Robinson+Cole

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Also admitted in Massachusetts

August 23, 2017

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

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

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 266-foot level of the existing 288-foot tower at 1375 North Road in Killingly, Connecticut (the "Property"). The tower and underlying property are owned by American Tower Corporation ("ATC"). The Council approved Cellco's use of this tower in 2005. Cellco now intends to replace six (6) of its existing antennas with three (3) model SBNHH-1D65B, 700 MHz antennas and three (3) model SBNHH-1D65B, 2100 MHz antennas, all at the same level on the tower. Cellco also intends to install six (6) remote radio heads ("RRHs") and two (2) HYBRIFLEX™ fiber optic antenna cables. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cables.

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 Sean Hendricks, Town Manager of the Town of Killingly; Ann-Marie Aubrey, Killingly's Director of Planning and Development; and ATC, the owner of the tower and the Property.

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 installed at the 266-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 General Power Density table with 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, with certain modifications, can support Cellco's proposed modifications. (*See* Post-Modification Structural Report included in Attachment 3). Please note that the tower company inadvertently listed the proposed SBNHH-1D65B antennas in the "existing" table rather than the "proposed" table. However, the final configuration of antennas and remote radio heads described in this filing was contemplated in the structural analysis.

A copy of the parcel map and property owner information is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 5.

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:
Sean Hendricks, Killingly Town Manager
Ann-Marie Aubrey, Killingly Director of Planning and Development
ATC
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

SBNHH-1D65B

6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 2x RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.6	0 ° | 14.5	0 ° | 17.4	0 ° | 17.8	0 ° | 18.1	0 ° | 18.2
	7 ° | 14.6	7 ° | 14.4	3 ° | 17.5	3 ° | 17.9	3 ° | 18.3	3 ° | 18.4
	14 ° | 14.2	14 ° | 13.6	7 ° | 17.4	7 ° | 17.9	7 ° | 18.2	7 ° | 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

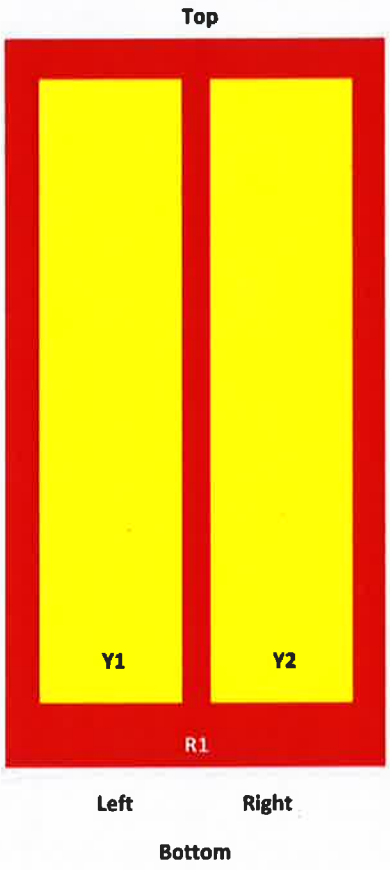
* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout

Product Specifications

SBNHH-1D65B

SBNHH 65



Array	Freq (MHz)	Conns	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	ANxxxxxxxxxxxxxxx.1
Y1	1695-2360	3-4	2	ANxxxxxxxxxxxxxxx.2
Y2	1695-2360	5-6		

View from the front of the antenna

(Sizes of colored boxes are not true depictions of array sizes)

General Specifications

Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	6
RF Connector Quantity, low band	2
RF Connector Quantity, high band	4
RF Connector Interface	7-16 DIN Female

Product Specifications

COMMSCOPE®

SBNHH-1D65B

Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1851.0 mm | 72.9 in
Width	301.0 mm | 11.9 in
Depth	180.0 mm | 7.1 in
Net Weight, without mounting kit	18.4 kg | 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (1) | Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

Packed Dimensions

Length	2025.0 mm | 79.7 in
Width	390.0 mm | 15.4 in
Depth	296.0 mm | 11.7 in
Shipping Weight	31.0 kg | 68.3 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Product Specifications

SBNHH-1D65B

Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

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.

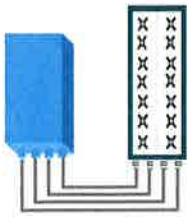
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

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

ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 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. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

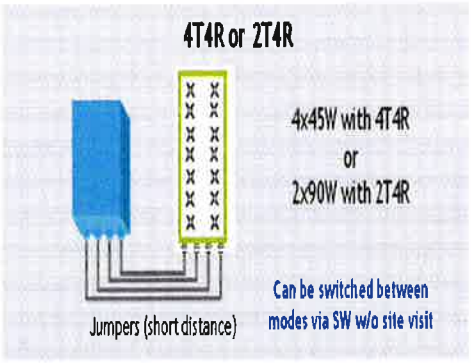
The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.

The Alcatel-Lucent B66a RRH4x45 is a compact (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 B66a RRH4x45 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 2110 - 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz 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 AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall

Features & Performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R selectable by SW)
Frequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz – 4 LTE MIMO carriers (In 70 MHz occupied bandwidth)
LTE carrier bandwidth	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure – RX Diversity scheme **Receiver Sensivity (FRC A1-3)**	2 dB typical (<2.5 dB max) – 2 or 4 way Rx diversity -104.5 dBm maximum
Sizes (HxWxD) in mm (in.) **Volume in Liters** **Weight in kg (lb) (w/o mounting HW)**	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield) 35.5 (with solar shield) 29.7 (without solar shield) 25.8kg (56.8lb) (with solar shield)
DC voltage range **DC power consumption**	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions **Wind load (@150km/h or 93mph)**	-40°C (-40°F) /+55°C (+131°F) UL50E Type 4 Enclosure 250N (56lb) Frontal/150N (34lb) Lateral
Antenna ports	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

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 CELLFLEX® 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)

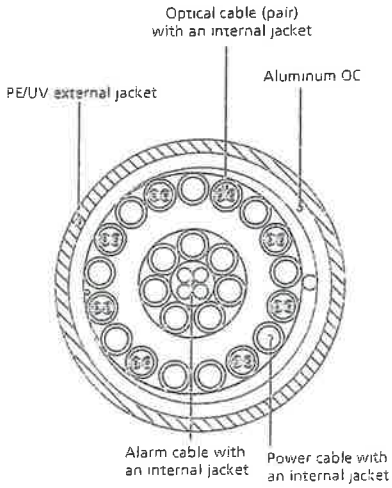


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Killingly Relo								
Tower Height: 288Ft.								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Sprint	12	100	300	851	0.0050	0.5673	0.09%	
*Sprint	11	411	300	1962	0.0188	1.0000	0.19%	
*AT&T	2	875	254	880	0.0102	0.5867	0.17%	
*AT&T	2	1294	254	1900	0.0151	1.0000	0.15%	
*AT&T	1	438	254	880	0.0026	0.5867	0.04%	
*AT&T	4	777	254	1900	0.0182	1.0000	0.18%	
*AT&T	1	1771	254	734	0.0104	0.4893	0.21%	
Verizon PCS	**0**	**342**	**266**	**0.0000**	**1970**	**1.0000**	**0.00%**	
Verizon Cellular	**9**	**244**	**266**	**0.0112**	**869**	**0.5793**	**1.93%**	
Verizon AWS	**1**	**6907**	**266**	**0.0351**	**2145**	**1.0000**	**3.51%**	
Verizon 700	**1**	**1394**	**266**	**0.0071**	**746**	**0.4973**	**1.42%**	
								7.90%
* Source: Siting Council								

ATTACHMENT 3

AMERICAN TOWER®
CORPORATION

Post-Modification Structural Analysis Report

Structure	:	**287.5 ft Self Supported Tower**
ATC Site Name	:	**East Killingly North, CT**
ATC Site Number	:	**88011**
Engineering Number	:	**OAA686695_C4_05**
Proposed Carrier	:	**Verizon**
Carrier Site Name	:	**Killingly Relo CT**
Carrier Site Number	:	**118646**
Site Location	:	**North Road** **Dayville, CT 06241-1404** **41.871500,-71.821500**
County	:	**Windham**
Date	:	**March 7, 2017**
Max Usage	:	**101%**
Result	:	**Pass ***

Prepared By:
Charles Dalton Wally, E.I.
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT
SCOTT A. WIRGAU
30575
LICENSED
PROFESSIONAL ENGINEER

Mar 7 2017 4:57 PM cosign

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

AMERICAN TOWER®
CORPORATION

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 287.5 ft self supported tower to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Job #26726321, dated September 13, 2006
Foundation Drawing	CSEI Analysis, ATC Job #26726321, dated September 13, 2006
Geotechnical Report	FDH Velocitel Project #17PXNW1600, dated February 27, 2017
Modifications	ATC Project #45432633, dated July 9, 2010 ATC Project #OAA686695_C6_04, dated November 28, 2016 [Pending]*

*** The modifications by ATC Job #OAA686695 are scheduled to be installed by [Month Date, Year].**

Analysis

The tower was analyzed using Power Line Systems, Inc.'s tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	101 mph (3-Second Gust, V_{asd}) / 130 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	5*

***Wind speed and topographic effects have been adjusted per site specific wind study in accordance with ASCE 7-10 Section 26.5.3, IBC Section 1609.3, and TIA-222-G Section 2.6.6.2.5**

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 the pending modifications cited in the Supporting Documents table are not completed by the forecast date above, the results of this analysis are no longer valid, and should contact American Tower's Site Manager for further direction on how to proceed.

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					
287.5	306.0	3	RFS FD9R6004/1C-3L	Platform w/ Handrails	(6) 1 5/8" Coax (6) 0.32" ATCB-B01	Sprint Nextel
		3	RFS APXVSPP18-C-A20			
266.0	266.0	6	Antel LPA-80063-4CF-EDIN-X	Sector Frame	(12) 1 5/8" Coax	Verizon
		6	Commscope SBNHH-1D65B			
	265.0	6	RFS FD9R6004/2C-3L			
246.0	246.0	6	Powerwave TT19-08BP111-001	Sector Frame	(12) 2 1/4" Coax (2) 0.78" 8 AWG 6 (1) 3" conduit (1) 0.39" Fiber Trunk	AT&T Mobility
		3	Raycap DC2-48-60-0-9E			
		1	Raycap FC12-PC6-10E			
		3	Ericsson RRUS-11			
		6	Powerwave P65-15-XLH-RR			
		1	Kathrein 800 10766			
		2	KMW AM-X-CD-17-65-00T-RET			
206.0	206.0	1	Andrew DB264	Side Arm	(1) 7/8" Coax	US Department Of Justice
50.0	50.0	1	MicroPulse GPS-QBW-26N	Side Arm	(1) 1/2" Coax	Verizon

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
266.0	266.0	3	Antel BXA-171063-8BF-EDIN-X	-	-	Verizon
		3	Antel BXA-70063-6CF-EDIN-X			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
266.0	266.0	3	Alcatel-Lucent B13 RRH4x30-4R 700U	Sector Frame	(2) 1 1/4" Hybriflex	Verizon
		3	Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield			
		2	Raycap RC3DC-3315-PF-48			

[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 coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	77%	Pass
Diagonals	101%	Pass
Truss Diagonals	92%	Pass
Horizontals	90%	Pass
Truss Horizontals	95%	Pass
Anchor Bolts	56%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	361.7	94%
Axial (Kips)	468.0	72%

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.

AMERICAN TOWER®
CORPORATION

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.

```
Project Name : 88011 - East Killingly North, CT
Project Notes: 287.5' AT&T Tag Tower
Project File : N:\L2 - ATC\88011\16_10-Verizon 10-05-16\Post-Mod\88011-L2-Verizon-10_05_16-Post-Mod.tow
Date run     : 1:30:28 PM Tuesday, March 07, 2017
by           : Tower Version 14.20
Licensed to  : American Tower Corp.

Successfully performed nonlinear analysis

The model has 0 warnings.

Member check option: ANSI/TIA 222-G-1
Connection rupture check: ANSI/TIA 222-G-1
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: n:\l2 - atc\88011\16_10-verizon 10-05-16\post-mod\88011-l2-verizon-10_05_16-post-mod.eia

*** Analysis Results:
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Maximum element usage is 100.69% for Angle "D 7X" in load case "W -90"   NG

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	0P	-43.63	-21.15	-332.68	48.49	[illegible]	[illegible]	4.47	-2.22	0.00
W 0	0X	-42.90	21.50	-329.96	47.99	1.22	-4.12	4.29	2.22	0.00
W 0	0XY	-33.66	-17.66	225.72	38.01	0.28	-4.47	4.48	1.98	0.00
W 0	0Y	-34.22	17.30	225.98	38.34	-0.20	-4.61	4.61	-1.95	0.00
W 180	0P	34.22	17.20	224.53	38.30	-0.21	4.66	4.66	1.96	0.00
W 180	0X	33.64	-17.52	224.50	37.93	0.27	4.50	4.51	-1.98	0.00
W 180	0XY	42.88	21.40	-328.73	47.92	[illegible]	4.15	4.32	-2.23	0.00
W 180	0Y	43.68	-21.08	-331.23	48.50	-1.37	4.29	4.51	2.22	0.00
W 45	0P	-49.50	-49.54	-467.97	70.03	3.01	-3.01	4.26	-0.00	0.00
W 45	0X	-16.99	-7.16	-52.37	18.44	3.60	-3.09	4.75	3.02	0.00
W 45	0XY	-40.93	-40.90	361.67	57.86	3.51	-3.51	4.96	-0.00	0.00
W 45	0Y	-7.13	-16.95	-52.26	18.39	3.08	-3.59	4.73	-3.02	0.00
W -45	0P	-17.53	7.41	-54.69	19.03	-3.74	-3.18	4.90	-3.01	0.00
W -45	0X	-48.95	49.81	-465.65	69.84	-3.14	-2.91	4.28	0.01	0.00
W -45	0XY	-6.78	16.69	-52.11	18.02	-3.03	-3.50	4.63	3.03	0.00
W -45	0Y	-41.29	40.64	361.52	57.93	-3.45	-3.60	4.99	0.02	0.00
W 90	0P	-21.12	-43.66	-332.71	48.50	4.26	1.39	4.48	2.22	0.00
W 90	0X	17.27	-34.24	225.91	38.35	4.61	0.19	4.62	1.95	0.00
W 90	0XY	-17.67	-33.64	225.69	38.00	4.47	-0.29	4.48	-1.98	0.00
W 90	0Y	21.52	-42.87	-329.82	47.97	4.11	-1.21	4.29	-2.22	0.00
W -90	0P	17.18	34.24	224.56	38.31	-4.66	0.20	4.67	-1.96	0.00
W -90	0X	-21.07	43.71	-331.37	48.52	-4.30	1.38	4.51	-2.22	0.00
W -90	0XY	21.43	42.85	-328.70	47.91	-4.14	-1.21	4.31	2.23	0.00
W -90	0Y	-17.54	33.62	224.57	37.92	-4.50	-0.28	4.50	1.98	0.00
W 0 Ice	0P	-16.14	-12.51	-153.20	20.42	-1.01	-0.01	1.01	-0.45	0.00
W 0 Ice	0X	-15.90	12.60	-151.25	20.29	0.94	0.00	0.94	0.45	0.00
W 0 Ice	0XY	-0.61	2.85	-31.14	2.91	0.94	-1.89	2.11	0.44	0.00
W 0 Ice	0Y	-0.58	-2.94	-32.22	3.00	-0.94	-1.91	2.13	-0.43	0.00
W 180 Ice	0P	0.60	-3.06	-33.99	3.12	-0.96	1.97	2.19	0.44	0.00
W 180 Ice	0X	0.58	3.02	-32.61	3.08	0.92	1.93	2.14	-0.45	0.00
W 180 Ice	0XY	15.87	12.43	-149.78	20.16	0.95	0.03	0.95	-0.45	0.00
W 180 Ice	0Y	16.17	-12.39	-151.43	20.37	-1.00	0.07	1.00	0.46	0.00
W 45 Ice	0P	-17.69	-17.70	-184.22	25.03	-0.26	0.26	0.36	0.00	0.00
W 45 Ice	0X	-10.34	5.11	-91.76	11.54	1.67	0.22	1.69	0.44	0.00
W 45 Ice	0XY	-2.28	-2.28	-0.18	3.23	1.66	-1.66	2.34	-0.00	0.00
W 45 Ice	0Y	5.12	-10.33	-91.65	11.53	-0.22	-1.67	1.69	-0.44	0.00
W -45 Ice	0P	-10.54	-5.05	-93.62	11.69	-1.75	0.22	1.76	-0.67	0.00
W -45 Ice	0X	-17.49	17.78	-182.36	24.94	0.19	0.27	0.32	-0.00	0.00
W -45 Ice	0XY	5.05	10.26	-90.48	11.43	0.21	-1.66	1.68	0.67	0.00
W -45 Ice	0Y	-2.22	2.21	-1.35	3.13	-1.67	-1.66	2.36	0.01	0.00
W 90 Ice	0P	-12.50	-16.14	-153.20	20.42	0.02	1.02	1.02	0.45	0.00
W 90 Ice	0X	-2.95	-0.58	-32.32	3.01	1.91	0.94	2.13	0.43	0.00
W 90 Ice	0XY	2.85	-0.61	-31.14	2.91	1.89	-0.94	2.11	-0.44	0.00
W 90 Ice	0Y	12.60	-15.89	-151.14	20.28	-0.00	-0.93	0.93	-0.45	0.00
W -90 Ice	0P	-3.06	0.60	-33.98	3.12	-1.97	0.96	2.19	-0.44	0.00
W -90 Ice	0X	-12.39	16.18	-151.54	20.38	-0.07	1.00	1.01	-0.46	0.00
W -90 Ice	0XY	12.44	15.86	-149.77	20.16	-0.03	-0.95	0.95	0.45	0.00
W -90 Ice	0Y	3.01	0.58	-32.51	3.07	-1.92	-0.92	2.14	0.45	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Joint	Origin Joint	Member	Leg Force In Leg Dir. (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg - Res. (kips)	Residual Shear Horizontal To Leg - Long. (kips)	Residual Shear Horizontal To Leg - Tran. (kips)	Total Long. Force (kips)	Total Tran. Force (kips)	Total Vert. Force (kips)
W 0	0P	1P	L 1P	335.382	23.354	23.400	23.383	0.896	-43.63	-21.15	-332.68
W 0	0X	1X	L 1X	332.645	[illegible]	22.860	[illegible]	-1.419	-42.90	21.50	-329.96
W 0	0XY	1XY	L 1XY	-228.004	20.248	20.300	19.919	3.916	-33.66	-17.66	225.72
W 0	0Y	1Y	L 1Y	-228.270	[illegible]	20.770	[illegible]	-3.543	-34.22	17.30	225.98
W 180	0P	1P	L 1P	-226.821	20.802	20.853	-20.552	-3.533	34.22	17.20	224.53
W 180	0X	1X	L 1X	-226.775	[illegible]	20.341	-19.974	3.850	33.64	-17.52	224.50
W 180	0XY	1XY	L 1XY	331.419	22.860	[illegible]	[illegible]	[illegible]	42.88	21.40	-328.73
W 180	0Y	1Y	L 1Y	333.938	23.487	23.533	-23.515	0.923	43.68	-21.08	-331.23
W 45	0P	1P	L 1P	472.252	[illegible]	[illegible]	[illegible]	21.052	-49.50	-49.54	-467.97
W 45	0X	1X	L 1X	52.770	17.250	17.251	13.800	10.351	-16.99	-7.16	-52.37
W 45	0XY	1XY	L 1XY	-365.296	[illegible]	[illegible]	[illegible]	18.886	-40.93	-40.90	361.67
W 45	0Y	1Y	L 1Y	52.665	17.204	17.205	10.316	13.769	-7.13	-16.95	-52.26
W -45	0P	1P	L 1P	55.102	[illegible]	[illegible]	[illegible]	-10.737	-17.53	7.41	-54.69
W -45	0X	1X	L 1X	469.926	29.648	[illegible]	[illegible]	-21.467	-48.95	49.81	-465.65
W -45	0XY	1XY	L 1XY	52.523	[illegible]	16.788	9.950	-13.522	-6.78	16.69	-52.11
W -45	0Y	1Y	L 1Y	-365.159	26.715	[illegible]	[illegible]	-18.633	-41.29	40.64	361.52
W 90	0P	1P	L 1P	335.416	23.379	23.425	0.867	23.409	-21.12	-43.66	-332.71
W 90	0X	1X	L 1X	-228.197	20.739	[illegible]	[illegible]	20.490	17.27	-34.24	225.91
W 90	0XY	1XY	L 1XY	-227.972	20.235	20.287	3.936	19.901	-17.67	-33.64	225.69
W 90	0Y	1Y	L 1Y	332.507	22.794	[illegible]	[illegible]	22.796	21.52	-42.87	-329.82
W -90	0P	1P	L 1P	-226.853	20.816	20.867	-3.513	-20.570	17.18	34.24	224.56
W -90	0X	1X	L 1X	334.076	23.505	[illegible]	0.895	-23.535	-21.07	43.71	-331.37
W -90	0XY	1XY	L 1XY	331.386	22.838	22.886	[illegible]	-22.841	21.43	42.85	-328.70
W -90	0Y	1Y	L 1Y	-226.848	20.271	20.322	3.874	-19.950	-17.54	33.62	224.57
W 0 Ice	0P	1P	L 1P	154.366	7.495	[illegible]	[illegible]	3.187	-16.14	-12.51	-153.20
W 0 Ice	0X	1X	L 1X	152.423	7.477	7.502	6.688	-3.397	-15.90	12.60	-151.25
W 0 Ice	0XY	1XY	L 1XY	31.159	2.677	[illegible]	[illegible]	-0.954	-0.61	2.85	-31.14
W 0 Ice	0Y	1Y	L 1Y	32.245	2.724	2.725	2.543	0.980	-0.58	-2.94	-32.22
W 180 Ice	0P	1P	L 1P	34.012	2.848	[illegible]	[illegible]	0.991	0.60	-3.06	-33.99
W 180 Ice	0X	1X	L 1X	32.636	2.765	2.767	-2.566	-1.037	0.58	3.02	-32.61
W 180 Ice	0XY	1XY	L 1XY	150.945	7.496	7.521	[illegible]	-3.314	15.87	12.43	-149.78
W 180 Ice	0Y	1Y	L 1Y	152.601	7.616	7.641	[illegible]	3.176	16.17	-12.39	-151.43
W 45 Ice	0P	1P	L 1P	185.685	9.136	9.170	6.479	6.489	-17.69	-17.70	-184.22
W 45 Ice	0X	1X	L 1X	92.355	4.772	[illegible]	[illegible]	0.470	-10.34	5.11	-91.76
W 45 Ice	0XY	1XY	L 1XY	-0.096	3.229	3.241	2.292	2.291	-2.28	-2.28	-0.18
W 45 Ice	0Y	1Y	L 1Y	92.249	4.767	[illegible]	[illegible]	4.751	5.12	-10.33	-91.65
W -45 Ice	0P	1P	L 1P	94.217	4.881	4.888	4.844	-0.653	-10.54	-5.05	-93.62
W -45 Ice	0X	1X	L 1X	183.824	9.209	[illegible]	[illegible]	-6.678	-17.49	17.78	-182.36
W -45 Ice	0XY	1XY	L 1XY	91.078	4.765	4.772	0.458	-4.750	5.05	10.26	-90.48
W -45 Ice	0Y	1Y	L 1Y	1.074	3.232	3.244	2.298	-2.289	-2.22	2.21	-1.35
W 90 Ice	0P	1P	L 1P	154.374	7.498	7.523	3.178	6.819	-12.50	-16.14	-153.20
W 90 Ice	0X	1X	L 1X	32.346	2.730	2.732	0.983	2.549	-2.95	-0.58	-32.32
W 90 Ice	0XY	1XY	L 1XY	31.164	2.678	2.679	[illegible]	2.505	2.85	-0.61	-31.14
W 90 Ice	0Y	1Y	L 1Y	152.311	7.478	7.503	-3.403	6.686	12.60	-15.89	-151.14
W -90 Ice	0P	1P	L 1P	34.007	2.847	2.849	[illegible]	-2.672	-3.06	0.60	-33.98
W -90 Ice	0X	1X	L 1X	152.713	7.615	7.640	3.170	-6.952	-12.39	16.18	-151.54
W -90 Ice	0XY	1XY	L 1XY	150.939	7.493	7.517	[illegible]	-6.743	12.44	15.86	-149.77
W -90 Ice	0Y	1Y	L 1Y	32.535	2.759	2.761	-1.034	-2.560	3.01	0.58	-32.51

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Resultant Moment (ft-k)
W 0	54.335	24515.422	24515.483
W 180	54.339	-24397.830	24397.890
W 45	18249.679	18254.321	25812.226
W -45	-18141.189	[illegible]	[illegible]
W 90	24510.804	[illegible]	24510.875
W -90	[illegible]	[illegible]	[illegible]
W 0 Ice	66.601	5303.969	5304.367
W 180 Ice	66.600	-5161.451	5161.880
W 45 Ice	[illegible]	[illegible]	[illegible]
W -45 Ice	-3913.279	4051.135	5632.534
W 90 Ice	[illegible]	[illegible]	[illegible]
W -90 Ice	-5166.118	71.267	5166.609

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft^2)	Face Af Adjust Factor	Face Ar Adjust Factor	Dead Load Factor
278.9-287.5	287.500	278.91[illegible]	[illegible]	[illegible]	9.00	10.04	81.75	1.1670	1.1670	1.294
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	90.70	1.2150	1.2150	1.336

260.2-270.3	270.333	260.167	8	16	11.09	12.33	119.04	1.1960	1.1960	1.316
250.0-260.2	260.167	250.000	12	24	12.33	13.57	131.62	1.2030	1.2030	1.323
237.5-250.0	250.000	237.500	16	24	13.57	15.09	179.08	1.2010	1.2010	1.441
225.0-237.5	237.500	225.000	16	24	15.09	16.61	198.10	1.2070	1.2070	1.448
212.5-225.0	225.000	212.500	16	24	16.61	18.13	217.12	1.2130	1.2130	1.455
200.0-212.5	212.500	200.000	16	24	18.13	19.65	236.14	1.2190	1.2190	1.463
187.5-200.0	200.000	187.500	16	24	19.65	21.17	255.16	1.2250	1.2250	1.469
162.5-187.5	187.500	162.500	16	24	21.17	24.22	567.39	1.2540	1.2540	1.504
137.5-162.5	162.500	137.500	16	24	24.22	27.26	643.48	1.2680	1.2680	1.522
112.5-137.5	137.500	112.500	16	24	27.26	30.30	719.57	1.2770	1.2770	1.533
87.50-112.5	112.500	87.500	20	32	30.30	33.35	795.65	1.2910	1.2910	1.549
62.50-87.50	87.500	62.500	36	76	33.35	36.39	871.74	1.2290	1.2290	1.474
37.50-62.50	62.500	37.500	32	68	36.39	39.43	947.83	1.2320	1.2320	1.478
0.000-37.50	37.500	0.000	20	40	39.43	44.00	1564.40	1.2590	1.2590	1.511

Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/r Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/r	KL/r	Length Comp. Member (ft)	Curve No.	No. Of Bolts Comp.	
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	72.40	Comp	72.40	L 1P	-354.155	W 45	489.140	0.000	0.000	0.250	0.250	0.250	72.38	72.38	37.639	1	0	
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	70.56	Comp	70.56	L 2P	-327.537	W 45	464.179	0.000	0.000	0.281	0.281	0.281	54.28	54.28	25.092	1	0	
Leg S3	L 8" x 8" x 1"	SAE	8X8X1	36.0	66.78	Comp	66.78	L 3P	-277.943	W 45	416.180	0.000	0.000	0.281	0.281	0.281	54.28	54.28	25.092	1	0	
Leg S4	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	77.49	Comp	77.49	L 4P	-267.873	W 45	345.685	0.000	0.000	0.333	0.333	0.333	63.92	63.92	25.092	1	0	
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	65.05	Comp	65.05	L 5P	-224.867	W 45	345.685	0.000	0.000	0.333	0.333	0.333	63.92	63.92	25.092	1	0	
Leg S6	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	60.64	Comp	60.64	L 6P	-181.751	W 45	299.727	0.000	0.000	0.333	0.333	0.333	63.52	63.52	25.092	1	0	
Leg S7	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	55.65	Comp	55.65	L 7P	-140.127	W 45	251.781	0.000	0.000	0.333	0.333	0.333	63.52	63.52	25.092	1	0	
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	53.93	Comp	53.93	L 8P	-118.588	W 45	219.909	0.000	0.000	0.500	0.500	0.500	64.34	64.34	12.546	1	0	
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	44.31	Comp	44.31	L 9P	-97.435	W 45	219.909	0.000	0.000	0.500	0.500	0.500	64.34	64.34	12.546	1	0	
Leg S10	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	46.13	Comp	46.13	L 10P	-77.572	W 45	168.154	0.000	0.000	0.500	0.500	0.500	63.79	63.79	12.546	1	0	
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	34.72	Comp	34.72	L 11P	-58.388	W 45	168.154	0.000	0.000	0.500	0.500	0.500	63.79	63.79	12.546	1	0	
Leg S12	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	29.49	Comp	29.49	L 12P	-39.162	W 45	132.802	0.000	0.000	0.500	0.500	0.500	63.26	63.26	12.546	1	0	
Leg S13	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	26.51	Comp	26.51	L 13P	-29.304	W 45	110.551	0.000	0.000	0.500	0.500	0.500	62.10	62.10	10.204	1	0	
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	16.35	Comp	16.35	L 14X	-18.070	W -45	110.551	0.000	0.000	0.500	0.500	0.500	62.10	62.10	10.204	1	0	
Leg S15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	9.11	Comp	9.11	L 15X	-7.734	W -45	84.921	0.000	0.000	0.500	0.500	0.500	52.00	52.00	8.615	1	0	
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	4.00	Comp	4.00	L 16X	-3.393	W -45	84.921	0.000	0.000	0.500	0.500	0.500	52.00	52.00	8.615	1	0	
Diag S1	B/B L5"x5"x0.3125"	DAE	5X5X0.31	36.0	46.55	Comp	46.55	D 2X	-66.196	W -90	146.487	0.000	0.000	0.316	0.316	0.316	74.10	74.10	30.682	1	0	
Diag S2	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	98.36	Comp	98.36	D 4X	-50.165	W -90	51.000	0.000	0.000	0.320	0.320	0.320	107.12	107.12	20.504	1	0	
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	96.07	Comp	96.07	D 6X	-49.974	W -90	52.020	0.000	0.000	0.320	0.320	0.320	105.35	105.35	20.165	1	0	
Diag S4	**B/B L2.5"x3"x0.25"**	**DAS**	**3X2.5X0.25**	**36.0**	**100.69**	**Comp**	**100.69**	**D 7X**	**-32.988**	**W -90**	**32.762**	**0.000**	**0.000**	**0.300**	**0.300**	**0.300**	**143.85**	**134.67**	**30.089**	**6**	**0**	NG
Diag S5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	97.08	Comp	97.08	D 9X	-32.932	W -90	33.924	0.000	0.000	0.300	0.300	0.300	139.95	132.27	29.273	6	0	
Diag S6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	98.14	Comp	98.14	D 11X	-31.697	W -90	32.298	0.000	0.000	0.320	0.320	0.320	145.42	135.63	28.515	6	0	
Diag S7	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	96.74	Comp	96.74	D 13X	-30.704	W -90	31.739	0.000	0.000	0.320	0.640	0.320	147.35	136.82	27.820	6	0	
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	73.01	Comp	73.01	D 15X	-17.946	W -90	24.580	0.000	0.000	0.500	1.000	0.500	165.36	147.90	16.399	6	0	
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	65.66	Comp	65.66	D 17X	-16.811	W -90	25.602	0.000	0.000	0.500	1.000	0.500	160.52	144.92	15.918	6	0	
Diag S10	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	93.75	Comp	93.75	D 19X	-15.941	W -90	17.003	0.000	0.000	0.500	1.000	0.500	198.42	168.23	15.460	6	0	
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	87.60	Comp	87.60	D 21X	-15.519	W -90	17.717	0.000	0.000	0.500	1.000	0.500	192.85	164.60	15.026	6	0	
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	79.16	Comp	79.16	D 23X	-14.588	W -90	18.428	0.000	0.000	0.500	1.000	0.500	187.63	161.59	14.620	6	0	
Diag S13	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	35.87	Comp	35.87	D 26X	-6.843	W -90	19.079	0.000	0.000	0.520	0.750	0.520	148.11	141.46	16.473	5	0	
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	30.52	Comp	30.52	D 28P	-6.400	W 90	20.971	0.000	0.000	0.520	0.750	0.520	139.54	134.90	15.519	5	0	
Diag S15	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	16.90	Comp	16.90	D 30XY	[illegible]	W -90	17.075	0.000	0.000	0.520	0.750	0.520	143.61	138.03	13.624	5	0	
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	9.87	Comp	9.87	D 32XY	-1.849	W -90	18.734	0.000	0.000	0.520	0.750	0.520	135.24	131.65	12.831	5	0	
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	82.01	Comp	82.01	H 2Y	-41.161	W -45	50.189	0.000	0.000	0.500	0.500	0.500	108.54	108.54	19.717	1	0	
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	84.39	Comp	84.39	H 3P	-35.321	W -90	41.857	0.000	0.000	0.940	0.940	0.940	125.53	123.40	12.130	6	0	
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	89.57	Comp	89.57	H 5P	[illegible]	W -90	36.064	0.000	0.000	0.940	0.940	0.940	132.69	127.80	11.116	6	0	
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	83.22	Comp	83.22	H 7P	-16.107	W -90	19.353	0.000	0.000	1.000	1.000	1.000	192.41	175.22	15.152	5	0	
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	65.47	Comp	65.47	H 9P	-15.102	W -90	23.067	0.000	0.000	1.000	1.000	1.000	173.06	160.49	13.630	5	0	
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	73.11	Comp	73.11	H 11P	[illegible]	W -90	16.052	0.000	0.000	1.000	1.000	1.000	188.95	172.58	12.109	5	0	
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	53.77	Comp	53.77	H 13P	-12.114	W -90	22.528	0.000	0.000	1.000	1.000	1.000	165.21	154.49	10.587	5	0	
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	41.27	Comp	41.27	H 15P	[illegible]	W -90	25.419	0.000	0.000	1.000	1.000	1.000	153.33	145.44	9.826	5	0	
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	33.03	Comp	33.03	H 17P	-9.548	W -90	28.903	0.000	0.000	1.000	1.000	1.000	141.46	136.39	9.045	5	0	
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	25.53	Comp	25.53	H 19P	[illegible]	W -90	32.836	0.000	0.000	1.000	1.000	1.000	129.59	127.35	8.304	5	0	
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	21.57	Comp	21.57	H 21P	-8.018	W -90	37.181	0.000	0.000	1.000	1.000	1.000	117.71	117.71	7.543	1	0	
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	15.61	Comp	15.61	H 23P	-6.674	W -90	42.757	0.000	0.000	1.000	1.000	1.000	105.84	105.84	6.783	1	0	
Horiz 13	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	6.06	Comp	6.06	H 25Y	-0.979	W 0	16.156	0.000	0.000	0.500	0.500	0.500	140.09	135.35	12.328	5	0	
Horiz 14	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.74	Tens	0.89	H 27Y	-0.587	W -45	65.637	0.000	0.000	0.500	0.500	0.500	70.41	70.41	11.090	1	0	
Horiz 15	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	1.81	Tens	0.01	H 30X	-0.003	W 90	21.376	0.000	0.000	0.500	0.500	0.500	114.15	114.15	10.045	1	0	
Horiz 16	C8x11.5	CHN	C8x11.5	36.0	0.18	Tens	0.13	H 31Y	-0.038	W -45	29.726	0.000	0.000	0.500	1.000	0.500	172.80	160.27	9.000	5	0	
LD 1	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	80.12	Comp	80.12	LD 1X	[illegible]	W -45	45.496	0.000	0.000	0.900	0.900	0.900	134.92	129.17	13.617	6	0	
LD 2	B/B L4"x4"x0.3125"	DAE	4X4X0.31	36.0	80.33	Comp	80.33	LD 3X	-59.577	W -90	74.168	0.000	0.000	0.900	0.900	0.900	118.60	118.60	13.617	1	0	
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	91.52	Comp	91.52	LD 7X	[illegible]	W -45	24.766	0.000	0.000	0.910	0.910	0.910	151.53	139.39	10.879	6	0	
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	91.82	Comp	91.82	LD 9X	-32.845	W -90	35.771	0.000	0.000	0.910	0.910	0.910	111.73	111.73	9.021	1	0	
LD 6	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	90.67	Comp	90.67	LD 11P	[illegible]	W -90	38.944	0.000	0.000	0.910	0.910	0.910	113.91	113.91	9.295	1	0	
LD 7	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	92.22	Comp	92.22	LD 13X	[illegible]	W -45	26.512	0.000	0.000	0.910	0.910	0.910	143.94	134.72	10.334	6	0	
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	88.81	Comp	88.81	LD 15X	[illegible]	W -90	36.550	0.000	0.000	0.910	0.910	0.910	109.88	109.88	7.889	1	0	
LD 9	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	65.88	Comp	65.88	LD 17P	[illegible]	W -90	52.023	0.000	0.000	0.910	0.910	0.910	105.35	105.35	8.972	1	0	
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	94.53	Comp	94.53	LH 1P	-17.905	W -45	18.942	0.000	0.000	0.500	1.000	0.500	198.83	166.48	19.717	6	0	
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	90.85	Comp	90.85	LH 3X	[illegible]	W -45	27.489	0.000	0.000	1.000	2.000	1.000	163.93	147.02	9.904	6	0	
LH 3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	84.06	Comp	84.06	LH 5X	-25.867	W -45	30.773	0.000	0.000	1.000	2.000	1.000	150.81	138.95	9.112	6	0	
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 9XY	[illegible]	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.31	2.31	19.276	1	0	

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes	Hole Diameter (in)	
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	72.40	Comp	49.66	L 1XY	169.206	W 45	542.051	0.000	0.000	0.000	37.639	0	0.000	0	
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	70.56	Comp	46.60	L 2XY	252.592	W 45	542.051	0.000	0.000	0.000	25.092	0	0.000	0	
Leg S3	L 8" x 8" x 1"	SAE	8X8X1	36.0	66.78	Comp	44.42	L 3XY	215.873	W 45	485.999	0.000	0.000	0.000	25.092	0	0.000	0	
Leg S4	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	77.49	Comp	49.37	L 4XY	211.627	W 45	428.651	0.000	0.000	0.000	25.092	0	0.000	0	
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	65.05	Comp	41.08	L 5XY	176.087	W 45	428.651	0.000	0.000	0.000	25.092	0	0.000	0	
Leg S6	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	60.64	Comp	37.90	L 6XY	140.473	W 45	370.655	0.000	0.000	0.000	25.092	0	0.000	0	
Leg S7	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	55.65	Comp	33.59	L 7XY	104.599	W 45	311.364	0.000	0.000	0.000	25.092	0	0.000	0	
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	53.93	Comp	31.93	L 8XY	87.318	W 45	273.456	0.000	0.000	0.000	12.546	0	0.000	0	
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	44.31	Comp	26.27	L 9XY	71.808	W 45	273.456	0.000	0.000	0.000	12.546	0	0.000	0	
Leg S10	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	46.13	Comp	26.50	L 10XY	55.203	W 45	208.332	0.000	0.000	0.000	12.546	0	0.000	0	
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	34.72	Comp	18.73	L 11XY	39.020	W 45	208.332	0.000	0.000	0.000	12.546	0	0.000	0	
Leg S12	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	29.49	Comp	14.39	L 12XY	23.588	W 45	163.944	0.000	0.000	0.000	12.546	0	0.000	0	
Leg S13	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	26.51	Comp	13.25	L 13XY	17.939	W 45	135.432	0.000	0.000	0.000	10.204	0	0.000	0	
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	16.35	Comp	6.35	L 14XY	6.601	W 45	135.432	0.000	0.000	0.000	10.204	0	0.000	0	
Leg S15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	9.11	Comp	2.97	L 15XY	2.914	W 45	98.172	0.000	0.000	0.000	8.615	0	0.000	0	
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	4.00	Comp	0.00	L 16Y	0.000		98.172	0.000	0.000	0.000	8.615	0	0.000	0	
Diag S1	B/B L5"x5"x0.3125"	DAE	5X5X0.31	36.0	46.55	Comp	25.94	D 2P	56.535	W -90	196.020	0.000	0.000	0.000	30.682	0	0.000	0	
Diag S2	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	98.36	Comp	47.35	D 4P	44.179	W -90	93.311	0.000	0.000	0.000	20.504	0	0.000	0	
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	96.07	Comp	46.41	D 6P	43.302	W -90	93.311	0.000	0.000	0.000	20.165	0	0.000	0	
Diag S4	**B/B L2.5"x3"x0.25"**	**DAS**	**3X2.5X0.25**	**36.0**	**100.69**	**Comp**	**36.16**	**D 7P**	**30.813**	**W -90**	**85.212**	**0.000**	**0.000**	**0.000**	**30.089**	**0**	**0.000**	**0**	NG
Diag S5	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	97.08	Comp	36.06	D 9P	30.728	W -90	85.212	0.000	0.000	0.000	29.273	0	0.000	0	
Diag S6	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	98.14	Comp	34.95	D 11P	29.782	W -90	85.212	0.000	0.000	0.000	28.515	0	0.000	0	
Diag S7	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	96.74	Comp	34.45	D 13P	29.378	W -90	85.212	0.000	0.000	0.000	27.820	0	0.000	0	
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	73.01	Comp	21.91	D 15P	16.893	W -90	77.112	0.000	0.000	0.000	16.399	0	0.000	0	
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	65.66	Comp	20.60	D 17P	15.981	W -90	77.112	0.000	0.000	0.000	15.918	0	0.000	0	
Diag S10	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	93.75	Comp	21.91	D 19P	15.113	W -90	69.012	0.000	0.000	0.000	15.460	0	0.000	0	
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	87.60	Comp	21.42	D 21P	14.753	W -90	69.012	0.000	0.000	0.000	15.026	0	0.000	0	
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	79.16	Comp	20.17	D 23P	13.918	W -90	69.012	0.000	0.000	0.000	14.620	0	0.000	0	
Diag S13	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	35.87	Comp	10.49	D 26X	5.741	W 90	54.756	0.000	0.000	0.000	16.473	0	0.000	0	
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	30.52	Comp	9.65	D 28P	5.284	W -90	54.756	0.000	0.000	0.000	15.519	0	0.000	0	
Diag S15	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	16.90	Comp	4.98	D 30XY	2.323	W 90	46.656	0.000	0.000	0.000	13.624	0	0.000	0	
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	9.87	Comp	2.81	D 32Y	1.313	W -90	46.656	0.000	0.000	0.000	12.831	0	0.000	0	
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	82.01	Comp	49.84	H 1X	46.508	W -45	93.312	0.000	0.000	0.000	19.717	0	0.000	0	
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	84.39	Comp	41.30	H 3X	38.538	W -90	93.312	0.000	0.000	0.000	12.130	0	0.000	0	
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	89.57	Comp	40.99	H 5X	34.931	W -90	85.212	0.000	0.000	0.000	11.116	0	0.000	0	
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	83.22	Comp	19.62	H 7X	16.722	W -90	85.212	0.000	0.000	0.000	15.151	0	0.000	0	
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	65.47	Comp	18.03	H 9P	15.364	W 90	85.212	0.000	0.000	0.000	13.630	0	0.000	0	
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	73.11	Comp	17.33	H 11X	13.364	W -90	77.112	0.000	0.000	0.000	12.109	0	0.000	0	
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	53.77	Comp	16.08	H 13P	12.400	W 90	77.112	0.000	0.000	0.000	10.587	0	0.000	0	
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	41.27	Comp	13.89	H 15X	10.710	W -90	77.112	0.000	0.000	0.000	9.826	0	0.000	0	
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	33.03	Comp	12.59	H 17P	9.707	W 90	77.112	0.000	0.000	0.000	9.045	0	0.000	0	
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	25.53	Comp	11.20	H 19X	8.636	W -90	77.112	0.000	0.000	0.000	8.304	0	0.000	0	
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	21.57	Comp	10.52	H 21P	8.109	W 90	77.112	0.000	0.000	0.000	7.543	0	0.000	0	
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	15.61	Comp	[illegible]	H 23P	7.213	W 90	77.112	0.000	0.000	0.000	6.783	0	0.000	0	
Horiz 13	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	6.06	Comp	[illegible]	H 25P	2.512	W 0	42.444	0.000	0.000	0.000	12.328	0	0.000	0	
Horiz 14	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.74	Tens	1.74	H 29X	1.486	W -45	85.212	0.000	0.000	0.000	11.090	0	0.000	0	
Horiz 15	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	1.83	Tens	1.81	H 29P	0.770	W 0	42.444	0.000	0.000	0.000	10.045	0	0.000	0	
Horiz 16	C8x11.5	CHN	C8x11.5	36.0	0.18	Tens	0.18	H 31X	0.198	W -45	109.512	0.000	0.000	0.000	9.000	0	0.000	0	
LD 1	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	80.12	Comp	28.97	LD 2Y	31.723	W -45	109.512	0.000	0.000	0.000	13.617	0	0.000	0	
LD 2	B/B L4"x4"x0.3125"	DAE	4X4X0.31	36.0	80.33	Comp	35.90	LD 3P	55.835	W -90	155.520	0.000	0.000	0.000	13.617	0	0.000	0	
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	91.52	Comp	30.86	LD 8Y	21.297	W -45	69.012	0.000	0.000	0.000	10.879	0	0.000	0	
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	91.82	Comp	41.17	LD 9P	28.101	W -90	69.012	0.000	0.000	0.000	9.021	0	0.000	0	
LD 6	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	90.67	Comp	46.99	LD 11X	36.235	W -90	77.112	0.000	0.000	0.000	9.295	0	0.000	0	
LD 7	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	92.22	Comp	32.04	LD 14Y	22.111	W -45	69.012	0.000	0.000	0.000	10.334	0	0.000	0	
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	88.81	Comp	41.46	LD 15P	28.609	W -90	69.012	0.000	0.000	0.000	7.889	0	0.000	0	
LD 9	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	65.88	Comp	37.54	LD 17X	35.015	W -90	93.312	0.000	0.000	0.000	8.972	0	0.000	0	
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	36.0	94.53	Comp	[illegible]	LH 1Y	15.442	W 0	77.112	0.000	0.000	0.000	19.717	0	0.000	0	
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	90.85	Comp	[illegible]	LH 4Y	[illegible]	W -45	85.212	0.000	0.000	0.000	9.904	0	0.000	0	
LH 3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	84.06	Comp	[illegible]	LH 6Y	[illegible]	W -45	85.212	0.000	0.000	0.000	9.112	0	0.000	0	
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 9X	[illegible]	W -45	0.324	0.000	0.000	0.000	19.276	0	0.000	0	

*** Maximum Stress Summary for Each Load Case

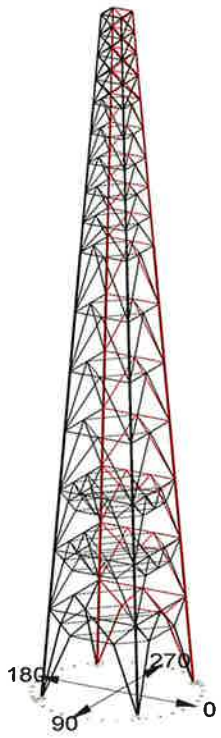
Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type	
W 0	99.85	D 8P	Angle	
W 180	**100.55**	**D 8Y**	**Angle**	**NG**
W 45	94.14	LH 1P	Angle	
W -45	94.53	LH 1P	Angle	
W 90	**100.04**	**D 7P**	**Angle**	**NG**
W -90	**100.69**	**D 7X**	**Angle**	**NG**
W 0 Ice	36.96	LH 1P	Angle	
W 180 Ice	35.98	LH 1Y	Angle	
W 45 Ice	31.36	LH 1P	Angle	
W -45 Ice	31.44	LH 1P	Angle	
W 90 Ice	36.93	LH 2P	Angle	
W -90 Ice	36.01	LH 2X	Angle	

*** Weight of structure (lbs):

Weight of Angles*Section DLF:	129933.0
Total:	129933.0

*** End of Report


180
270
90
0


Z

Site #:	88011
Name:	East Killingly North, CT

Engineer:	CDW
Date:	03/07/17

Windspeed:	No Ice:	101 mph	Ice:	50 mph
Carrier	Verizon			

Taper:	-0.121739		
FW @ Base:	44	ft	

Taper Change:	287.5	ft
FW @ Top:	9	ft

Spreadsheet Version Last Updated: 7/27/2012

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)
0	XY-Symmetry	22	22	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	
1	XY-Symmetry	19.7173913	19.7173913	37.5	Free	Free	Free	Free	Free	Free	
2	XY-Symmetry	18.19565217	18.19565217	62.5	Free	Free	Free	Free	Free	Free	
3	XY-Symmetry	16.67391304	16.67391304	87.5	Free	Free	Free	Free	Free	Free	
4	XY-Symmetry	15.15217391	15.15217391	112.5	Free	Free	Free	Free	Free	Free	
5	XY-Symmetry	13.63043478	13.63043478	137.5	Free	Free	Free	Free	Free	Free	
6	XY-Symmetry	12.10869565	12.10869565	162.5	Free	Free	Free	Free	Free	Free	
7	XY-Symmetry	10.58695652	10.58695652	187.5	Free	Free	Free	Free	Free	Free	
8	XY-Symmetry	9.826086957	9.826086957	200	Free	Free	Free	Free	Free	Free	
9	XY-Symmetry	9.065217391	9.065217391	212.5	Free	Free	Free	Free	Free	Free	
10	XY-Symmetry	8.304347826	8.304347826	225	Free	Free	Free	Free	Free	Free	
11	XY-Symmetry	7.543478261	7.543478261	237.5	Free	Free	Free	Free	Free	Free	
12	XY-Symmetry	6.782608696	6.782608696	250	Free	Free	Free	Free	Free	Free	
13	XY-Symmetry	6.163766087	6.163766087	260.1667	Free	Free	Free	Free	Free	Free	
14	XY-Symmetry	5.544923478	5.544923478	270.3334	Free	Free	Free	Free	Free	Free	
15	XY-Symmetry	5.022461739	5.022461739	278.9167	Free	Free	Free	Free	Free	Free	
16	XY-Symmetry	4.5	4.5	287.5	Free	Free	Free	Free	Free	Free	
A1	Y-Symmetry	19.7173913	0	37.5	Free	Free	Free	Free	Free	Free	
A2	X-Symmetry	0	19.7173913	37.5	Free	Free	Free	Free	Free	Free	
A3	XY-Symmetry	18.19565217	6.065217391	62.5	Free	Free	Free	Free	Free	Free	
A4	XY-Symmetry	6.065217391	18.19565217	62.5	Free	Free	Free	Free	Free	Free	
A5	XY-Symmetry	16.67391304	5.557971014	87.5	Free	Free	Free	Free	Free	Free	
A6	XY-Symmetry	5.557971014	16.67391304	87.5	Free	Free	Free	Free	Free	Free	
A7	Y-Symmetry	15.15217391	0	112.5	Free	Free	Free	Free	Free	Free	
A8	X-Symmetry	0	15.15217391	112.5	Free	Free	Free	Free	Free	Free	
A9	Y-Symmetry	13.63043478	0	137.5	Free	Free	Free	Free	Free	Free	
A10	X-Symmetry	0	13.63043478	137.5	Free	Free	Free	Free	Free	Free	
A11	Y-Symmetry	12.10869565	0	162.5	Free	Free	Free	Free	Free	Free	
A12	X-Symmetry	0	12.10869565	162.5	Free	Free	Free	Free	Free	Free	
A13	Y-Symmetry	10.58695652	0	187.5	Free	Free	Free	Free	Free	Free	
A14	X-Symmetry	0	10.58695652	187.5	Free	Free	Free	Free	Free	Free	
A15	Y-Symmetry	9.826086957	0	200	Free	Free	Free	Free	Free	Free	
A16	X-Symmetry	0	9.826086957	200	Free	Free	Free	Free	Free	Free	
A17	Y-Symmetry	9.065217391	0	212.5	Free	Free	Free	Free	Free	Free	
A18	X-Symmetry	0	9.065217391	212.5	Free	Free	Free	Free	Free	Free	
A19	Y-Symmetry	8.304347826	0	225	Free	Free	Free	Free	Free	Free	
A20	X-Symmetry	0	8.304347826	225	Free	Free	Free	Free	Free	Free	
A21	Y-Symmetry	7.543478261	0	237.5	Free	Free	Free	Free	Free	Free	
A22	X-Symmetry	0	7.543478261	237.5	Free	Free	Free	Free	Free	Free	
A23	Y-Symmetry	6.782608696	0	250	Free	Free	Free	Free	Free	Free	
A24	X-Symmetry	0	6.782608696	250	Free	Free	Free	Free	Free	Free	
H1	XY-Symmetry	20.28804348	9.858695652	28.125	Free	Free	Free	Free	Free	Free	
H2	XY-Symmetry	9.858695652	20.28804348	28.125	Free	Free	Free	Free	Free	Free	
H5	XY-Symmetry	18.62356522	9.904208696	55.47	Free	Free	Free	Free	Free	Free	
H6	XY-Symmetry	9.904208696	18.62356522	55.47	Free	Free	Free	Free	Free	Free	
H7	Y-Symmetry	18.62356522	0	55.47	Free	Free	Free	Free	Free	Free	
H8	X-Symmetry	0	18.62356522	55.47	Free	Free	Free	Free	Free	Free	
H9	XY-Symmetry	17.10182609	9.111686957	80.47	Free	Free	Free	Free	Free	Free	
H10	XY-Symmetry	9.111686957	17.10182609	80.47	Free	Free	Free	Free	Free	Free	
H11	Y-Symmetry	17.10182609	0	80.47	Free	Free	Free	Free	Free	Free	
H12	X-Symmetry	0	17.10182609	80.47	Free	Free	Free	Free	Free	Free	

# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
3	9.375	37.5	1	1	0	44	3
	7.03	25	2	2	37.5	39.43478261	3
	7.03	25	2	3	62.5	36.39130435	3
		25	A	4	87.5	33.34782609	2
		25	A	5	112.5	30.30434783	2
		25	A	6	137.5	27.26086957	2
		25	A	7	162.5	24.2173913	2
		12.5	A	8	187.5	21.17391304	1
		12.5	A	9	200	19.65217391	1
		12.5	A	10	212.5	18.13043478	1
		12.5	A	11	225	16.60869565	1
		12.5	A	12	237.5	15.08695652	1
1		10.1667	X	13	250	13.56521739	1
1		10.1667	X	14	260.1667	12.32753217	1
1		8.5833	X	15	270.3334	11.08984696	1
1		8.5833	X	16	278.9167	10.04492348	1
				17	287.5	9	

NOTES

Types:

1: Built up Horizs. w/ A

2: Built up Horizs. w/ M

A: Typical A brace

X: Typical X brace

Drop: Use only for types 1 & 2

Sections: 16

Legs

Site No.:	88011
Engineer:	CDW
Date:	03/07/2017
Carrier:	Verizon

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter or Length (in)	Thickness [2] (in)	F_Y (ksi)
1	0.000-37.50	L	8	1.125	36
2	37.50-62.50	L	8	1.125	36
3	62.50-87.50	L	8	1	36
4	87.50-112.5	L	8	0.875	36
5	112.5-137.5	L	8	0.875	36
6	137.5-162.5	L	8	0.75	36
7	162.5-187.5	L	8	0.625	36
8	187.5-200.0	L	6	0.75	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.5625	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.4375	36
13	250.0-260.2	L	5	0.4375	36
14	260.2-270.3	L	5	0.4375	36
15	270.3-278.9	L	5	0.3125	36
16	278.9-287.5	L	5	0.3125	36

Notes:

[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Leg

[2] For Solid Round Leg Shapes Thickness Equals Zero.

[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88011
Engineer:	CDW
Date:	03/07/2017
Carrier:	Verizon

When inputting thickness values, include all decimal places.

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

Notes:

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

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

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

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88011
Engineer:	CDW
Date:	03/07/2017
Carrier:	Verizon

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	
1	0.000-37.50	2L		3.5	2.5	0.25	36	
2	37.50-62.50	2L		3.5	2.5	0.25	36	
3	62.50-87.50	2L		3	2.5	0.25	36	
4	87.50-112.5	2L		3	2.5	0.25	36	
5	112.5-137.5	2L		3	2.5	0.25	36	
6	137.5-162.5	2L		2.5	2.5	0.25	36	
7	162.5-187.5	2L		2.5	2.5	0.25	36	
8	187.5-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-260.2	L		3	2.5	0.25	36	
14	260.2-270.3	2L		3	2.5	0.25	36	
15	270.3-278.9	L		3	2.5	0.25	36	
16	278.9-287.5	C		8	11.5		36	

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

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

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

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88011
Engineer:	CDW
Date:	03/07/2017
Carrier:	Verizon

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

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)
1	0.000-37.50	2L		3.5	3.5	0.25	36
2	0.000-37.50	2L		4	4	0.3125	36
3	37.50-62.50	2L		2.5	2	0.25	36
4	37.50-62.50	2L		2.5	2	0.25	36
5	37.50-62.50	2L		3	2	0.25	36
6	62.50-87.50	2L		2.5	2	0.25	36
7	62.50-87.50	2L		2.5	2	0.25	36
8	62.50-87.50	2L		3	3	0.25	36

Notes:

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

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

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

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88011
Engineer:	CDW
Date:	03/07/2017
Carrier:	Verizon

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-37.50	2L		2.5	2.5	0.25	36	Y
2	37.50-62.50	2L		2.5	3	0.25	36	
3	62.50-87.50	2L		2.5	3	0.25	36	

Notes:

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

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

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

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

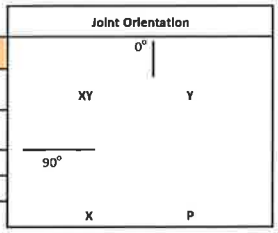
Coax and Dishes (p. 1 of 2)

Orig by MED, Improved by ABL, Last update 6/25/13 MED

Site No.:	88011
Engineer:	CDW
Date:	03/07/17
Carrier:	Verizon

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

Joint Orientation



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

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
LADDER	0	287.5	1	Flat	2	8.0	0.33	Yes	Yes
COAX CAGE1	8.3333	33.3333	2	Round	12	37.7	25	Yes	Yes
COAX CAGE2	8.3333	33.3333	2	Round	12	37.7	25	Yes	Yes
Sprint1	10	287.5	6	Round	1.98	6.2	0.33	Yes	Yes
Sprint2	10	287.5	6	Round	0.32	1.0	0.05	Yes	Yes
Verizon1	10	266	2	Round	1.54	4.8	0.33	No	No
Verizon2	10	265	12	Round	1.98	6.2	0.33	Yes	Yes
AT&T1	10	246	1	Round	0.39	1.2	0.06	Yes	Yes
AT&T2	10	246	2	Round	0.78	2.5	0.59	Yes	Yes
AT&T3	10	246	1	Round	3.5	11.0	50	Yes	Yes
AT&T4	10	246	1	Flat	8.265	44.1	50	Yes	Yes
USDOJ1	10	210	1	Round	1.09	3.4	0.33	Yes	Yes
Verizon3	10	50	1	Round	0.63	2.0	0.06	Yes	Yes
WG1	10	287.5	1	Flat	2	8.0	0.33	Yes	Yes
WG2	10	287.5	1	Flat	2	8.0	0.33	Yes	Yes

Coax and Dishes (p. 2 of 2)

	Exposure	B	α	7	$k_{z\,max}$	2.01	
Tia Code:	TIA-222-G	Topo Cat:	1	z_g	1200	$k_{z\,min}$	0.7
f		Crest Ht:	0	K_e	0.9	K_t	

Description	From (ft)	To (ft)	Quantity	Face # (1-4, A-D)	Coax Width (in)	Considered Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include In Wind Load (Yes/No)
														No	Yes
LADDER	0	287.5	1	A	2.00	Flat	100		Flat	1	1	8.0	0.33	Yes	Yes
COAX CAGE1	8.3333	33.3333	2	4	12.00	Ind	100		Round	2	1	37.7	25	Yes	Yes
COAX CAGE2	8.3333	33.3333	2	2	12.00	Ind	100		Round	2	1	37.7	25	Yes	Yes
							100							No	Yes
Sprint1	10	287.5	6	1	1.98	Ind	100		Round	6	1	6.2	0.33	Yes	Yes
Sprint2	10	287.5	6	1	0.32	Ind	100		Round	6	1	1.0	0.05	Yes	Yes
Verizon1	10	266	2	1	1.54	Ind	100		Round	2	1	4.8	0.33	Yes	Yes
Verizon2	10	265	12	1	1.98	Ind	100		Round	12	1	6.2	0.33	Yes	Yes
AT&T1	10	246	1	2	0.39	Ind	100		Round	1	1	1.2	0.06	Yes	Yes
AT&T2	10	246	2	2	0.78	Ind	100		Round	2	1	2.5	0.59	Yes	Yes
AT&T3	10	246	1	2	3.50	Ind	100		Round	1	1	11.0	1	Yes	Yes
AT&T4	10	246	12	2	2.38	Block	50	0.5	Flat	6	2	44.1	14.64	Yes	Yes
USDOJ1	10	210	1	1	1.09	Ind	100		Round	1	1	3.4	0.33	Yes	Yes
Verizon3	10	50	1	1	0.63	Ind	100		Round	1	1	2.0	0.06	Yes	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
WG1	10	287.5	1	1	2.00	Flat	100		Flat	1	1	8.0	0.33	Yes	Yes
WG2	10	287.5	1	2	2.00	Flat	100		Flat	1	1	8.0	0.33	Yes	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes
							100							No	Yes

Task:	Determine Point Loads	
Tower Height:	287.5	ft
Gh:	0.85	
Wind Speed:	101	mph
Ice Wind Speed:	50	
Ice Density:	56	
Tower Type:	S	

Ice Thick:	0.75	in
Topographic Category (1-4):	1	
Exposure Category (B-D):	B	
Structure Class (1-3):	2	
Height of Crest (H) If Topo Cat. >1:	0	ft
Load Factor; Wind:	1.6	
Load Factor; Dead:	1.2	

Site No.:	88011
Engineer:	CDW
Date:	03/07/2017
Carrier:	Verizon

No.	Carrier	Elevation (ft)	Quantity	# of Azimuths		Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction	C_AA_C (ft^2)	Weight (k)	Ka
1		287.5	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		287.5	1	4			Platform						1.000	60.00	6.00	1
2		270	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		270	1	4			Catwalk						1.000	50.00	4.50	1
3		237.5	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		237.5	1	1			Rest Platform						1.000	15.00	0.50	1
4		200	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		200	1	4			Platform						1.000	40.00	4.50	1
5		187.5	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		187.5	1	1			Rest Platform						1.000	15.00	0.50	1
6		137.5	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		137.5	1	1			Rest Platform						1.000	15.00	0.50	1
7		87.5	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		87.5	1	4			Platform						1.000	40.00	4.50	1
8		37.5	1	1			-	0.000	0.000	0.000	0.000	F	0.000			1
		37.5	1	1			Rest Platform						1.000	15.00	0.50	1
9																1
																1
10	SPRINT NEXTEL	306	3	3	Proposed	RFS	FD9R6004/1C-3L	5.800	6.500	1.500	3.100	F	0.500			0.75
	SPRINT NEXTEL	306	3	3			-						0.000	0.00	0.00	1
11	SPRINT NEXTEL	306	3	3	Proposed	RFS	APXVSPP18-C-A20	72.000	11.800	7.000	57.000	F	0.690			0.75
	SPRINT NEXTEL	306	1	1			-						0.000	0.00	0.00	1
12	VERIZON WIRELESS	266	3	3		Alcatel-Lucent	B13 RRH4x30-4R 700U	21.700	12.000	9.000	57.200	F	0.670			0.8
	VERIZON WIRELESS	266	3	3			Sector Frame						0.750	17.90	0.40	0.75
13	VERIZON WIRELESS	266	3	3		Alcatel-Lucent	B66A RRH4x45-4R w/ Solar Shield	25.800	11.800	7.200	56.800	F	0.670			0.8
	VERIZON WIRELESS	266	1	1			-						0.000	0.00	0.00	1
14	VERIZON WIRELESS	266	2	2		Raycap	RC3DC-3315-PF-48	28.900	15.700	10.300	32.000	F	0.670			0.8
	VERIZON WIRELESS	266	1	1			-						0.000	0.00	0.00	1
15	VERIZON WIRELESS	265	6	3		RFS	FD9R6004/2C-3L	5.800	6.500	1.500	2.600	F	0.500			0.8
	VERIZON WIRELESS	265	1	1			-						0.000	0.00	0.00	1
16	VERIZON WIRELESS	265	6	3		Amphenol Antel	LPA-80063-4CF-EDIN-X	47.400	15.200	13.100	20.000	F	0.750			0.8
	VERIZON WIRELESS	265	1	1			-						0.000	0.00	0.00	1
17	VERIZON WIRELESS	265	6	3		Commscope	SBNHH-1D65B	72.700	11.900	7.100	50.700	F	0.690			0.8
	VERIZON WIRELESS	265	1	1			-						0.000	0.00	0.00	1
18	AT&T MOBILITY	246	6	3		Powerwave Allgon	TT19-08BP111-001	9.900	6.700	5.400	16.000	F	0.500			0.8
	AT&T MOBILITY	246	3	3			Sector Frame						0.750	17.90	0.40	0.75
19	AT&T MOBILITY	246	3	3		Raycap	DC2-48-60-0-9E	10.300	10.300	6.200	16.000	F	0.500			0.8
	AT&T MOBILITY	246	1	1			-						0.000	0.00	0.00	1
20	AT&T MOBILITY	246	1	1		Raycap	FC12-PC6-10E (20.35 lb)	15.500	16.300	6.600	20.400	F	1.000			0.8
	AT&T MOBILITY	246	1	1			-						0.000	0.00	0.00	1
21	AT&T MOBILITY	246	3	3		Ericsson	RRUS-11	25.000	18.200	6.700	55.000	F	0.670			0.8
	AT&T MOBILITY	246	1	1			-						0.000	0.00	0.00	1
22	AT&T MOBILITY	246	6	3		Powerwave Allgon	P65-15-XLH-RR	51.000	12.000	6.000	41.000	F	0.660			0.8
	AT&T MOBILITY	246	1	1			-						0.000	0.00	0.00	1
23	AT&T MOBILITY	246	1	1		Kathrein Scala	800 10766	96.000	11.800	6.000	61.700	F	0.680			0.8
	AT&T MOBILITY	246	1	1			-						0.000	0.00	0.00	1
24	AT&T MOBILITY	246	2	2		KMW	AM-X-CD-17-65-00T-RET (96" Height)	96.000	11.800	6.000	59.500	F	0.680			0.8
	AT&T MOBILITY	246	1	1			-						0.000	0.00	0.00	1
25	US DEPARTMENT OF JUSTICE	210	1	1		Andrew	DB264	258.000	3.000	3.000	36.000	R	1.000			1
	US DEPARTMENT OF JUSTICE	210	1	1			Side Arm						1.000	5.20	0.15	1
26	VERIZON WIRELESS	50	1	1		MicroPulse	GPS-QBW-26N	5.000	3.200	3.200	0.600	R	1.000			1
	VERIZON WIRELESS	50	1	1			Side Arm						1.000	2.50	0.08	1
27																1
																1
28																1
																1
29																1
																1
30																1
																1
31																1
																1
32																1
																1
33																1
																1
34																1
																1
35																1
																1

No.	Elevation (ft)	C_AA_C (ft^2)	C_AA_C(Ice) (ft^2)	Force (lb)	Force (Ice) (lb)	Weight (lb)	Weight (Ice) (lb)	60 Azi Mult.	Force mean	F (Ice) mean	Height	Sum of Forces (No I	
											Flag	60 Azi.	180 Azi.
1	287.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00			
	287.5	60.00	81.00	2420.414	500.496	7200	9360	1.00	1331.23	275.27	1.5034783	2420.414474	
2	270	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5034793		
	270	50.00	67.50	1981.143	409.663	5400	7020	1.00	1089.63	225.31	1.5037037	1981.143344	
3	237.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037047		
	237.5	15.00	20.25	572.958	118.477	600	780	1.00	315.13	65.16	1.5042105	572.9580501	
4	200	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5042115		
	200	40.00	54.00	1454.681	300.801	5400	7020	1.00	800.07	165.44	1.5050000	1454.680667	
5	187.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5050010		
	187.5	15.00	20.25	535.539	110.739	600	780	1.00	294.55	60.91	1.5053333	535.5385372	
6	137.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5053343		
	137.5	15.00	20.25	490.123	101.348	600	780	1.00	269.57	55.74	1.5072727	490.1233815	
7	87.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5072737		
	87.5	40.00	54.00	1148.656	237.520	5400	7020	1.00	631.76	130.64	1.5114286	1148.655957	
8	37.5	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5114296		
	37.5	15.00	20.25	338.131	69.919	600	780	1.00	185.97	38.46	1.5266667	338.1310184	
9					#VALUE!			1.00	#VALUE!	#VALUE!	1.5266677		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
10	306	0.35	0.64	14.514	4.018	11	25	1.00	7.98	2.21	#DIV/0!		
	306	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	#DIV/0!	14.51407355	
11	306	12.46	14.75	511.591	92.809	205	503	1.00	281.38	51.04	#DIV/0!		
	306	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5032680	526.1054789	
12	266	3.49	4.90	137.670	29.590	206	330	1.00	75.72	16.27	1.5032690		
	266	40.28	54.37	1589.020	246.435	1440	1872	1.00	873.96	135.54	1.5032690	1726.690266	
13	266	4.08	5.68	160.953	34.303	204	337	1.00	88.52	18.87	1.5032700		
	266	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5032700	1887.643746	
14	266	4.05	5.45	159.921	32.933	77	227	1.00	87.96	18.11	1.5032710		
	266	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037594	2047.564524	
15	265	0.75	1.36	29.717	8.226	19	34	1.00	16.34	4.52	1.5037604		
	265	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037736	29.71651318	
16	265	22.11	28.58	871.374	172.543	144	407	1.00	479.26	94.90	1.5037746		
	265	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037736	901.0908491	
17	265	27.07	32.02	1066.856	193.272	365	696	1.00	586.77	106.30	1.5037746		
	265	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5037736	1967.946808	
18	246	1.33	2.18	51.184	12.890	115	161	1.00	28.15	7.09	1.5037746		
	246	40.28	54.37	1553.926	240.992	1440	1872	1.00	854.66	132.55	1.5040650	1605.11031	
19	246	1.06	1.62	40.933	9.600	58	101	1.00	22.51	5.28	1.5040660		
	246	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040650	1646.042907	
20	246	1.68	2.35	64.986	13.909	24	97	1.00	35.74	7.65	1.5040660		
	246	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040650	1711.02937	
21	246	6.10	8.16	235.240	48.232	198	356	1.00	129.38	26.53	1.5040660		
	246	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040650	1946.269302	
22	246	17.20	21.83	663.780	129.008	295	528	1.00	365.08	70.95	1.5040660		
	246	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040650	2610.049488	
23	246	6.15	6.91	237.410	40.851	74	413	1.00	130.58	22.47	1.5040660		
	246	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040650	2847.459495	
24	246	12.31	13.82	474.820	81.702	143	496	1.00	261.15	44.94	1.5040660		
	246	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040650	3322.279507	
25	210	6.45	9.73	237.860	54.968	43	396	1.00	130.82	30.23	1.5040660		
	210	5.20	7.02	191.763	39.653	180	234	1.00	105.47	21.81	1.5047619	429.6231614	
26	50	0.09	0.17	2.175	0.636	1	7	1.00	1.20	0.35	1.5047629		
	50	2.50	3.38	61.183	12.651	96	125	1.00	33.65	6.96	1.5200000	63.35836287	
27					#VALUE!			1.00	#VALUE!	#VALUE!	1.5200010		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
28					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
29				#DIV/0!				1.00	#DIV/0!	0.00	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
30				#DIV/0!				1.00	#DIV/0!	0.00	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
31				#DIV/0!				1.00	#DIV/0!	0.00	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
32				#DIV/0!				1.00	#DIV/0!	0.00	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
33				#DIV/0!				1.00	#DIV/0!	0.00	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
34				#DIV/0!				1.00	#DIV/0!	0.00	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	
35				#DIV/0!				1.00	#DIV/0!	0.00	#DIV/0!		
								1.00	0.00	0.00	#DIV/0!	#VALUE!	

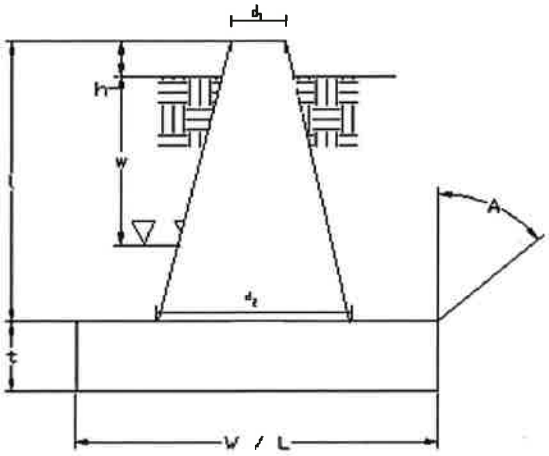
Foundation

Site No.:	88011
Engineer:	CDW
Date:	03/07/17
Carrier:	Verizon

Design Loads (Factored)

Compression/Leg:	467.97	k
Uplift/Leg:	361.67	k
Shear/Leg	70.03	k

Face Width @ Top of Pier (d_1):	3.50	ft
Face Width @ Bottom of Pier (d_2):	7.50	ft
Total Length of Pier (l):	8.50	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	14.75	ft
Length of Pad (L):	14.75	ft
Thickness of Pad (t):	3.25	ft
Water Table Depth (w):	30	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	120.0	pcf
Unit Weight of Soil (Below Water Table):	55.0	pcf
Friction Angle of Uplift (A):	30	°
Ultimate Compressive Bearing Pressure:	4000	psf



Volume Pier (Total):	268.46	ft^3
Volume Pad (Total):	707.08	ft^3
Volume Soil (Total):	2747.35	ft^3
Volume Pier (Buoyant):	0.00	ft^3
Volume Pad (Buoyant):	0.00	ft^3
Volume Soil (Buoyant):	0.00	ft^3
Weight Pier:	40.27	k
Weight Pad:	106.06	k
Weight Soil:	329.68	k
Skin Friction:	26.96	k

Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
383.97	0.94	OK

Axial Check

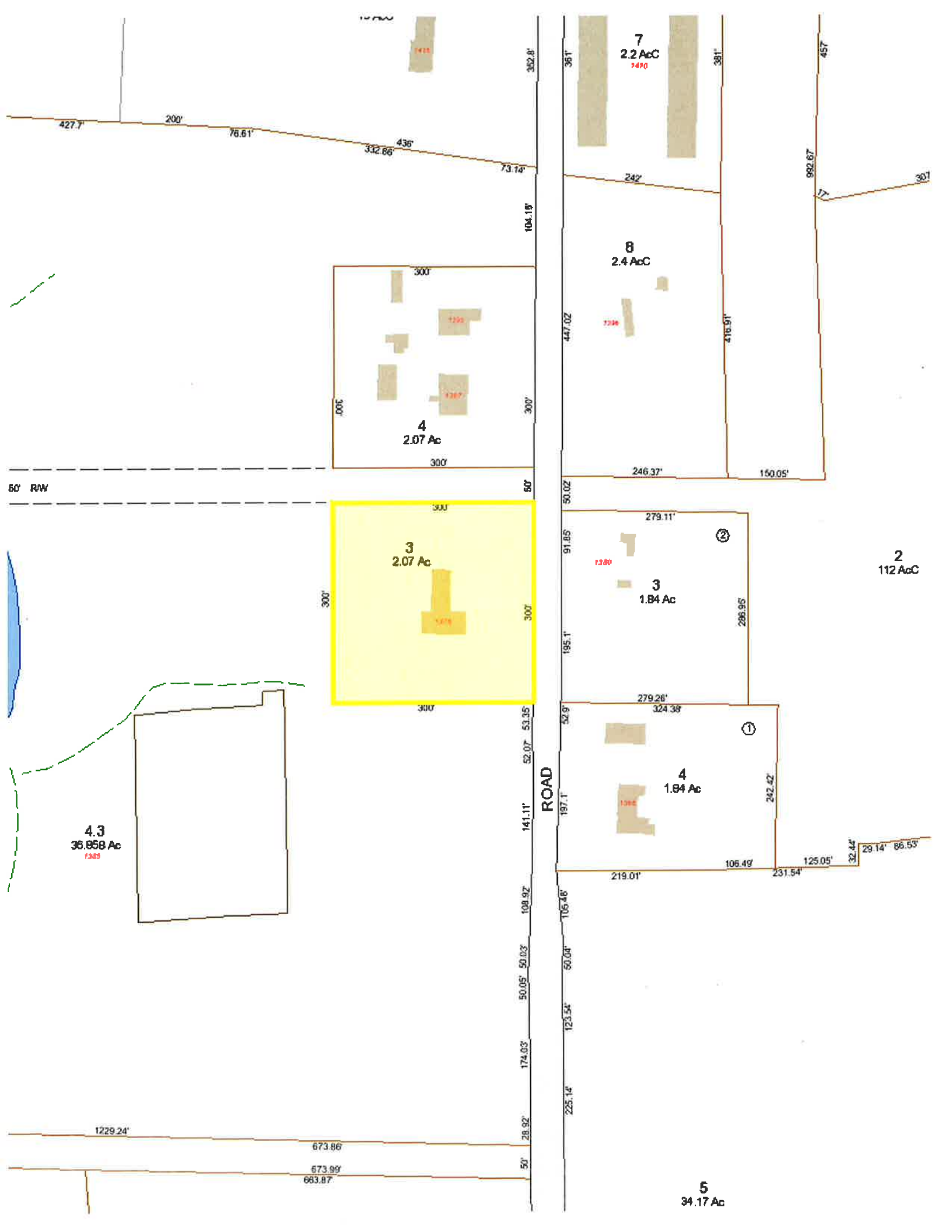
ϕs Axial Resistance (k)	Ratio	Result
652.69	0.72	OK

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	6
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.54	OK

ATTACHMENT 4


7
2.2 AcC
8
2.4 AcC
4
2.07 Ac
3
2.07 Ac
3
1.84 Ac
4
1.94 Ac
4.3
36.858 Ac
2
112 AcC
5
34.17 Ac
ROAD
50' R/W
427.7'
200'
76.61'
436'
332.86'
73.14'
352.8'
104.15'
361'
242'
381'
457'
992.67'
307'
17'
447.02'
416.91'
246.37'
150.05'
50.02'
300'
50'
279.11'
91.85'
286.95'
195.1'
279.26'
324.38'
52.9'
197.1'
242.42'
106.49'
125.05'
219.01'
231.54'
32.44'
29.14'
86.53'
53.35'
52.07'
141.11'
108.92'
106.48'
50.03'
50.04'
50.05'
123.54'
174.03'
225.14'
28.92'
1229.24'
673.86'
673.99'
663.87'

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COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD	Map ID: 000072	Class: Communication Towers	Card: 1 of 1	Printed: April 27, 2017

CURRENT OWNER

AMERICAN TOWERS INC
PO BOX 723597
ATLANTA GA 31139

GENERAL INFORMATION

Living Units	
Neighborhood	117
Alternate Id	50-3
Vol / Pg	772/5
District	4
Zoning	RURAL DEVELOPMENT
Class	COMMERCIAL

Property Notes

AT&T TRANSFER STATION

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	2.0700			49,870

Total Acres: 2.07
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	34,930	49,900	49,900	0	0
Building	188,160	268,800	268,800	0	0
Total	223,090	318,700	318,700	0	0

Manual Override Reason
Base Date of Value 10/01/2013
Value Flag COST APPROACH Effective Date of Value 10/01/2017
Gross Building:

Entrance Information

Date	ID	Entry Code	Source
05/17/12	DB	Viewed	Other
05/16/12	DB	Viewed	Other
12/11/06	DH	Exterior	Other

Permit Information

Date Issued	Number	Price	Purpose		% Complete
11/30/12	22122	25,000	BLDG	Add 13 New Antennas & 6 Rrh'S (	996
11/12/10	20889	12,000	52 CADD	Build Out Of Rm For Cellular Equip	100
08/31/10	20753	50,000	52 CADD	Addn 6 Antennas & Assoc Equip I	100
06/07/07	18646	25,000	52 CADD	Install Antennas	100
08/27/98	13234	4,000	BLDG	Nvc Tank Out	100

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
02/16/00	186,528	Land & Bldg	Love And Affection Sale	772/5		AMERICAN TOWERS INC

Inspection Witnessed By _____

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COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD | **Parcel Id: 000072** | **Class: Communication Towers** | Card: 1 of 1 | Printed: April 27, 2017

Building Information

Year Built/Eff Year	1960 /
Building #	1
Structure Type	Radio/Tv Transmitter
Identical Units	1
Total Units	
Grade	B-
# Covered Parking	
# Uncovered Parking	
DBA	AMERICAN TOWER

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units	Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units

Interior/Exterior Information

Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	01	01	100	2,048	158	Light Manufacturin	16	Concrete Bl	Wood Frame/Joist/B	Normal	None	None	Normal	4	4
2	01	01	100	1,575	151	Light Manufacturin	12	Concrete Bl	Wood Frame/Joist/B	Normal	None	None	Normal	4	4

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	2,048	Light Manufacturing	60		73,210
2	1,575	Light Manufacturing	60		54,770

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy	Fun	Value
1	Fence Chai	1960	6	240	1	1,440	C	3	3	1,780
2	Asph Pav	1960	1	3,700	1	3,700	C	3	3	4,000
3	Tow er Cell	1960	1	300	1	300	C	3	3	135,000

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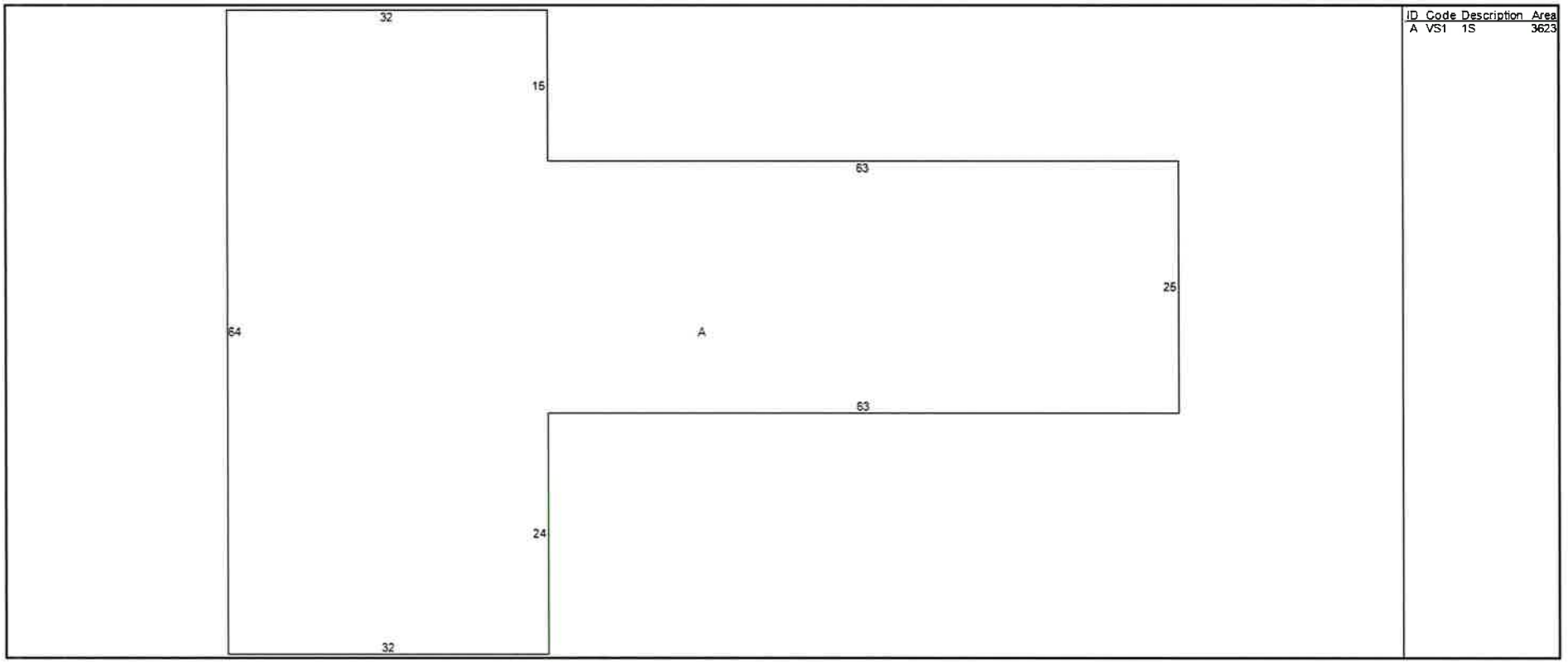
COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD	Parcel Id: 000072	Class: Communication Towers	Card: 1 of 1	Printed: April 27, 2017



Addtional Property Photos

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COMMERCIAL PROPERTY RECORD CARD 2017

TOWN OF KILLINGLY

Situs : 1375 NORTH RD	Parcel Id: 000072	Class: Communication Towers	Card: 1 of 1	Printed: April 27, 2017

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
07	S		Light Manuf/Warehouse	0	3,623						0							

Apartment Detail - Building 1 of 1

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 1 of 1

Total Gross Building Area	3,623
Replace, Cost New Less Depr	127,980
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	127,980
Value per SF	35.32

Notes - Building 1 of 1

Income Summary (Includes all Building on Parcel)

Total Net Income	
Capitalization Rate	0.000000
Sub total	
Residual Land Value	
Final Income Value	
Total Gross Rent Area	3,623
Total Gross Building Area	3,623

ATTACHMENT 5

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here ***Postmark with Date of Receipt.***
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 08/23/2017 US POSTAGE $002.38⁰ ZIP 06103 041L12203380
	Postmaster, per *(name of receiving employee)*		

ANN STREET STATION 06103
AUG 23 2017
U.S.P.S.

USPS® Tracking Number Firm-specific Identifier	U.S.P.S. Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Sean Hendricks, Town Manger Town of Killingly 172 Main Street Danielson, CT 06239				
2.	Ann-Marie Aubrey, Director Killingly Planning and Development 172 Main Street Danielson, CT 06239				
3.	American Tower Corporation 10 Presidential Way Woburn, MA 01801				
4.					
5.					
6.					