0.00	0.000	13.000	0.00	0.00	0.00	66.00
150.0	Concealment Canister	1	9.984	16.874	1.00	15.00	0.000	6.500	253.11	0.00	1,645.18	200.00
150.0	Ericsson RRUS 11	6	9.902	16.734	0.67	11.82	0.000	2.000	197.77	0.00	395.54	330.00
150.0	Flat Platform w/ Han	1	9.864	16.670	1.00	42.40	0.000	0.000	706.82	0.00	0.00	2,000.00
150.0	KMW AM-X-CD-16-65-	6	9.902	16.734	0.78	38.66	0.000	2.000	646.87	0.00	1,293.74	291.00
150.0	Powerwave 7770.00	3	9.902	16.734	0.75	13.23	0.000	2.000	221.39	0.00	442.77	105.00
150.0	Powerwave LGP21401	6	9.902	16.734	0.50	3.87	0.000	2.000	64.76	0.00	129.52	84.60
150.0	Raycap DC6-48-60-18-	1	9.902	16.734	1.00	1.26	0.000	2.000	21.08	0.00	42.17	20.00
150.0	RFS APX16DWV-	3	10.101	17.071	0.00	0.00	0.000	13.000	0.00	0.00	0.00	118.80
									6,678.32			9,573.60



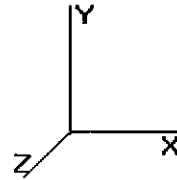
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:37 AM

Page: 22

Base Elev: 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Linear Appurtenance Segment Forces**

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
5.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
5.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
10.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
10.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
15.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
15.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
20.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
20.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
25.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
25.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
30.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
30.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.509	0.00	24.60
35.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.509	8.80	9.45
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.509	0.00	24.60
35.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.509	32.45	49.20
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.509	21.45	24.60
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.762	0.00	24.60
40.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.762	9.14	9.45
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.762	0.00	24.60
40.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.762	33.71	49.20
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.762	22.28	24.60
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.993	0.00	24.60
45.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.993	9.45	9.45
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.993	0.00	24.60
45.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.993	34.86	49.20
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.993	23.05	24.60
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.207	0.00	24.60
50.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.207	9.74	9.45
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.207	0.00	24.60
50.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.207	35.93	49.20
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.207	23.75	24.60
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.406	0.00	24.60

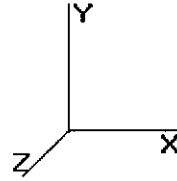
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code : TIA/EIA-222 Rev F

1/25/2013 10:36:37 AM

Page : 23

Base Elev : 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> Twist/Sway	<b>50.00 mph Wind with No Ice</b>	<b>21 Iterations</b>
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

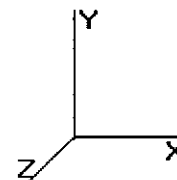
55.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.406	10.01	9.45
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.406	0.00	24.60
55.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.406	36.92	49.20
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.406	24.41	24.60
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.592	0.00	24.60
60.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.592	10.26	9.45
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.592	0.00	24.60
60.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.592	37.85	49.20
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.592	25.02	24.60
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.768	0.00	24.60
65.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.768	10.50	9.45
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.768	0.00	24.60
65.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.768	38.73	49.20
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.768	25.60	24.60
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.934	0.00	24.60
70.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.934	10.73	9.45
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.934	0.00	24.60
70.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.934	39.55	49.20
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.934	26.15	24.60
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.092	0.00	24.60
75.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.092	10.94	9.45
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.092	0.00	24.60
75.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.092	40.34	49.20
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.092	26.67	24.60
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.242	0.00	24.60
80.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.242	11.14	9.45
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.242	0.00	24.60
80.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.242	41.09	49.20
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.242	27.16	24.60
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.387	0.00	24.60
85.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.387	11.34	9.45
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.387	0.00	24.60
85.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.387	41.81	49.20
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.387	27.64	24.60
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.525	0.00	24.60
90.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.525	11.53	9.45
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.525	0.00	24.60
90.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.525	42.50	49.20
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.525	28.09	24.60
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.657	0.00	24.60
95.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.657	11.70	9.45
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.657	0.00	24.60
95.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.657	43.16	49.20
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.657	28.53	24.60
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.683	0.00	4.92
96.00	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	8.683	2.35	1.89
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.683	0.00	4.92
96.00	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	8.683	8.66	9.84
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.39	8.683	5.72	4.92
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	8.785	0.00	19.68
100.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	8.785	9.50	7.56
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	8.785	0.00	19.68
100.0	(19) 1 5/8" Coax	Yes	4.00	9.84	0.59	8.785	35.04	39.36
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.908	0.00	24.60
105.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.908	12.04	9.45
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.908	0.00	24.60
105.0	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.908	44.41	49.20

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

1/25/2013 10:36:37 AM  
 Page: 24



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case:** Twist/Sway      50.00 mph Wind with No Ice      21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

106.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.933	0.00	4.92
106.0	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	8.933	2.42	1.89
106.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.933	0.00	4.92
106.0	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	8.933	8.91	9.84
110.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.028	0.00	19.68
110.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	9.028	9.76	7.56
110.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.028	0.00	19.68
110.0	(19) 1 5/8" Coax	Yes	4.00	9.84	0.59	9.028	36.01	39.36
115.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.143	0.00	24.60
115.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	9.143	12.36	9.45
115.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.143	0.00	24.60
115.0	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	9.143	45.58	49.20
116.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	9.166	0.00	4.92
116.0	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	9.166	2.48	1.89
116.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	9.166	0.00	4.92
116.0	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	9.166	9.14	9.84
120.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.255	0.00	19.68
120.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	9.255	10.01	7.56
120.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.255	0.00	19.68
125.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.363	0.00	24.60
125.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	9.363	12.66	9.45
125.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.363	0.00	24.60
127.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	9.406	0.00	9.84
127.0	(3) 1 1/4" Hybriflex	Yes	2.00	1.89	0.16	9.406	5.09	3.78
127.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	9.406	0.00	9.84
130.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.00	9.469	0.00	14.76
130.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	9.469	9.60	14.76
135.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.572	0.00	24.60
135.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	9.572	16.18	24.60
139.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.652	0.00	19.68
139.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.20	9.652	13.05	19.68
140.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	9.672	0.00	4.92
140.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.20	9.672	3.27	4.92
142.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	9.711	0.00	9.84
142.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.20	9.711	6.56	9.84
145.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	9.769	9.91	14.76
150.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	9.864	16.67	24.60

Totals: 1,681.28      3,290.43

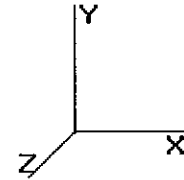


Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:37 AM

Page: 25

**Load Case:** Twist/Sway

50.00 mph Wind with No Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Applied Segment Forces Summary**

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	297.58	2,348.89	0.00	0.00
10.00	293.17	2,309.91	0.00	0.00
15.00	288.77	2,270.94	0.00	0.00
20.00	284.37	2,231.97	0.00	0.00
25.00	279.97	2,192.99	0.00	0.00
30.00	275.56	2,154.02	0.00	0.00
35.00	275.76	2,115.05	0.00	0.00
40.00	281.83	2,076.08	0.00	0.00
45.00	286.50	1,749.33	0.00	0.00
50.00	290.30	1,716.86	0.00	0.00
55.00	293.22	1,684.38	0.00	0.00
60.00	295.38	1,651.90	0.00	0.00
65.00	296.87	1,619.43	0.00	0.00
70.00	297.76	1,586.95	0.00	0.00
75.00	298.12	1,554.47	0.00	0.00
80.00	298.00	1,521.99	0.00	0.00
85.00	297.44	1,253.31	0.00	0.00
90.00	296.47	1,227.33	0.00	0.00
95.00	295.13	1,201.35	0.00	0.00
96.00	1,177.91	1,929.15	0.00	0.00
100.0	211.11	889.02	0.00	0.00
105.0	262.08	1,087.89	0.00	0.00
106.0	306.70	349.46	0.00	0.00
110.0	207.00	844.93	0.00	0.00
115.0	256.40	1,032.77	0.00	0.00
116.0	1,913.20	2,278.04	0.00	0.00
120.0	165.11	763.99	0.00	0.00
125.0	203.02	838.84	0.00	0.00
127.0	1,211.70	2,719.77	0.00	0.00
130.0	120.41	473.89	0.00	0.00
135.0	197.60	771.62	0.00	0.00
139.0	154.62	600.93	0.00	0.00
140.0	26.62	64.95	0.00	0.00
142.0	250.51	194.94	0.00	0.00
145.0	77.99	176.25	0.00	0.00
150.0	2,238.58	3,502.72	0.00	3,948.92
<b>Totals:</b>	<b>14,502.78</b>	<b>52,986.32</b>	<b>0.00</b>	<b>3,948.92</b>

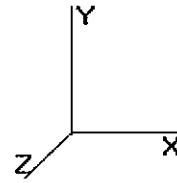
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:37 AM

Page: 26

Base Elev: 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Shaft Forces and Deflections**

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-14.526	-52.980	0.000	0.000	0.000	-1,433.826	0.000	0.000	0.000	0.000
5.00	-14.271	-50.619	0.000	0.000	0.000	-1,361.198	-0.027	0.000	0.027	-0.050
10.00	-14.018	-48.297	0.000	0.000	0.000	-1,289.842	-0.106	0.000	0.106	-0.100
15.00	-13.764	-46.014	0.000	0.000	0.000	-1,219.755	-0.238	0.000	0.238	-0.150
20.00	-13.512	-43.771	0.000	0.000	0.000	-1,150.935	-0.423	0.000	0.423	-0.201
25.00	-13.260	-41.568	0.000	0.000	0.000	-1,083.378	-0.660	0.000	0.660	-0.251
30.00	-13.008	-39.404	0.000	0.000	0.000	-1,017.081	-0.950	0.000	0.950	-0.302
35.00	-12.753	-37.279	0.000	0.000	0.000	-952.041	-1.293	0.000	1.293	-0.352
40.00	-12.488	-35.194	0.000	0.000	0.000	-888.277	-1.689	0.000	1.689	-0.402
45.00	-12.221	-33.435	0.000	0.000	0.000	-825.836	-2.137	0.000	2.137	-0.452
50.00	-11.948	-31.709	0.000	0.000	0.000	-764.734	-2.642	0.000	2.642	-0.511
55.00	-11.670	-30.016	0.000	0.000	0.000	-704.993	-3.208	0.000	3.208	-0.569
60.00	-11.385	-28.355	0.000	0.000	0.000	-646.645	-3.836	0.000	3.836	-0.627
65.00	-11.096	-26.729	0.000	0.000	0.000	-589.720	-4.523	0.000	4.523	-0.683
70.00	-10.803	-25.135	0.000	0.000	0.000	-534.240	-5.269	0.000	5.269	-0.739
75.00	-10.505	-23.575	0.000	0.000	0.000	-480.228	-6.071	0.000	6.071	-0.793
80.00	-10.205	-22.049	0.000	0.000	0.000	-427.702	-6.930	0.000	6.930	-0.845
85.00	-9.909	-20.791	0.000	0.000	0.000	-376.676	-7.842	0.000	7.842	-0.895
90.00	-9.612	-19.559	0.000	0.000	0.000	-327.133	-8.811	0.000	8.811	-0.953
95.00	-9.306	-18.357	0.000	0.000	0.000	-279.075	-9.839	0.000	9.839	-1.008
96.00	-8.102	-16.446	0.000	0.000	0.000	-269.768	-10.051	0.000	10.051	-1.019
100.0	-7.887	-15.555	0.000	0.000	0.000	-237.360	-10.923	0.000	10.923	-1.060
105.0	-7.611	-14.468	0.000	0.000	0.000	-197.926	-12.058	0.000	12.058	-1.106
106.0	-7.303	-14.122	0.000	0.000	0.000	-190.315	-12.291	0.000	12.291	-1.116
110.0	-7.088	-13.277	0.000	0.000	0.000	-161.103	-13.240	0.000	13.240	-1.149
115.0	-6.815	-12.247	0.000	0.000	0.000	-125.664	-14.465	0.000	14.465	-1.186
116.0	-4.858	-10.008	0.000	0.000	0.000	-118.850	-14.714	0.000	14.714	-1.193
120.0	-4.681	-9.245	0.000	0.000	0.000	-99.419	-15.725	0.000	15.725	-1.219
125.0	-4.463	-8.410	0.000	0.000	0.000	-76.015	-17.017	0.000	17.017	-1.246
127.0	-3.193	-5.716	0.000	0.000	0.000	-67.089	-17.542	0.000	17.542	-1.258
130.0	-3.064	-5.244	0.000	0.000	0.000	-57.510	-18.337	0.000	18.337	-1.273
135.0	-2.851	-4.476	0.000	0.000	0.000	-42.190	-19.683	0.000	19.683	-1.295
139.0	-2.683	-3.878	0.000	0.000	0.000	-30.787	-20.774	0.000	20.774	-1.310
140.0	-2.657	-3.813	0.000	0.000	0.000	-28.104	-21.049	0.000	21.049	-1.313
142.0	-2.405	-3.622	0.000	0.000	0.000	-22.791	-21.609	0.000	21.609	-1.356
145.0	-2.326	-3.446	0.000	0.000	0.000	-15.577	-22.478	0.000	22.478	-1.407
150.0	-2.239	0.000	0.000	0.000	0.000	-3.949	-23.982	0.000	23.982	-1.454

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

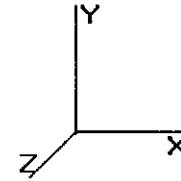
Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:37 AM

Page: 27

Copyright © 2007- 2011 by American Tower Corporation. All rights reserved.



**Load Case:** Twist/Sway      50.00 mph Wind with No Ice      21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Stresses**

Seg Elev (ft)	Applied Stresses						Combined (ksi)	Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)				
0.00	0.43	0.24	0.00	0.00	0.00	11.48	11.92	33.4	0.0	0.356
5.00	0.42	0.24	0.00	0.00	0.00	11.32	11.75	33.4	0.0	0.351
10.00	0.41	0.24	0.00	0.00	0.00	11.15	11.57	33.4	0.0	0.346
15.00	0.40	0.24	0.00	0.00	0.00	10.97	11.38	33.4	0.0	0.340
20.00	0.39	0.24	0.00	0.00	0.00	10.78	11.17	33.4	0.0	0.334
25.00	0.38	0.24	0.00	0.00	0.00	10.57	10.96	33.4	0.0	0.328
30.00	0.36	0.24	0.00	0.00	0.00	10.36	10.73	33.4	0.0	0.321
35.00	0.35	0.24	0.00	0.00	0.00	10.12	10.48	33.4	0.0	0.313
40.00	0.34	0.24	0.00	0.00	0.00	9.87	10.22	33.4	0.0	0.305
40.00	0.41	0.29	0.00	0.00	0.00	11.76	12.17	31.4	0.0	0.388
45.00	0.39	0.29	0.00	0.00	0.00	11.43	11.84	31.4	0.0	0.377
50.00	0.38	0.29	0.00	0.00	0.00	11.08	11.48	31.4	0.0	0.366
55.00	0.37	0.29	0.00	0.00	0.00	10.71	11.09	31.4	0.0	0.354
60.00	0.36	0.29	0.00	0.00	0.00	10.31	10.68	31.4	0.0	0.340
65.00	0.35	0.29	0.00	0.00	0.00	9.87	10.23	31.4	0.0	0.326
70.00	0.33	0.29	0.00	0.00	0.00	9.41	9.76	31.4	0.0	0.311
75.00	0.32	0.29	0.00	0.00	0.00	8.91	9.24	31.4	0.0	0.295
80.00	0.31	0.29	0.00	0.00	0.00	8.37	8.69	31.4	0.0	0.277
80.00	0.38	0.36	0.00	0.00	0.00	10.35	10.75	28.7	0.0	0.374
85.00	0.37	0.36	0.00	0.00	0.00	9.62	10.02	28.7	0.0	0.349
90.00	0.36	0.36	0.00	0.00	0.00	8.84	9.22	28.7	0.0	0.321
95.00	0.35	0.36	0.00	0.00	0.00	7.99	8.36	28.7	0.0	0.291
96.00	0.31	0.31	0.00	0.00	0.00	7.81	8.14	28.7	0.0	0.284
100.00	0.30	0.31	0.00	0.00	0.00	7.21	7.53	28.7	0.0	0.262
105.00	0.29	0.31	0.00	0.00	0.00	6.39	6.70	28.7	0.0	0.233
106.00	0.29	0.30	0.00	0.00	0.00	6.22	6.53	28.7	0.0	0.227
110.00	0.28	0.30	0.00	0.00	0.00	5.54	5.84	28.7	0.0	0.203
115.00	0.26	0.30	0.00	0.00	0.00	4.61	4.90	28.7	0.0	0.171
116.00	0.22	0.21	0.00	0.00	0.00	4.42	4.65	28.7	0.0	0.162
120.00	0.21	0.21	0.00	0.00	0.00	3.90	4.12	28.7	0.0	0.144
120.00	0.23	0.24	0.00	0.00	0.00	4.43	4.68	38.1	0.0	0.123
125.00	0.22	0.24	0.00	0.00	0.00	3.63	3.87	38.1	0.0	0.102
127.00	0.15	0.17	0.00	0.00	0.00	3.29	3.46	38.1	0.0	0.091
130.00	0.14	0.17	0.00	0.00	0.00	2.95	3.11	38.1	0.0	0.082
135.00	0.13	0.16	0.00	0.00	0.00	2.33	2.47	38.1	0.0	0.065
139.00	0.11	0.16	0.00	0.00	0.00	1.81	1.94	38.1	0.0	0.051
139.00	0.39	0.55	0.00	0.00	0.00	9.18	9.62	52.0	0.0	0.185
140.00	0.39	0.55	0.00	0.00	0.00	8.54	8.98	52.0	0.0	0.173
142.00	0.37	0.50	0.00	0.00	0.00	7.20	7.63	52.0	0.0	0.147
145.00	0.37	0.50	0.00	0.00	0.00	5.23	5.66	52.0	0.0	0.109
150.00	0.00	0.51	0.00	0.00	0.00	1.47	1.71	52.0	0.0	0.033

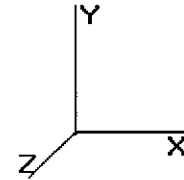


Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:37 AM

Page: 28

### Analysis Summary

Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	37.2	0.00	52.94	0.00	0.00	3669.15	30.50	31.4	40.00	0.973
Ice	30.7	0.00	63.37	0.00	0.00	3095.73	26.13	31.4	40.00	0.833
Twist/Sway	14.5	0.00	52.98	0.00	0.00	1433.83	12.17	31.4	40.00	0.388

1/25/2013

EM

#302483

Foundation Check:

M= 3669.2 K-ft

V= 37.2 k

P= 52.9 k

Sliding Factor of Safety

V = 37.2 k

Total weight = Wt. Of Concrete + Wt. Of Soil + P = 86.7 + 47.8 + 52.9 = 187.4k

Ultimate friction resistance =  $0.41 \times (\text{wt.}) = 0.41 \times 187.4 = 77 \text{ k}$

Ultimate passive sliding resistance =  $11' \times 2.58' \times 1.33 = 37.7\text{k}$

Factor of Safety =  $114.2/37.7 = 3$  Thus OK

(12) R71 Williams 150 ksi rock anchor check (next page)

<b>Base/Flange Plate</b>	Plate Type	<b>Baseplate</b>
	Pole Diameter	37.38 in
	Pole Thickness	in
	Plate Length	62 in
	Plate Thickness	2 in
	Plate Fy	60 ksi
	Weld Length	0.25 in
	Allowable	664.01 k-in
	Applied	451.80 k-in

<b>Stiffeners</b>	#	0
-------------------	---	---

<b>Bolts ●</b>	#	8
	Bolt Circle	44 in
	(R)adial / (S)quare	S
	Bolt Gap	6 in
	Diameter	2.25 in
	Hole Diameter	2.375 in
	Type	#18J
	Fy	75 ksi
	Fu	100 ksi
	Allowable	194.86 k
Applied	120.64 k	

<b>Reinforcement ●</b>	#	0
------------------------	---	---

<b>Extra Bolts O</b>	#	12
	Bolt Circle	55.5 in
	(R)adial / (S)quare	S
	Bolt Gap	6 in
	Offset Angle	30°
	Diameter	1.75 in
	Type	R71
	Fu	390 ksi
	Allowable	412.75 k
	Applied	107.43 k

Code Rev. **F**  
A.S.I. **1.33**

Date **1/25/2013**  
Engineer **EM**  
Site # **302483**  
Carrier **Verizon**

Moment \* **2384.9 k-ft**  
Axial \* **34.4 k**

\* Factored by 0.65, see attached calcs

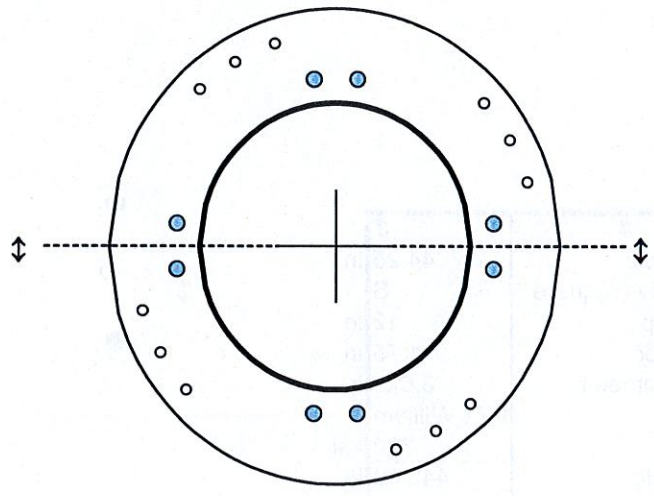


Plate Stress Ratio:  
**0.68** (Pass)

Bolt Stress Ratio:  
**0.62** (Pass)

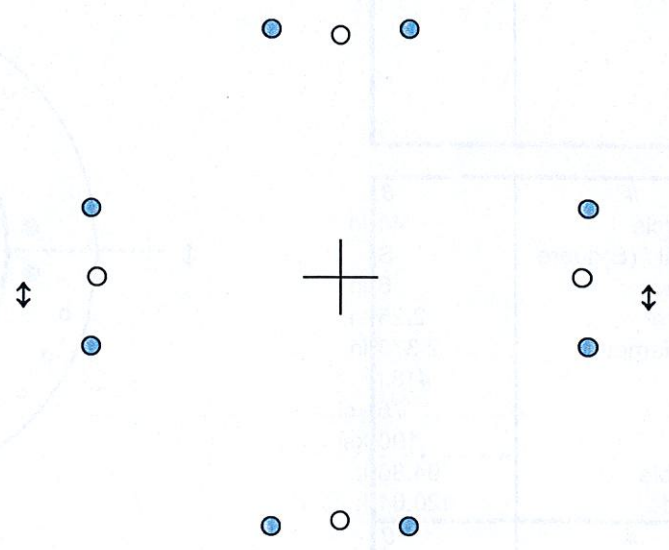
Extra Bolt Stress Ratio:  
**0.26** (Pass)



Code Rev. **F**  
 A.S.I. **1.33**  
 Moment **3669.2 k-ft**  
 Axial **52.9 k**

Date **1/25/2013**  
 Engineer **EM**  
 Site # **302483**  
 Carrier **Verizon**

<b>Bolts</b>	#	<b>8</b>
	Bolt Circle (R)adial / (S)quare	44.25 in S
	Bolt Gap	12 in
	Diameter	1.75 in
	Hole Diameter	3.625 in
	Type	R71 William
	Fu	390 ksi
	Allowable	446.16 k
	Applied	333.20 k
<b>Reinforcement</b>	#	<b>0</b>
<b>Extra Bolts</b>	#	<b>4</b>
	Bolt Circle (R)adial / (S)quare	41.63 in R
	Offset Angle	90°
	Diameter	1.75 in
	Type	R71 William
	Fu	390 ksi
	Applied	320.19 k



Bolt Stress Ratio:  
**0.75** (Pass)

Extra Bolt Stress Ratio:  
**0.78** (Pass)



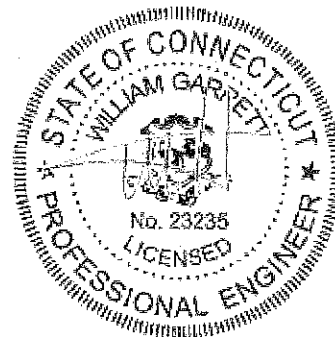
**AMERICAN TOWER®**  
CORPORATION

---

## Structural Analysis Report

**Structure** : 150 ft Monopole  
**ATC Site Name** : Brln - Berlin, CT  
**ATC Site Number** : 302483  
**Engineering Number** : 51665222  
**Proposed Carrier** : Verizon  
**Carrier Site Name** : Berlin 2, CT  
**Carrier Site Number** : N/A  
**Site Location** : 260 Beckley Road  
Kensington, CT 06037-2419  
41.631722,-72.729900  
**County** : Hartford  
**Date** : January 25, 2013  
**Max Usage** : 97%  
**Result** : Pass

Esha Modi  
Project Engineer



Jan 28 2013 12:08 PM





**Table of Contents**

Introduction .....	1
Supporting Documents .....	1
Analysis .....	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Proposed Equipment .....	2
Structure Usages .....	3
Foundations .....	3
Deflection, Twist, and Sway.....	3
Standard Conditions .....	4
Calculations .....	Attached



### Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by Verizon.

### Supporting Documents

<b>Tower Drawings</b>	ITT Meyer Type "B", dated July 21, 2001 Smith Cullum Mapping Acq. #CT-0019, dated July 21, 2001
<b>Geotechnical Report</b>	Daniel G. Loucks Project #CT-0019, dated 21 December 2001
<b>Modifications</b>	Scientel Project Berlin-CT0019, dated July 30 2002

### Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

<b>Basic Wind Speed:</b>	80 mph (Fastest Mile)
<b>Basic Wind Speed w/ Ice:</b>	69 mph (Fastest Mile)w/ 1/2" radial ice concurrent
<b>Code:</b>	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (4) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

### Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact me via email at [esha.modi@americantower.com](mailto:esha.modi@americantower.com) or call 919-466-5017.





**Existing and Reserved Equipment**

Mount Elev. <sup>1</sup> (ft)	Qty.	Antenna	Mount Type	Lines	Carrier
163.0	6	Andrew ETW200VA12UB	Conceal Canister	(12) 1 5/8" Coax	T-Mobile
	3	RFS APX16DWV-16DWV-S-E-ACU			
152.0	6	KMW AM-X-CD-16-65-00T-RET	Platform w/ Handrials	(2) 0.78" 8 AWG 6 (12) 1 1/4" Coax (1) 3" conduit (1) 0.39" Cable	AT&T Mobility
	1	Raycap DC6-48-60-18-8F			
	6	Ericsson RRUS 11 (Band 12)			
	3	Powerwave 7770.00			
	6	Powerwave LGP21401			
142.0	3	RFS APXV18-206517LS-C	Flush	(6) 1 5/8" Coax	Metro PCS
127.0	2	RFS APXVSP18-C-A20	Low Profile Platform	(6) 1 5/8" Coax (3) 1 1/4" Hybriflex	Sprint Nextel
	3	Powerwave 7184.14 / M-1900-90-16.5I-2-D			
	1	RFS APXV9ERR18-C-A20			
	6	Alcatel-Lucent 4x40W RRH			
	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter			
	3	RFS IBC1900HG-2A			
	3	RFS IBC1900BB-1			
	6	Antel LPA-80063-6CF-EDIN-X			
116.0	1	RFS APX75-866514-CTD	Low Profile Platform	(12) 1 5/8" Coax	Verizon Wireless
	2	Andrew LNX-6514DS-T4M			
	3	48" x 6" Panel			
106.0	3	48" x 6" Panel	Flush	(6) 1 1/4" Coax	AT&T Mobility
96.0	12	Decibel 844G65VTASX	Low Profile Platform	(15) 1 5/8" Coax	Sprint Nextel

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty.	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
116.0	116.0	6	Antel BXA-171063-8CF-EDIN-X	Low Profile Platform	(7) 1 5/8" Coax	Verizon Wireless
		1	RFS DB-T1-6Z-8AB-OZ			
		3	Alcatel-Lucent RRH2x40-AWS			

<sup>1</sup>Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax outside the pole shaft in same location as existing.



### Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited, to:

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	62%	Pass
Shaft	97%	Pass
Base Plate	68%	Pass

**Foundations**

Reaction Component	Analysis Reactions
Moment (Kips-Ft)	3669.2
Axial (Kips)	63.4
Shear (Kips)	37.2

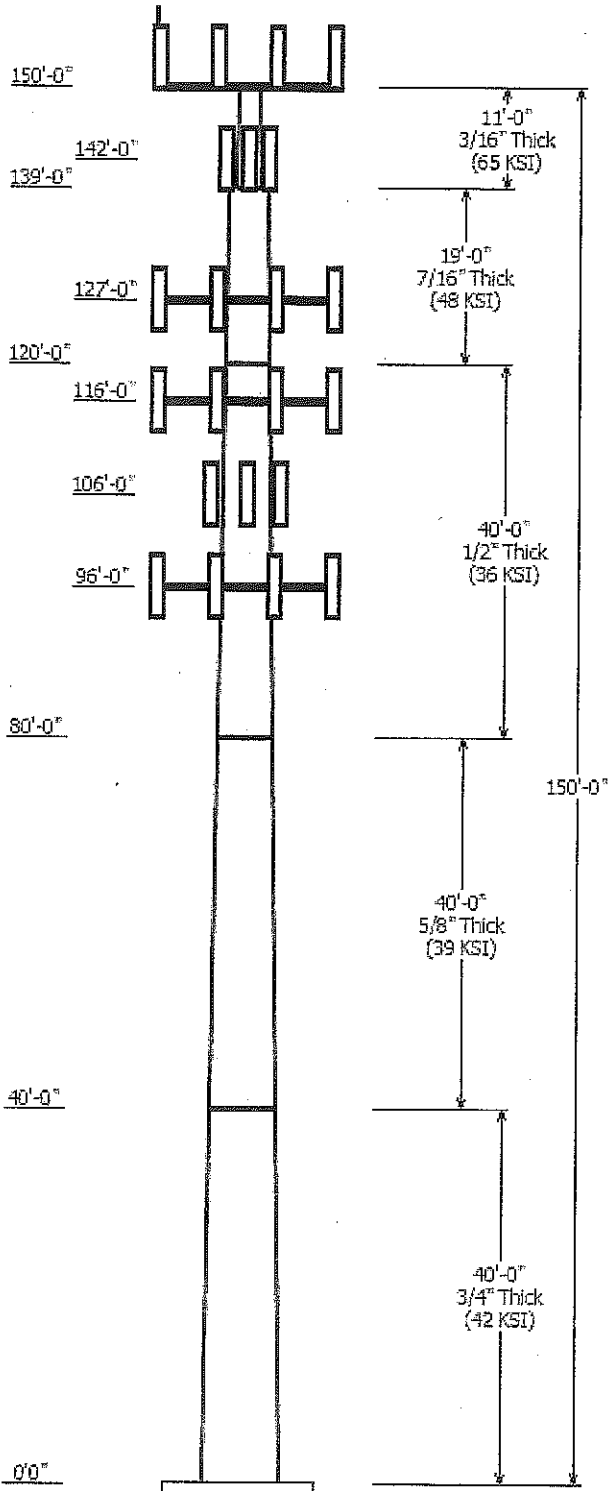
The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

**Deflection and Sway\***

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
116.0	1.226	-1.193

\*Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



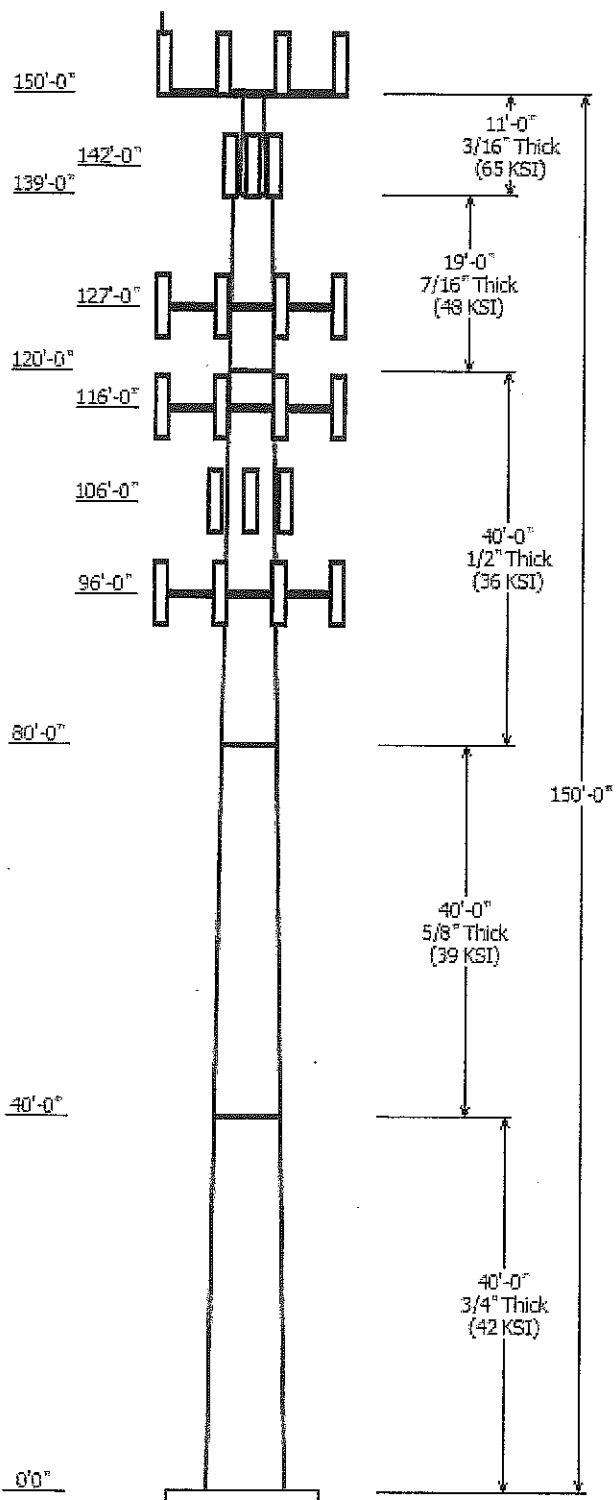
Job Information	
Pole : 302483	Code: TIA/EIA-222 Rev F
Description : 150 ft ITT Meyer Monopole	
Client : Verizon Wireless	
Location : BrIn - Berlin, CT	
Shape : 12 Sides	
Height : 150.00 (ft)	
Base Elev (ft): 0.00	
Taper: 0.18970 (in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Top	Flats Bottom				
1	40.000	43.71	51.30	0.750	0.000	0.189701	42
2	40.000	36.09	43.68	0.625 Butt Joint	0.000	0.189701	39
3	40.000	28.50	36.09	0.500 Butt Joint	0.000	0.189701	36
4	19.000	24.90	28.50	0.438 Butt Joint	0.000	0.189701	48
5	11.000	15.00	16.72	0.188 Butt Joint	0.000	0.156364	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	152.000	6	KMW AM-X-CD-16-65-00T-RET
150.000	152.000	6	Ericsson RRUS 11
150.000	152.000	1	Raycap DC6-48-60-18-8F
150.000	163.000	3	RFS APX16DWV-16DWV-S-E
150.000	163.000	6	Andrew ETW200VS12UB
150.000	152.000	6	Powerwave LGP21401
150.000	152.000	3	Powerwave 7770.00
150.000	150.000	1	Flat Platform w/ Handrails
150.000	156.500	1	Concealment Canister
142.000	142.000	3	RFS APXV18-206517LS-C
127.000	127.000	1	Flat Low Profile Platform
127.000	127.000	1	RFS APXV9ERR18-C-A20
127.000	127.000	2	RFS APXVSP18-C-A20
127.000	127.000	6	Alcatel-Lucent 4X40W RRH
127.000	127.000	3	Alcatel-Lucent 800 MHz 2X50W
127.000	127.000	3	RFS IBC1900BB-1
127.000	127.000	3	RFS IBC1900HG-2A
127.000	127.000	3	Allgon 7184
116.000	116.000	3	Alcatel-Lucent RRH2x40-AWS
116.000	116.000	1	RFS DB-T1-6Z-8AB-0Z
116.000	116.000	6	Antel LPA-80063-6CF-EDIN-X
116.000	116.000	1	RFS APX75-866514-CT0
116.000	116.000	2	Andrew LNX-6514DS-T4M
116.000	116.000	6	Antel BXA-171063-8BF-EDIN-X
116.000	116.000	1	Round Low Profile Platform
106.000	106.000	3	72" x 12" Panel
96.000	96.000	1	Flat Low Profile Platform
96.000	96.000	12	Decibel 844G65VTZASX

Linear Appurtenance			
Elev (ft)	From	To	Exposed To Wind
	142.0	150.0	1 5/8" Coax Yes
	127.0	142.0	1 5/8" Coax Yes
	0.000	150.0	1 5/8" Coax No
	0.000	152.0	1 1/4" Coax No
	0.000	152.0	10 mm Cable No
	0.000	152.0	19.7 mm Cable No
	0.000	152.0	3" Conduit No



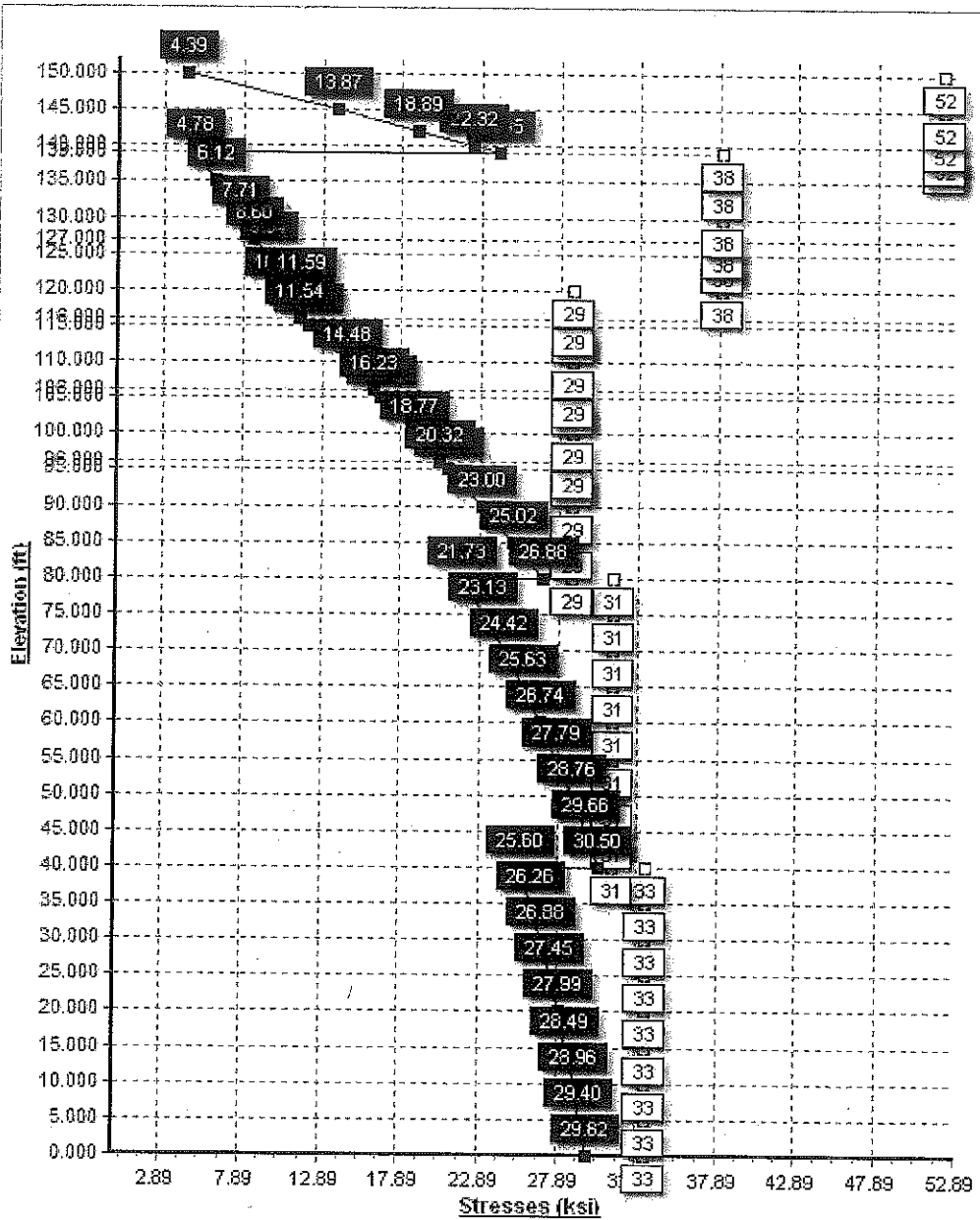


0.000	96.000	1 5/8" Coax	Yes
0.000	96.000	1 5/8" Coax	No
0.000	106.0	1 1/4" Coax	No
0.000	116.0	1 5/8" Coax	Yes
0.000	127.0	1 1/4" Hybriflex	Yes
0.000	127.0	1 5/8" Coax	No
0.000	127.0	1 5/8" Coax	Yes
0.000	142.0	1 5/8" Coax	Yes

Load Cases	
No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	3669.15	37.19	52.94
Ice	3095.73	30.71	63.37
Twist/Sway	1433.83	14.53	52.98

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000



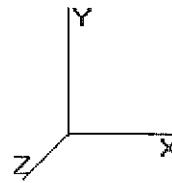
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:35 AM  
 Page: 1

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-12	40.000	0.7500	42		0.00	15,369	51.30	0.00	122.08	39816.6	16.18	68.40	43.71	40.00	103.75	24442.9	13.47	58.28	0.189701
2-12	40.000	0.6250	39	Butt	0.00	10,755	43.68	40.00	86.65	20501.8	16.58	69.89	36.09	80.00	71.38	11460.3	13.33	57.75	0.189701
3-12	40.000	0.5000	36	Butt	0.00	6,968	36.09	80.00	57.30	9265.7	17.20	72.18	28.50	120.00	45.09	4513.2	13.13	57.01	0.189701
4-12	19.000	0.4375	48	Butt	0.00	2,392	28.50	120.00	39.54	3975.5	15.31	65.15	24.90	139.00	34.46	2632.2	13.11	56.91	0.189701
5-12	11.000	0.1875	65	Butt	0.00	354	16.72	139.00	9.98	348.2	21.75	89.17	15.00	150.00	8.94	250.4	19.29	80.00	0.156364
Shaft Weight						35,838													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAa (sf)	CaAa Factor	Weight (lb)	Ice CaAa (sf)	CaAa Factor	Distance From Face (ft)	Vert Ecc (ft)
150.00	Andrew ETW200VS12UB	6	11.00	0.000	0.00	14.52	0.000	0.00	0.000	13.000
150.00	Concealment Canister	1	200.00	15.000	1.00	300.00	20.000	1.00	0.000	6.500
150.00	Ericsson RRUS 11	6	55.00	2.940	0.67	74.30	3.290	0.67	0.000	2.000
150.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	2,450.00	48.400	1.00	0.000	0.000
150.00	KMW AM-X-CD-16-65-00T-	6	48.50	8.260	0.78	95.00	9.080	0.78	0.000	2.000
150.00	Powerwave 7770.00	3	35.00	5.880	0.75	67.75	6.530	0.76	0.000	2.000
150.00	Powerwave LGP21401	6	14.10	1.290	0.50	21.26	1.530	0.50	0.000	2.000
150.00	Raycap DC6-48-60-18-8F	1	20.00	1.260	1.00	35.10	1.460	1.00	0.000	2.000
150.00	RFS APX16DWV-16DWV-S-E-	3	39.60	0.000	0.00	69.38	0.000	0.00	0.000	13.000
142.00	RFS APXV18-206517LS-C	3	22.00	5.020	0.80	48.13	5.700	0.82	0.000	0.000
127.00	Alcatel-Lucent 4X40W RRH	6	59.50	2.710	0.67	82.60	3.070	0.67	0.000	0.000
127.00	Alcatel-Lucent 800 MHz	3	64.00	2.400	0.67	86.10	2.720	0.67	0.000	0.000
127.00	Allgon 7184	3	11.20	2.680	0.75	27.10	3.280	0.75	0.000	0.000
127.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
127.00	RFS APXV9ERR18-C-A20	1	62.00	8.020	0.85	113.90	9.080	0.85	0.000	0.000
127.00	RFS APXVSP18-C-A20	2	57.00	8.020	0.82	106.50	9.080	0.82	0.000	0.000
127.00	RFS IBC1900BB-1	3	22.00	1.130	0.50	59.80	1.360	0.50	0.000	0.000
127.00	RFS IBC1900HG-2A	3	22.00	1.130	0.50	59.80	1.360	0.50	0.000	0.000
116.00	Alcatel-Lucent RRH2x40-AWS	3	44.00	2.520	0.67	61.40	2.870	0.67	0.000	0.000
116.00	Andrew LNX-6514DS-T4M	2	38.40	8.170	0.82	88.90	9.240	0.82	0.000	0.000
116.00	Antel BXA-171063-8BF-EDIN-X	6	10.50	2.940	0.87	29.30	3.410	0.87	0.000	0.000
116.00	Antel LPA-80063-6CF-EDIN-X	6	27.00	9.730	0.93	101.90	11.350	0.93	0.000	0.000
116.00	RFS APX75-866514-CT0	1	30.80	9.760	0.74	81.10	10.690	0.74	0.000	0.000
116.00	RFS DB-T1-6Z-8AB-0Z	1	110.00	4.800	0.67	144.50	6.080	0.67	0.000	0.000
116.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
106.00	72" x 12" Panel	3	45.00	8.400	0.67	92.28	9.230	0.67	0.000	0.000
96.00	Decibel 844G65VTZASX	12	16.00	5.890	0.71	55.00	6.500	0.71	0.000	0.000
96.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
Totals		94	9573.60			13,503.87			Number of Loadings :	28

**Linear Appurtenance Properties**

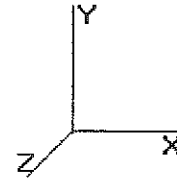
Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
0.00	152.00	(12) 1 1/4" Coax	7.56	0.00	0.00	0.00	N
0.00	152.00	(1) 10 mm Cable	0.07	0.00	0.00	0.00	N
0.00	152.00	(2) 19.7 mm Cable	1.18	0.00	0.00	0.00	N
0.00	152.00	(1) 3" Conduit	7.58	0.00	0.00	0.00	N
0.00	150.00	(6) 1 5/8" Coax	4.92	0.00	0.00	0.00	N
142.00	150.00	(6) 1 5/8" Coax	4.92	0.20	9.46	0.25	Y

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:35 AM  
 Page: 2

Base Elev: 0.000 (ft)



Copyright © 2007-2011 by American Tower Corporation. All rights reserved.

0.00	142.00	(6) 1 5/8" Coax	4.92	0.00	9.46	0.00	Y
127.00	142.00	(6) 1 5/8" Coax	4.92	0.20	9.46	0.25	Y
0.00	127.00	(3) 1 1/4" Hybriflex	1.89	0.16	3.77	0.21	Y
0.00	127.00	(6) 1 5/8" Coax	2.46	0.00	0.00	0.00	N
0.00	127.00	(6) 1 5/8" Coax	4.92	0.00	9.46	0.00	Y
0.00	116.00	(19) 1 5/8" Coax	9.84	0.59	18.93	0.64	Y
0.00	106.00	(6) 1 1/4" Coax	0.63	0.00	0.00	0.00	N
0.00	96.00	(6) 1 5/8" Coax	4.92	0.39	9.46	0.44	Y
0.00	96.00	(9) 1 5/8" Coax	7.38	0.00	0.00	0.00	N
Total Weight			7,607.39 (lb)		6,345.15 (lb)		



Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

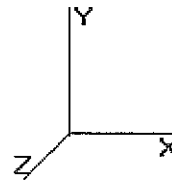
Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

1/25/2013 10:36:35 AM

Page: 3



**Segment Properties** (Max Len : 5 ft)

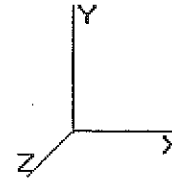
Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.7500	51.300	122.078	39,816.6	16.18	68.40	42	33	0.0
5.00		0.7500	50.351	119.787	37,617.1	15.85	67.14	42	33	2,057.5
10.00		0.7500	49.403	117.497	35,500.1	15.51	65.87	42	33	2,018.6
15.00		0.7500	48.454	115.206	33,464.0	15.17	64.61	42	33	1,979.6
20.00		0.7500	47.506	112.915	31,507.4	14.83	63.34	42	33	1,940.6
25.00		0.7500	46.557	110.625	29,628.5	14.49	62.08	42	33	1,901.6
30.00		0.7500	45.609	108.334	27,825.8	14.15	60.81	42	33	1,862.7
35.00		0.7500	44.660	106.044	26,097.8	13.81	59.55	42	33	1,823.7
40.00	Top - Section 1	0.7500	43.712	103.753	24,442.9	13.47	58.28	42	33	1,784.7
40.00	Bot - Section 2	0.6250	43.680	86.648	20,501.8	16.58	69.89	39	31	
45.00		0.6250	42.731	84.739	19,176.5	16.18	68.37	39	31	1,458.0
50.00		0.6250	41.783	82.830	17,909.5	15.77	66.85	39	31	1,425.5
55.00		0.6250	40.834	80.922	16,699.7	15.36	65.34	39	31	1,393.0
60.00		0.6250	39.886	79.013	15,545.5	14.96	63.82	39	31	1,360.6
65.00		0.6250	38.937	77.104	14,445.8	14.55	62.30	39	31	1,328.1
70.00		0.6250	37.989	75.195	13,399.3	14.14	60.78	39	31	1,295.6
75.00		0.6250	37.040	73.286	12,404.5	13.74	59.26	39	31	1,263.1
80.00	Top - Section 2	0.6250	36.092	71.377	11,460.3	13.33	57.75	39	31	1,230.6
80.00	Bot - Section 3	0.5000	36.092	57.303	9,265.7	17.20	72.18	36	29	
85.00		0.5000	35.144	55.776	8,544.5	16.69	70.29	36	29	962.0
90.00		0.5000	34.195	54.249	7,861.7	16.18	68.39	36	29	936.0
95.00		0.5000	33.247	52.722	7,216.3	15.67	66.49	36	29	910.0
96.00		0.5000	33.057	52,417	7,091.6	15.57	66.11	36	29	178.9
100.00		0.5000	32.298	51.195	6,607.2	15.16	64.60	36	29	705.1
105.00		0.5000	31.350	49.668	6,033.4	14.66	62.70	36	29	858.0
106.00		0.5000	31.160	49.363	5,922.8	14.55	62.32	36	29	168.5
110.00		0.5000	30.401	48.141	5,493.9	14.15	60.80	36	29	663.6
115.00		0.5000	29.453	46.614	4,987.4	13.64	58.91	36	29	806.1
116.00		0.5000	29.263	46.308	4,890.0	13.54	58.53	36	29	158.1
120.00	Top - Section 3	0.5000	28.504	45.087	4,513.2	13.13	57.01	36	29	622.0
120.00	Bot - Section 4	0.4375	28.504	39.539	3,975.5	15.31	65.15	48	38	
125.00		0.4375	27.556	38.203	3,585.9	14.73	62.98	48	38	661.3
127.00		0.4375	27.176	37.668	3,437.5	14.50	62.12	48	38	258.2
130.00		0.4375	26.607	36.866	3,222.6	14.15	60.82	48	38	380.4
135.00		0.4375	25.659	35.530	2,884.8	13.57	58.65	48	38	615.9
139.00	Top - Section 4	0.4375	24.900	34.461	2,632.2	13.11	56.91	48	38	476.3
139.00	Bot - Section 5	0.1875	16.720	9.981	348.2	21.75	89.17	65	52	
140.00		0.1875	16.564	9.887	338.4	21.53	88.34	65	52	33.8
142.00		0.1875	16.251	9.698	319.4	21.08	86.67	65	52	66.6
145.00		0.1875	15.782	9.415	292.2	20.41	84.17	65	52	97.6
150.00		0.1875	15.000	8.943	250.4	19.29	80.00	65	52	156.2
										35,838.1

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:35 AM  
 Page: 4

**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Shaft Segment Forces**

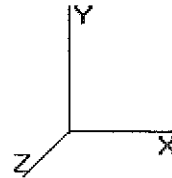
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 16.384	27.68 341.99	1.030	0.000	0.00	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00 16.384	27.68 335.67	1.030	0.000	5.00	21.177	21.81	604.0	0.0	2,057.5	
10.00		0.00	1.00 16.384	27.68 329.35	1.030	0.000	5.00	20.782	21.41	592.7	0.0	2,018.6	
15.00		0.00	1.00 16.384	27.68 323.02	1.030	0.000	5.00	20.387	21.00	581.4	0.0	1,979.6	
20.00		0.00	1.00 16.384	27.68 316.70	1.030	0.000	5.00	19.992	20.59	570.2	0.0	1,940.6	
25.00		0.00	1.00 16.384	27.68 310.38	1.030	0.000	5.00	19.597	20.18	558.9	0.0	1,901.6	
30.00		0.00	1.00 16.384	27.68 304.05	1.030	0.000	5.00	19.201	19.78	547.6	0.0	1,862.7	
35.00		0.00	1.01 16.662	28.15 300.24	1.030	0.000	5.00	18.806	19.37	545.4	0.0	1,823.7	
40.00	Top - Section 1	0.00	1.05 17.310	29.25 299.53	1.030	0.000	5.00	18.411	18.96	554.7	0.0	1,784.7	
45.00		0.00	1.09 17.902	30.25 297.78	1.030	0.000	5.00	18.002	18.54	561.0	0.0	1,458.0	
50.00		0.00	1.12 18.449	31.17 295.58	1.030	0.000	5.00	17.607	18.14	565.4	0.0	1,425.5	
55.00		0.00	1.15 18.959	32.04 292.83	1.030	0.000	5.00	17.212	17.73	568.0	0.0	1,393.0	
60.00		0.00	1.18 19.436	32.84 289.61	1.030	0.000	5.00	16.817	17.32	568.9	0.0	1,360.6	
65.00		0.00	1.21 19.885	33.60 285.97	1.030	0.000	5.00	16.422	16.91	568.4	0.0	1,328.1	
70.00		0.00	1.24 20.311	34.32 281.98	1.030	0.000	5.00	16.026	16.51	566.6	0.0	1,295.6	
75.00		0.00	1.26 20.715	35.00 277.66	1.030	0.000	5.00	15.631	16.10	563.6	0.0	1,263.1	
80.00	Top - Section 2	0.00	1.28 21.101	35.66 273.06	1.030	0.000	5.00	15.236	15.69	559.6	0.0	1,230.6	
85.00		0.00	1.31 21.469	36.28 268.19	1.030	0.000	5.00	14.841	15.29	554.6	0.0	962.0	
90.00		0.00	1.33 21.823	36.88 263.10	1.030	0.000	5.00	14.446	14.88	548.7	0.0	936.0	
95.00		0.00	1.35 22.163	37.45 257.78	1.030	0.000	5.00	14.050	14.47	542.0	0.0	910.0	
96.00	Appertunance(s)	0.00	1.35 22.229	37.56 256.69	1.030	0.000	1.00	2.763	2.85	106.9	0.0	178.9	
100.00		0.00	1.37 22.490	38.00 252.27	1.030	0.000	4.00	10.893	11.22	426.4	0.0	705.1	
105.00		0.00	1.39 22.806	38.54 246.57	1.030	0.000	5.00	13.260	13.66	526.4	0.0	858.0	
106.00	Appertunance(s)	0.00	1.39 22.867	38.64 245.41	1.030	0.000	1.00	2.605	2.68	103.7	0.0	168.5	
110.00		0.00	1.41 23.111	39.05 240.71	1.030	0.000	4.00	10.260	10.57	412.8	0.0	663.6	
115.00		0.00	1.42 23.406	39.55 234.68	1.030	0.000	5.00	12.470	12.84	508.0	0.0	806.1	
116.00	Appertunance(s)	0.00	1.43 23.464	39.65 233.46	1.030	0.000	1.00	2.446	2.52	99.9	0.0	158.1	
120.00	Top - Section 3	0.00	1.44 23.692	40.04 228.51	1.030	0.000	4.00	9.628	9.92	397.1	0.0	622.0	
125.00		0.00	1.46 23.970	40.51 222.20	1.030	0.000	5.00	11.679	12.03	487.3	0.0	661.3	
127.00	Appertunance(s)	0.00	1.47 24.079	40.69 219.63	1.030	0.000	2.00	4.561	4.70	191.2	0.0	258.2	
130.00		0.00	1.48 24.241	40.96 215.75	1.030	0.000	3.00	6.723	6.92	283.7	0.0	380.4	
135.00		0.00	1.49 24.503	41.41 209.19	1.030	0.000	5.00	10.889	11.22	464.4	0.0	615.9	
139.00	Top - Section 4	0.00	1.50 24.709	41.75 203.85	1.030	0.000	4.00	8.426	8.68	362.4	0.0	476.3	
140.00		0.00	1.51 24.759	41.84 135.74	1.030	0.000	1.00	1.387	1.43	59.8	0.0	33.8	
142.00	Appertunance(s)	0.00	1.51 24.860	42.01 133.45	1.030	0.000	2.00	2.735	2.82	118.3	0.0	66.6	
145.00		0.00	1.52 25.009	42.26 129.98	1.030	0.000	3.00	4.004	4.12	174.3	0.0	97.6	
150.00	Appertunance(s)	0.00	1.54 25.252	42.67 124.14	1.030	0.000	5.00	6.413	6.61	281.9	0.0	156.2	
<b>Totals:</b>								150.00			15,726.6	0.0	35,838.1

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:35 AM  
 Page: 5

Base Elev: 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

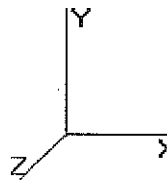
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
96.00	Decibel	12	22.229	37.567	0.71	50.18	0.000	0.000	1,885.23	0.00	0.00	192.00
96.00	Flat Low Profile Pla	1	22.229	37.567	1.00	26.10	0.000	0.000	980.50	0.00	0.00	1,500.00
106.0	72" x 12" Panel	3	22.867	38.646	0.67	16.88	0.000	0.000	652.50	0.00	0.00	135.00
116.0	Alcatel-Lucent RRH2x	3	23.464	39.654	0.67	5.07	0.000	0.000	200.86	0.00	0.00	132.00
116.0	Andrew LNX-6514DS-	2	23.464	39.654	0.82	13.40	0.000	0.000	531.32	0.00	0.00	76.80
116.0	Antel BXA-171063-8BF	6	23.464	39.654	0.87	15.35	0.000	0.000	608.57	0.00	0.00	63.00
116.0	Antel LPA-80063-6CF-	6	23.464	39.654	0.93	54.29	0.000	0.000	2,152.97	0.00	0.00	162.00
116.0	RFS APX75-866514-	1	23.464	39.654	0.74	7.22	0.000	0.000	286.40	0.00	0.00	30.80
116.0	RFS DB-T1-6Z-8AB-0Z	1	23.464	39.654	0.67	3.22	0.000	0.000	127.53	0.00	0.00	110.00
116.0	Round Low Profile Pl	1	23.464	39.654	1.00	21.70	0.000	0.000	860.50	0.00	0.00	1,500.00
127.0	Alcatel-Lucent 4X40W	6	24.079	40.694	0.67	10.89	0.000	0.000	443.33	0.00	0.00	357.00
127.0	Alcatel-Lucent 800 M	3	24.079	40.694	0.67	4.82	0.000	0.000	196.31	0.00	0.00	192.00
127.0	Algon 7184	3	24.079	40.694	0.75	6.03	0.000	0.000	245.39	0.00	0.00	33.60
127.0	Flat Low Profile Pla	1	24.079	40.694	1.00	26.10	0.000	0.000	1,062.12	0.00	0.00	1,500.00
127.0	RFS APXV9ERR18-C-	1	24.079	40.694	0.85	6.82	0.000	0.000	277.41	0.00	0.00	62.00
127.0	RFS APXVSPP18-C-	2	24.079	40.694	0.82	13.15	0.000	0.000	535.24	0.00	0.00	114.00
127.0	RFS IBC1900BB-1	3	24.079	40.694	0.50	1.69	0.000	0.000	68.98	0.00	0.00	66.00
127.0	RFS IBC1900HG-2A	3	24.079	40.694	0.50	1.69	0.000	0.000	68.98	0.00	0.00	66.00
142.0	RFS APXV18-	3	24.860	42.013	0.80	12.05	0.000	0.000	506.17	0.00	0.00	66.00
150.0	Andrew	6	25.859	43.702	0.00	0.00	0.000	13.000	0.00	0.00	0.00	66.00
150.0	Concealment Canister	1	25.560	43.197	1.00	15.00	0.000	6.500	647.95	0.00	4,211.67	200.00
150.0	Ericsson RRUS 11	6	25.348	42.838	0.67	11.82	0.000	2.000	506.29	0.00	1,012.59	330.00
150.0	Flat Platform w/ Han	1	25.252	42.676	1.00	42.40	0.000	0.000	1,809.47	0.00	0.00	2,000.00
150.0	KMW AM-X-CD-16-65-	6	25.348	42.838	0.78	38.66	0.000	2.000	1,655.98	0.00	3,311.96	291.00
150.0	Powerwave 7770.00	3	25.348	42.838	0.75	13.23	0.000	2.000	566.75	0.00	1,133.49	105.00
150.0	Powerwave LGP21401	6	25.348	42.838	0.50	3.87	0.000	2.000	165.78	0.00	331.57	84.60
150.0	Raycap DC6-48-60-18-	1	25.348	42.838	1.00	1.26	0.000	2.000	53.98	0.00	107.95	20.00
150.0	RFS APX16DWV-	3	25.859	43.702	0.00	0.00	0.000	13.000	0.00	0.00	0.00	118.80
									17,096.49			9,573.60

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:35 AM

Page: 6

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	22 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Linear Appurtenance Segment Forces**

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
5.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
5.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
10.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
10.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
15.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
15.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
20.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
20.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
25.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
25.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
30.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.384	22.15	9.45
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.384	0.00	24.60
30.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.384	81.68	49.20
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.384	53.99	24.60
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.662	0.00	24.60
35.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	16.662	22.53	9.45
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	16.662	0.00	24.60
35.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	16.662	83.07	49.20
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	16.662	54.91	24.60
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.310	0.00	24.60
40.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	17.310	23.40	9.45
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.310	0.00	24.60
40.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	17.310	86.30	49.20
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	17.310	57.04	24.60
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.902	0.00	24.60
45.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	17.902	24.20	9.45
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	17.902	0.00	24.60
45.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	17.902	89.25	49.20
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	17.902	59.00	24.60
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.449	0.00	24.60
50.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	18.449	24.94	9.45
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.449	0.00	24.60
50.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	18.449	91.98	49.20
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	18.449	60.80	24.60
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.959	0.00	24.60

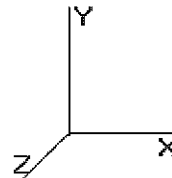
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

1/25/2013 10:36:35 AM

Page: 7



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

Load Case: No Ice		80.00 mph Wind with No Ice					22 Iterations	
Gust Response Factor : 1.69								
Dead Load Factor : 1.00								
Wind Load Factor : 1.00								
55.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	18.959	25.63	9.45
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	18.959	0.00	24.60
55.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	18.959	94.52	49.20
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	18.959	62.48	24.60
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.436	0.00	24.60
60.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	19.436	26.28	9.45
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.436	0.00	24.60
60.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	19.436	96.90	49.20
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	19.436	64.05	24.60
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.885	0.00	24.60
65.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	19.885	26.89	9.45
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	19.885	0.00	24.60
65.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	19.885	99.14	49.20
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	19.885	65.53	24.60
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.311	0.00	24.60
70.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	20.311	27.46	9.45
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.311	0.00	24.60
70.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	20.311	101.26	49.20
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	20.311	66.93	24.60
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.715	0.00	24.60
75.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	20.715	28.01	9.45
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	20.715	0.00	24.60
75.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	20.715	103.28	49.20
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	20.715	68.27	24.60
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.101	0.00	24.60
80.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	21.101	28.53	9.45
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.101	0.00	24.60
80.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	21.101	105.20	49.20
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	21.101	69.54	24.60
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.469	0.00	24.60
85.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	21.469	29.03	9.45
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.469	0.00	24.60
85.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	21.469	107.04	49.20
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	21.469	70.75	24.60
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.823	0.00	24.60
90.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	21.823	29.50	9.45
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	21.823	0.00	24.60
90.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	21.823	108.80	49.20
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	21.823	71.92	24.60
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.163	0.00	24.60
95.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	22.163	29.96	9.45
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.163	0.00	24.60
95.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	22.163	110.49	49.20
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	22.163	73.04	24.60
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	22.229	0.00	4.92
96.00	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	22.229	6.01	1.89
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	22.229	0.00	4.92
96.00	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	22.229	22.16	9.84
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.39	22.229	14.65	4.92
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	22.490	0.00	19.68
100.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	22.490	24.33	7.56
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	22.490	0.00	19.68
100.0	(19) 1 5/8" Coax	Yes	4.00	9.84	0.59	22.490	89.70	39.36
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.806	0.00	24.60
105.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	22.806	30.83	9.45
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	22.806	0.00	24.60
105.0	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	22.806	113.70	49.20



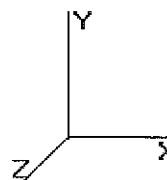


Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM

Page: 9

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	22 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	761.80	2,348.89	0.00	0.00
10.00	750.53	2,309.91	0.00	0.00
15.00	739.25	2,270.94	0.00	0.00
20.00	727.98	2,231.97	0.00	0.00
25.00	716.71	2,192.99	0.00	0.00
30.00	705.44	2,154.02	0.00	0.00
35.00	705.94	2,115.05	0.00	0.00
40.00	721.48	2,076.08	0.00	0.00
45.00	733.45	1,749.33	0.00	0.00
50.00	743.17	1,716.86	0.00	0.00
55.00	750.64	1,684.38	0.00	0.00
60.00	756.17	1,651.90	0.00	0.00
65.00	759.98	1,619.43	0.00	0.00
70.00	762.27	1,586.95	0.00	0.00
75.00	763.19	1,554.47	0.00	0.00
80.00	762.88	1,521.99	0.00	0.00
85.00	761.44	1,253.31	0.00	0.00
90.00	758.97	1,227.33	0.00	0.00
95.00	755.54	1,201.35	0.00	0.00
96.00	3,015.46	1,929.15	0.00	0.00
100.0	540.45	889.02	0.00	0.00
105.0	670.92	1,087.89	0.00	0.00
106.0	785.16	349.46	0.00	0.00
110.0	529.93	844.93	0.00	0.00
115.0	656.38	1,032.77	0.00	0.00
116.0	4,897.80	2,278.04	0.00	0.00
120.0	422.69	763.99	0.00	0.00
125.0	519.72	838.84	0.00	0.00
127.0	3,101.95	2,719.77	0.00	0.00
130.0	308.26	473.89	0.00	0.00
135.0	505.85	771.62	0.00	0.00
139.0	395.83	600.93	0.00	0.00
140.0	68.14	64.95	0.00	0.00
142.0	641.31	194.94	0.00	0.00
145.0	199.67	176.25	0.00	0.00
150.0	5,730.76	3,502.72	0.00	10,109.23
<b>Totals:</b>	<b>37,127.11</b>	<b>52,986.32</b>	<b>0.00</b>	<b>10,109.23</b>

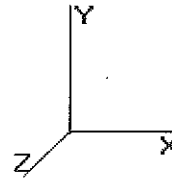
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:36 AM  
 Page: 10

Base Elev: 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-37.187	-52.944	0.000	0.000	0.000	-3,669.150	0.000	0.000	0.000	0.000
5.00	-36.536	-50.514	0.000	0.000	0.000	-3,483.216	-0.069	0.000	0.069	-0.128
10.00	-35.886	-48.126	0.000	0.000	0.000	-3,300.539	-0.272	0.000	0.272	-0.256
15.00	-35.237	-45.781	0.000	0.000	0.000	-3,121.114	-0.609	0.000	0.609	-0.385
20.00	-34.589	-43.477	0.000	0.000	0.000	-2,944.933	-1.081	0.000	1.081	-0.514
25.00	-33.943	-41.215	0.000	0.000	0.000	-2,771.990	-1.689	0.000	1.689	-0.643
30.00	-33.299	-38.995	0.000	0.000	0.000	-2,602.276	-2.431	0.000	2.431	-0.772
35.00	-32.645	-36.817	0.000	0.000	0.000	-2,435.784	-3.309	0.000	3.309	-0.900
40.00	-31.966	-34.682	0.000	0.000	0.000	-2,272.562	-4.321	0.000	4.321	-1.029
45.00	-31.280	-32.871	0.000	0.000	0.000	-2,112.734	-5.467	0.000	5.467	-1.156
50.00	-30.581	-31.090	0.000	0.000	0.000	-1,956.339	-6.759	0.000	6.759	-1.307
55.00	-29.866	-29.348	0.000	0.000	0.000	-1,803.435	-8.209	0.000	8.209	-1.457
60.00	-29.137	-27.642	0.000	0.000	0.000	-1,654.106	-9.814	0.000	9.814	-1.604
65.00	-28.394	-25.975	0.000	0.000	0.000	-1,508.426	-11.572	0.000	11.572	-1.749
70.00	-27.642	-24.346	0.000	0.000	0.000	-1,366.455	-13.479	0.000	13.479	-1.890
75.00	-26.879	-22.755	0.000	0.000	0.000	-1,228.249	-15.533	0.000	15.533	-2.028
80.00	-26.110	-21.202	0.000	0.000	0.000	-1,093.853	-17.729	0.000	17.729	-2.161
85.00	-25.349	-19.918	0.000	0.000	0.000	-963.305	-20.061	0.000	20.061	-2.289
90.00	-24.587	-18.661	0.000	0.000	0.000	-836.563	-22.539	0.000	22.539	-2.439
95.00	-23.805	-17.460	0.000	0.000	0.000	-713.629	-25.169	0.000	25.169	-2.579
96.00	-20.723	-15.645	0.000	0.000	0.000	-689.824	-25.712	0.000	25.712	-2.606
100.0	-20.171	-14.742	0.000	0.000	0.000	-606.932	-27.941	0.000	27.941	-2.710
105.0	-19.465	-13.664	0.000	0.000	0.000	-506.078	-30.844	0.000	30.844	-2.830
106.0	-18.677	-13.336	0.000	0.000	0.000	-486.613	-31.440	0.000	31.440	-2.854
110.0	-18.125	-12.490	0.000	0.000	0.000	-411.907	-33.868	0.000	33.868	-2.940
115.0	-17.426	-11.476	0.000	0.000	0.000	-321.285	-36.998	0.000	36.998	-3.035
116.0	-12.421	-9.453	0.000	0.000	0.000	-303.860	-37.636	0.000	37.636	-3.053
120.0	-11.968	-8.698	0.000	0.000	0.000	-254.176	-40.221	0.000	40.221	-3.118
125.0	-11.410	-7.880	0.000	0.000	0.000	-194.335	-43.524	0.000	43.524	-3.188
127.0	-8.164	-5.333	0.000	0.000	0.000	-171.515	-44.865	0.000	44.865	-3.217
130.0	-7.834	-4.870	0.000	0.000	0.000	-147.023	-46.899	0.000	46.899	-3.257
135.0	-7.288	-4.123	0.000	0.000	0.000	-107.855	-50.340	0.000	50.340	-3.313
139.0	-6.859	-3.544	0.000	0.000	0.000	-78.705	-53.131	0.000	53.131	-3.350
140.0	-6.791	-3.475	0.000	0.000	0.000	-71.846	-53.833	0.000	53.833	-3.358
142.0	-6.146	-3.306	0.000	0.000	0.000	-58.264	-55.264	0.000	55.264	-3.468
145.0	-5.943	-3.128	0.000	0.000	0.000	-39.826	-57.486	0.000	57.486	-3.599
150.0	-5.731	0.000	0.000	0.000	0.000	-10.109	-61.331	0.000	61.331	-3.720

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

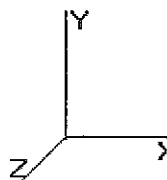
Code: TIA/EIA-222 Rev F

1/25/2013 10:36:36 AM

Page: 11

Base Elev: 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case:** No Ice                      80.00 mph Wind with No Ice                      22 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Stresses**

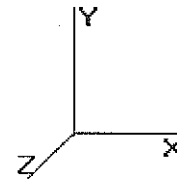
Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.43	0.62	0.00	0.00	0.00	29.36	29.82	33.4	0.0	0.892
5.00	0.42	0.62	0.00	0.00	0.00	28.96	29.40	33.4	0.0	0.879
10.00	0.41	0.62	0.00	0.00	0.00	28.53	28.96	33.4	0.0	0.866
15.00	0.40	0.62	0.00	0.00	0.00	28.07	28.49	33.4	0.0	0.852
20.00	0.39	0.62	0.00	0.00	0.00	27.58	27.99	33.4	0.0	0.837
25.00	0.37	0.62	0.00	0.00	0.00	27.06	27.45	33.4	0.0	0.821
30.00	0.36	0.62	0.00	0.00	0.00	26.49	26.88	33.4	0.0	0.804
35.00	0.35	0.63	0.00	0.00	0.00	25.89	26.26	33.4	0.0	0.785
40.00	0.33	0.63	0.00	0.00	0.00	25.24	25.60	33.4	0.0	0.766
40.00	0.40	0.75	0.00	0.00	0.00	30.08	30.50	31.4	0.0	0.973
45.00	0.39	0.75	0.00	0.00	0.00	29.24	29.66	31.4	0.0	0.946
50.00	0.38	0.75	0.00	0.00	0.00	28.35	28.76	31.4	0.0	0.917
55.00	0.36	0.75	0.00	0.00	0.00	27.39	27.79	31.4	0.0	0.886
60.00	0.35	0.75	0.00	0.00	0.00	26.36	26.74	31.4	0.0	0.853
65.00	0.34	0.75	0.00	0.00	0.00	25.26	25.63	31.4	0.0	0.817
70.00	0.32	0.75	0.00	0.00	0.00	24.06	24.42	31.4	0.0	0.779
75.00	0.31	0.75	0.00	0.00	0.00	22.78	23.13	31.4	0.0	0.738
80.00	0.30	0.74	0.00	0.00	0.00	21.40	21.73	31.4	0.0	0.693
80.00	0.37	0.93	0.00	0.00	0.00	26.47	26.88	28.7	0.0	0.936
85.00	0.36	0.92	0.00	0.00	0.00	24.61	25.02	28.7	0.0	0.871
90.00	0.34	0.92	0.00	0.00	0.00	22.60	23.00	28.7	0.0	0.801
95.00	0.33	0.92	0.00	0.00	0.00	20.42	20.81	28.7	0.0	0.725
96.00	0.30	0.80	0.00	0.00	0.00	19.97	20.32	28.7	0.0	0.708
100.00	0.29	0.80	0.00	0.00	0.00	18.43	18.77	28.7	0.0	0.654
105.00	0.28	0.80	0.00	0.00	0.00	16.33	16.67	28.7	0.0	0.580
106.00	0.27	0.77	0.00	0.00	0.00	15.90	16.23	28.7	0.0	0.565
110.00	0.26	0.76	0.00	0.00	0.00	14.16	14.48	28.7	0.0	0.504
115.00	0.25	0.76	0.00	0.00	0.00	11.79	12.10	28.7	0.0	0.421
116.00	0.20	0.54	0.00	0.00	0.00	11.29	11.54	28.7	0.0	0.402
120.00	0.19	0.54	0.00	0.00	0.00	9.97	10.21	28.7	0.0	0.355
120.00	0.22	0.62	0.00	0.00	0.00	11.32	11.59	38.1	0.0	0.304
125.00	0.21	0.61	0.00	0.00	0.00	9.28	9.54	38.1	0.0	0.251
127.00	0.14	0.44	0.00	0.00	0.00	8.42	8.60	38.1	0.0	0.226
130.00	0.13	0.43	0.00	0.00	0.00	7.54	7.71	38.1	0.0	0.202
135.00	0.12	0.42	0.00	0.00	0.00	5.96	6.12	38.1	0.0	0.161
139.00	0.10	0.40	0.00	0.00	0.00	4.62	4.78	38.1	0.0	0.126
139.00	0.36	1.40	0.00	0.00	0.00	23.47	23.95	52.0	0.0	0.461
140.00	0.35	1.40	0.00	0.00	0.00	21.84	22.32	52.0	0.0	0.429
142.00	0.34	1.29	0.00	0.00	0.00	18.41	18.89	52.0	0.0	0.363
145.00	0.33	1.28	0.00	0.00	0.00	13.36	13.87	52.0	0.0	0.267
150.00	0.00	1.30	0.00	0.00	0.00	3.76	4.39	52.0	0.0	0.084

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM  
 Page: 12

<b>Load Case:</b> Ice	69.28 mph Wind with Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Shaft Segment Forces**

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 12.287	20.76 296.17	1.030		0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00 12.287	20.76 290.69	1.030		0.500	5.00	21.594	22.24	461.9	159.2	2,216.7
10.00		0.00	1.00 12.287	20.76 285.21	1.030		0.500	5.00	21.199	21.83	453.4	156.2	2,174.8
15.00		0.00	1.00 12.287	20.76 279.74	1.030		0.500	5.00	20.804	21.43	445.0	153.3	2,132.8
20.00		0.00	1.00 12.287	20.76 274.26	1.030		0.500	5.00	20.408	21.02	436.5	150.3	2,090.9
25.00		0.00	1.00 12.287	20.76 268.79	1.030		0.500	5.00	20.013	20.61	428.1	147.3	2,049.0
30.00		0.00	1.00 12.287	20.76 263.31	1.030		0.500	5.00	19.618	20.21	419.6	144.3	2,007.0
35.00		0.00	1.01 12.496	21.11 260.01	1.030		0.500	5.00	19.223	19.80	418.1	141.4	1,965.1
40.00	Top - Section 1	0.00	1.05 12.982	21.93 259.39	1.030		0.500	5.00	18.828	19.39	425.4	138.4	1,923.1
45.00		0.00	1.09 13.426	22.69 257.88	1.030		0.500	5.00	18.419	18.97	430.5	135.3	1,593.3
50.00		0.00	1.12 13.836	23.38 255.98	1.030		0.500	5.00	18.024	18.56	434.1	132.4	1,557.9
55.00		0.00	1.15 14.218	24.02 253.59	1.030		0.500	5.00	17.629	18.16	436.3	129.4	1,522.4
60.00		0.00	1.18 14.576	24.63 250.80	1.030		0.500	5.00	17.233	17.75	437.3	126.4	1,487.0
65.00		0.00	1.21 14.913	25.20 247.65	1.030		0.500	5.00	16.838	17.34	437.1	123.5	1,451.5
70.00		0.00	1.24 15.232	25.74 244.19	1.030		0.500	5.00	16.443	16.94	436.0	120.5	1,416.1
75.00		0.00	1.26 15.536	26.25 240.45	1.030		0.500	5.00	16.048	16.53	434.0	117.5	1,380.6
80.00	Top - Section 2	0.00	1.28 15.825	26.74 236.47	1.030		0.500	5.00	15.653	16.12	431.2	114.6	1,345.2
85.00		0.00	1.31 16.101	27.21 232.26	1.030		0.500	5.00	15.257	15.72	427.6	111.6	1,073.5
90.00		0.00	1.33 16.366	27.65 227.84	1.030		0.500	5.00	14.862	15.31	423.4	108.6	1,044.6
95.00		0.00	1.35 16.621	28.09 223.24	1.030		0.500	5.00	14.467	14.90	418.6	105.6	1,015.6
96.00	Appertunance(s)	0.00	1.35 16.671	28.17 222.30	1.030		0.500	1.00	2.846	2.93	82.6	21.0	199.9
100.0		0.00	1.37 16.866	28.50 218.46	1.030		0.500	4.00	11.226	11.56	329.6	82.1	787.3
105.0		0.00	1.39 17.103	28.90 213.53	1.030		0.500	5.00	13.677	14.09	407.2	99.7	957.7
106.0	Appertunance(s)	0.00	1.39 17.150	28.98 212.53	1.030		0.500	1.00	2.688	2.77	80.2	19.8	188.3
110.0		0.00	1.41 17.332	29.29 208.45	1.030		0.500	4.00	10.594	10.91	319.6	77.4	741.0
115.0		0.00	1.42 17.554	29.66 203.23	1.030		0.500	5.00	12.886	13.27	393.7	93.8	899.8
116.0	Appertunance(s)	0.00	1.43 17.597	29.73 202.18	1.030		0.500	1.00	2.530	2.61	77.5	18.6	176.7
120.0	Top - Section 3	0.00	1.44 17.768	30.02 197.89	1.030		0.500	4.00	9.961	10.26	308.1	72.6	694.6
125.0		0.00	1.46 17.977	30.38 192.42	1.030		0.500	5.00	12.096	12.46	378.5	87.8	749.2
127.0	Appertunance(s)	0.00	1.47 18.058	30.51 190.20	1.030		0.500	2.00	4.728	4.87	148.6	34.7	292.8
130.0		0.00	1.48 18.179	30.72 186.84	1.030		0.500	3.00	6.973	7.18	220.7	50.9	431.4
135.0		0.00	1.49 18.376	31.05 181.16	1.030		0.500	5.00	11.305	11.64	361.6	81.9	697.8
139.0	Top - Section 4	0.00	1.50 18.530	31.31 176.53	1.030		0.500	4.00	8.760	9.02	282.6	63.6	539.9
140.0		0.00	1.51 18.568	31.38 175.55	1.030		0.500	1.00	1.470	1.51	47.5	10.7	44.5
142.0	Appertunance(s)	0.00	1.51 18.644	31.50 175.56	1.030		0.500	2.00	2.901	2.99	94.2	21.0	87.6
145.0		0.00	1.52 18.755	31.69 172.56	1.030		0.500	3.00	4.254	4.38	138.9	30.6	128.1
150.0	Appertunance(s)	0.00	1.54 18.938	32.00 107.51	1.030		0.500	5.00	6.830	7.03	225.1	48.5	204.7
<b>Totals:</b>								150.00			12,130.1	3,430.6	39,268.7



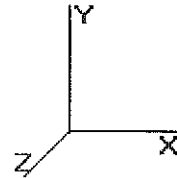
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:36 AM  
 Page: 13

Base Elev: 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case: Ice**

69.28 mph Wind with Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

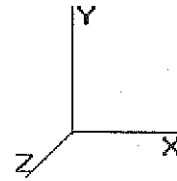
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
96.00	Decibel	12	16.671	28.174	0.71	55.38	0.000	0.000	1,560.26	0.00	0.00	660.00
96.00	Flat Low Profile Pla	1	16.671	28.174	1.00	31.60	0.000	0.000	890.29	0.00	0.00	1,700.00
106.0	72" x 12" Panel	3	17.150	28.983	0.67	18.55	0.000	0.000	537.70	0.00	0.00	276.84
116.0	Alcatel-Lucent RRH2x	3	17.597	29.739	0.67	5.77	0.000	0.000	171.56	0.00	0.00	184.20
116.0	Andrew LNX-6514DS-	2	17.597	29.739	0.82	15.15	0.000	0.000	450.65	0.00	0.00	177.80
116.0	Antel BXA-171063-8BF	6	17.597	29.739	0.87	17.80	0.000	0.000	529.36	0.00	0.00	175.80
116.0	Antel LPA-80063-6CF-	6	17.597	29.739	0.93	63.33	0.000	0.000	1,883.46	0.00	0.00	611.40
116.0	RFS APX75-866514-	1	17.597	29.739	0.74	7.91	0.000	0.000	235.25	0.00	0.00	81.10
116.0	RFS DB-T1-6Z-8AB-0Z	1	17.597	29.739	0.67	4.07	0.000	0.000	121.14	0.00	0.00	144.50
116.0	Round Low Profile Pl	1	17.597	29.739	1.00	27.20	0.000	0.000	808.90	0.00	0.00	1,700.00
127.0	Alcatel-Lucent 4X40W	6	18.058	30.519	0.67	12.34	0.000	0.000	376.65	0.00	0.00	495.60
127.0	Alcatel-Lucent 800 M	3	18.058	30.519	0.67	5.47	0.000	0.000	166.85	0.00	0.00	258.30
127.0	Allgon 7184	3	18.058	30.519	0.75	7.38	0.000	0.000	225.22	0.00	0.00	81.29
127.0	Flat Low Profile Pla	1	18.058	30.519	1.00	31.60	0.000	0.000	964.40	0.00	0.00	1,700.00
127.0	RFS APXV9ERR18-C-	1	18.058	30.519	0.85	7.72	0.000	0.000	235.54	0.00	0.00	113.90
127.0	RFS APXVSP18-C-	2	18.058	30.519	0.82	14.89	0.000	0.000	454.46	0.00	0.00	213.00
127.0	RFS IBC1900BB-1	3	18.058	30.519	0.50	2.04	0.000	0.000	62.26	0.00	0.00	179.40
127.0	RFS IBC1900HG-2A	3	18.058	30.519	0.50	2.04	0.000	0.000	62.26	0.00	0.00	179.40
142.0	RFS APXV18-	3	18.644	31.508	0.82	14.02	0.000	0.000	441.81	0.00	0.00	144.39
150.0	Andrew	6	19.393	32.774	0.00	0.00	0.000	13.000	0.00	0.00	0.00	87.12
150.0	Concealment Canister	1	19.169	32.396	1.00	20.00	0.000	6.500	647.91	0.00	4,211.42	300.00
150.0	Ericsson RRUS 11	6	19.010	32.127	0.67	13.23	0.000	2.000	424.90	0.00	849.80	445.80
150.0	Flat Platform w/ Han	1	18.938	32.005	1.00	48.40	0.000	0.000	1,549.05	0.00	0.00	2,450.00
150.0	KMW AM-X-CD-16-65-	6	19.010	32.127	0.78	42.49	0.000	2.000	1,365.20	0.00	2,730.40	570.00
150.0	Powerwave 7770.00	3	19.010	32.127	0.76	14.89	0.000	2.000	478.31	0.00	956.63	203.24
150.0	Powerwave LGP21401	6	19.010	32.127	0.50	4.59	0.000	2.000	147.46	0.00	294.92	127.56
150.0	Raycap DC6-48-60-18-	1	19.010	32.127	1.00	1.46	0.000	2.000	46.90	0.00	93.81	35.10
150.0	RFS APX16DWV-	3	19.393	32.774	0.00	0.00	0.000	13.000	0.00	0.00	0.00	208.14
											14,837.77	13,503.87

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007- 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM  
 Page: 14

<b>Load Case:</b> Ice	69.28 mph Wind with Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Linear Appurtenance Segment Forces**

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
5.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
5.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
5.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
5.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
10.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
10.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
10.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
10.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
10.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
15.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
15.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
15.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
15.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
15.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
20.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
20.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
20.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
20.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
20.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
25.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
25.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
25.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
25.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
25.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
30.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
30.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.287	21.80	18.85
30.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.287	0.00	47.30
30.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.287	66.45	94.65
30.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.287	45.68	47.30
35.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.496	0.00	47.30
35.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.496	22.17	18.85
35.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.496	0.00	47.30
35.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.496	67.58	94.65
35.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.496	46.46	47.30
40.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.982	0.00	47.30
40.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	12.982	23.04	18.85
40.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	12.982	0.00	47.30
40.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	12.982	70.20	94.65
40.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	12.982	48.27	47.30
45.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.426	0.00	47.30
45.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	13.426	23.82	18.85
45.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.426	0.00	47.30
45.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	13.426	72.61	94.65
45.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	13.426	49.92	47.30
50.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.836	0.00	47.30
50.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	13.836	24.55	18.85
50.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	13.836	0.00	47.30
50.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	13.836	74.83	94.65
50.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	13.836	51.44	47.30
55.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	14.218	0.00	47.30

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

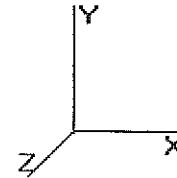
Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:36 AM

Page: 15

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case: Ice**

69.28 mph Wind with Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

55.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	14.218	25.23	18.85
55.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	14.218	0.00	47.30
55.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	14.218	76.89	94.65
55.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	14.218	52.86	47.30
60.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	14.576	0.00	47.30
60.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	14.576	25.87	18.85
60.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	14.576	0.00	47.30
60.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	14.576	78.83	94.65
60.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	14.576	54.19	47.30
65.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	14.913	0.00	47.30
65.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	14.913	26.46	18.85
65.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	14.913	0.00	47.30
65.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	14.913	80.65	94.65
65.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	14.913	55.45	47.30
70.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	15.232	0.00	47.30
70.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	15.232	27.03	18.85
70.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	15.232	0.00	47.30
70.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	15.232	82.38	94.65
70.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	15.232	56.63	47.30
75.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	15.536	0.00	47.30
75.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	15.536	27.57	18.85
75.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	15.536	0.00	47.30
75.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	15.536	84.02	94.65
75.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	15.536	57.76	47.30
80.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	15.825	0.00	47.30
80.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	15.825	28.08	18.85
80.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	15.825	0.00	47.30
80.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	15.825	85.58	94.65
80.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	15.825	58.84	47.30
85.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	16.101	0.00	47.30
85.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	16.101	28.57	18.85
85.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	16.101	0.00	47.30
85.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	16.101	87.08	94.65
85.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	16.101	59.86	47.30
90.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	16.366	0.00	47.30
90.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	16.366	29.04	18.85
90.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	16.366	0.00	47.30
90.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	16.366	88.51	94.65
90.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	16.366	60.85	47.30
95.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	16.621	0.00	47.30
95.00	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	16.621	29.49	18.85
95.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	16.621	0.00	47.30
95.00	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	16.621	89.89	94.65
95.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.44	16.621	61.80	47.30
96.00	(6) 1 5/8" Coax	Yes	1.00	9.46	0.00	16.671	0.00	9.46
96.00	(3) 1 1/4" Hybriflex	Yes	1.00	3.77	0.21	16.671	5.92	3.77
96.00	(6) 1 5/8" Coax	Yes	1.00	9.46	0.00	16.671	0.00	9.46
96.00	(19) 1 5/8" Coax	Yes	1.00	18.93	0.64	16.671	18.03	18.93
96.00	(6) 1 5/8" Coax	Yes	1.00	9.46	0.44	16.671	12.40	9.46
100.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.00	16.866	0.00	37.84
100.0	(3) 1 1/4" Hybriflex	Yes	4.00	3.77	0.21	16.866	23.94	15.08
100.0	(6) 1 5/8" Coax	Yes	4.00	9.46	0.00	16.866	0.00	37.84
100.0	(19) 1 5/8" Coax	Yes	4.00	18.93	0.64	16.866	72.97	75.72
105.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	17.103	0.00	47.30
105.0	(3) 1 1/4" Hybriflex	Yes	5.00	3.77	0.21	17.103	30.35	18.85
105.0	(6) 1 5/8" Coax	Yes	5.00	9.46	0.00	17.103	0.00	47.30
105.0	(19) 1 5/8" Coax	Yes	5.00	18.93	0.64	17.103	92.49	94.65

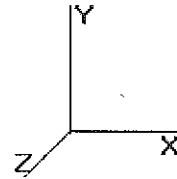


Pole : 302483  
 Location : BrIn - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM

Page: 17

<b>Load Case:</b> Ice	69.28 mph Wind with Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	595.80	2,631.03	0.00	0.00
10.00	587.35	2,589.09	0.00	0.00
15.00	578.89	2,547.14	0.00	0.00
20.00	570.44	2,505.20	0.00	0.00
25.00	561.99	2,463.26	0.00	0.00
30.00	553.54	2,421.32	0.00	0.00
35.00	554.32	2,379.38	0.00	0.00
40.00	566.95	2,337.43	0.00	0.00
45.00	576.81	2,007.62	0.00	0.00
50.00	584.92	1,972.18	0.00	0.00
55.00	591.28	1,936.73	0.00	0.00
60.00	596.14	1,901.28	0.00	0.00
65.00	599.67	1,865.84	0.00	0.00
70.00	602.02	1,830.39	0.00	0.00
75.00	603.32	1,794.94	0.00	0.00
80.00	603.66	1,759.50	0.00	0.00
85.00	603.14	1,487.85	0.00	0.00
90.00	601.81	1,458.90	0.00	0.00
95.00	599.74	1,429.95	0.00	0.00
96.00	2,569.48	2,642.75	0.00	0.00
100.0	426.50	1,051.36	0.00	0.00
105.0	530.02	1,287.84	0.00	0.00
106.0	642.57	531.17	0.00	0.00
110.0	419.20	1,002.52	0.00	0.00
115.0	519.82	1,226.79	0.00	0.00
116.0	4,303.10	3,316.92	0.00	0.00
120.0	333.32	880.47	0.00	0.00
125.0	410.40	981.47	0.00	0.00
127.0	2,709.07	3,606.64	0.00	0.00
130.0	243.70	552.04	0.00	0.00
135.0	400.45	898.91	0.00	0.00
139.0	313.87	700.86	0.00	0.00
140.0	55.36	84.72	0.00	0.00
142.0	551.71	312.47	0.00	0.00
145.0	162.66	220.45	0.00	0.00
150.0	4,924.89	4,785.50	0.00	9,136.99
<b>Totals:</b>	<b>30,647.92</b>	<b>63,401.92</b>	<b>0.00</b>	<b>9,136.99</b>

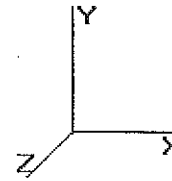


Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code : TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM  
 Page: 18

**Load Case:** Ice

69.28 mph Wind with Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

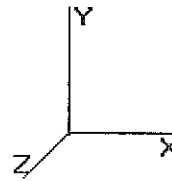
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-30.708	-63.372	0.000	0.000	0.000	-3,095.730	0.000	0.000	0.000	0.000
5.00	-30.224	-60.685	0.000	0.000	0.000	-2,942.194	-0.058	0.000	0.058	-0.108
10.00	-29.739	-58.041	0.000	0.000	0.000	-2,791.076	-0.229	0.000	0.229	-0.216
15.00	-29.254	-55.441	0.000	0.000	0.000	-2,642.381	-0.514	0.000	0.514	-0.325
20.00	-28.768	-52.885	0.000	0.000	0.000	-2,496.114	-0.914	0.000	0.914	-0.434
25.00	-28.281	-50.373	0.000	0.000	0.000	-2,352.276	-1.427	0.000	1.427	-0.544
30.00	-27.794	-47.904	0.000	0.000	0.000	-2,210.872	-2.056	0.000	2.056	-0.653
35.00	-27.297	-45.480	0.000	0.000	0.000	-2,071.905	-2.799	0.000	2.799	-0.763
40.00	-26.779	-43.100	0.000	0.000	0.000	-1,935.421	-3.656	0.000	3.656	-0.872
45.00	-26.255	-41.047	0.000	0.000	0.000	-1,801.529	-4.628	0.000	4.628	-0.981
50.00	-25.722	-39.029	0.000	0.000	0.000	-1,670.256	-5.725	0.000	5.725	-1.110
55.00	-25.173	-37.049	0.000	0.000	0.000	-1,541.650	-6.956	0.000	6.956	-1.237
60.00	-24.610	-35.108	0.000	0.000	0.000	-1,415.789	-8.319	0.000	8.319	-1.363
65.00	-24.035	-33.207	0.000	0.000	0.000	-1,292.740	-9.813	0.000	9.813	-1.487
70.00	-23.450	-31.344	0.000	0.000	0.000	-1,172.564	-11.436	0.000	11.436	-1.608
75.00	-22.855	-29.521	0.000	0.000	0.000	-1,055.317	-13.185	0.000	13.185	-1.727
80.00	-22.251	-27.738	0.000	0.000	0.000	-941.047	-15.055	0.000	15.055	-1.841
85.00	-21.654	-26.225	0.000	0.000	0.000	-829.795	-17.042	0.000	17.042	-1.951
90.00	-21.055	-24.743	0.000	0.000	0.000	-721.528	-19.156	0.000	19.156	-2.080
95.00	-20.431	-23.311	0.000	0.000	0.000	-616.255	-21.400	0.000	21.400	-2.201
96.00	-17.782	-20.751	0.000	0.000	0.000	-595.824	-21.864	0.000	21.864	-2.225
100.0	-17.348	-19.688	0.000	0.000	0.000	-524.696	-23.767	0.000	23.767	-2.315
105.0	-16.785	-18.406	0.000	0.000	0.000	-437.958	-26.248	0.000	26.248	-2.419
106.0	-16.135	-17.889	0.000	0.000	0.000	-421.173	-26.756	0.000	26.756	-2.439
110.0	-15.697	-16.884	0.000	0.000	0.000	-356.633	-28.832	0.000	28.832	-2.514
115.0	-15.135	-15.669	0.000	0.000	0.000	-278.151	-31.510	0.000	31.510	-2.596
116.0	-10.694	-12.544	0.000	0.000	0.000	-263.016	-32.055	0.000	32.055	-2.611
120.0	-10.333	-11.669	0.000	0.000	0.000	-220.241	-34.267	0.000	34.267	-2.667
125.0	-9.884	-10.701	0.000	0.000	0.000	-168.578	-37.093	0.000	37.093	-2.729
127.0	-7.010	-7.224	0.000	0.000	0.000	-148.809	-38.242	0.000	38.242	-2.754
130.0	-6.745	-6.680	0.000	0.000	0.000	-127.781	-39.983	0.000	39.983	-2.788
135.0	-6.305	-5.797	0.000	0.000	0.000	-94.058	-42.929	0.000	42.929	-2.837
139.0	-5.958	-5.111	0.000	0.000	0.000	-68.840	-45.320	0.000	45.320	-2.869
140.0	-5.903	-5.023	0.000	0.000	0.000	-62.882	-45.921	0.000	45.921	-2.876
142.0	-5.345	-4.730	0.000	0.000	0.000	-51.075	-47.147	0.000	47.147	-2.972
145.0	-5.181	-4.507	0.000	0.000	0.000	-35.040	-49.054	0.000	49.054	-3.087
150.0	-4.925	0.000	0.000	0.000	0.000	-9.137	-52.355	0.000	52.355	-3.195

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

Copyright ©2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM  
 Page: 19

<b>Load Case:</b> Ice	69.28 mph Wind with Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

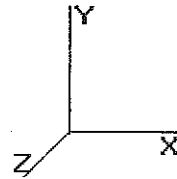
Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.52	0.51	0.00	0.00	0.00	24.78	25.31	33.4	0.0	0.757
5.00	0.51	0.51	0.00	0.00	0.00	24.46	24.99	33.4	0.0	0.747
10.00	0.49	0.51	0.00	0.00	0.00	24.13	24.64	33.4	0.0	0.737
15.00	0.48	0.52	0.00	0.00	0.00	23.77	24.26	33.4	0.0	0.726
20.00	0.47	0.52	0.00	0.00	0.00	23.38	23.86	33.4	0.0	0.714
25.00	0.46	0.52	0.00	0.00	0.00	22.96	23.43	33.4	0.0	0.701
30.00	0.44	0.52	0.00	0.00	0.00	22.51	22.97	33.4	0.0	0.687
35.00	0.43	0.52	0.00	0.00	0.00	22.02	22.47	33.4	0.0	0.672
40.00	0.42	0.52	0.00	0.00	0.00	21.50	21.93	33.4	0.0	0.656
40.00	0.50	0.63	0.00	0.00	0.00	25.61	26.13	31.4	0.0	0.833
45.00	0.48	0.63	0.00	0.00	0.00	24.94	25.44	31.4	0.0	0.811
50.00	0.47	0.63	0.00	0.00	0.00	24.21	24.70	31.4	0.0	0.788
55.00	0.46	0.63	0.00	0.00	0.00	23.42	23.90	31.4	0.0	0.762
60.00	0.44	0.63	0.00	0.00	0.00	22.56	23.03	31.4	0.0	0.735
65.00	0.43	0.63	0.00	0.00	0.00	21.64	22.10	31.4	0.0	0.705
70.00	0.42	0.63	0.00	0.00	0.00	20.65	21.10	31.4	0.0	0.673
75.00	0.40	0.63	0.00	0.00	0.00	19.57	20.01	31.4	0.0	0.638
80.00	0.39	0.63	0.00	0.00	0.00	18.41	18.83	31.4	0.0	0.600
80.00	0.48	0.79	0.00	0.00	0.00	22.77	23.29	28.7	0.0	0.811
85.00	0.47	0.79	0.00	0.00	0.00	21.20	21.71	28.7	0.0	0.756
90.00	0.46	0.79	0.00	0.00	0.00	19.49	20.00	28.7	0.0	0.696
95.00	0.44	0.79	0.00	0.00	0.00	17.64	18.13	28.7	0.0	0.631
96.00	0.40	0.69	0.00	0.00	0.00	17.25	17.69	28.7	0.0	0.616
100.00	0.38	0.69	0.00	0.00	0.00	15.93	16.36	28.7	0.0	0.570
105.00	0.37	0.69	0.00	0.00	0.00	14.14	14.55	28.7	0.0	0.507
106.00	0.36	0.66	0.00	0.00	0.00	13.76	14.17	28.7	0.0	0.493
110.00	0.35	0.66	0.00	0.00	0.00	12.26	12.66	28.7	0.0	0.441
115.00	0.34	0.66	0.00	0.00	0.00	10.20	10.60	28.7	0.0	0.369
116.00	0.27	0.47	0.00	0.00	0.00	9.78	10.08	28.7	0.0	0.351
120.00	0.26	0.47	0.00	0.00	0.00	8.64	8.94	28.7	0.0	0.311
120.00	0.30	0.53	0.00	0.00	0.00	9.81	10.15	38.1	0.0	0.266
125.00	0.28	0.53	0.00	0.00	0.00	8.05	8.38	38.1	0.0	0.220
127.00	0.19	0.38	0.00	0.00	0.00	7.31	7.53	38.1	0.0	0.198
130.00	0.18	0.37	0.00	0.00	0.00	6.55	6.77	38.1	0.0	0.178
135.00	0.16	0.36	0.00	0.00	0.00	5.20	5.40	38.1	0.0	0.142
139.00	0.15	0.35	0.00	0.00	0.00	4.05	4.24	38.1	0.0	0.111
139.00	0.51	1.21	0.00	0.00	0.00	20.53	21.15	52.0	0.0	0.407
140.00	0.51	1.21	0.00	0.00	0.00	19.12	19.74	52.0	0.0	0.380
142.00	0.49	1.12	0.00	0.00	0.00	16.14	16.74	52.0	0.0	0.322
145.00	0.48	1.12	0.00	0.00	0.00	11.75	12.39	52.0	0.0	0.238
150.00	0.00	1.12	0.00	0.00	0.00	3.40	3.91	52.0	0.0	0.075

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev: 0.000 (ft)

Copyright © 2007-2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:36 AM  
 Page: 20

**Load Case:** Twist/Sway      50.00 mph Wind with No Ice      21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Shaft Segment Forces**

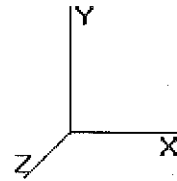
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	6.400	10.81	213.75	1.030	0.000	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	6.400	10.81	209.79	1.030	0.000	5.00	21.177	21.81	235.9	0.0	2,057.5
10.00		0.00	1.00	6.400	10.81	205.84	1.030	0.000	5.00	20.782	21.41	231.5	0.0	2,018.6
15.00		0.00	1.00	6.400	10.81	201.89	1.030	0.000	5.00	20.387	21.00	227.1	0.0	1,979.6
20.00		0.00	1.00	6.400	10.81	197.94	1.030	0.000	5.00	19.992	20.59	222.7	0.0	1,940.6
25.00		0.00	1.00	6.400	10.81	193.98	1.030	0.000	5.00	19.597	20.18	218.3	0.0	1,901.6
30.00		0.00	1.00	6.400	10.81	190.03	1.030	0.000	5.00	19.201	19.78	213.9	0.0	1,862.7
35.00		0.00	1.01	6.509	10.99	187.65	1.030	0.000	5.00	18.806	19.37	213.1	0.0	1,823.7
40.00	Top - Section 1	0.00	1.05	6.762	11.42	187.20	1.030	0.000	5.00	18.411	18.96	216.7	0.0	1,784.7
45.00		0.00	1.09	6.993	11.81	186.11	1.030	0.000	5.00	18.002	18.54	219.1	0.0	1,458.0
50.00		0.00	1.12	7.207	12.17	184.74	1.030	0.000	5.00	17.607	18.14	220.9	0.0	1,425.5
55.00		0.00	1.15	7.406	12.51	183.02	1.030	0.000	5.00	17.212	17.73	221.9	0.0	1,393.0
60.00		0.00	1.18	7.592	12.83	181.00	1.030	0.000	5.00	16.817	17.32	222.2	0.0	1,360.6
65.00		0.00	1.21	7.768	13.12	178.73	1.030	0.000	5.00	16.422	16.91	222.0	0.0	1,328.1
70.00		0.00	1.24	7.934	13.40	176.23	1.030	0.000	5.00	16.026	16.51	221.3	0.0	1,295.6
75.00		0.00	1.26	8.092	13.67	173.54	1.030	0.000	5.00	15.631	16.10	220.2	0.0	1,263.1
80.00	Top - Section 2	0.00	1.28	8.242	13.93	170.66	1.030	0.000	5.00	15.236	15.69	218.6	0.0	1,230.6
85.00		0.00	1.31	8.387	14.17	167.62	1.030	0.000	5.00	14.841	15.29	216.7	0.0	962.0
90.00		0.00	1.33	8.525	14.40	164.43	1.030	0.000	5.00	14.446	14.88	214.4	0.0	936.0
95.00		0.00	1.35	8.657	14.63	161.11	1.030	0.000	5.00	14.050	14.47	211.7	0.0	910.0
96.00	Appertunance(s)	0.00	1.35	8.683	14.67	160.43	1.030	0.000	1.00	2.763	2.85	41.8	0.0	178.9
100.00		0.00	1.37	8.785	14.84	157.67	1.030	0.000	4.00	10.893	11.22	166.6	0.0	705.1
105.00		0.00	1.39	8.908	15.05	154.11	1.030	0.000	5.00	13.260	13.66	205.6	0.0	858.0
106.00	Appertunance(s)	0.00	1.39	8.933	15.09	153.38	1.030	0.000	1.00	2.605	2.68	40.5	0.0	168.5
110.00		0.00	1.41	9.028	15.25	150.44	1.030	0.000	4.00	10.260	10.57	161.2	0.0	663.6
115.00		0.00	1.42	9.143	15.45	146.67	1.030	0.000	5.00	12.470	12.84	198.5	0.0	806.1
116.00	Appertunance(s)	0.00	1.43	9.166	15.49	145.91	1.030	0.000	1.00	2.446	2.52	39.0	0.0	158.1
120.00	Top - Section 3	0.00	1.44	9.255	15.64	142.82	1.030	0.000	4.00	9.628	9.92	155.1	0.0	622.0
125.00		0.00	1.46	9.363	15.82	138.87	1.030	0.000	5.00	11.679	12.03	190.4	0.0	661.3
127.00	Appertunance(s)	0.00	1.47	9.406	15.89	137.27	1.030	0.000	2.00	4.561	4.70	74.7	0.0	258.2
130.00		0.00	1.48	9.469	16.00	134.84	1.030	0.000	3.00	6.723	6.92	110.8	0.0	380.4
135.00		0.00	1.49	9.572	16.17	130.74	1.030	0.000	5.00	10.889	11.22	181.4	0.0	615.9
139.00	Top - Section 4	0.00	1.50	9.652	16.31	127.40	1.030	0.000	4.00	8.426	8.68	141.6	0.0	476.3
140.00		0.00	1.51	9.672	16.34	84.840	1.030	0.000	1.00	1.387	1.43	23.3	0.0	33.8
142.00	Appertunance(s)	0.00	1.51	9.711	16.41	83.407	1.030	0.000	2.00	2.735	2.82	46.2	0.0	66.6
145.00		0.00	1.52	9.769	16.51	81.242	1.030	0.000	3.00	4.004	4.12	68.1	0.0	97.6
150.00	Appertunance(s)	0.00	1.54	9.864	16.67	77.592	1.030	0.000	5.00	6.413	6.61	110.1	0.0	156.2
Totals:								150.00			6,143.2	0.0	35,838.1	

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code : TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:37 AM  
 Page: 21

<b>Load Case:</b> Twist/Sway	<b>50.00 mph Wind with No Ice</b>	<b>21 Iterations</b>
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Discrete Appurtenance Segment Forces**

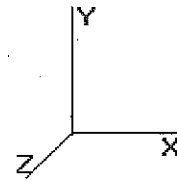
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
96.00	Decibel	12	8.683	14.675	0.71	50.18	0.000	0.000	736.42	0.00	0.00	192.00
96.00	Flat Low Profile Pla	1	8.683	14.675	1.00	26.10	0.000	0.000	383.01	0.00	0.00	1,500.00
106.0	72" x 12" Panel	3	8.933	15.096	0.67	16.88	0.000	0.000	254.88	0.00	0.00	135.00
116.0	Alcatel-Lucent RRH2x	3	9.166	15.490	0.67	5.07	0.000	0.000	78.46	0.00	0.00	132.00
116.0	Andrew LNX-6514DS-	2	9.166	15.490	0.82	13.40	0.000	0.000	207.55	0.00	0.00	76.80
116.0	Antel BXA-171063-8BF	6	9.166	15.490	0.87	15.35	0.000	0.000	237.72	0.00	0.00	63.00
116.0	Antel LPA-80063-6CF-	6	9.166	15.490	0.93	54.29	0.000	0.000	841.00	0.00	0.00	162.00
116.0	RFS APX75-866514-	1	9.166	15.490	0.74	7.22	0.000	0.000	111.87	0.00	0.00	30.80
116.0	RFS DB-T1-6Z-8AB-0Z	1	9.166	15.490	0.67	3.22	0.000	0.000	49.82	0.00	0.00	110.00
116.0	Round Low Profile Pl	1	9.166	15.490	1.00	21.70	0.000	0.000	336.13	0.00	0.00	1,500.00
127.0	Alcatel-Lucent 4X40W	6	9.406	15.896	0.67	10.89	0.000	0.000	173.18	0.00	0.00	357.00
127.0	Alcatel-Lucent 800 M	3	9.406	15.896	0.67	4.82	0.000	0.000	76.68	0.00	0.00	192.00
127.0	Allgon 7184	3	9.406	15.896	0.75	6.03	0.000	0.000	95.85	0.00	0.00	33.60
127.0	Flat Low Profile Pla	1	9.406	15.896	1.00	26.10	0.000	0.000	414.89	0.00	0.00	1,500.00
127.0	RFS APXV9ERR18-C-	1	9.406	15.896	0.85	6.82	0.000	0.000	108.36	0.00	0.00	62.00
127.0	RFS APXVSP18-C-	2	9.406	15.896	0.82	13.15	0.000	0.000	209.08	0.00	0.00	114.00
127.0	RFS IBC1900BB-1	3	9.406	15.896	0.50	1.69	0.000	0.000	26.94	0.00	0.00	66.00
127.0	RFS IBC1900HG-2A	3	9.406	15.896	0.50	1.69	0.000	0.000	26.94	0.00	0.00	66.00
142.0	RFS APXV18-	3	9.711	16.411	0.80	12.05	0.000	0.000	197.72	0.00	0.00	66.00
150.0	Andrew	6	10.101	17.071	0.00	0.00	0.000	13.000	0.00	0.00	0.00	66.00
150.0	Concealment Canister	1	9.984	16.874	1.00	15.00	0.000	6.500	253.11	0.00	1,645.18	200.00
150.0	Ericsson RRUS 11	6	9.902	16.734	0.67	11.82	0.000	2.000	197.77	0.00	395.54	330.00
150.0	Flat Platform w/ Han	1	9.864	16.670	1.00	42.40	0.000	0.000	706.82	0.00	0.00	2,000.00
150.0	KMW AM-X-CD-16-65-	6	9.902	16.734	0.78	38.66	0.000	2.000	646.87	0.00	1,293.74	291.00
150.0	Powerwave 7770.00	3	9.902	16.734	0.75	13.23	0.000	2.000	221.39	0.00	442.77	105.00
150.0	Powerwave LGP21401	6	9.902	16.734	0.50	3.87	0.000	2.000	64.76	0.00	129.52	84.60
150.0	Raycap DC6-48-60-18-	1	9.902	16.734	1.00	1.26	0.000	2.000	21.08	0.00	42.17	20.00
150.0	RFS APX16DWV-	3	10.101	17.071	0.00	0.00	0.000	13.000	0.00	0.00	0.00	118.80
									6,678.32			9,573.60

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code : TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



1/25/2013 10:36:37 AM  
 Page : 22

**Load Case:** Twist/Sway      50.00 mph Wind with No Ice      21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Linear Appurtenance Segment Forces**

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
5.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
5.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
10.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
10.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
15.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
15.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
20.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
20.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
25.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
25.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
30.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.400	8.65	9.45
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.400	0.00	24.60
30.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.400	31.91	49.20
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.400	21.09	24.60
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.509	0.00	24.60
35.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.509	8.80	9.45
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.509	0.00	24.60
35.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.509	32.45	49.20
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.509	21.45	24.60
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.762	0.00	24.60
40.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.762	9.14	9.45
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.762	0.00	24.60
40.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.762	33.71	49.20
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.762	22.28	24.60
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.993	0.00	24.60
45.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	6.993	9.45	9.45
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	6.993	0.00	24.60
45.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	6.993	34.86	49.20
45.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	6.993	23.05	24.60
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.207	0.00	24.60
50.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.207	9.74	9.45
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.207	0.00	24.60
50.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.207	35.93	49.20
50.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.207	23.75	24.60
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.406	0.00	24.60



Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

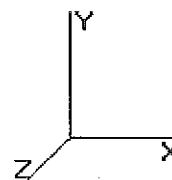
Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:37 AM

Page: 23

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case:** Twist/Sway      **50.00 mph Wind with No Ice**      **21 Iterations**

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

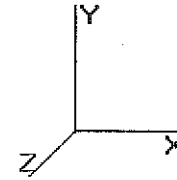
55.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.406	10.01	9.45
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.406	0.00	24.60
55.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.406	36.92	49.20
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.406	24.41	24.60
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.592	0.00	24.60
60.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.592	10.26	9.45
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.592	0.00	24.60
60.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.592	37.85	49.20
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.592	25.02	24.60
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.768	0.00	24.60
65.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.768	10.50	9.45
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.768	0.00	24.60
65.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.768	38.73	49.20
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.768	25.60	24.60
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.934	0.00	24.60
70.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	7.934	10.73	9.45
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	7.934	0.00	24.60
70.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	7.934	39.55	49.20
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	7.934	26.15	24.60
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.092	0.00	24.60
75.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.092	10.94	9.45
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.092	0.00	24.60
75.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.092	40.34	49.20
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.092	26.67	24.60
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.242	0.00	24.60
80.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.242	11.14	9.45
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.242	0.00	24.60
80.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.242	41.09	49.20
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.242	27.16	24.60
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.387	0.00	24.60
85.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.387	11.34	9.45
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.387	0.00	24.60
85.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.387	41.81	49.20
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.387	27.64	24.60
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.525	0.00	24.60
90.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.525	11.53	9.45
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.525	0.00	24.60
90.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.525	42.50	49.20
90.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.525	28.09	24.60
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.657	0.00	24.60
95.00	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.657	11.70	9.45
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.657	0.00	24.60
95.00	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.657	43.16	49.20
95.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.39	8.657	28.53	24.60
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.683	0.00	4.92
96.00	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	8.683	2.35	1.89
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.683	0.00	4.92
96.00	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	8.683	8.66	9.84
96.00	(6) 1 5/8" Coax	Yes	1.00	4.92	0.39	8.683	5.72	4.92
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	8.785	0.00	19.68
100.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	8.785	9.50	7.56
100.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	8.785	0.00	19.68
100.0	(19) 1 5/8" Coax	Yes	4.00	9.84	0.59	8.785	35.04	39.36
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.908	0.00	24.60
105.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	8.908	12.04	9.45
105.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	8.908	0.00	24.60
105.0	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	8.908	44.41	49.20

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:37 AM  
 Page: 24

Base Elev : 0.000 (ft)



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

**Load Case:** Twist/Sway      50.00 mph Wind with No Ice      21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

106.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.933	0.00	4.92
106.0	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	8.933	2.42	1.89
106.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	8.933	0.00	4.92
106.0	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	8.933	8.91	9.84
110.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.028	0.00	19.68
110.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	9.028	9.76	7.56
110.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.028	0.00	19.68
110.0	(19) 1 5/8" Coax	Yes	4.00	9.84	0.59	9.028	36.01	39.36
115.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.143	0.00	24.60
115.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	9.143	12.36	9.45
115.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.143	0.00	24.60
115.0	(19) 1 5/8" Coax	Yes	5.00	9.84	0.59	9.143	45.58	49.20
116.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	9.166	0.00	4.92
116.0	(3) 1 1/4" Hybriflex	Yes	1.00	1.89	0.16	9.166	2.48	1.89
116.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	9.166	0.00	4.92
116.0	(19) 1 5/8" Coax	Yes	1.00	9.84	0.59	9.166	9.14	9.84
120.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.255	0.00	19.68
120.0	(3) 1 1/4" Hybriflex	Yes	4.00	1.89	0.16	9.255	10.01	7.56
120.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.255	0.00	19.68
125.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.363	0.00	24.60
125.0	(3) 1 1/4" Hybriflex	Yes	5.00	1.89	0.16	9.363	12.66	9.45
125.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.363	0.00	24.60
127.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	9.406	0.00	9.84
127.0	(3) 1 1/4" Hybriflex	Yes	2.00	1.89	0.16	9.406	5.09	3.78
127.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	9.406	0.00	9.84
130.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.00	9.469	0.00	14.76
130.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	9.469	9.60	14.76
135.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.00	9.572	0.00	24.60
135.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	9.572	16.18	24.60
139.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.00	9.652	0.00	19.68
139.0	(6) 1 5/8" Coax	Yes	4.00	4.92	0.20	9.652	13.05	19.68
140.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.00	9.672	0.00	4.92
140.0	(6) 1 5/8" Coax	Yes	1.00	4.92	0.20	9.672	3.27	4.92
142.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.00	9.711	0.00	9.84
142.0	(6) 1 5/8" Coax	Yes	2.00	4.92	0.20	9.711	6.56	9.84
145.0	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	9.769	9.91	14.76
150.0	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	9.864	16.67	24.60
Totals:							1,681.28	3,290.43

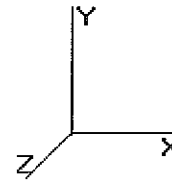
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:37 AM  
 Page: 25

Base Elev: 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	297.58	2,348.89	0.00	0.00
10.00	293.17	2,309.91	0.00	0.00
15.00	288.77	2,270.94	0.00	0.00
20.00	284.37	2,231.97	0.00	0.00
25.00	279.97	2,192.99	0.00	0.00
30.00	275.56	2,154.02	0.00	0.00
35.00	275.76	2,115.05	0.00	0.00
40.00	281.83	2,076.08	0.00	0.00
45.00	286.50	1,749.33	0.00	0.00
50.00	290.30	1,716.86	0.00	0.00
55.00	293.22	1,684.38	0.00	0.00
60.00	295.38	1,651.90	0.00	0.00
65.00	296.87	1,619.43	0.00	0.00
70.00	297.76	1,586.95	0.00	0.00
75.00	298.12	1,554.47	0.00	0.00
80.00	298.00	1,521.99	0.00	0.00
85.00	297.44	1,253.31	0.00	0.00
90.00	296.47	1,227.33	0.00	0.00
95.00	295.13	1,201.35	0.00	0.00
96.00	1,177.91	1,929.15	0.00	0.00
100.0	211.11	889.02	0.00	0.00
105.0	262.08	1,087.89	0.00	0.00
106.0	306.70	349.46	0.00	0.00
110.0	207.00	844.93	0.00	0.00
115.0	256.40	1,032.77	0.00	0.00
116.0	1,913.20	2,278.04	0.00	0.00
120.0	165.11	763.99	0.00	0.00
125.0	203.02	838.84	0.00	0.00
127.0	1,211.70	2,719.77	0.00	0.00
130.0	120.41	473.89	0.00	0.00
135.0	197.60	771.62	0.00	0.00
139.0	154.62	600.93	0.00	0.00
140.0	26.62	64.95	0.00	0.00
142.0	250.51	194.94	0.00	0.00
145.0	77.99	176.25	0.00	0.00
150.0	2,238.58	3,502.72	0.00	3,948.92
<b>Totals:</b>	<b>14,502.78</b>	<b>52,986.32</b>	<b>0.00</b>	<b>3,948.92</b>

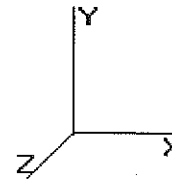
Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

1/25/2013 10:36:37 AM  
 Page: 26

Base Elev : 0.000 (ft)

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.



**Load Case:** Twist/Sway

50.00 mph Wind with No Ice

21 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

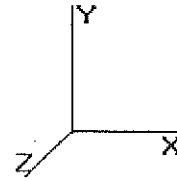
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-14.526	-52.980	0.000	0.000	0.000	-1,433.826	0.000	0.000	0.000	0.000
5.00	-14.271	-50.619	0.000	0.000	0.000	-1,361.198	-0.027	0.000	0.027	-0.050
10.00	-14.018	-48.297	0.000	0.000	0.000	-1,289.842	-0.106	0.000	0.106	-0.100
15.00	-13.764	-46.014	0.000	0.000	0.000	-1,219.755	-0.238	0.000	0.238	-0.150
20.00	-13.512	-43.771	0.000	0.000	0.000	-1,150.935	-0.423	0.000	0.423	-0.201
25.00	-13.260	-41.568	0.000	0.000	0.000	-1,083.378	-0.660	0.000	0.660	-0.251
30.00	-13.008	-39.404	0.000	0.000	0.000	-1,017.081	-0.950	0.000	0.950	-0.302
35.00	-12.753	-37.279	0.000	0.000	0.000	-952.041	-1.293	0.000	1.293	-0.352
40.00	-12.488	-35.194	0.000	0.000	0.000	-888.277	-1.689	0.000	1.689	-0.402
45.00	-12.221	-33.435	0.000	0.000	0.000	-825.836	-2.137	0.000	2.137	-0.452
50.00	-11.948	-31.709	0.000	0.000	0.000	-764.734	-2.642	0.000	2.642	-0.511
55.00	-11.670	-30.016	0.000	0.000	0.000	-704.993	-3.208	0.000	3.208	-0.569
60.00	-11.385	-28.355	0.000	0.000	0.000	-646.645	-3.836	0.000	3.836	-0.627
65.00	-11.096	-26.729	0.000	0.000	0.000	-589.720	-4.523	0.000	4.523	-0.683
70.00	-10.803	-25.135	0.000	0.000	0.000	-534.240	-5.269	0.000	5.269	-0.739
75.00	-10.505	-23.575	0.000	0.000	0.000	-480.228	-6.071	0.000	6.071	-0.793
80.00	-10.205	-22.049	0.000	0.000	0.000	-427.702	-6.930	0.000	6.930	-0.845
85.00	-9.909	-20.791	0.000	0.000	0.000	-376.676	-7.842	0.000	7.842	-0.895
90.00	-9.612	-19.559	0.000	0.000	0.000	-327.133	-8.811	0.000	8.811	-0.953
95.00	-9.306	-18.357	0.000	0.000	0.000	-279.075	-9.839	0.000	9.839	-1.008
96.00	-8.102	-16.446	0.000	0.000	0.000	-269.768	-10.051	0.000	10.051	-1.019
100.0	-7.887	-15.555	0.000	0.000	0.000	-237.360	-10.923	0.000	10.923	-1.060
105.0	-7.611	-14.468	0.000	0.000	0.000	-197.926	-12.058	0.000	12.058	-1.106
106.0	-7.303	-14.122	0.000	0.000	0.000	-190.315	-12.291	0.000	12.291	-1.116
110.0	-7.088	-13.277	0.000	0.000	0.000	-161.103	-13.240	0.000	13.240	-1.149
115.0	-6.815	-12.247	0.000	0.000	0.000	-125.664	-14.465	0.000	14.465	-1.186
116.0	-4.858	-10.008	0.000	0.000	0.000	-118.850	-14.714	0.000	14.714	-1.193
120.0	-4.681	-9.245	0.000	0.000	0.000	-99.419	-15.725	0.000	15.725	-1.219
125.0	-4.463	-8.410	0.000	0.000	0.000	-76.015	-17.017	0.000	17.017	-1.246
127.0	-3.193	-5.716	0.000	0.000	0.000	-67.089	-17.542	0.000	17.542	-1.258
130.0	-3.064	-5.244	0.000	0.000	0.000	-57.510	-18.337	0.000	18.337	-1.273
135.0	-2.851	-4.476	0.000	0.000	0.000	-42.190	-19.683	0.000	19.683	-1.295
139.0	-2.683	-3.878	0.000	0.000	0.000	-30.787	-20.774	0.000	20.774	-1.310
140.0	-2.657	-3.813	0.000	0.000	0.000	-28.104	-21.049	0.000	21.049	-1.313
142.0	-2.405	-3.622	0.000	0.000	0.000	-22.791	-21.609	0.000	21.609	-1.356
145.0	-2.326	-3.446	0.000	0.000	0.000	-15.577	-22.478	0.000	22.478	-1.407
150.0	-2.239	0.000	0.000	0.000	0.000	-3.949	-23.982	0.000	23.982	-1.454

Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

1/25/2013 10:36:37 AM  
 Page: 27



Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	21 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

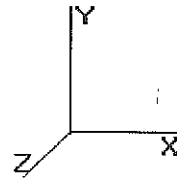
Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.43	0.24	0.00	0.00	0.00	11.48	11.92	33.4	0.0	0.356
5.00	0.42	0.24	0.00	0.00	0.00	11.32	11.75	33.4	0.0	0.351
10.00	0.41	0.24	0.00	0.00	0.00	11.15	11.57	33.4	0.0	0.346
15.00	0.40	0.24	0.00	0.00	0.00	10.97	11.38	33.4	0.0	0.340
20.00	0.39	0.24	0.00	0.00	0.00	10.78	11.17	33.4	0.0	0.334
25.00	0.38	0.24	0.00	0.00	0.00	10.57	10.96	33.4	0.0	0.328
30.00	0.36	0.24	0.00	0.00	0.00	10.36	10.73	33.4	0.0	0.321
35.00	0.35	0.24	0.00	0.00	0.00	10.12	10.48	33.4	0.0	0.313
40.00	0.34	0.24	0.00	0.00	0.00	9.87	10.22	33.4	0.0	0.305
40.00	0.41	0.29	0.00	0.00	0.00	11.76	12.17	31.4	0.0	0.388
45.00	0.39	0.29	0.00	0.00	0.00	11.43	11.84	31.4	0.0	0.377
50.00	0.38	0.29	0.00	0.00	0.00	11.08	11.48	31.4	0.0	0.366
55.00	0.37	0.29	0.00	0.00	0.00	10.71	11.09	31.4	0.0	0.354
60.00	0.36	0.29	0.00	0.00	0.00	10.31	10.68	31.4	0.0	0.340
65.00	0.35	0.29	0.00	0.00	0.00	9.87	10.23	31.4	0.0	0.326
70.00	0.33	0.29	0.00	0.00	0.00	9.41	9.76	31.4	0.0	0.311
75.00	0.32	0.29	0.00	0.00	0.00	8.91	9.24	31.4	0.0	0.295
80.00	0.31	0.29	0.00	0.00	0.00	8.37	8.69	31.4	0.0	0.277
80.00	0.38	0.36	0.00	0.00	0.00	10.35	10.75	28.7	0.0	0.374
85.00	0.37	0.36	0.00	0.00	0.00	9.62	10.02	28.7	0.0	0.349
90.00	0.36	0.36	0.00	0.00	0.00	8.84	9.22	28.7	0.0	0.321
95.00	0.35	0.36	0.00	0.00	0.00	7.99	8.36	28.7	0.0	0.291
96.00	0.31	0.31	0.00	0.00	0.00	7.81	8.14	28.7	0.0	0.284
100.00	0.30	0.31	0.00	0.00	0.00	7.21	7.53	28.7	0.0	0.262
105.00	0.29	0.31	0.00	0.00	0.00	6.39	6.70	28.7	0.0	0.233
106.00	0.29	0.30	0.00	0.00	0.00	6.22	6.53	28.7	0.0	0.227
110.00	0.28	0.30	0.00	0.00	0.00	5.54	5.84	28.7	0.0	0.203
115.00	0.26	0.30	0.00	0.00	0.00	4.61	4.90	28.7	0.0	0.171
116.00	0.22	0.21	0.00	0.00	0.00	4.42	4.65	28.7	0.0	0.162
120.00	0.21	0.21	0.00	0.00	0.00	3.90	4.12	28.7	0.0	0.144
120.00	0.23	0.24	0.00	0.00	0.00	4.43	4.68	38.1	0.0	0.123
125.00	0.22	0.24	0.00	0.00	0.00	3.63	3.87	38.1	0.0	0.102
127.00	0.15	0.17	0.00	0.00	0.00	3.29	3.46	38.1	0.0	0.091
130.00	0.14	0.17	0.00	0.00	0.00	2.95	3.11	38.1	0.0	0.082
135.00	0.13	0.16	0.00	0.00	0.00	2.33	2.47	38.1	0.0	0.065
139.00	0.11	0.16	0.00	0.00	0.00	1.81	1.94	38.1	0.0	0.051
139.00	0.39	0.55	0.00	0.00	0.00	9.18	9.62	52.0	0.0	0.185
140.00	0.39	0.55	0.00	0.00	0.00	8.54	8.98	52.0	0.0	0.173
142.00	0.37	0.50	0.00	0.00	0.00	7.20	7.63	52.0	0.0	0.147
145.00	0.37	0.50	0.00	0.00	0.00	5.23	5.66	52.0	0.0	0.109
150.00	0.00	0.51	0.00	0.00	0.00	1.47	1.71	52.0	0.0	0.033



Pole : 302483  
 Location : Brln - Berlin, CT  
 Height : 150.0 (ft)  
 Base Dia : 51.30 (in)  
 Top Dia : 15.00 (in)  
 Shape : 12 Sides  
 Taper : 0.189701 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



1/25/2013 10:36:37 AM  
 Page: 28

Copyright © 2007 - 2011 by American Tower Corporation. All rights reserved.

### Analysis Summary

Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	37.2	0.00	52.94	0.00	0.00	3669.15	30.50	31.4	40.00	0.973
Ice	30.7	0.00	63.37	0.00	0.00	3095.73	26.13	31.4	40.00	0.833
Twist/Sway	14.5	0.00	52.98	0.00	0.00	1433.83	12.17	31.4	40.00	0.388

1/25/2013

EM

#302483

Foundation Check:

M= 3669.2 K-ft

V= 37.2 k

P= 52.9 k

Sliding Factor of Safety

V = 37.2 k

Total weight = Wt. Of Concrete + Wt. Of Soil + P = 86.7 + 47.8 + 52.9 = 187.4k

Ultimate friction resistance =  $0.41 \times (\text{wt.}) = 0.41 \times 187.4 = 77 \text{ k}$

Ultimate passive sliding resistance =  $11' \times 2.58' \times 1.33 = 37.7\text{k}$

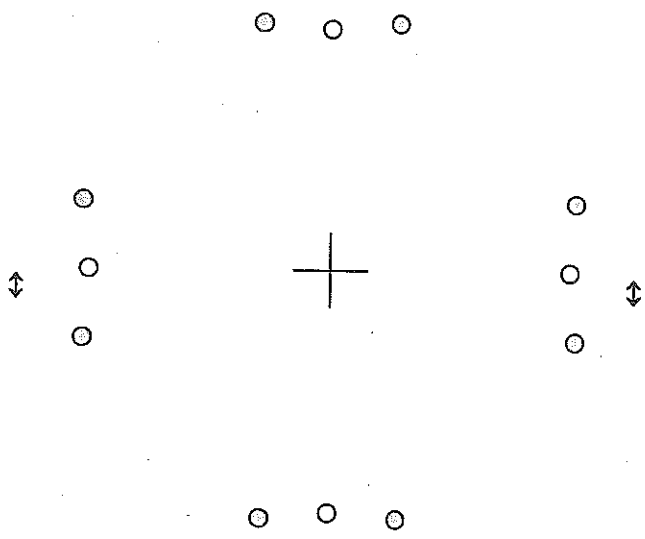
Factor of Safety =  $114.2/37.7 = 3$  Thus OK

(12) R71 Williams 150 ksi rock anchor check (next page)

Code Rev. **F**  
 A.S.I. **1.33**  
 Moment **3669.2 k-ft**  
 Axial **52.9 k**

Date **1/25/2013**  
 Engineer **EM**  
 Site # **302483**  
 Carrier **Verizon**

Bolts	#	<b>8</b>
	Bolt Circle (R)adial / (S)quare	44.25 in S
	Bolt Gap	12 in
	Diameter	1.75 in
	Hole Diameter	3.625 in
	Type	R71 William
	Fu	390 ksi
	Allowable Applied	446.16 k 333.20 k
Reinforcement	#	<b>0</b>
Extra Bolts	#	<b>4</b>
	Bolt Circle (R)adial / (S)quare	41.63 in R
	Offset Angle	90 °
	Diameter	1.75 in
	Type	R71 William
	Fu	390 ksi
Allowable Applied	412.75 k 320.19 k	

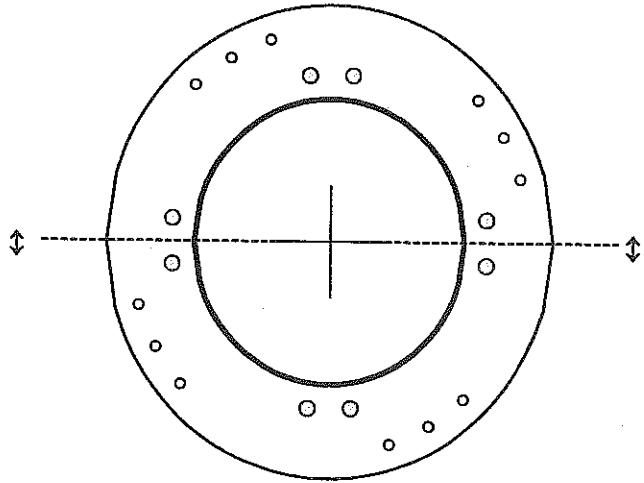


Bolt Stress Ratio:  
**0.75** (Pass)

Extra Bolt Stress Ratio:  
**0.78** (Pass)

<b>Base/Flange Plate</b>	Plate Type	<b>Baseplate</b>
	Pole Diameter	37.38 in
	Pole Thickness	in
	Plate Length	62 in
	Plate Thickness	2 in
	Plate Fy	60 ksi
	Weld Length	0.25 in
	Allowable	664.01 k-in
	Applied	451.80 k-in
	<b>Stiffeners</b>	#

Code Rev. **F** Date 1/25/2013  
 A.S.I. 1.33 Engineer EM  
 Moment \* 2384.9 k-ft Site # 302483  
 Axial \* 34.4 k Carrier Verizon  
 \* Factored by 0.65, see attached calcs



<b>Bolts</b>	#	8
	Bolt Circle (R)adial / (S)quare	44 in S
	Bolt Gap	6 in
	Diameter	2.25 in
	Hole Diameter	2.375 in
	Type	#18J
	Fy	75 ksi
	Fu	100 ksi
	Allowable	194.86 k
	Applied	120.64 k
<b>Reinforcement</b>	#	0
<b>Extra Bolts O</b>	#	12
	Bolt Circle (R)adial / (S)quare	55.5 in S
	Bolt Gap	6 in
	Offset Angle	30°
	Diameter	1.75 in
	Type	R71
	Fu	390 ksi
	Allowable	412.75 k
Applied	107.43 k	

Plate Stress Ratio:  
**0.68** (Pass)

Bolt Stress Ratio:  
**0.62** (Pass)

Extra Bolt Stress Ratio:  
**0.26** (Pass)



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](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

February 28, 2013

The Honorable Adam P. Salina  
Mayor  
Town of Berlin  
240 Kensington Road  
Kensington, CT 06037

RE: **EM-VER-007-130226** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 260 Beckley Road, Berlin, Connecticut.

Dear Mayor Salina:

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 March 14, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

A handwritten signature in cursive script that reads "L. Roberts".

Linda Roberts  
Executive Director

LR/jb

c: Denise McNair, Town Manager, Town of Berlin  
Arthur Simonian, Town Engineer, Town of Berlin