Robinson+Cole

KENNETH C. BALDWIN

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Also admitted in Massachusetts

August 27, 2015

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

Re: **Notice of Exempt Modification – Facility Modification**
1000 Trumbull Avenue, Bridgeport, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the 155-foot level of the existing 240-foot tower at 1000 Trumbull Avenue in Bridgeport, Connecticut (the "Property"). The tower is owned by American Tower Corporation ("ATC"). The Council approved Cellco's use of this tower in 1990. Cellco now intends to replace nine (9) of its existing antennas with three (3) model 80010734V01, 700 MHz antennas; three (3) model HBXX-6516DS-VTM, 1900 MHz antennas; and three (3) model HBXX-6516DS-VTM, 2100 MHz antennas, all at the same level on the tower. Cellco also intends to replace six (6) existing remote radio heads ("RRHs") with six (6) new RRHs and install three (3) additional RRHs and one (1) HYBRIFLEX™ fiber optic antenna cable. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Bill Finch, Mayor for the City of Bridgeport. A copy of this letter is also being sent to Cell Tower Lease Acquisition LLC, owner of the Property and to ATC, the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be located on its existing antenna platform at the 155-foot level on the tower.

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

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed State and local criteria.

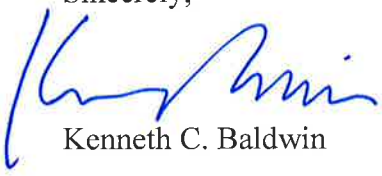
4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case General Power Density table for Cellco's modified facility is included in Attachment 2.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The tower and its foundation can support Cellco's proposed modifications. (*See* Structural Analysis Report included in Attachment 3).

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Kenneth C. Baldwin

Enclosures
Copy to:
Bill Finch, Mayor for the City of Bridgeport
Cell Tower Lease Acquisition LLC
American Tower Corporation
Tim Parks

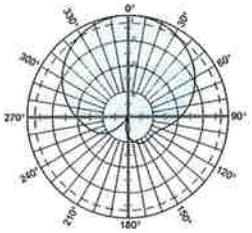
ATTACHMENT 1

KATHREIN
SCALA DIVISION

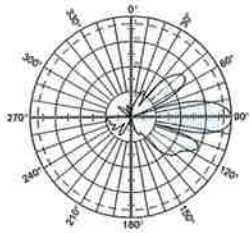
800 10734V01
700 MHz Single Band 4', 65 Degree Antenna RET

Kathrein's X-polarized antennas are designed for use in digital polarization diversity systems.

- X-polarized (+45° and -45°).
- UV resistant fiberglass radomes.
- Wideband vector dipole technology.
- DC Grounded metallic parts for impulse suppression.
- RET motor housed inside the radome and field replaceable.



Horizontal pattern
±45°- polarization



Vertical pattern
±45°- polarization
0°–16° electrical downtilt

General specifications:

Frequency range	698–894 MHz
VSWR	<1.5:1
Impedance	50 ohms
Intermodulation (2x20w)	IM3: <-150 dBc
Polarization	+45° and -45°
Maximum input power	500 watts per input (at 50°C)
Connector	2 x 7-16 DIN female (long neck) (bottom mounted)
Isolation	>30 dB
Electrical downtilt	0–16 degrees (continuously adjustable)
See reverse for order information.	

Specifications:	**698–806 MHz**	**824–894 MHz**
Gain	14.2 dBi	14.8 dBi
Front-to-back ratio	>30 dB (co-polar) 32 dB (average)	>30 dB (co-polar) 33 dB (average)
+45° and -45° polarization horizontal beamwidth	68° (half-power)	65° (half-power)
+45° and -45° polarization vertical beamwidth	16° (half-power)	14.8° (half-power)
Min. sidelobe suppression for first sidelobe above main beam average	0° 8° 16° T 16 17 17 dB 16 19 20 dB	0° 8° 16° T 18 17 16 dB 20 20 20 dB
Cross polar ratio Main direction 0° Sector ±60°	 24 dB (typical) >10 dB, Average: 15 dB	 23 dB (typical) >10 dB, Average: 16 dB

IRT specifications:

Logical interface ex factory[1]	3GPP/AISG 2.0
Protocols	AISG 1.1 and 3GPP/AISG 2.0 compliant
Hardware interface[2]	2 x 8 pin connector acc. IEC 60130-9; according to AISG: – IRT in (male): Control / Daisy chain in – IRT in (female): Daisy chain out
Power supply	10–30 V
Power consumption	<1 watt (standby) <8.5 watts (motor activated)
Adjustment time (full range)	40 sec.
Adjustment cycles	>50,000
Certification	FCC 15.107 Class B Computing Devices

[1] The protocol of the logical interface can be switched from 3GPP/AISG 2.0 to AISG 1.1 and vice versa with a vendor specific command. Start-up operation of the RCU 86010149 is possible in an RET system supporting AISG 1.1 or supporting 3GPP/AISG 2.0 after performing a layer 2 reset before address assignment. The protocol can also be changed as follows: AISG 1.1 to 3GPP: Enter "3GPP" into the additional data filed "Installer's ID" and perform a layer 7 reset or a power reset. 3GPP to AISG 1.1: Enter "AISG 1" into the additional datafield "Installer's ID" and perform a layer 2 reset or a power reset. After switching the protocol any other information can be entered into the "Installer's ID" field.

[2] The tightning torque for fixing the connector must be 0.5 – 1.0 Nm ('hand-tightened'). The connector should be tightened by hand only!

11385-A
936.4272

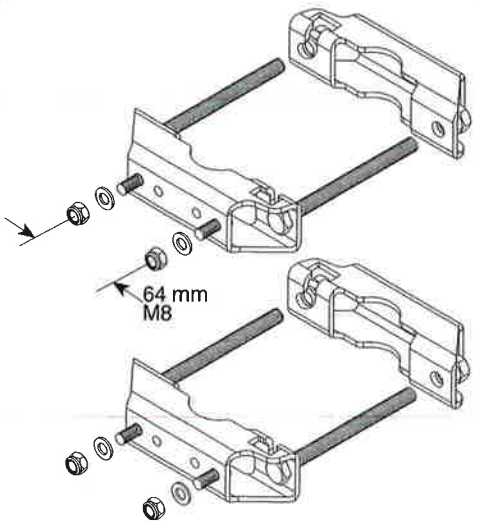
RoHS
Lead-Free
Oct 6, 2011

AISG
Antenna Interface Standards Group

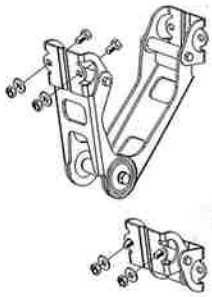
Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991
Email: communications@kathrein.com Internet: www.kathrein-scala.com

KATHREIN
SCALA DIVISION

800 10734V01
700 MHz Single Band 4', 65 Degree Antenna RET



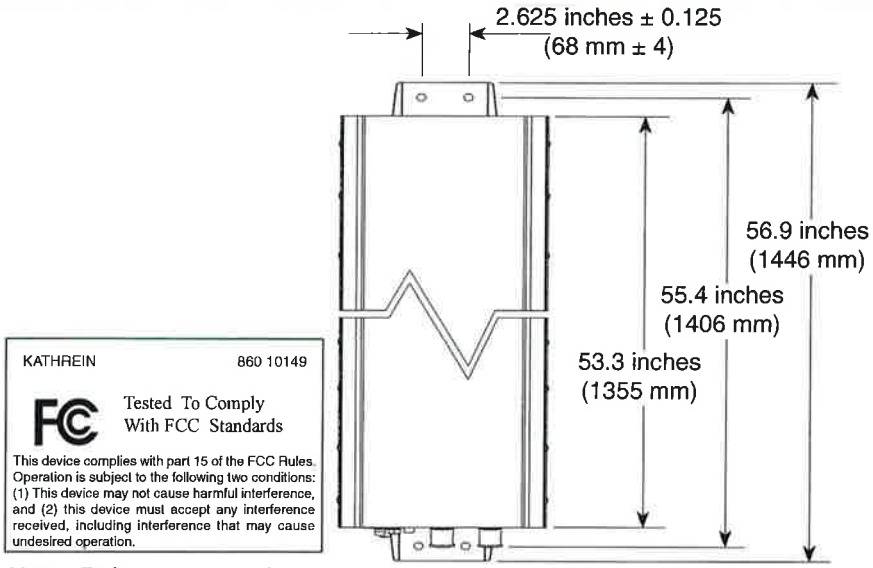
Mounting Brackets
for use with 2-point mount antennas
Mast dia. 2–4.5 inches (50–115 mm)
Weight: 4.4 lb (2 kg)



Mechanical Tilt Brackets
for use with 2-point mount antennas
Weight: 7.4 lb (3.7 kg)
(Model 850 10013)

Mechanical specifications:

Weight	24.3 lb (11 kg)	28.7 lb (13 kg) clamps included
Dimensions H x W x D	53.3 x 11.9 x 3.9 inches (1355 x 303 x 99 mm)	
Wind load Front/Side/Rear Mounting category	at 93 mph (150kph) 140 lbf / 45 lbf / 160 lbf (620 N) / (200 N) / (710 N) M (Medium)	
Wind survival rating*	150 mph (240 kph)	
Shipping dimensions	56.3 x 12.4 x 4.5 inches (1430 x 315 x 115 mm)	
Shipping weight	33.1 lb (15 kg)	
Mounting bracket	2-point hot-dip galvanized with stainless steel hardware for 2 to 4.5 inch (50 to 115 mm) OD masts.	

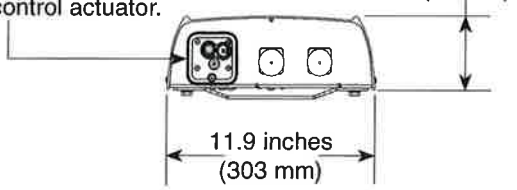


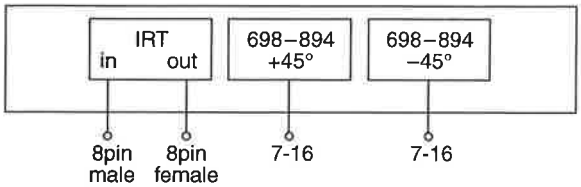
KATHREIN 860 10149

FC Tested To Comply With FCC Standards

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: Refer to part number 860 10149 for the specifications of the remote control actuator.





Order Information:

Model	Description
800 10734V01	Antenna with mounting bracket 0°–16° electrical downtilt
800 10734V01K	Antenna with Antenna with mounting bracket and mechanical tilt bracket 0°–16° electrical downtilt

* Mechanical design is based on environmental conditions as stipulated in TIA-222-G-2 (December 2009) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.

All specifications are subject to change without notice. The latest specifications are available at www.kathrein-scala.com.

Kathrein Inc., Scala Division Post Office Box 4580 Medford, OR 97501 (USA) Phone: (541) 779-6500 Fax: (541) 779-3991
Email: communications@kathrein.com Internet: www.kathrein-scala.com

Product Specifications

COMMSCOPE®

on the go

HBXX-6516DS-VTM

DualPol® Quad Teletilt® Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible

- Fully supports PCS 1900, GSM 1800, UMTS 2100, and AWS spectrum
- Each DualPol® array can be independently adjusted for greater flexibility
- Excellent gain, VSWR, front-to-back ratio, and PIM specifications for robust network performance
- Ideal choice for site collocations and tough zoning restrictions
- Great solution to maximize network coverage and capacity

Electrical Specifications

Frequency Band, MHz	**1710–1880**	**1850–1990**	**1920–2180**
Gain, dBi	17.7	18.0	18.0
Beamwidth, Horizontal, degrees	67	65	63
Beamwidth, Vertical, degrees	7.5	7.0	6.5
Beam Tilt, degrees	0–10	0–10	0–10
USLS, typical, dB	18	18	18
Front-to-Back Ratio at 180°, dB	30	30	30
Isolation, dB	30	30	30
VSWR | Return Loss, dB	1.4:1 | 15.6	1.4:1 | 15.6	1.4:1 | 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm
Lightning Protection	dc Ground	dc Ground	dc Ground

Mechanical Specifications

Color | Radome Material	Light gray | PVC, UV resistant
Connector Interface | Location | Quantity	7-16 DIN Female | Bottom | 4
Wind Loading, maximum	419.5 N @ 150 km/h 94.3 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h | 149.8 mph

Dimensions

Depth	166.0 mm | 6.5 in
Length	1294.00 mm | 50.94 in
Width	305.00 mm | 12.01 in
Net Weight	13.90 kg | 30.64 lb

Remote Electrical Tilt (RET) Information

Model with Factory Installed AISG 1.1 Actuator	HBXX-6516DS-R2M
Model with Factory Installed AISG 2.0 Actuator	HBXX-6516DS-A2M

Regulatory Compliance/Certifications

Agency	**Classification**
RoHS 2002/95/EC	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)

Product Specifications

HBXX-6516DS-VTM

ISO 9001:2008 Designed, manufactured and/or distributed under this quality management system

Included Products

600899A-2 — Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members

ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

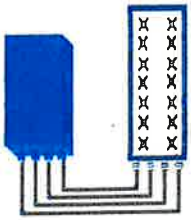
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

Alcatel·Lucent

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz – 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure – RX Diversity scheme	2 dB typ. (<2.5 dB max) – 2 or 4 way Rx diversity
Sizes (HxWxD) in mm (in.) Volume in L Weight in kg (lb) (w/o mounting HW)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield) 38 (with solar shield) 26 (57.2) (with solar shield)
DC voltage range DC power consumption	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 550W typical @100% RF load (in 2Tx or 4TX mode)
Environmental conditions Wind load (@150km/h or 93mph)	-40°C (-40°F) /+55°C (+131°F) IP65 Frontal:<200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
AISG interfaces	1 AISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) – 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

PCS RF MODULES

RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

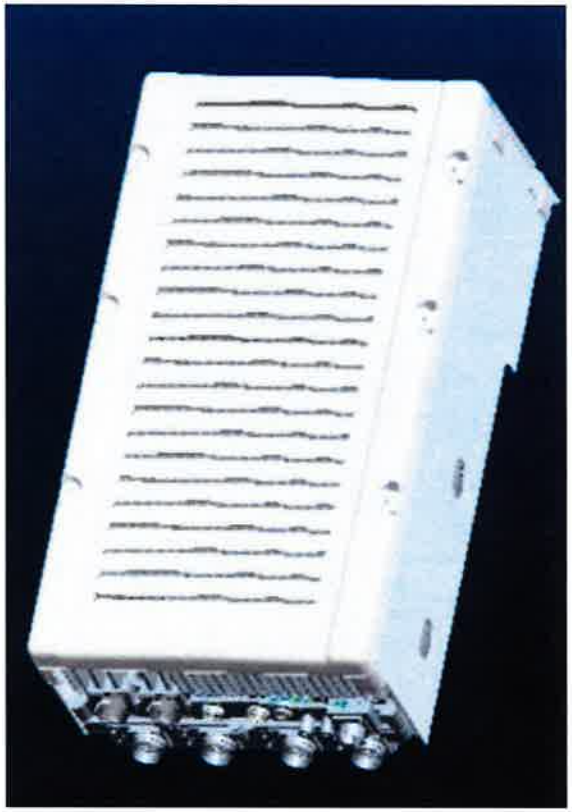
		RRH2x60
RF Output Power		2x60W
Instantaneous Bandwidth		20MHz
Transmitter		2 TX
Receiver	1900 HW version 1900A HW version	2 Branch RX – LA6.0.1 4 Branch RX – LR13.3
Features		AISG 2.0 for RET/TMA
		Internal Smart Bias-T
Power		-48VDC
CPRI Ports		2 CPRI Rate 3 Ports
External Alarms		4 External User Alarms
Monitor Ports		TX
Environmental		GR487 Compliance
RF Connectors		7/16 DIN (top mounted)

** Not a Verizon Wireless deployed product

NEW PCS RF MODULES FOR VZW
RRH2X60 - HW CHARACTERISTICS

LR14.3

	RRH2x60
RF Output Power	2x60W (4x30W HW Ready)
Instantaneous Bandwidth	60MHz
Target Reliability (Annual Return Rate)	<2%
Receiver	4 Branch Rx
Features	AISG 2.0 for RET/TMA
Power	-48VDC
	Internal Smart Bias-T
CPRI Ports	2 CPRI Rate 5 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX, RX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (downward facing)
Dimensions	22"(h) x 12"(w)x 9.4" (d)**
Weight	55lb**



**- Includes solar shield but not mounting brackets (8 lbs.)

ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET

RRH2X60-AWS FOR BAND 4 APPLICATIONS

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.

A distributed Node B expands the 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 a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-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.

SUPERIOR RF PERFORMANCE

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

OPTIMIZED TCO

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

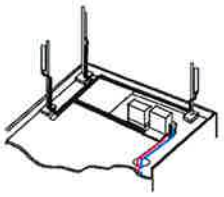
EASY INSTALLATION

The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

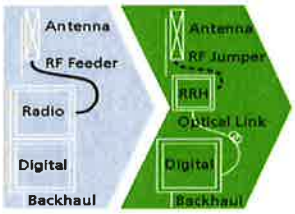
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

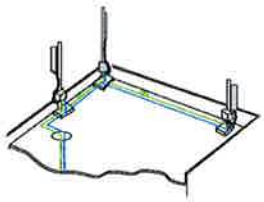
Installation can easily be done by a single person as the Alcatel–Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and silent solutions, with minimum impact on the neighborhood, which ease the deployment
- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

TECHNICAL SPECIFICATIONS

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisychaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

Alcatel·Lucent

AT THE SPEED OF IDEAS™

Product Data Sheet HB158-1-08U8-S8J18

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

Product Description

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

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX³ accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Figure 1: HYBRIFLEX Series

Features/Benefits

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

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

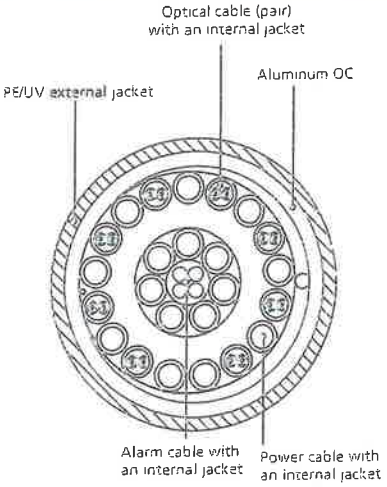


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: North Bridgeport (Bridgeport)								
Tower Height: 240Ft.								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*AT&T UMTS	1	500	165	0.0066	1900	1.0000	0.66%	
*AT&T UMTS	1	500	165	0.0066	880	0.5867	1.13%	
*AT&T GSM	1	427	165	0.0056	1900	1.0000	0.56%	
*AT&T LTE	1	500	165	0.0066	734	0.4893	1.35%	
*Red Star	1	150	217	0.0011	44	0.2000	0.57%	
*Metrocall	1	150	239	0.0009	75	0.2000	0.47%	
*Metrocall	1	3500	240	0.0218	930	0.6200	3.52%	
*Clinton Tower	1	3500	223	0.0253	930	0.6200	4.08%	
*AAT	1	3500	235	0.0228	930	0.6200	3.68%	
*Nextel	8	100	187	0.0082	851	0.5673	1.45%	
*Clearwire	2	153	187	0.0031	2496	1.0000	0.31%	
*Clearwire	1	211	187	0.0022	11 GHz	1.0000	0.22%	
*Sprint CDMA/LTE	7	618	180.6	0.0477	1900	1.0000	4.77%	
*Sprint CDMA/LTE	1	310	180.6	0.0034	850	0.5667	0.60%	
*Sprint CDMA/LTE	2	693	180.6	0.0153	2500	1.0000	1.53%	
*Sprint/Nextel WiMAX	3	562	187	0.0173	2657	1.0000	1.73%	
*Sprint/Nextel Microwave	2	4074	180	0.0904	19500	1.0000	9.04%	
*Sprint/Nextel Microwave	2	1097	180	0.0243	22500	1.0000	2.43%	
*Sprint/Nextel Microwave	2	692	180	0.0154	22500	1.0000	1.54%	
*T-Mobile LTE	2	24	205	0.0004	2100	1.0000	0.04%	
*T-Mobile GSM/UMTS	2	12	205	0.0002	1950	1.0000	0.02%	
*T-Mobile UMTS	2	12	205	0.0002	2100	1.0000	0.02%	
*MetroPCS	7	735	195	0.0487	2310	1.0000	4.87%	
Verizon PCS	**1**	**1087**	**155**	**0.0163**	**1970**	**1.0000**	**1.63%**	
Verizon Cellular	**9**	**386**	**155**	**0.0520**	**869**	**0.5793**	**8.97%**	
Verizon AWS	**1**	**1307**	**155**	**0.0196**	**2145**	**1.0000**	**1.96%**	
Verizon 700	**1**	**727**	**155**	**0.0109**	**746**	**0.4973**	**2.19%**	
								59.35%
* Source: Siting Council								

ATTACHMENT 3

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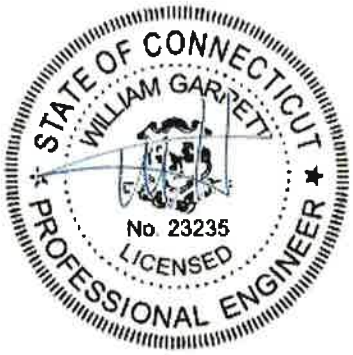
Structural Analysis Report

Structure	:	**240 ft Self Supported Tower**
GTP Site Name	:	**Tartaglia, CT**
GTP Site Number	:	**CT-5035**
Engineering Number	:	**61933921**
Proposed Carrier	:	**Verizon Wireless**
Carrier Site Name	:	**North Bridgeport CT**
Carrier Site Number	:	**117938**
Site Location	:	**1000 Trumbull Avenue** **Bridgeport, CT 06606-0000** **41.21884900, -73.20170100**
County	:	**Fairfield**
Date	:	**May 7, 2015**
Max Usage	:	**100%**
Result	:	**Pass**

Reviewed by:
William Garrett, PE
Chief Engineer



May 8 2015 2:34 PM

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer I

Robert D. Barrett

COA: PEC.0001553

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 240 ft self supported tower to reflect the change in loading by Verizon Wireless.

Supporting Documents

Tower Drawings	Rohn Drawing #C880400RI, dated March 3, 1988
Foundation Drawing	Rohn Drawing #A880341-1, dated January 28, 1988
Geotechnical Report	Soiltesting Job #G96-1987-87, dated January 6, 1988
Modifications	GlenMartin Drawing #GM-07602, dated February 21, 2013

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.

Basic Wind Speed:	85 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	74 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & 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 American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
240.0	240.0	1	10' Omni	Leg	(1) 1" Conduit (1) 1 1/4" Coax	--
		1	Beacon			
		-	-	Empty Side Arm		
230.0	230.0	2	8' Omni	Side Arms	(2) 7/8" Coax	
223.0	223.0	1	12' Omni	Side Arm	(1) 1 1/4" Coax	
212.0	212.0	6	Andrew HBX-6516DS-VTM	Sector Frames	(12) 1 5/8" Coax	Metro PCS
202.0	202.0	3	Ericsson KRY 112 144-1	Sector Frames	(12) 1 5/8" Coax (1) 1 5/8" Hybrid	T-Mobile
		3	Ericsson AIR21 B4A B2P			
		3	Ericsson AIR21 B2A B4P			
196.0	196.0	1	3' Yagi	Leg	(1) 7/8" Coax	--
187.0	187.0	2	2' HP Dish	Leg	(4) 1/2" Coax	Clearwire
		1	Andrew VHLP800-11-DW1			
180.6	180.6	3	RFS APXVTM14-C-I20	Sector Frames	(6) 5/16" Coax (3) 1 1/4" Hybriflex (3) 1/2" Ethernet (2) 2" Conduit (1) 1.625" Hybrid	Sprint Nextel
		3	Alcatel-Lucent TD-RRH8x20-25			
		1	PCTEL GPS-TMG-HR-26NCM			
		3	DragonWave A-ANT-11G-2C			
		3	Samsung DAP Heads			
		3	Argus LLPX310R			
		3	Alcatel-Lucent 800MHz 2/50W			
		6	Alcatel-Lucent 1900MHz 2x40W			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
174.0	174.0	2	Andrew 950F65T4E-M	Leg	(6) 1 5/8" Coax	--
		4	5' x 5" x 2" Panel			
164.0	164.0	1	20' Omni	Sector Frames	(1) 1 1/4" Coax	AT&T Mobility
		6	Ericsson RRUS 11		(6) 1 5/8" Coax (6) 0.64" Fiber (1) 0.39" Fiber Trunk (1) 3/8" Coax	
		3	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS A2 Module			
		3	Ericsson RRUS-32			
		3	Ericsson RRUS-E2			
		6	Ericsson RRUS-12			
		3	Powerwave TT19-08BP111-001			
		9	CCI HPA-65R-BUU-H6			
		3	Powerwave 7020 RET			
		3	Powerwave 7770			
152.0	155.0	3	Antel BXA-80063/6BF	Sector Frames	(12) 1 5/8" Coax (1) 1 5/8" Hybrid	Verizon Wireless
140.0	140.0	3	Small Side Lights	Leg	-	--
118.0	118.0	1	10' Omni	Side Arm	(1) 7/8" Coax	
108.0	108.0	1	10' Omni	Side Arm	(1) 1 1/4" Coax	
80.0	80.0	-	-	Empty Side Arm	-	
22.0	22.0	1	3' Dish	Leg	(1) CAT5	
20.0	20.0	1	GPS	Leg	(1) 1/2" Coax	Verizon Wireless
8.0	8.0	1	GPS	Side Arm	(1) 1/2" Coax	T-Mobile

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
152.0	155.0	3	Alcatel-Lucent ALU 2X40 LTE	-	-	Verizon Wireless
		3	Alcatel-Lucent ALU 2X40 AWS			
		6	RFS FD9R6004/2C-3L			
		3	Antel BXA-171063/8BF			
		3	Antel BXA-70063/6CF			
		3	Rymsa MG D-800T0			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
152.0	155.0	6	Andrew CBC78-DF	Sector Frames	(1) 1 5/8" Hybrid	Verizon Wireless
		2	RFS DB-T1-6Z-8AB-0Z			
		3	ALU RH_2x60-PCS			
		3	ALU RH_2x60-700			
		3	ALU RH_2x60-AWS			
		3	Kathrein 800 10734V01			
		6	Commscope HBXX-6516DS-A2M			

[1]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 stacked on top of existing Verizon Wireless coax.

Structure Usages*

Structural Component	Controlling Usage	Pass/Fail
Legs	51%	Pass
Diagonals	100%	Pass
Horizontals	96%	Pass
Anchor Bolts	54%	Pass
Leg Bolts	43%	Pass

***Anchorages have a factor of safety of 2.**

Foundations*

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	275.7	52%
Axial (Kips)	339.5	28%
Shear (Kips)	48.4	33%

***Foundations have a factor of safety of 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, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
187.0	2' HP Dish	Clearwire	0.172	0.021	0.070
	Andrew VHLP800-11-DW1				
180.6	DragonWave A-ANT-11G-2C	Sprint Nextel	0.160		
152.0	Andrew CBC78-DF	Verizon Wireless	0.123		0.077
	ALU RH_2x60-PCS				
	ALU RH_2x60-AWS				
	ALU RH_2x60-700				
	RFS DB-T1-6Z-8AB-0Z				
	Commscope HBXX-6516DS-A2M				
	Kathrein 800 10734V01				
22.0	3' Dish	--	0.012	0.003	0.035

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

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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:

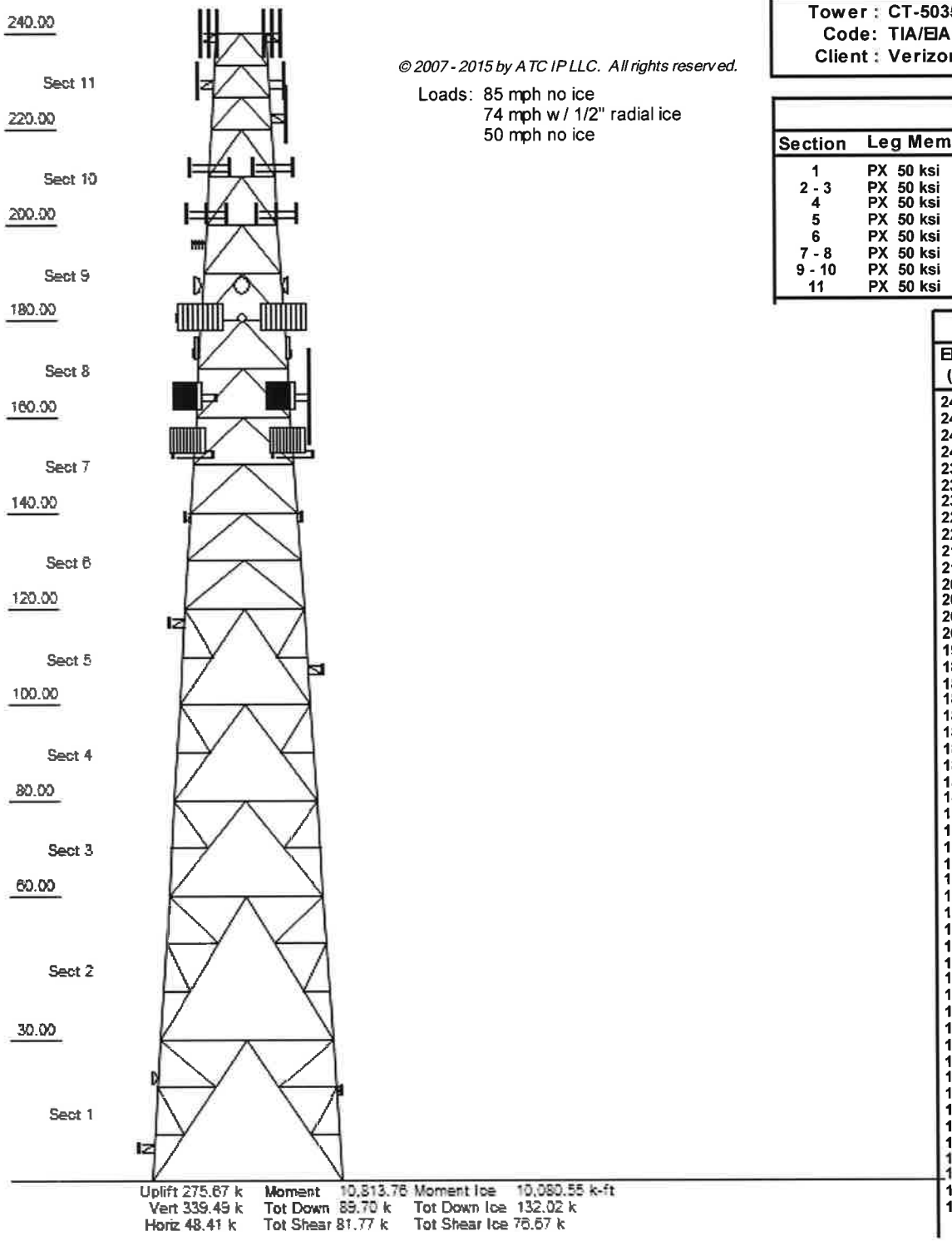
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- 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 A.T. Engineering Service, PLLC 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. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Loads: 85 mph no ice
74 mph w / 1/2" radial ice
50 mph no ice

Job Information

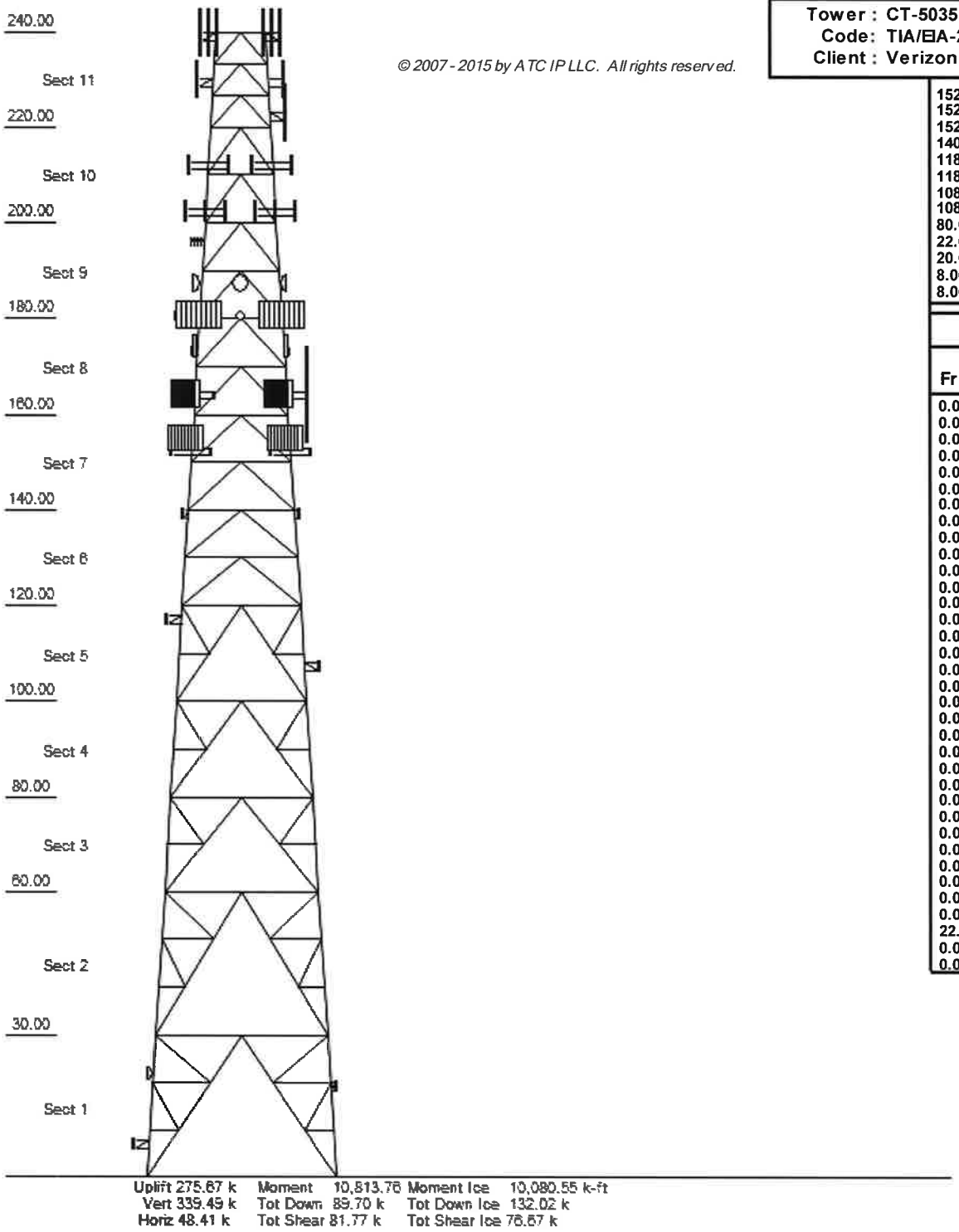
Tower : CT-5035	Location : Tartaglia, CT	
Code: TIA/EIA-222-F	Shape : Triangle	Base Width : 40.33 ft
Client : Verizon Wireless		Top Width : 10.93 ft

Sections Properties

Section	Leg Members		Diagonal Members	Horizontal Members
1	PX 50 ksi	10" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3-1/2" DIA PIPE
2 - 3	PX 50 ksi	10" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
4	PX 50 ksi	8" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
5	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
6	PX 50 ksi	8" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
7 - 8	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
9 - 10	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2" DIA PIPE
11	PX 50 ksi	8" DIA PIPE	PST 50 ksi 2" DIA PIPE	PST 50 ksi 2" DIA PIPE

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
240.00	Straight Arm	1	Empty Round Side Arm
240.00	Whip	1	10' Omni
240.00	Whip	1	Beacon
240.00	Whip	1	Lightning Rod
230.00	Whip	1	8' Omni
230.00	Whip	1	8' Omni
230.00	Straight Arm	3	Round Side Arm
223.00	Straight Arm	1	Round Side Arm
223.00	Whip	1	12' Omni
212.00	Mounting Frame	3	Round Sector Frame
212.00	Panel	6	Andrew HBX-6516DS-VTM
202.00	Panel	3	Ericsson KRY 112 144-1
202.00	Panel	3	Ericsson AIR21 B4A B2P
202.00	Panel	3	Ericsson AIR21 B2A B4P
202.00	Mounting Frame	3	Round Sector Frame
196.00	Yagi	1	3' Yagi
187.00	Dish	2	2' HP Dish
187.00	Dish	1	Andrew VHLP800-11-DW1
180.60	Panel	3	RFS APXVTM14-C-I20
180.60	Panel	3	Alcatel-Lucent TD-RRH8x20-25
180.60	Panel	1	PCTEL GPS-TMG-HR-26NCM
180.60	Dish	3	DragonWave A-ANT-11G-2C
180.60	Panel	3	Samsung DAP Heads
180.60	Panel	3	Argus LLPX310R
180.60	Panel	3	Alcatel-Lucent 800 MHz 2/50W
180.60	Panel	6	Alcatel-Lucent 1900 MHz 2x40W
180.60	Panel	1	RFS APXV9ERR18-C-A20
180.60	Panel	2	RFS APXVSPP18-C-A20
180.60	Mounting Frame	3	Flat Light Sector Frame
174.00	Panel	2	Andrew 950F65T4E-M
174.00	Panel	4	5' x 5" x 2" Panel
164.00	Panel	6	Ericsson RRUS 11
164.00	Panel	2	Raycap DC6-48-60-18-8F
164.00	Panel	6	Ericsson RRUS A2 Module
164.00	Panel	3	Ericsson RRUS-32
164.00	Panel	3	Ericsson RRUS-E2
164.00	Panel	6	Ericsson RRUS-12
164.00	Panel	3	Powerwave TT19-08BP111-001
164.00	Panel	9	CCI HPA-65R-BUU-H6
164.00	Panel	1	Raycap DC6-48-60-18-8F
164.00	Panel	3	Powerwave 7020 RET
164.00	Panel	3	Powerwave 7770
164.00	Mounting Frame	3	Round Sector Frame
164.00	Whip	1	20' Omni
152.00	Panel	6	Andrew CBC78-DF
152.00	Panel	2	RFS DB-T1-6Z-8AB-0Z
152.00	Panel	3	ALU RH 2x60-PCS
152.00	Panel	3	ALU RH_2x60-700
152.00	Panel	3	ALU RH_2x60-AWS
152.00	Panel	3	Kathrein 800 10734V01



Job Information

Tower : CT-5035	Location : Tartaglia, CT	
Code: TIA/EIA-222-F	Shape : Triangle	Base Width : 40.33 ft
Client : Verizon Wireless		Top Width : 10.93 ft

152.00	Panel	6	Commscope HBXX-6516DS-A2M
152.00	Mounting Frame	3	Flat Light Sector Frame
152.00	Panel	3	Antel BXA-80063/6BF
140.00	Whip	3	Small Side Lights
118.00	Straight Arm	1	Round Side Arm
118.00	Whip	1	10' Omni
108.00	Straight Arm	1	Round Side Arm
108.00	Whip	1	10' Omni
80.00	Straight Arm	1	Empty Round Side Arm
22.00	Dish	1	3' Dish
20.00	Whip	1	GPS
8.00	Straight Arm	1	Round Side Arm
8.00	Whip	1	GPS

Linear Appurtenance

Elev (ft) From	To	Qty	Description
0.000	240.00	1	1" Conduit
0.000	240.00	1	1 1/4" Coax
0.000	230.00	2	7/8" Coax
0.000	223.00	1	1 1/4" Coax
0.000	212.00	1	Waveguide
0.000	212.00	12	1 5/8" Coax
0.000	202.00	1	Waveguide
0.000	202.00	1	1 5/8" Hybrid
0.000	202.00	12	1 5/8" Coax
0.000	196.00	1	7/8" Coax
0.000	187.00	4	1/2" Coax
0.000	180.60	1	Waveguide
0.000	180.60	6	5/16" Coax
0.000	180.60	2	2" Conduit
0.000	180.60	3	1/2" Ethernet
0.000	180.60	1	1.625" Hybrid
0.000	180.60	3	1 1/4" Hybriflex
0.000	174.00	1	Waveguide
0.000	174.00	6	1 5/8" Coax
0.000	164.00	1	Waveguide
0.000	164.00	1	3/8" Coax
0.000	164.00	6	1 5/8" Coax
0.000	164.00	1	1 1/4" Coax
0.000	164.00	4	0.64" Fiber Cable
0.000	164.00	2	0.64" Fiber Cable
0.000	164.00	1	0.39" Fiber Trunk
0.000	152.00	1	Waveguide
0.000	152.00	1	1 5/8" Hybrid
0.000	152.00	1	1 5/8" Hybrid
0.000	152.00	12	1 5/8" Coax
0.000	118.00	1	7/8" Coax
0.000	108.00	1	1 1/4" Coax
22.000	22.000	1	CAT5
0.000	20.000	1	1/2" Coax
0.000	8.000	1	1/2" Coax

Site Number:	**CT-5035**	**Code:**	**TIA/EIA-222-F**	
Site Name:	**Tartaglia, CT**	**Engineering Number:**	**61933921**	5/7/2015 7:02:39 PM
Customer:	**Verizon Wireless**			

Analysis Parameters

Tower Loading

Location:	**Fairfield County, CT**	**Height:**	**240**
Code:	**TIA/EIA-222-F**	**Base Elevation:**	**0.00 ft**
Shape:	**Triangle**	**Base Face Width:**	**40.33 ft**
Tower Manufacturer:	**Rohn**	**Top Face Width:**	**10.93 ft**
Tower Type:	**Self Support**		

Ice & Wind Parameters

Exposure Category:	**B**	**Design Windspeed Without Ice:**	**85 mph**
Design Ice Thickness:	**0.50 in**	**Design Windspeed With Ice:**	**74 mph**

Load Cases

Normal No Ice	**85.00 mph Wind Normal To Face with No Ice**
60 deg No Ice	**85.00 mph Wind at 60 deg From Face with No Ice**
90 deg No Ice	**85.00 mph Wind at 90 deg From Face with No Ice**
Normal Ice	**73.61 mph Wind Normal To Face with Ice**
60 deg Ice	**73.61 mph Wind at 60 deg From Face with Ice**
90 deg Ice	**73.61 mph Wind at 90 deg From Face with Ice**
Normal Twist/Sway	**50.00 mph Wind Normal To Face with No Ice**
60 deg Twist/Sway	**50.00 mph Wind at 60 deg From Face with No Ice**
90 deg Twist/Sway	**50.00 mph Wind at 90 deg From Face with No Ice**

Site Number: CT-5035
Site Name: Tartaglia, CT
Customer: Verizon Wireless

Code: TIA/EIA-222-F
Engineering Number: 61933921

5/7/2015 7:02:39 PM

Tower Loading

Discrete Appurtenance Properties

Normal No Ice

Elevation (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Dist. From Face (ft)	X Angle (deg)	Vert Ecc (ft)	Mom (lb-ft)	Qz (psf)	Total Force (lb)	Pu (lb)
240.00	10' Omni	1	25	3.0	1.00	0.0	0.00	0.0	0.0	32.60	108	25
240.00	Beacon	1	70	4.5	1.00	0.0	0.00	0.0	0.0	32.60	162	70
240.00	Empty Round Side	1	150	5.2	1.00	0.0	0.00	0.0	0.0	32.60	187	150
240.00	Lightning Rod	1	10	1.0	1.00	0.0	0.00	0.0	0.0	32.60	36	10
230.00	8' Omni	1	40	2.4	1.00	0.0	0.00	0.0	0.0	32.21	85	40
230.00	8' Omni	1	40	2.4	1.00	0.0	0.00	0.0	0.0	32.21	85	40
230.00	Round Side Arm	3	150	5.2	0.67	0.0	0.00	0.0	0.0	32.21	371	450
223.00	12' Omni	1	40	3.6	1.00	0.0	0.00	0.0	0.0	31.93	127	40
223.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	31.93	183	150
212.00	Andrew HBX-6516DS-	6	10	3.3	0.80	0.0	0.00	0.0	0.0	31.47	556	62
212.00	Round Sector Frame	3	300	14.4	0.75	0.0	0.00	0.0	0.0	31.47	1124	900
202.00	Ericsson AIR21 B2A	3	83	6.5	0.83	0.0	0.00	0.0	0.0	31.04	556	249
202.00	Ericsson AIR21 B4A	3	82	6.6	0.83	0.0	0.00	0.0	0.0	31.04	560	245
202.00	Ericsson KRY 112 144-	3	11	0.4	0.50	0.0	0.00	0.0	0.0	31.04	21	33
202.00	Round Sector Frame	3	300	14.4	0.75	0.0	0.00	0.0	0.0	31.04	1108	900
196.00	3' Yagi	1	10	3.0	1.00	0.0	0.00	0.0	0.0	30.77	101	10
187.00	2' HP Dish	2	90	4.0	1.00	0.0	0.00	0.0	0.0	30.36	265	180
187.00	Andrew VHLP800-11-	1	121	16.7	1.00	0.0	0.00	0.0	0.0	30.36	559	121
180.60	Alcatel-Lucent 1900	6	90	3.1	0.67	0.0	0.00	0.0	0.0	30.06	407	540
180.60	Alcatel-Lucent 800	3	53	2.5	0.67	0.0	0.00	0.0	0.0	30.06	166	159
180.60	Alcatel-Lucent TD-	3	70	4.1	0.50	0.0	0.00	0.0	0.0	30.06	201	210
180.60	Argus LLPX310R	3	29	4.8	0.70	0.0	0.00	0.0	0.0	30.06	336	86
180.60	DragonWave A-ANT-	3	27	4.7	1.00	0.0	0.00	0.0	0.0	30.06	466	81
180.60	Flat Light Sector	3	400	17.9	0.67	0.0	0.00	0.0	0.0	30.06	1192	1200
180.60	PCTEL GPS-TMG-HR-	1	1	0.1	1.00	0.0	0.00	0.0	0.0	30.06	3	1
180.60	RFS APXV9ERR18-C-	1	62	8.3	0.85	0.0	0.00	0.0	0.0	30.06	233	62
180.60	RFS APXVSPP18-C-A20	2	57	8.3	0.85	0.0	0.00	0.0	0.0	30.06	465	114
180.60	RFS APXVTM14-C-I20	3	56	6.3	0.66	0.0	0.00	0.0	0.0	30.06	416	168
180.60	Samsung DAP Heads	3	33	1.8	0.33	0.0	0.00	0.0	0.0	30.06	60	99
174.00	5' x 5" x 2" Panel	4	30	3.3	0.76	0.0	0.00	0.0	0.0	29.74	325	120
174.00	Andrew 950F65T4E-M	2	16	4.8	0.77	0.0	0.00	0.0	0.0	29.74	240	31
164.00	20' Omni	1	55	6.0	1.00	0.0	0.00	0.0	0.0	29.24	193	55
164.00	CCI HPA-65R-BUU-H6	9	51	10.4	0.81	0.0	0.00	0.0	0.0	29.24	2434	459
164.00	Ericsson RRUS 11	6	51	3.3	0.50	0.0	0.00	0.0	0.0	29.24	320	304
164.00	Ericsson RRUS A2	6	21	1.9	0.50	0.0	0.00	0.0	0.0	29.24	180	127
164.00	Ericsson RRUS-12	6	58	3.7	0.67	0.0	0.00	0.0	0.0	29.24	475	347
164.00	Ericsson RRUS-32	3	77	3.9	0.67	0.0	0.00	0.0	0.0	29.24	251	231
164.00	Ericsson RRUS-E2	3	58	3.7	0.67	0.0	0.00	0.0	0.0	29.24	238	174
164.00	Powerwave 7020 RET	3	2	0.4	0.50	0.0	0.00	0.0	0.0	29.24	19	7
164.00	Powerwave 7770	3	35	5.9	0.75	0.0	0.00	0.0	0.0	29.24	426	105
164.00	Powerwave TT19-	3	16	0.6	0.50	0.0	0.00	0.0	0.0	29.24	31	48
164.00	Raycap DC6-48-60-18-	1	20	1.3	0.67	0.0	0.00	0.0	0.0	29.24	27	20
164.00	Raycap DC6-48-60-18-	2	20	1.3	0.67	0.0	0.00	0.0	0.0	29.24	54	40
164.00	Round Sector Frame	3	300	14.4	0.67	0.0	0.00	0.0	0.0	29.24	933	900
152.00	ALU RH_2x60-700	3	57	2.5	0.67	0.0	0.00	3.0	481.8	28.78	161	172
152.00	ALU RH_2x60-AWS	3	44	2.2	0.67	0.0	0.00	3.0	418.7	28.78	140	132
152.00	ALU RH_2x60-PCS	3	46	2.2	0.67	0.0	0.00	3.0	411.1	28.78	137	138
152.00	Andrew CBC78-DF	6	7	0.4	0.50	0.0	0.00	3.0	128.4	28.78	43	40
152.00	Antel BXA-80063/6BF	3	19	7.5	0.77	0.0	0.00	3.0	1641.4	28.78	547	58
152.00	Commscope HBXX-	6	31	5.9	0.78	0.0	0.00	3.0	2644.4	28.78	881	184
152.00	Flat Light Sector	3	400	17.9	0.67	0.0	0.00	0.0	0.0	28.62	1134	1200
152.00	Kathrein 800 10734V01	3	24	6.2	0.69	0.0	0.00	3.0	1214.9	28.78	405	73

Site Number: CT-5035 Code: TIA/EIA-222-F

Site Name: Tartaglia, CT Engineering Number: 61933921 5/7/2015 7:02:39 PM

Customer: Verizon Wireless

Tower Loading

152.00	RFS DB-T1-6Z-8AB-0Z	2	7	5.6	0.67	0.0	0.00	3.0	713.8	28.78	238	13
140.00	Small Side Lights	3	45	2.0	1.00	0.0	0.00	0.0	0.0	27.95	185	135
118.00	10' Omni	1	8	0.1	1.00	0.0	0.00	0.0	0.0	26.62	4	8
118.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	26.62	153	150
108.00	10' Omni	1	8	0.1	1.00	0.0	0.00	0.0	0.0	25.95	4	8
108.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	25.95	149	150
80.00	Empty Round Side	1	150	5.2	1.00	0.0	0.00	0.0	0.0	23.82	136	150
22.00	3' Dish	1	100	6.1	1.00	0.0	0.00	0.0	0.0	18.50	124	100
20.00	GPS	1	10	1.0	1.00	0.0	0.00	0.0	0.0	18.50	20	10
8.00	GPS	1	10	1.0	1.00	0.0	0.00	0.0	0.0	18.50	20	10
8.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	18.50	106	150
	Totals	166	12243	852.2								

Discrete Appurtenance Properties Normal Ice

Elevation (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Dist. From Face (ft)	X Angle (deg)	Vert Ecc (ft)	Mom (lb-ft)	Qz (psf)	Total Force (lb)	Pu (lb)
240.00	10' Omni	1	47	4.0	1.00	0.0	0.00	0.0	0.0	24.45	109	47
240.00	Beacon	1	120	4.9	1.00	0.0	0.00	0.0	0.0	24.45	132	120
240.00	Empty Round Side	1	175	5.9	1.00	0.0	0.00	0.0	0.0	24.45	159	175
240.00	Lightning Rod	1	21	1.4	1.00	0.0	0.00	0.0	0.0	24.45	37	21
230.00	8' Omni	1	62	3.2	1.00	0.0	0.00	0.0	0.0	24.16	86	62
230.00	8' Omni	1	62	3.2	1.00	0.0	0.00	0.0	0.0	24.16	86	62
230.00	Round Side Arm	3	175	5.9	0.67	0.0	0.00	0.0	0.0	24.16	316	525
223.00	12' Omni	1	66	4.8	1.00	0.0	0.00	0.0	0.0	23.94	127	66
223.00	Round Side Arm	1	175	5.9	1.00	0.0	0.00	0.0	0.0	23.94	156	175
212.00	Andrew HBX-6516DS-	6	30	3.8	0.80	0.0	0.00	0.0	0.0	23.60	479	177
212.00	Round Sector Frame	3	415	19.2	0.75	0.0	0.00	0.0	0.0	23.60	1123	1245
202.00	Ericsson AIR21 B2A	3	133	7.2	0.83	0.0	0.00	0.0	0.0	23.28	460	398
202.00	Ericsson AIR21 B4A	3	133	7.2	0.83	0.0	0.00	0.0	0.0	23.28	460	398
202.00	Ericsson KRY 112 144-	3	14	0.6	0.50	0.0	0.00	0.0	0.0	23.28	21	42
202.00	Round Sector Frame	3	415	19.2	0.75	0.0	0.00	0.0	0.0	23.28	1108	1245
196.00	3' Yagi	1	36	4.8	1.00	0.0	0.00	0.0	0.0	23.08	121	36
187.00	2' HP Dish	2	128	4.3	1.00	0.0	0.00	0.0	0.0	22.77	216	256
187.00	Andrew VHLP800-11-	1	218	17.4	1.00	0.0	0.00	0.0	0.0	22.77	437	218
180.60	Alcatel-Lucent 1900	6	117	3.4	0.67	0.0	0.00	0.0	0.0	22.54	342	701
180.60	Alcatel-Lucent 800	3	80	2.8	0.67	0.0	0.00	0.0	0.0	22.54	141	240
180.60	Alcatel-Lucent TD-	3	83	4.4	0.50	0.0	0.00	0.0	0.0	22.54	165	248
180.60	Argus LLPX310R	3	55	5.4	0.70	0.0	0.00	0.0	0.0	22.54	280	164
180.60	DragonWave A-ANT-	3	55	5.1	1.00	0.0	0.00	0.0	0.0	22.54	376	165
180.60	Flat Light Sector	3	510	22.2	0.67	0.0	0.00	0.0	0.0	22.54	1108	1530
180.60	PCTEL GPS-TMG-HR-	1	2	0.1	1.00	0.0	0.00	0.0	0.0	22.54	3	2
180.60	RFS APXV9ERR18-C-	1	114	9.1	0.85	0.0	0.00	0.0	0.0	22.54	192	114
180.60	RFS APXVSPP18-C-A20	2	107	9.1	0.85	0.0	0.00	0.0	0.0	22.54	383	213
180.60	RFS APXVTM14-C-I20	3	92	7.6	0.66	0.0	0.00	0.0	0.0	22.54	373	277
180.60	Samsung DAP Heads	3	39	2.1	0.33	0.0	0.00	0.0	0.0	22.54	52	118
174.00	5' x 5" x 2" Panel	4	46	3.8	0.76	0.0	0.00	0.0	0.0	22.31	286	185
174.00	Andrew 950F65T4E-M	2	55	6.4	0.77	0.0	0.00	0.0	0.0	22.31	243	110
164.00	20' Omni	1	98	8.0	1.00	0.0	0.00	0.0	0.0	21.93	194	98
164.00	CCI HPA-65R-BUU-H6	9	114	11.2	0.81	0.0	0.00	0.0	0.0	21.93	1975	1026
164.00	Ericsson RRUS 11	6	72	3.7	0.50	0.0	0.00	0.0	0.0	21.93	267	431
164.00	Ericsson RRUS A2	6	31	2.2	0.50	0.0	0.00	0.0	0.0	21.93	156	188
164.00	Ericsson RRUS-12	6	81	4.1	0.67	0.0	0.00	0.0	0.0	21.93	394	486
164.00	Ericsson RRUS-32	3	105	4.3	0.67	0.0	0.00	0.0	0.0	21.93	209	315

Site Number: CT-5035 Code: TIA/EIA-222-F

Site Name: Tartaglia, CT Engineering Number: 61933921 5/7/2015 7:02:39 PM

Customer: Verizon Wireless

Tower Loading

164.00	Ericsson RRUS-E2	3	81	4.1	0.67	0.0	0.00	0.0	0.0	21.93	197	244
164.00	Powerwave 7020 RET	3	5	0.5	0.50	0.0	0.00	0.0	0.0	21.93	20	15
164.00	Powerwave 7770	3	68	6.5	0.75	0.0	0.00	0.0	0.0	21.93	355	203
164.00	Powerwave TT19-	3	22	0.8	0.50	0.0	0.00	0.0	0.0	21.93	30	65
164.00	Raycap DC6-48-60-18-	1	35	1.5	0.67	0.0	0.00	0.0	0.0	21.93	24	35
164.00	Raycap DC6-48-60-18-	2	35	1.5	0.67	0.0	0.00	0.0	0.0	21.93	47	70
164.00	Round Sector Frame	3	415	19.2	0.67	0.0	0.00	0.0	0.0	21.93	933	1245
152.00	ALU RH_2x60-700	3	77	2.9	0.67	0.0	0.00	3.0	410.1	21.58	137	230
152.00	ALU RH_2x60-AWS	3	60	2.5	0.67	0.0	0.00	3.0	358.5	21.58	119	180
152.00	ALU RH_2x60-PCS	3	63	2.5	0.67	0.0	0.00	3.0	352.7	21.58	118	188
152.00	Andrew CBC78-DF	6	10	0.6	0.50	0.0	0.00	3.0	128.4	21.58	43	59
152.00	Antel BXA-80063/6BF	3	61	8.3	0.77	0.0	0.00	3.0	1361.2	21.58	454	182
152.00	Commscope HBXX-	6	66	6.6	0.78	0.0	0.00	3.0	2190.2	21.58	730	396
152.00	Flat Light Sector	3	510	22.2	0.67	0.0	0.00	0.0	0.0	21.46	1055	1530
152.00	Kathrein 800 10734V01	3	55	6.8	0.69	0.0	0.00	3.0	1005.6	21.58	335	166
152.00	RFS DB-T1-6Z-8AB-0Z	2	10	6.1	0.67	0.0	0.00	3.0	581.2	21.58	194	20
140.00	Small Side Lights	3	140	4.0	1.00	0.0	0.00	0.0	0.0	20.96	275	420
118.00	10' Omni	1	10	0.2	1.00	0.0	0.00	0.0	0.0	19.96	5	10
118.00	Round Side Arm	1	175	5.9	1.00	0.0	0.00	0.0	0.0	19.96	130	175
108.00	10' Omni	1	10	0.2	1.00	0.0	0.00	0.0	0.0	19.46	5	10
108.00	Round Side Arm	1	175	5.9	1.00	0.0	0.00	0.0	0.0	19.46	127	175
80.00	Empty Round Side	1	175	5.9	1.00	0.0	0.00	0.0	0.0	17.86	116	175
22.00	3' Dish	1	152	6.4	1.00	0.0	0.00	0.0	0.0	13.87	99	152
20.00	GPS	1	18	1.2	1.00	0.0	0.00	0.0	0.0	13.87	18	18
8.00	GPS	1	18	1.2	1.00	0.0	0.00	0.0	0.0	13.87	18	18
8.00	Round Side Arm	1	175	5.9	1.00	0.0	0.00	0.0	0.0	13.87	90	175
	Totals	166	18033	1003.8								

Discrete Appurtenance Properties

Normal Twist/Sway

Elevation (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Dist. From Face (ft)	X Angle (deg)	Vert Ecc (ft)	Mom (lb-ft)	Qz (psf)	Total Force (lb)	Pu (lb)
240.00	10' Omni	1	25	3.0	1.00	0.0	0.00	0.0	0.0	11.28	37	25
240.00	Beacon	1	70	4.5	1.00	0.0	0.00	0.0	0.0	11.28	56	70
240.00	Empty Round Side	1	150	5.2	1.00	0.0	0.00	0.0	0.0	11.28	65	150
240.00	Lightning Rod	1	10	1.0	1.00	0.0	0.00	0.0	0.0	11.28	12	10
230.00	8' Omni	1	40	2.4	1.00	0.0	0.00	0.0	0.0	11.15	29	40
230.00	8' Omni	1	40	2.4	1.00	0.0	0.00	0.0	0.0	11.15	29	40
230.00	Round Side Arm	3	150	5.2	0.67	0.0	0.00	0.0	0.0	11.15	128	450
223.00	12' Omni	1	40	3.6	1.00	0.0	0.00	0.0	0.0	11.05	44	40
223.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	11.05	63	150
212.00	Andrew HBX-6516DS-	6	10	3.3	0.80	0.0	0.00	0.0	0.0	10.89	192	62
212.00	Round Sector Frame	3	300	14.4	0.75	0.0	0.00	0.0	0.0	10.89	389	900
202.00	Ericsson AIR21 B2A	3	83	6.5	0.83	0.0	0.00	0.0	0.0	10.74	192	249
202.00	Ericsson AIR21 B4A	3	82	6.6	0.83	0.0	0.00	0.0	0.0	10.74	194	245
202.00	Ericsson KRY 112 144-	3	11	0.4	0.50	0.0	0.00	0.0	0.0	10.74	7	33
202.00	Round Sector Frame	3	300	14.4	0.75	0.0	0.00	0.0	0.0	10.74	383	900
196.00	3' Yagi	1	10	3.0	1.00	0.0	0.00	0.0	0.0	10.65	35	10
187.00	2' HP Dish	2	90	4.0	1.00	0.0	0.00	0.0	0.0	10.51	92	180
187.00	Andrew VHLP800-11-	1	121	16.7	1.00	0.0	0.00	0.0	0.0	10.51	194	121
180.60	Alcatel-Lucent 1900	6	90	3.1	0.67	0.0	0.00	0.0	0.0	10.40	141	540
180.60	Alcatel-Lucent 800	3	53	2.5	0.67	0.0	0.00	0.0	0.0	10.40	57	159
180.60	Alcatel-Lucent TD-	3	70	4.1	0.50	0.0	0.00	0.0	0.0	10.40	70	210
180.60	Argus LLPX310R	3	29	4.8	0.70	0.0	0.00	0.0	0.0	10.40	116	86

Site Number: CT-5035 Code: TIA/EIA-222-F

Site Name: Tartaglia, CT Engineering Number: 61933921 5/7/2015 7:02:40 PM

Customer: Verizon Wireless

Tower Loading

180.60	DragonWave A-ANT-	3	27	4.7	1.00	0.0	0.00	0.0	0.0	10.40	161	81
180.60	Flat Light Sector	3	400	17.9	0.67	0.0	0.00	0.0	0.0	10.40	412	1200
180.60	PCTEL GPS-TMG-HR-	1	1	0.1	1.00	0.0	0.00	0.0	0.0	10.40	1	1
180.60	RFS APXV9ERR18-C-	1	62	8.3	0.85	0.0	0.00	0.0	0.0	10.40	80	62
180.60	RFS APXVSPP18-C-A20	2	57	8.3	0.85	0.0	0.00	0.0	0.0	10.40	161	114
180.60	RFS APXVTM14-C-I20	3	56	6.3	0.66	0.0	0.00	0.0	0.0	10.40	144	168
180.60	Samsung DAP Heads	3	33	1.8	0.33	0.0	0.00	0.0	0.0	10.40	21	99
174.00	5' x 5" x 2" Panel	4	30	3.3	0.76	0.0	0.00	0.0	0.0	10.29	112	120
174.00	Andrew 950F65T4E-M	2	16	4.8	0.77	0.0	0.00	0.0	0.0	10.29	83	31
164.00	20' Omni	1	55	6.0	1.00	0.0	0.00	0.0	0.0	10.12	67	55
164.00	CCI HPA-65R-BUU-H6	9	51	10.4	0.81	0.0	0.00	0.0	0.0	10.12	842	459
164.00	Ericsson RRUS 11	6	51	3.3	0.50	0.0	0.00	0.0	0.0	10.12	111	304
164.00	Ericsson RRUS A2	6	21	1.9	0.50	0.0	0.00	0.0	0.0	10.12	62	127
164.00	Ericsson RRUS-12	6	58	3.7	0.67	0.0	0.00	0.0	0.0	10.12	165	347
164.00	Ericsson RRUS-32	3	77	3.9	0.67	0.0	0.00	0.0	0.0	10.12	87	231
164.00	Ericsson RRUS-E2	3	58	3.7	0.67	0.0	0.00	0.0	0.0	10.12	82	174
164.00	Powerwave 7020 RET	3	2	0.4	0.50	0.0	0.00	0.0	0.0	10.12	7	7
164.00	Powerwave 7770	3	35	5.9	0.75	0.0	0.00	0.0	0.0	10.12	148	105
164.00	Powerwave TT19-	3	16	0.6	0.50	0.0	0.00	0.0	0.0	10.12	11	48
164.00	Raycap DC6-48-60-18-	1	20	1.3	0.67	0.0	0.00	0.0	0.0	10.12	9	20
164.00	Raycap DC6-48-60-18-	2	20	1.3	0.67	0.0	0.00	0.0	0.0	10.12	19	40
164.00	Round Sector Frame	3	300	14.4	0.67	0.0	0.00	0.0	0.0	10.12	323	900
152.00	ALU RH_2x60-700	3	57	2.5	0.67	0.0	0.00	3.0	166.7	9.96	56	172
152.00	ALU RH_2x60-AWS	3	44	2.2	0.67	0.0	0.00	3.0	144.9	9.96	48	132
152.00	ALU RH_2x60-PCS	3	46	2.2	0.67	0.0	0.00	3.0	142.2	9.96	47	138
152.00	Andrew CBC78-DF	6	7	0.4	0.50	0.0	0.00	3.0	44.4	9.96	15	40
152.00	Antel BXA-80063/6BF	3	19	7.5	0.77	0.0	0.00	3.0	568.0	9.96	189	58
152.00	Commscope HBXX-	6	31	5.9	0.78	0.0	0.00	3.0	915.0	9.96	305	184
152.00	Flat Light Sector	3	400	17.9	0.67	0.0	0.00	0.0	0.0	9.90	393	1200
152.00	Kathrein 800 10734V01	3	24	6.2	0.69	0.0	0.00	3.0	420.4	9.96	140	73
152.00	RFS DB-T1-6Z-8AB-0Z	2	7	5.6	0.67	0.0	0.00	3.0	247.0	9.96	82	13
140.00	Small Side Lights	3	45	2.0	1.00	0.0	0.00	0.0	0.0	9.67	64	135
118.00	10' Omni	1	8	0.1	1.00	0.0	0.00	0.0	0.0	9.21	1	8
118.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	9.21	53	150
108.00	10' Omni	1	8	0.1	1.00	0.0	0.00	0.0	0.0	8.98	1	8
108.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	8.98	51	150
80.00	Empty Round Side	1	150	5.2	1.00	0.0	0.00	0.0	0.0	8.24	47	150
22.00	3' Dish	1	100	6.1	1.00	0.0	0.00	0.0	0.0	6.40	43	100
20.00	GPS	1	10	1.0	1.00	0.0	0.00	0.0	0.0	6.40	7	10
8.00	GPS	1	10	1.0	1.00	0.0	0.00	0.0	0.0	6.40	7	10
8.00	Round Side Arm	1	150	5.2	1.00	0.0	0.00	0.0	0.0	6.40	37	150
	Totals	166	12243	852.2								

Site Number: CT-5035 | Code: TIA/EIA-222-F |

Site Name: Tartaglia, CT | Engineering Number: 61933921 | 5/7/2015 7:02:40 PM

Customer: Verizon Wireless

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Wind	Spread On Faces	Bundling Arrangement
0.00	240.0	1 1/4" Coax	1	1.55	0.63	0.00	2	Separate
0.00	240.0	1" Conduit	1	1.30	1.68	0.00	2	Separate
0.00	230.0	7/8" Coax	2	1.09	0.33	0.00	3	Separate
0.00	223.0	1 1/4" Coax	1	1.55	0.63	0.00	2	Separate
0.00	212.0	1 5/8" Coax	12	1.98	0.82	0.00	3	Separate
0.00	212.0	Waveguide	1	1.50	6.00	100.00	3	Separate
0.00	202.0	1 5/8" Coax	12	1.98	0.82	100.00	3	Separate
0.00	202.0	1 5/8" Hybrid	1	1.98	1.30	100.00	3	Separate
0.00	202.0	Waveguide	1	1.50	6.00	100.00	3	Separate
0.00	196.0	7/8" Coax	1	1.09	0.33	0.00	3	Separate
0.00	187.0	1/2" Coax	4	0.63	0.15	0.00	1	Separate
0.00	180.6	1 1/4" Hybriflex	3	1.54	1.00	83.30	2	Separate
0.00	180.6	1.625" Hybrid	1	1.63	1.61	0.00	2	Separate
0.00	180.6	1/2" Ethernet	3	0.50	0.14	0.00	2	Separate
0.00	180.6	2" Conduit	2	2.38	3.65	100.00	1	Separate
0.00	180.6	5/16" Coax	6	0.32	0.04	100.00	2	Separate
0.00	180.6	Waveguide	1	1.50	6.00	100.00	2	Separate
0.00	174.0	1 5/8" Coax	6	1.98	0.82	100.00	1	Separate
0.00	174.0	Waveguide	1	1.50	6.00	100.00	1	Separate
0.00	164.0	0.39" Fiber Trunk	1	0.39	0.07	0.00	3	Separate
0.00	164.0	0.64" Fiber Cable	2	0.64	0.25	0.00	3	Separate
0.00	164.0	0.64" Fiber Cable	4	0.64	0.25	0.00	3	Separate
0.00	164.0	1 1/4" Coax	1	1.55	0.63	0.00	2	Separate
0.00	164.0	1 5/8" Coax	6	1.98	0.82	50.00	3	Separate
0.00	164.0	3/8" Coax	1	0.44	0.08	100.00	3	Separate
0.00	164.0	Waveguide	1	1.50	6.00	100.00	3	Separate
0.00	152.0	1 5/8" Coax	12	1.98	0.82	50.00	3	Separate
0.00	152.0	1 5/8" Hybrid	1	1.98	1.30	100.00	3	Separate
0.00	152.0	1 5/8" Hybrid	1	1.98	1.30	0.00	3	Separate
0.00	152.0	Waveguide	1	1.50	6.00	100.00	3	Separate
0.00	118.0	7/8" Coax	1	1.09	0.33	0.00	2	Separate
0.00	108.0	1 1/4" Coax	1	1.55	0.63	0.00	2	Separate
22.00	22.00	CAT5	1	0.24	0.04	0.00	Lin App	Separate
0.00	20.00	1/2" Coax	1	0.63	0.15	0.00	3	Separate
0.00	8.00	1/2" Coax	1	0.63	0.15	100.00	3	Separate

Force/Stress Summary

Section: 1 1 Bot Elev (ft): 0.00 Height (ft): 30.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	-294.59	Normal No Ice	30.08	33	33	33	32.8	35.7	575.26	0	0	0.00	0.00	51	Member X
HORIZ PST - 3-1/2" DIA PIP	-15.34	90 deg No Ice	18.29	100	100	100	163.8	7.4	19.89	2	0	0.00	35.26	77	Member X
DIAG PST - 3" DIA PIPE	-30.33	90 deg No Ice	36.16	33	33	33	0.0	0.0	42.94	3	0	0.00	50.54	70	User Input

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	236.84	60 deg No Ice	50	643.98	0	0	0.00	0.00	36	Member
HORIZ PST - 3-1/2" DIA PIP	15.91	90 deg No Ice	50	107.20	2	0	0.00	28.64	55	Bolt Bear
DIAG PST - 3" DIA PIPE	28.71	90 deg No Ice	50	157.96	3	0	0.00	0.00	18	User Input

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	235.23	60 deg No Ice	0.00	0		
Top Compression	292.87	Normal No Ice	0.00	0		
Bot Tension	279.39	60 deg No Ice	518.35	54	12	1" A193-B7
Bot Compression	340.61	Normal No Ice	0.00	0		

Section: 2 2 Bot Elev (ft): 30.00 Height (ft): 30.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	-243.51	Normal No Ice	30.08	33	33	33	32.8	35.7	575.26	0	0	0.00	0.00	42	Member X
HORIZ PST - 3" DIA PIPE	-14.90	90 deg No Ice	16.41	100	100	100	169.8	6.9	15.39	2	0	0.00	33.70	96	Member X
DIAG PST - 3" DIA PIPE	-32.99	90 deg No Ice	35.15	32	32	32	116.4	14.7	32.79	3	0	0.00	50.54	100	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	193.11	60 deg No Ice	50	643.98	0	0	0.00	0.00	29	Member
HORIZ PST - 3" DIA PIPE	15.65	90 deg No Ice	50	89.20	2	0	0.00	27.38	57	Bolt Bear
DIAG PST - 3" DIA PIPE	30.77	90 deg No Ice	50	89.20	3	0	0.00	44.22	69	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	191.56	60 deg No Ice	0.00	0		
Top Compression	241.84	Normal No Ice	0.00	0		
Bot Tension	235.23	60 deg No Ice	552.95	43	12	1 A325
Bot Compression	292.87	Normal No Ice	0.00	0		

Force/Stress Summary

Section: 3 3 Bot Elev (ft): 60.00 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	-208.02	Normal No Ice	20.05	50	50	50	33.1	35.7	574.34	0	0	0.00	0.00	36	Member X
HORIZ PST - 3" DIA PIPE	-13.77	90 deg No Ice	15.16	100	100	100	156.9	8.1	18.04	2	0	0.00	33.70	76	Member X
DIAG PST - 3" DIA PIPE	-24.66	90 deg No Ice	25.88	50	50	50	133.9	11.1	24.77	3	0	0.00	42.12	99	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 10" DIA PIPE	164.53	60 deg No Ice	50	643.98	0	0	0.00	0.00	25	Member
HORIZ PST - 3" DIA PIPE	14.47	90 deg No Ice	50	89.20	2	0	0.00	27.38	52	Bolt Bear
DIAG PST - 3" DIA PIPE	22.96	90 deg No Ice	50	89.20	3	0	0.00	36.85	62	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	163.07	60 deg No Ice	0.00	0		
Top Compression	206.45	Normal No Ice	0.00	0		
Bot Tension	191.56	60 deg No Ice	552.95	35	12	1 A325
Bot Compression	241.84	Normal No Ice	0.00	0		

Section: 4 4 Bot Elev (ft): 80.00 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-173.25	Normal No Ice	20.06	50	50	50	41.8	34.1	436.53	0	0	0.00	0.00	39	Member X
HORIZ PST - 3" DIA PIPE	-12.83	90 deg No Ice	13.83	100	100	100	143.2	9.7	21.67	2	0	0.00	33.70	59	Member X
DIAG PST - 3" DIA PIPE	-23.87	90 deg No Ice	25.11	50	50	50	129.9	11.8	26.32	3	0	0.00	42.12	90	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	135.25	60 deg No Ice	50	511.99	0	0	0.00	0.00	26	Member
HORIZ PST - 3" DIA PIPE	13.13	90 deg No Ice	50	89.20	2	0	0.00	27.38	47	Bolt Bear
DIAG PST - 3" DIA PIPE	22.40	90 deg No Ice	50	89.20	3	0	0.00	36.85	60	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	133.85	60 deg No Ice	0.00	0		
Top Compression	171.78	Normal No Ice	0.00	0		
Bot Tension	163.07	60 deg No Ice	552.95	29	12	1 A325
Bot Compression	206.45	Normal No Ice	0.00	0		

Force/Stress Summary

Section: 5 5 Bot Elev (ft): 100.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-137.12	Normal No Ice	20.05	50	50	50	41.8	34.1	436.56	0	0	0.00	0.00	31	Member X
HORIZ PST - 2-1/2" DIA PIP	-12.04	90 deg No Ice	12.58	100	100	100	159.5	7.8	13.33	2	0	0.00	31.67	90	Member X
DIAG PST - 2-1/2" DIA PIP	-24.13	90 deg No Ice	24.33	50	50	50	0.0	0.0	27.71	3	0	0.00	39.58	87	User Input

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	104.10	60 deg No Ice	50	511.99	0	0	0.00	0.00	20	Member
HORIZ PST - 2-1/2" DIA PIP	12.69	90 deg No Ice	50	68.16	2	0	0.00	25.73	49	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	22.85	90 deg No Ice	50	136.00	3	0	0.00	0.00	16	User Input

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	102.84	60 deg No Ice	0.00	0		
Top Compression	135.76	Normal No Ice	0.00	0		
Bot Tension	133.85	60 deg No Ice	552.95	24	12	1 A325
Bot Compression	171.78	Normal No Ice	0.00	0		

Section: 6 6 Bot Elev (ft): 120.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-118.57	Normal No Ice	10.03	100	100	100	41.8	34.1	436.56	0	0	0.00	0.00	27	Member X
HORIZ PST - 2-1/2" DIA PIP	-11.27	90 deg No Ice	11.96	100	100	100	151.6	8.7	14.76	2	0	0.00	26.39	76	Member X
DIAG PST - 3" DIA PIPE	-15.95	90 deg No Ice	16.08	100	100	100	166.4	7.2	16.04	3	0	0.00	42.12	99	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	89.16	60 deg No Ice	50	511.99	0	0	0.00	0.00	17	Member
HORIZ PST - 2-1/2" DIA PIP	11.89	90 deg No Ice	50	68.16	2	0	0.00	21.44	55	Bolt Bear
DIAG PST - 3" DIA PIPE	14.98	90 deg No Ice	50	89.20	3	0	0.00	36.85	40	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	72.42	60 deg No Ice	0.00	0		
Top Compression	99.29	Normal No Ice	0.00	0		
Bot Tension	102.84	60 deg No Ice	368.63	28	8	1 A325
Bot Compression	135.76	Normal No Ice	0.00	0		

Force/Stress Summary

Section: 7 7 Bot Elev (ft): 140.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-82.18	Normal No Ice	10.03	100	100	100	41.8	34.1	436.56	0	0	0.00	0.00	18	Member X
HORIZ PST - 2-1/2" DIA PIP	-10.10	90 deg No Ice	10.71	100	100	100	135.8	10.8	18.41	2	0	0.00	26.39	54	Member X
DIAG PST - 2-1/2" DIA PIP	-14.83	90 deg No Ice	15.12	100	100	100	0.0	0.0	17.50	3	0	0.00	39.58	84	User Input

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	58.13	60 deg No Ice	50	511.99	0	0	0.00	0.00	11	Member
HORIZ PST - 2-1/2" DIA PIP	10.55	90 deg No Ice	50	68.16	2	0	0.00	21.44	49	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	14.01	90 deg No Ice	50	128.00	3	0	0.00	0.00	10	User Input

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	44.02	60 deg No Ice	0.00	0		
Top Compression	63.98	Normal No Ice	0.00	0		
Bot Tension	72.42	60 deg No Ice	368.63	20	8	1 A325
Bot Compression	99.29	Normal No Ice	0.00	0		

Section: 8 8 Bot Elev (ft): 160.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-50.81	Normal No Ice	10.03	100	100	100	41.8	34.1	436.56	0	0	0.00	0.00	11	Member X
HORIZ PST - 2-1/2" DIA PIP	-6.47	90 deg No Ice	9.464	100	100	100	119.9	13.8	23.59	2	0	0.00	26.39	27	Member X
DIAG PST - 2-1/2" DIA PIP	-10.30	90 deg No Ice	14.20	100	100	100	180.1	6.1	10.46	3	0	0.00	39.58	98	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	34.72	60 deg No Ice	50	511.99	0	0	0.00	0.00	6	Member
HORIZ PST - 2-1/2" DIA PIP	6.85	90 deg No Ice	50	68.16	2	0	0.00	21.44	31	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	9.61	90 deg No Ice	50	68.16	3	0	0.00	34.64	27	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	23.57	60 deg No Ice	0.00	0		
Top Compression	37.47	Normal No Ice	0.00	0		
Bot Tension	44.02	60 deg No Ice	368.63	12	8	1 A325
Bot Compression	63.98	Normal No Ice	0.00	0		

Force/Stress Summary

Section: 9 9 Bot Elev (ft): 180.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-27.16	Normal No Ice	10.03	100	100	100	41.8	34.1	436.56	0	0	0.00	0.00	6	Member X
HORIZ PST - 2" DIA PIPE	-4.10	90 deg No Ice	8.214	100	100	100	125.2	12.7	13.58	2	0	0.00	20.15	30	Member X
DIAG PST - 2-1/2" DIA PIP	-7.24	90 deg No Ice	13.35	100	100	100	169.2	7.0	11.85	3	0	0.00	39.58	61	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	16.88	60 deg No Ice	50	511.99	0	0	0.00	0.00	3	Member
HORIZ PST - 2" DIA PIPE	4.35	90 deg No Ice	50	42.80	2	0	0.00	16.37	26	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	6.70	90 deg No Ice	50	68.16	3	0	0.00	34.64	19	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	9.44	60 deg No Ice	0.00	0	8	1 A325
Top Compression	17.87	Normal Ice	0.00	0		
Bot Tension	23.57	60 deg No Ice	368.63	6		
Bot Compression	37.47	Normal No Ice	0.00	0		

Section: 10 10 Bot Elev (ft): 200.0 Height (ft): 20.000

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-11.17	Normal No Ice	10.02	100	100	100	41.8	34.1	436.61	0	0	0.00	0.00	2	Member X
HORIZ PST - 2" DIA PIPE	-2.14	Normal No Ice	7.026	100	100	100	107.1	17.3	18.56	2	0	0.00	20.15	11	Member X
DIAG PST - 2-1/2" DIA PIP	-4.39	90 deg No Ice	12.55	100	100	100	159.1	7.9	13.40	3	0	0.00	39.58	32	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	5.22	60 deg No Ice	50	511.99	0	0	0.00	0.00	1	Member
HORIZ PST - 2" DIA PIPE	2.30	60 deg No Ice	50	42.80	2	0	0.00	16.37	14	Bolt Bear
DIAG PST - 2-1/2" DIA PIP	3.95	90 deg No Ice	50	68.16	3	0	0.00	34.64	11	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	2.10	60 deg No Ice	0.00	0	8	1 A325
Top Compression	6.07	Normal Ice	0.00	0		
Bot Tension	9.44	60 deg No Ice	368.63	3		
Bot Compression	17.87	Normal Ice	0.00	0		

Force/Stress Summary

Section: 11 11 **Bot Elev (ft): 220.0** **Height (ft): 20.000**

Max Compression Member	Force (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	-3.56	Normal No Ice	6.68	100	100	100	27.8	36.6	467.92	0	0	0.00	0.00	0	Member X
HORIZ PST - 2" DIA PIPE	-0.81	Normal No Ice	6.130	100	100	100	93.5	21.6	23.09	2	0	0.00	20.15	4	Bolt Bear
DIAG PST - 2" DIA PIPE	-1.69	90 deg No Ice	9.288	100	100	100	141.6	9.9	10.62	3	0	0.00	30.22	15	Member X

Max Tension Member	Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG PX - 8" DIA PIPE	0.92	60 deg No Ice	50	511.99	0	0	0.00	0.00	0	Member
HORIZ PST - 2" DIA PIPE	1.02	90 deg No Ice	50	42.80	2	0	0.00	16.37	6	Bolt Bear
DIAG PST - 2" DIA PIPE	1.40	90 deg No Ice	50	42.80	3	0	0.00	26.45	5	Bolt Bear

Max Splice Forces	Force (kip)	Load Case	Capacity (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0		
Top Compression	0.41	60 deg Ice	0.00	0		
Bot Tension	2.10	60 deg No Ice	368.63	1	8	1 A325
Bot Compression	6.07	Normal Ice	0.00	0		

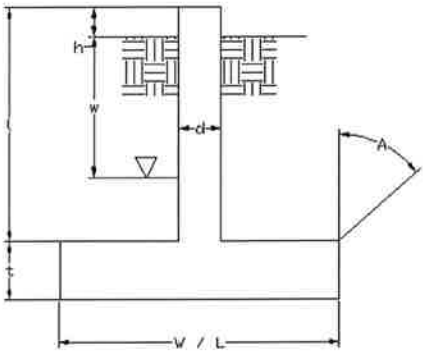
Site Name:	Tartaglia, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	CT-5035	*American Tower Corporation*	
Engineering Number:	61933921		
Engineer:	R. Barrett		
Date:	5/7/2015		

Design Base Loads (Unfactored) per TIA-222-F

Foundation Mapped:	N				
Moment (M):	0.0	k-ft	Concrete Compressive Strength (f'_c):	3000	psi
Shear/Leg (V):	48.4	k	Vertical Steel Rebar Size #:	9	
Compression/Leg (P):	339.5	k	Vertical Steel Rebar Area:	1.00	in^2
Uplift/Leg (U):	275.7	k	# of Vertical Steel Rebars:	24	
Tower Type (GT / SST):	SST		Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Diameter of Prismatic Portion of Pier (d):	4.5	ft	Tie / Stirrup Size #:	5	
Depth to Base of Foundation (l + t - h):	15.0	ft	Tie / Stirrup Area:	0.31	in^2
Pier Height Above Ground (h):	0.50	ft	Tie / Stirrup Spacing:	12.0	in
Length / Width of Pad (w):	14.9	ft	Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Thickness of Pad (t):	2.50	ft	Rebar Cage Diameter:	46.0	in
Depth Below Ground Surface to Water Table (w):	99.0	ft	Bending/Tension Reduction Factor (ϕ_B):	0.90	
Unit Weight of Concrete:	150.0	pcf	Shear Reduction Factor (ϕ_V):	0.75	
Unit Weight of Water:	62.4	pcf	Compression Reduction Factor (ϕ_V):	0.65	
Unit Weight of Soil Above Water Table:	110.0	pcf	Wind Design Factor:	1.30	
Unit Weight of Soil Below Water Table:	55.0	pcf	Steel Elastic Modulus:	29000	ksi
Friction Angle of Uplift from Top of Pad:	30	Degrees	Pad Steel Rebar Size #:	7	
Friction Angle of Uplift from Base of Pad:	30	Degrees	Pad Steel Rebar Area:	0.60	in^2
Uplift Angle Started at Top or Base of Pad (T/B):	B		Pad Steel Rebar Yield Strength (F_y):	60	ksi
Allowable Skin Friction:	0	psf	# of Rebar in Top of Pad:	17	
Allowable Compressive Bearing Pressure:	6000	psf	# of Rebar in Base of Pad:	17	
Capacity Increase (Due to Transient Loads):	1.00		Pad Clear Cover:	3	in

Axial Capacities and Design Moment

Weight of Concrete (Bouyancy Considered):	114.0	k
Weight of Soil (Bouyancy Considered):	872.5	k
Allowable Skin Friction Resistance:	0.0	k
Controlling Failure Mode (Top / Base):	Base	
Allowable Uplift Capacity per Leg:	527.4	k
Compressive Design Load:	370.8	k
Allowable Compression Capacity per Leg:	1327.6	k
Uplift Design Load/Uplift Capacity:	0.52	Result: OK
Compression Design Load/Compression Capacity:	0.28	Result: OK



Depth (ft) Top	Depth (ft) Bottom	Ultimate Lateral Bearing Pressure (psf)	Increment (psf/ft)	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)
0.0	2.0	0.0	110.0	110	0	0
2.0	12.5	660.0	330.0	110	0	30

Inflection Point (Below Ground Surface):	8.2	ft
Unfactored Design Moment At Inflection Point:	366.7	k-ft

Pad Strength Capacity

β:	0.85	ACI318-05 - 10.2.7.3
Lower Pad Flexural Reinforcement Ratio:	0.0022	OK - Minimum Reinforcement Ratio Met - AC
Upper Pad Flexural Reinforcement Ratio:	0.0022	OK - Minimum Reinforcement Ratio Met - AC
Lower Pad Flexural Reinforcement Spacing:	11	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Flexural Reinforcement Spacing:	11	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
One Way Design Shear (V_u):	96.4	k
One Way Shear Capacity (ϕV_c):	395.4	k - ACI318-05 - 11.3.1.1
$V_u / \phi V_c$:	0.24	Result: OK
Punching Design Shear (V_u):	364.2	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1104.7	k - ACI318-05 - 11.12.2.1
$V_u / \phi V_c$:	0.33	Result: OK
Flexural Loading Due to Soil Pressure (M_u):	436.0	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	1188.4	k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.37	Result: OK
Flexural Loading Due to Uplift (M_u):	560.0	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	1188.4	k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.47	Result: OK

Pier Strength Capacity

Design Moment (M_u):	476.7	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	2432.6	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.20	Result: OK
Design Shear (V_u):	62.9	k
Nominal Shear Capacity ($\phi_V V_n$):	322.1	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.20	Result: OK
Design Tension (T_u):	358.4	k
Nominal Tension Capacity ($\phi_T T_n$):	1296.0	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.28	Result: OK
Design Compression (P_u):	441.3	k
Nominal Compression Capacity ($\phi_P P_n$):	3005.0	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.15	Result: OK
Pier Reinforcement Ratio:	0.010	Reinforcement Ratio is Satisfactory - ACI318-05 - 10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.47	Result: OK