

June 6, 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
393 Jackson Hill Road, Middlefield, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 140-foot level of an existing 146-foot tower at 393 Jackson Hill Road in Middlefield, Connecticut (the “Property”). The tower is owned by SBA Communications Corporation (“SBA”). The Council approved Cellco’s use of this tower in 2007. Cellco now intends to replace six (6) of its existing antennas with three (3) model SBNHH-1D65B, 700/2100 MHz antennas and three (3) model SBNHH-1D65B, 1900 MHz antennas, and install nine (9) new remote radio heads (“RRHs”) behind its new 700/2100 MHz and 1900 MHz antennas, on the same antenna platform at the 140-foot level on the tower. Cellco also intends to install 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 Edward P. Bailey, First Selectman of the Town of Middlefield; Jerry Russ, Middlefield’s Zoning Enforcement Officer; and SBA, the tower owner. The Town of Middlefield is the owner of 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 structure. Cellco’s replacement antennas and RRHs will be attached to the existing platform at the 140-foot level of the tower.

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Melanie A. Bachman, Esq.
June 6, 2017
Page 2

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 installation of new antennas and RRHs will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included 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).

A copy of the parcel map and property owner information is included in Attachment 4.

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:

Edward P. Bailey, Middlefield First Selectman
Jerry Buss, Middlefield Zoning Enforcement Officer
SBA
Tim Parks

ATTACHMENT 1



SBNHH-1D65B

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal 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

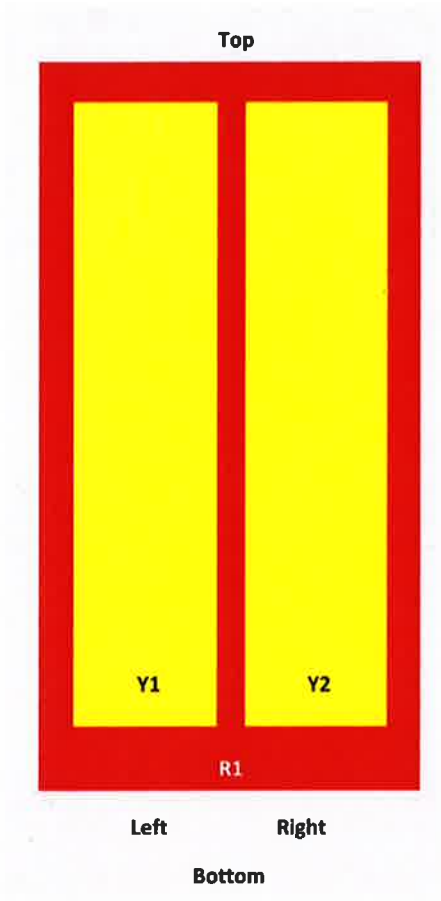
* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, [download the whitepaper Time to Raise the Bar on BSAs.](#)

Array Layout

SBNHH-1D65B

SBNHH 65

Array	Freq (MHz)	Combs	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	ANXXXXXXXXXXXXXXXXX.1
Y1	1695-2360	3-4	2	ANXXXXXXXXXXXXXXXXX.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

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

RoHS 2011/65/EU
China RoHS SJ/T 11364-2006
ISO 9001:2008

Classification

Compliant by Exemption
Above Maximum Concentration Value (MCV)
Designed, manufactured and/or distributed under this quality management system



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.

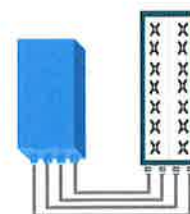


FEATURES

- 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

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.)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield)
Volume in L	38 (with solar shield)
Weight in kg (lb) (w/o mounting HW)	26 (57.2) (with solar shield)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	550W typical @100% RF load (in 2Tx or 4TX mode)
Environmental conditions	-40°C (-40°F) /+55°C (+131°F) IP65
Wind load (@150km/h or 93mph)	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

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ALCATEL-LUCENT B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new 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 B25 RRH4x30 allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30 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, LTE carriers from 3 MHz up to 20 MHz and up to 65 MHz instantaneous bandwidth.

The Alcatel-Lucent B25 RRH4x30 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 B25 RRH4x30 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.

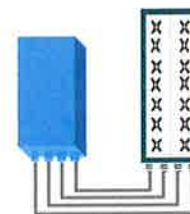


FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- Ready for 3, 5, 10, 15 or 20MHz LTE carrier operation with 4Rx Diversity
- Ready to support up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- Convection-cooled (fan-less)
- Supports AISG 2.0 devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency and cell edge throughput through MIMO4
- Increases LTE coverage thanks to 4-way Rx 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

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (in 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2)	2.0 dB typ. (<2.5 dB max)
RX Diversity scheme	2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.)	538 x 304 x 182 (21.2" x 12.0" x 7.2")
Volume (w/ solar shield) in L	30
Weight (w/ solar shield) in kg (lb)	24 (53)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	580W typical @100% RF load
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) IP65
Wind load (@150km/h or 93mph)	Frontal: <200N / Lateral : <150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
AISG interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Misc. Interfaces	1 external alarms connector (4 alarms) 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

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B25 RRH4x30

ALCATEL-LUCENT DATA SHEET REV1.1 – JANUARY 2015

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.

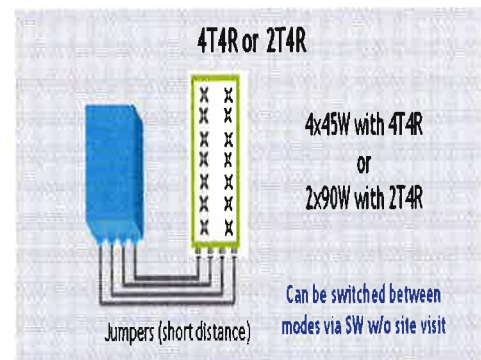
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the 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



TECHNICAL SPECIFICATIONS

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.)	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield)
Volume in Liters	35.5 (with solar shield) 29.7 (without solar shield)
Weight in kg (lb) (w/o mounting HW)	25.8kg (56.8lb) (with solar shield)
DC voltage range	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) UL50E Type 4 Enclosure
Wind load (@150km/h or 93mph)	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

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

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments. It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Features/Benefits

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



Figure 1: HYBRIFLEX Series

Technical Specifications

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))	0.68 (0.205)
DC-Resistance Power Cable, 8.4mm ² (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)			UL34-V0, UL1666 RoHS Compliant
Size (Power)		(mm (AWG))	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		(mm (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 to 149)
Operation Temperature		(°C (°F))	-40 to +65 (-40 to 149)

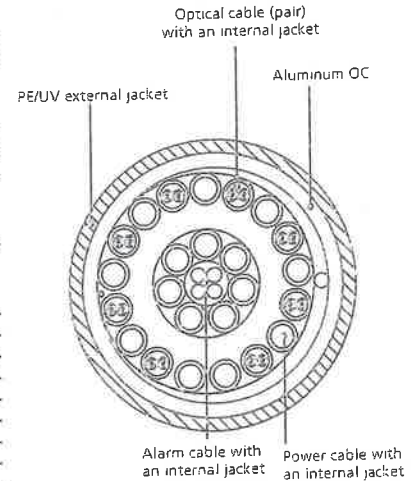


Figure 2: Construction Detail

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

This data is provisional and subject to change

RFS The Clear Choice®

HB158-1-08U8-S8J18

Rev: P1

Print Date: 27.6.2012

Radio Frequency Systems

Please visit us on the internet at <http://www.rfsworld.com>

ATTACHMENT 2

ATTACHMENT 3



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 146 ft. EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46135-A

Customer Site Name: Middlefield-Jacson Hill Rd

Carrier Name: Verizon

Carrier Site ID / Name: 118003 / Middlefield South, CT

Site Location: 393 Jackson Hill Road

Middlefield, Connecticut

Middlesex County

Latitude: 41.517360

Longitude: -72.714167

Analysis Result:

Max Structural Usage: 70.1% [Pass]

Max Foundation Usage: 76.0% [Pass]

Report Prepared By: Walter Velez



Introduction

The purpose of this report is to summarize the analysis results on the 146 ft. EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Original structural design report & design drawings prepared by Engineered Endeavors Incorporated, Inc. Dated 05-28-1999. Drawing No GS51482. Job No 5072. Previous structural report prepared by Tower Engineering Solutions. Dated 04-24-2017. TES Project No 32505 Rev1.
Foundation Drawing	Original foundation design & drawings prepared by Engineered Endeavors Incorporated, Inc. Dated 05-28-1999. Drawing No 5072SPRD. Job No 5072.
Geotechnical Report	Geotechnical report prepared by Tectonic Engineering Consultants, P.C. Dated 05-20-1999. Project No W.O.1170.C942.
Modification Drawings	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA-222-G. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis: (Based on IBC 2012)	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
Operational Wind Speed:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Standard/Codes:	60 mph + 0" Radial ice
Exposure Category:	ANSI/TIA-222-G, 2012 IBC & 2016 Connecticut State Building Code
Structure Class:	C
Topographic Category:	II
Crest Height:	1
Seismic Parameters:	0 ft.
	$S_s = 0.181, S_1 = 0.063$

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	153.0	9	ALP 7130.16.33.00 - Panel	Platform w/ Hand Rails	(9) 1 1/4"	Sprint Nextel ¹
2	140.0	3	Antel BXA700636CF_2 - Panel	Low Profile Platform	(12) 1 5/8"	Verizon
3		6	Antel LPA-80063/4CF - Panel			
4		3	Antel BXA-171063-8BF_2 - Panel			
5		6	RFS FD9R6004-2C-3L Diplexers			
6	109.0	1	14'x7" Cross Omni	Low Profile Platform	(1) 1/2"; (1) 7/8"	Town of Middlefield
7		1	8' Omni			
8	98.0	3	KMW AM-X-CD-16-65-00T-RET - Panel	Low Profile Platform	(18) 1 1/4"; (3) DC Power Fiber line ²	AT&T
9		6	Powerwave 7770 - Panel			
10		6	Powerwave LGP21401 TMA's			
11		6	Powerwave LGP21903 TMA's			
12		6	Ericsson RRUS 11			
13		6	Powerwave 7020 RET's			
14		1	Raycap DC6-48-60-18-8F			
15	88.0	3	RFS APXV18-206517S-C - Panel	Flush Mount	(6) 1 5/8"	T-Mobile

¹ Sprint Nextel terminated. Coax & antennas still on the tower. (2) 1 1/4" transmission lines to remain when equipment is removed.

² DC Power Fiber lines installed inside 3" innerduct.

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
16	140.0	6	Commscope SBNHH-1D65B - Panel	Low Profile Platform	(10) 1 5/8"; (2) 1 5/8" Hybriflex	Verizon
17		6	Antel LPA-80063/4CF - Panel			
18	138.0	3	ALU B13 RRH4X30-4R			
19		3	ALU B25 RRH4x30-4R			
20		3	ALU B66 RRH4x45			
21		2	Raycap RC2DC-3315-PF-48			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	70.1%	52.1%	68.3%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	2626.9	23.1	29.6
Analysis Reactions	2969.7	27.3	40.3
Factored Reactions*	3546.4	31.2	39.9

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA-222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.7878 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA-222-G standards, the 2012 IBC and the 2016 Connecticut State Building Code under the design basic wind speed specified in the Analysis Criteria.

Antenna Mount Note:

The existing mount contributed no additional stress to the tower since it was already existing.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 70.05% at 48.7ft

Structure: CT46135-A-SBA
Site Name: Middlefield-jacson Hill Rd
Height: 146.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-G
Exposure: C
Gh: 1.1

4/28/2017

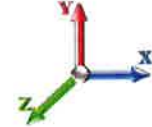


Page: 1

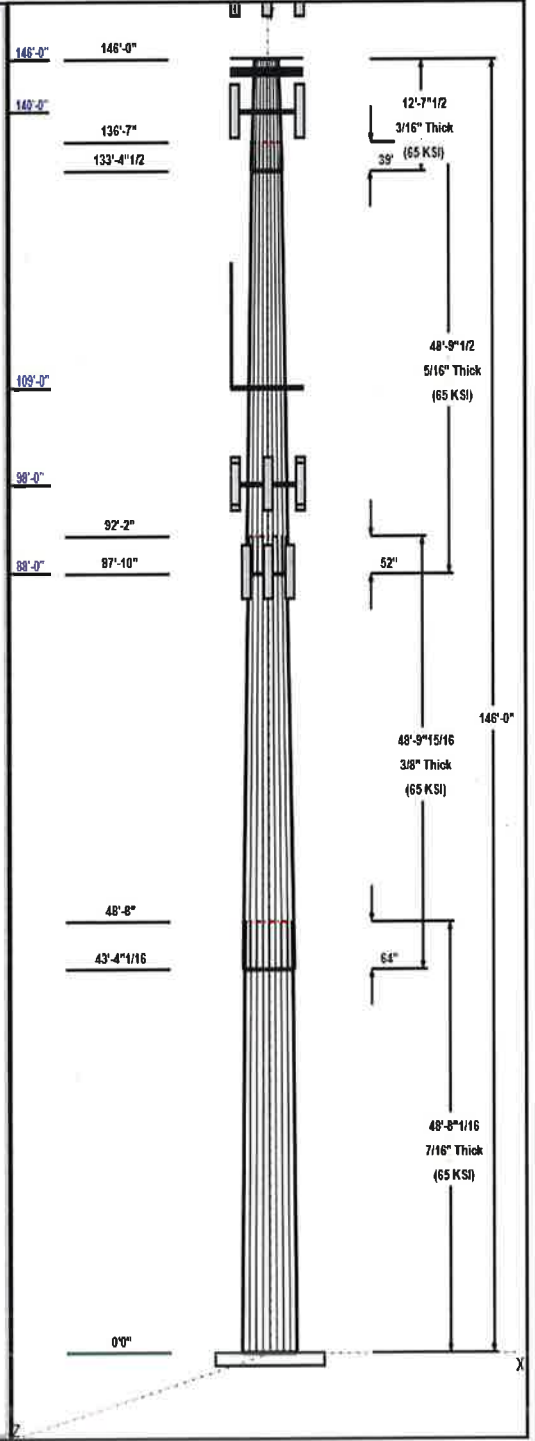
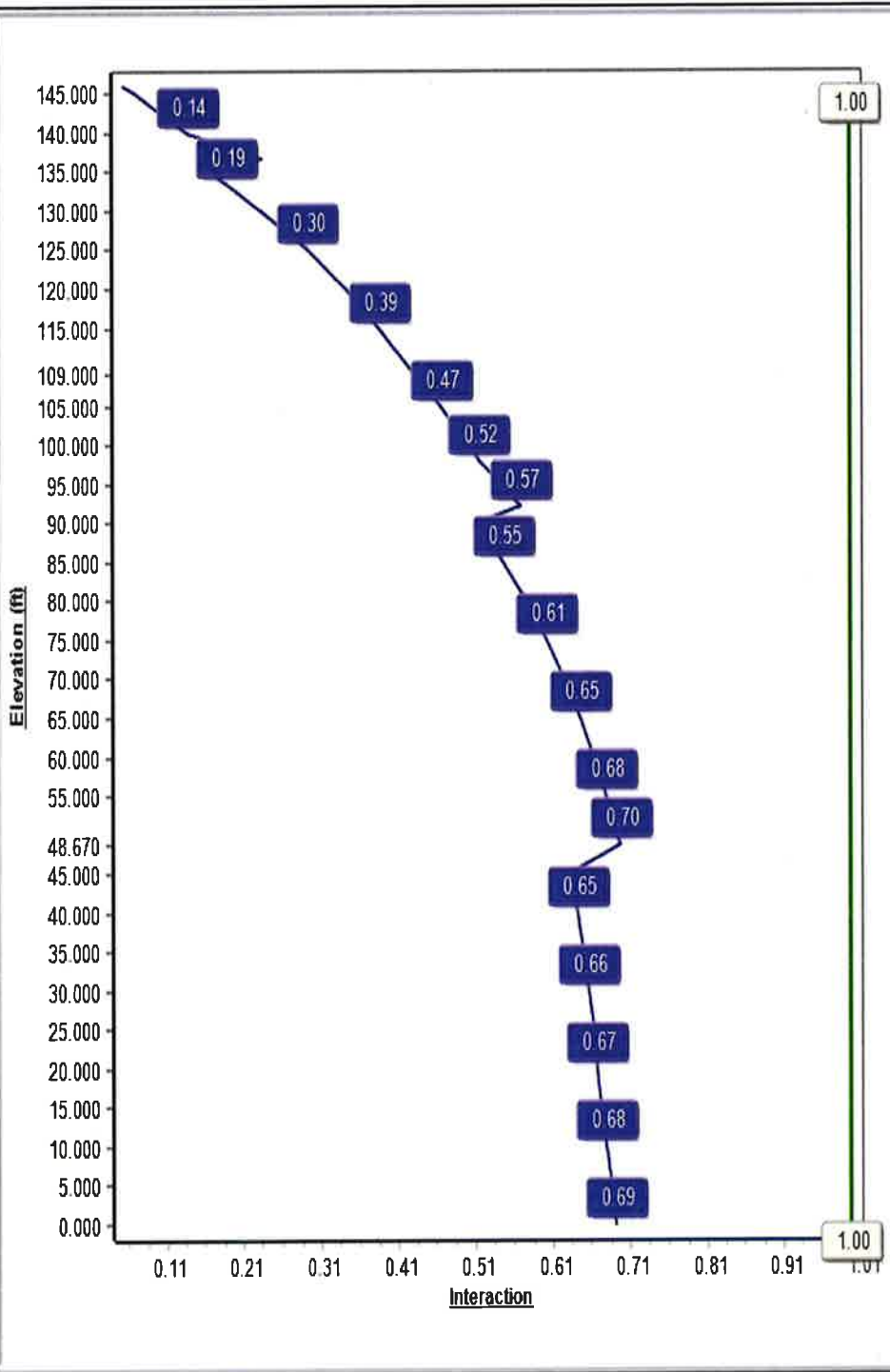
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Iterations: 26

Load Case : 1.2D + 1.6W 97 mph Wind



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Structure: CT46135-A-SBA

Type: Tapered
Site Name: Middlefield-jacson Hill Rd
Height: 146.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.19692

4/28/2017

Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.67	36.42	46.00	0.438		0.19692	65
2	48.83	28.60	38.22	0.375	Slip	0.19692	65
3	48.79	20.47	30.08	0.313	Slip	0.19692	65
4	12.63	19.00	21.49	0.188	Slip	0.19692	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
146.00	146.00	1	Beacon	---
146.00	149.50	1	Lightning Rod	---
146.00	153.00	9	ALP 7130.16.33.00	Sprint Nextel
146.00	146.00	1	Platform w/ Hand Rails	Sprint Nextel
140.00	140.00	6	Commscope	Verizon
140.00	140.00	6	Antel LPA-80063/4CF	Verizon
140.00	138.00	3	ALU B13 RRH4X30-4R	Verizon
140.00	138.00	3	ALU B25 RRH4x30-4R	Verizon
140.00	138.00	3	ALU B66 RRH4x45	Verizon
140.00	138.00	2	Raycap	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
109.00	116.00	1	14'x7" Cross Omni	Town of Middlefield
109.00	113.00	1	8' Omni	Town of Middlefield
109.00	109.00	1	Low Profile Platform	Town of Middlefield
98.00	98.00	3	KMW	AT&T
98.00	98.00	6	Powerwave 7770	AT&T
98.00	98.00	6	Powerwave LGP21401	AT&T
98.00	98.00	6	Powerwave LGP21903	AT&T
98.00	98.00	6	Ericsson RRUS 11	AT&T
98.00	98.00	6	Powerwave 7020 RET's	AT&T
98.00	98.00	1	Raycap DC6-48-60-18-8F	AT&T
98.00	98.00	1	Low Profile Platform	AT&T
88.00	88.00	3	RFS APXV18-206517S-C	T-Mobile
88.00	88.00	1	Flush Mount	T-Mobile

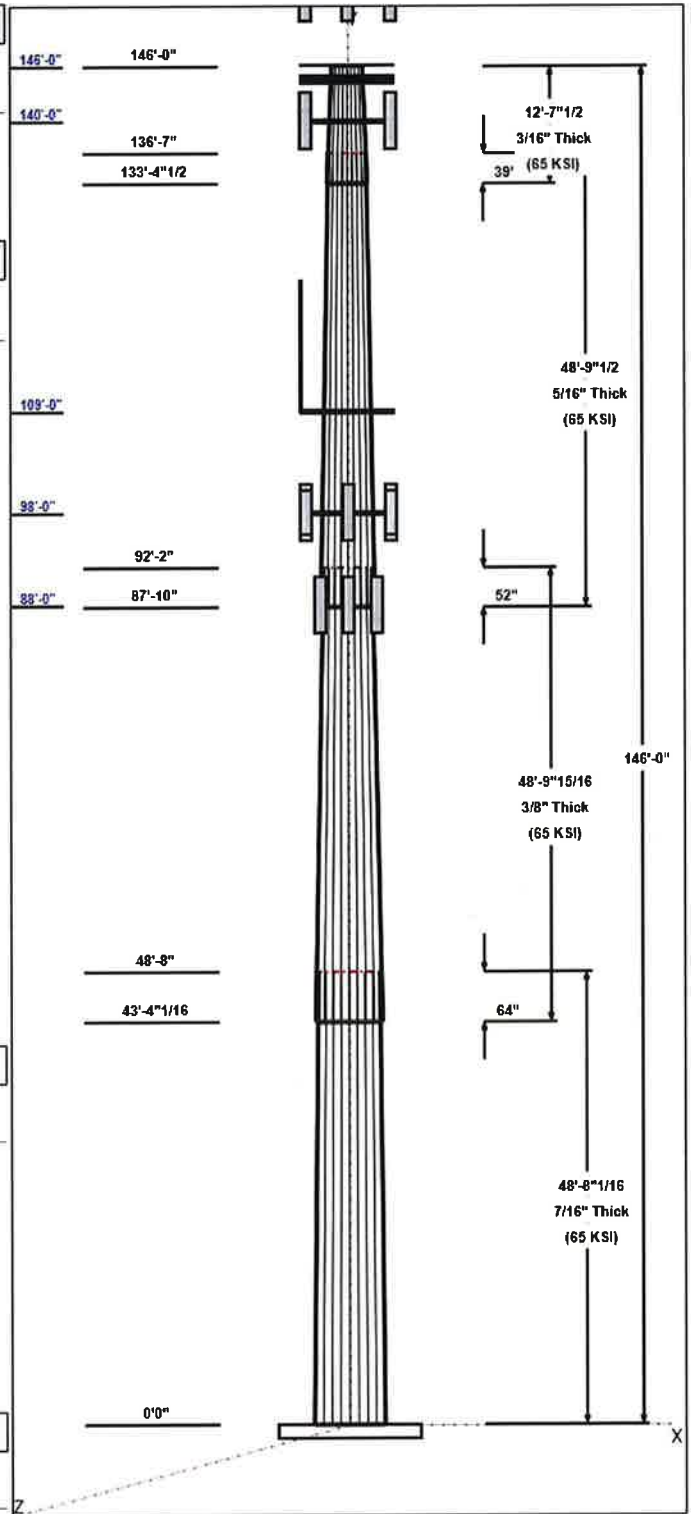
Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
3.00	146.00	Inside	1 1/4" Coax	Sprint Nextel
3.00	140.00	Inside	1 5/8" Coax	Verizon
3.00	140.00	Inside	1 5/8" Hybriflex	Verizon
3.00	109.00	Inside	1/2" Coax	Town of Middlefield
3.00	109.00	Inside	7/8" Coax	Town of Middlefield
3.00	98.00	Inside	1 1/4" Coax	AT&T
3.00	98.00	Inside	3" Innerduct	AT&T
3.00	98.00	Inside	DC Power Fiber line	AT&T
3.00	88.00	Inside	1 5/8" Coax	T-Mobile

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate



Structure: CT46135-A-SBA

Type: Tapered
Site Name: Middlefield-jacson Hill Rd
Height: 146.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.19692

4/28/2017

Page: 3



Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	61.0	60.0	Round

Reactions

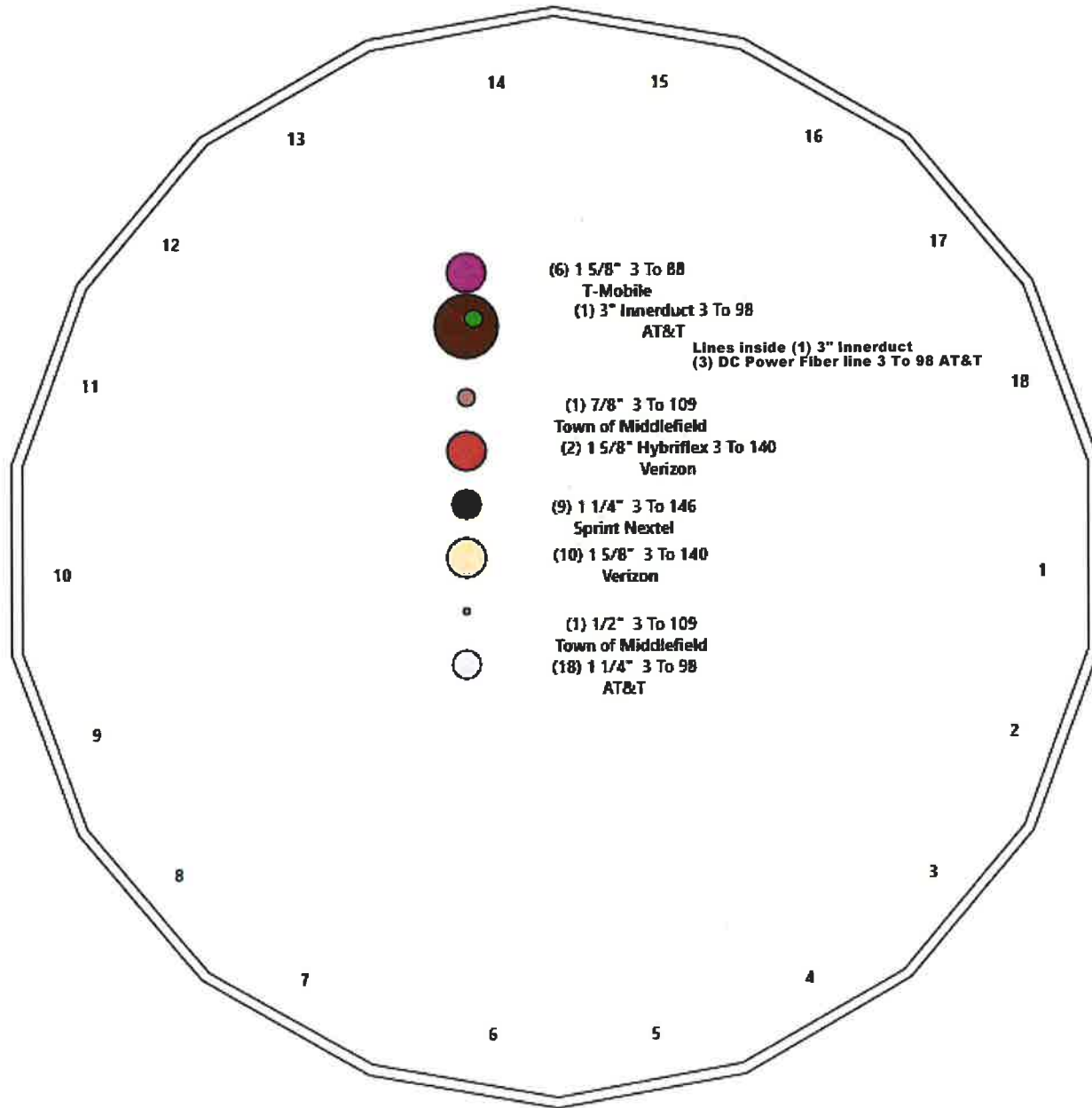
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	2969.7	27.3	40.3
0.9D + 1.6W 97 mph Wind	2930.4	27.3	30.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	840.4	7.7	61.6
1.2D + 1.0E	113.9	1.0	40.3
0.9D + 1.0E	112.3	1.0	30.3
1.0D + 1.0W 60 mph Wind	705.5	6.5	33.6

Structure: CT46135-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Middlefield-jacson Hill Rd
Height: 146.00 (ft)

4/28/2017

Page: 4



Shaft Properties

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.670	0.4375	65		0.00	9,376
2	18	48.830	0.3750	65	Slip	64.00	6,533
3	18	48.790	0.3125	65	Slip	52.00	4,111
4	18	12.627	0.1875	65	Slip	39.00	513
Total Shaft Weight:							20,532

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	46.00	0.00	63.27	16593.77	17.13	105.14	36.42	48.67	49.96	8170.56	13.27	83.24	0.196918
2	38.22	43.34	45.04	8148.39	16.56	101.91	28.60	92.17	33.59	3381.52	12.04	76.27	0.196918
3	30.08	87.83	29.52	3305.07	15.56	96.25	20.47	136.62	19.99	1026.59	10.14	65.51	0.196918
4	21.49	133.3	12.68	726.47	18.80	114.59	19.00	146.00	11.20	500.59	16.46	101.3	0.196918

Load Summary

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 6

Discrete Appurtenances

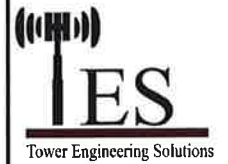
No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	146.00	Beacon	1	15.00	2.40	1.00	32.41	2.400	1.00	0.00	0.00
2	146.00	Lightning Rod	1	35.00	1.05	1.00	66.33	3.417	1.00	0.00	3.50
3	146.00	ALP 7130.16.33.00	9	17.60	5.32	0.99	196.75	6.341	0.99	0.00	7.00
4	146.00	Platform w/ Hand Rails	1	1600.00	32.00	0.00	3694.18	59.848	0.00	0.00	0.00
5	140.00	Commscope SBNHH-1D65B	6	50.71	8.05	0.83	250.20	9.334	0.83	0.00	0.00
6	140.00	Antel LPA-80063/4CF	6	20.00	6.15	0.94	224.70	7.182	0.94	0.00	0.00
7	140.00	ALU B13 RRH4X30-4R	3	57.20	2.16	0.67	119.06	2.767	0.67	0.00	-2.00
8	140.00	ALU B25 RRH4x30-4R	3	51.00	2.14	0.67	108.35	2.744	0.67	0.00	-2.00
9	140.00	ALU B66 RRH4x45	3	56.80	2.54	0.67	140.21	3.229	0.67	0.00	-2.00
10	140.00	Raycap RC2DC-3315-PF-48	2	42.00	2.52	0.67	191.52	3.151	0.67	0.00	-2.00
11	140.00	Low Profile Platform	1	1500.00	22.00	1.00	2799.91	39.540	1.00	0.00	0.00
12	109.00	14'x7" Cross Omni	1	60.00	4.94	1.00	213.84	10.638	1.00	0.00	7.00
13	109.00	8' Omni	1	25.00	2.40	1.00	84.20	5.066	1.00	0.00	4.00
14	109.00	Low Profile Platform	1	1500.00	22.00	1.00	2767.78	39.107	1.00	0.00	0.00
15	98.00	KMW AM-X-CD-16-65-00T-RET	3	48.50	8.02	0.79	204.01	10.697	0.79	0.00	0.00
16	98.00	Powerwave 7770	6	35.00	5.51	0.77	163.31	6.518	0.77	0.00	0.00
17	98.00	Powerwave LGP21401 TMA's	6	14.10	1.05	0.60	38.06	1.702	0.60	0.00	0.00
18	98.00	Powerwave LGP21903 TMA's	6	5.50	0.20	0.60	13.58	0.482	0.60	0.00	0.00
19	98.00	Ericsson RRUS 11	6	50.70	2.57	0.67	128.03	3.191	0.67	0.00	0.00
20	98.00	Powerwave 7020 RET's	6	2.20	0.34	0.60	12.00	0.734	0.60	0.00	0.00
21	98.00	Raycap DC6-48-60-18-8F	1	16.00	2.20	0.67	71.81	3.132	0.67	0.00	0.00
22	98.00	Low Profile Platform	1	1500.00	22.00	1.00	2754.36	38.926	1.00	0.00	0.00
23	88.00	RFS APXV18-206517S-C	3	26.40	5.17	0.79	114.43	7.421	0.79	0.00	0.00
24	88.00	Flush Mount	1	350.00	5.00	0.75	627.97	8.309	0.75	0.00	0.00
Totals:			78	8,632.36			22,304.04				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
3.00	146.00	(9) 1 1/4" Coax	0.00	Inside
3.00	140.00	(10) 1 5/8" Coax	0.00	Inside
3.00	140.00	(2) 1 5/8" Hybriflex	0.00	Inside
3.00	109.00	(1) 1/2" Coax	0.00	Inside
3.00	109.00	(1) 7/8" Coax	0.00	Inside
3.00	98.00	(18) 1 1/4" Coax	0.00	Inside
3.00	98.00	(1) 3" Innerduct	0.00	Inside
3.00	98.00	(3) DC Power Fiber line	0.00	Inside
3.00	88.00	(6) 1 5/8" Coax	0.00	Inside

Shaft Section Properties

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 7

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.4375	46.000	63.267	16593.8	17.13	105.14	81.3	710.5	0.0
5.00		0.4375	45.015	61.900	15541.1	16.73	102.89	81.7	680.0	1064.8
10.00		0.4375	44.031	60.533	14533.9	16.34	100.64	82.2	650.1	1041.5
15.00		0.4375	43.046	59.165	13571.2	15.94	98.39	82.5	621.0	1018.3
20.00		0.4375	42.062	57.798	12652.0	15.54	96.14	82.5	592.5	995.0
25.00		0.4375	41.077	56.431	11775.2	15.14	93.89	82.5	564.6	971.7
30.00		0.4375	40.092	55.064	10939.9	14.75	91.64	82.5	537.4	948.5
35.00		0.4375	39.108	53.697	10145.1	14.35	89.39	82.5	510.9	925.2
40.00		0.4375	38.123	52.330	9389.8	13.95	87.14	82.5	485.1	902.0
43.34	Bot - Section 2	0.4375	37.466	51.417	8907.2	13.69	85.64	82.5	468.3	589.0
45.00		0.4375	37.139	50.962	8672.9	13.56	84.89	82.5	460.0	543.5
48.67	Top - Section 1	0.3750	37.166	43.789	7488.6	16.07	99.11	0.0	0.0	1182.4
50.00		0.3750	36.904	43.477	7329.8	15.94	98.41	82.5	391.2	197.5
55.00		0.3750	35.920	42.305	6753.0	15.48	95.79	82.5	370.3	729.7
60.00		0.3750	34.935	41.133	6207.2	15.02	93.16	82.5	350.0	709.8
65.00		0.3750	33.950	39.962	5691.6	14.55	90.53	82.5	330.2	689.9
70.00		0.3750	32.966	38.790	5205.5	14.09	87.91	82.5	311.0	669.9
75.00		0.3750	31.981	37.618	4747.8	13.63	85.28	82.5	292.4	650.0
80.00		0.3750	30.997	36.446	4317.8	13.16	82.66	82.5	274.4	630.1
85.00		0.3750	30.012	35.274	3914.5	12.70	80.03	82.5	256.9	610.1
87.83	Bot - Section 3	0.3750	29.454	34.610	3697.6	12.44	78.54	82.5	247.3	336.9
88.00		0.3750	29.421	34.571	3685.1	12.42	78.46	82.5	246.7	36.4
90.00		0.3750	29.027	34.102	3537.2	12.24	77.41	82.5	240.0	433.1
92.17	Top - Section 2	0.3125	29.226	28.677	3028.9	15.08	93.52	0.0	0.0	462.5
95.00		0.3125	28.668	28.124	2856.9	14.77	91.74	82.5	196.3	273.8
98.00		0.3125	28.077	27.538	2682.0	14.43	89.85	82.5	188.1	284.1
100.00		0.3125	27.683	27.147	2569.5	14.21	88.59	82.5	182.8	186.1
105.00		0.3125	26.699	26.171	2302.1	13.65	85.44	82.5	169.8	453.6
109.00		0.3125	25.911	25.390	2102.0	13.21	82.92	82.5	159.8	350.9
110.00		0.3125	25.714	25.194	2053.9	13.10	82.28	82.5	157.3	86.1
115.00		0.3125	24.729	24.218	1824.2	12.54	79.13	82.5	145.3	420.3
120.00		0.3125	23.745	23.241	1612.3	11.99	75.98	82.5	133.7	403.7
125.00		0.3125	22.760	22.265	1417.5	11.43	72.83	82.5	122.7	387.1
130.00		0.3125	21.776	21.288	1239.0	10.88	69.68	82.5	112.1	370.5
133.37	Bot - Section 4	0.3125	21.111	20.629	1127.5	10.50	67.56	82.5	105.2	240.6
135.00		0.3125	20.791	20.311	1076.2	10.32	66.53	82.5	102.0	182.9
136.62	Top - Section 3	0.1875	20.846	12.294	662.9	18.19	111.18	0.0	0.0	179.8
140.00		0.1875	20.182	11.899	601.0	17.57	107.63	80.7	58.7	139.0
145.00		0.1875	19.197	11.313	516.5	16.64	102.38	81.8	53.0	197.5
146.00		0.1875	19.000	11.195	500.6	16.46	101.33	82.0	51.9	38.3

20532.0

Wind Loading - Shaft

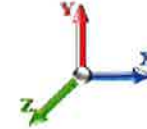
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 8

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	348.10	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	340.65	0.650	0.000	5.00	19.254	12.52	428.4	0.0	1277.7
10.00		1.00	0.85	19.450	21.40	333.20	0.650	0.000	5.00	18.837	12.24	419.2	0.0	1249.8
15.00		1.00	0.85	19.450	21.40	325.75	0.650	0.000	5.00	18.421	11.97	409.9	0.0	1221.9
20.00		1.00	0.90	20.638	22.70	327.87	0.650	0.000	5.00	18.004	11.70	425.1	0.0	1194.0
25.00		1.00	0.95	21.630	23.79	327.80	0.650	0.000	5.00	17.588	11.43	435.2	0.0	1166.1
30.00		1.00	0.98	22.477	24.72	326.15	0.650	0.000	5.00	17.171	11.16	441.5	0.0	1138.2
35.00		1.00	1.01	23.218	25.54	323.34	0.650	0.000	5.00	16.755	10.89	445.0	0.0	1110.3
40.00		1.00	1.04	23.880	26.27	319.66	0.650	0.000	5.00	16.338	10.62	446.3	0.0	1082.4
43.34	Bot - Section 2	1.00	1.06	24.286	26.71	316.81	0.650	0.000	3.34	10.671	6.94	296.5	0.0	706.8
45.00		1.00	1.07	24.479	26.93	315.29	0.650	0.000	1.66	5.356	3.48	150.0	0.0	652.3
48.67	Top - Section 1	1.00	1.09	24.887	27.38	311.72	0.650	0.000	3.67	11.654	7.58	331.8	0.0	1418.9
50.00		1.00	1.09	25.029	27.53	316.79	0.650	0.000	1.33	4.168	2.71	119.3	0.0	237.0
55.00		1.00	1.12	25.536	28.09	311.45	0.650	0.000	5.00	15.406	10.01	450.0	0.0	875.7
60.00		1.00	1.14	26.008	28.61	305.70	0.650	0.000	5.00	14.989	9.74	446.0	0.0	851.8
65.00		1.00	1.16	26.450	29.09	299.60	0.650	0.000	5.00	14.572	9.47	440.9	0.0	827.8
70.00		1.00	1.17	26.866	29.55	293.19	0.650	0.000	5.00	14.156	9.20	435.1	0.0	803.9
75.00		1.00	1.19	27.259	29.98	286.51	0.650	0.000	5.00	13.739	8.93	428.4	0.0	780.0
80.00		1.00	1.21	27.632	30.39	279.58	0.650	0.000	5.00	13.323	8.66	421.1	0.0	756.1
85.00		1.00	1.22	27.987	30.79	272.43	0.650	0.000	5.00	12.906	8.39	413.2	0.0	732.1
87.83	Bot - Section 3	1.00	1.23	28.181	31.00	268.29	0.650	0.000	2.83	7.129	4.63	229.8	0.0	404.3
88.00	Appurtenance(s)	1.00	1.23	28.192	31.01	268.04	0.650	0.000	0.17	0.424	0.28	13.7	0.0	43.6
90.00		1.00	1.24	28.325	31.16	265.08	0.650	0.000	2.00	5.052	3.28	163.7	0.0	519.7
92.17	Top - Section 2	1.00	1.24	28.468	31.31	261.84	0.650	0.000	2.17	5.397	3.51	175.8	0.0	555.1
95.00		1.00	1.25	28.650	31.51	263.29	0.650	0.000	2.83	6.940	4.51	227.5	0.0	328.6
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	258.71	0.650	0.000	3.00	7.203	4.68	237.6	0.0	340.9
100.00		1.00	1.27	28.961	31.86	255.63	0.650	0.000	2.00	4.718	3.07	156.3	0.0	223.3
105.00		1.00	1.28	29.260	32.19	247.80	0.650	0.000	5.00	11.504	7.48	385.1	0.0	544.3
109.00	Appurtenance(s)	1.00	1.29	29.491	32.44	241.44	0.650	0.000	4.00	8.904	5.79	300.4	0.0	421.1
110.00		1.00	1.29	29.548	32.50	239.84	0.650	0.000	1.00	2.184	1.42	73.8	0.0	103.3
115.00		1.00	1.30	29.826	32.81	231.74	0.650	0.000	5.00	10.671	6.94	364.1	0.0	504.4
120.00		1.00	1.32	30.094	33.10	223.51	0.650	0.000	5.00	10.255	6.67	353.0	0.0	484.5
125.00		1.00	1.33	30.354	33.39	215.16	0.650	0.000	5.00	9.838	6.39	341.6	0.0	464.5
130.00		1.00	1.34	30.605	33.67	206.71	0.650	0.000	5.00	9.421	6.12	329.9	0.0	444.6
133.37	Bot - Section 4	1.00	1.34	30.771	33.85	200.94	0.650	0.000	3.37	6.121	3.98	215.5	0.0	288.7
135.00		1.00	1.35	30.850	33.93	198.15	0.650	0.000	1.63	2.935	1.91	103.6	0.0	219.5
136.62	Top - Section 3	1.00	1.35	30.927	34.02	195.35	0.650	0.000	1.62	2.886	1.88	102.1	0.0	215.7
140.00	Appurtenance(s)	1.00	1.36	31.087	34.20	193.07	0.650	0.000	3.38	5.861	3.81	208.5	0.0	166.8
145.00		1.00	1.37	31.317	34.45	184.34	0.650	0.000	5.00	8.330	5.41	298.5	0.0	236.9
146.00	Appurtenance(s)	1.00	1.37	31.362	34.50	182.58	0.650	0.000	1.00	1.616	1.05	58.0	0.0	46.0
Totals:									146.00			11,721.4		24,638.3

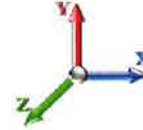
Discrete Appurtenance Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Page: 9
	Struct Class: II	



Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	146.00	ALP 7130.16.33.00	9	31.673	34.841	0.99	1.00	47.40	190.08	0.000	7.000	2642.37	0.00	18496.62
2	146.00	Lightning Rod	1	31.519	34.671	1.00	1.00	1.05	42.00	0.000	3.500	58.25	0.00	203.87
3	146.00	Beacon	1	31.362	34.499	1.00	1.00	2.40	18.00	0.000	0.000	132.48	0.00	0.00
4	146.00	Platform w/ Hand Rails	1	31.362	34.499	0.00	1.00	32.00	1920.00	0.000	0.000	1766.34	0.00	0.00
5	140.00	ALU B13 RRH4X30-4R	3	30.993	34.092	0.54	0.80	3.47	205.92	0.000	-2.000	189.46	0.00	-378.91
6	140.00	Commscope	6	31.087	34.195	0.66	0.80	32.07	365.11	0.000	0.000	1754.69	0.00	0.00
7	140.00	Antel LPA-80063/4CF	6	31.087	34.195	0.75	0.80	27.75	144.00	0.000	0.000	1518.21	0.00	0.00
8	140.00	Raycap	2	30.993	34.092	0.54	0.80	2.70	100.80	0.000	-2.000	147.36	0.00	-294.71
9	140.00	ALU B25 RRH4x30-4R	3	30.993	34.092	0.54	0.80	3.44	183.60	0.000	-2.000	187.70	0.00	-375.41
10	140.00	ALU B66 RRH4x45	3	30.993	34.092	0.54	0.80	4.08	204.48	0.000	-2.000	222.79	0.00	-445.57
11	140.00	Low Profile Platform	1	31.087	34.195	1.00	1.00	22.00	1800.00	0.000	0.000	1203.67	0.00	0.00
12	109.00	Low Profile Platform	1	29.491	32.440	1.00	1.00	22.00	1800.00	0.000	0.000	1141.89	0.00	0.00
13	109.00	8' Omni	1	29.716	32.687	0.80	0.80	1.92	30.00	0.000	4.000	100.41	0.00	401.66
14	109.00	14'x7" Cross Omni	1	29.880	32.868	0.80	0.80	3.95	72.00	0.000	7.000	207.83	0.00	1454.81
15	98.00	KMW	3	28.838	31.722	0.63	0.80	15.21	174.60	0.000	0.000	771.77	0.00	0.00
16	98.00	Powerwave 7770	6	28.838	31.722	0.62	0.80	20.36	252.00	0.000	0.000	1033.62	0.00	0.00
17	98.00	Powerwave LGP21401	6	28.838	31.722	0.48	0.80	3.02	101.52	0.000	0.000	153.48	0.00	0.00
18	98.00	Powerwave LGP21903	6	28.838	31.722	0.48	0.80	0.58	39.60	0.000	0.000	29.23	0.00	0.00
19	98.00	Ericsson RRUS 11	6	28.838	31.722	0.54	0.80	8.27	365.04	0.000	0.000	419.49	0.00	0.00
20	98.00	Powerwave 7020 RET's	6	28.838	31.722	0.48	0.80	0.98	15.84	0.000	0.000	49.70	0.00	0.00
21	98.00	Raycap DC6-48-60-18-8F	1	28.838	31.722	0.54	0.80	1.18	19.20	0.000	0.000	59.85	0.00	0.00
22	98.00	Low Profile Platform	1	28.838	31.722	1.00	1.00	22.00	1800.00	0.000	0.000	1116.60	0.00	0.00
23	88.00	Flush Mount	1	28.192	31.011	0.56	0.75	2.81	420.00	0.000	0.000	139.55	0.00	0.00
24	88.00	RFS APXV18-206517S-C	3	28.192	31.011	0.63	0.80	9.80	95.04	0.000	0.000	486.37	0.00	0.00
Totals:								10,358.83				15,533.11		

Total Applied Force Summary

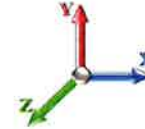
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 10

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		428.42	1371.08	0.00	0.00
10.00		419.16	1483.17	0.00	0.00
15.00		409.89	1455.26	0.00	0.00
20.00		425.07	1427.34	0.00	0.00
25.00		435.21	1399.43	0.00	0.00
30.00		441.53	1371.52	0.00	0.00
35.00		445.03	1343.60	0.00	0.00
40.00		446.33	1315.69	0.00	0.00
43.34		296.48	862.48	0.00	0.00
45.00		149.99	729.88	0.00	0.00
48.67		331.80	1590.12	0.00	0.00
50.00		119.34	299.03	0.00	0.00
55.00		450.04	1109.04	0.00	0.00
60.00		445.97	1085.11	0.00	0.00
65.00		440.94	1061.19	0.00	0.00
70.00		435.07	1037.26	0.00	0.00
75.00		428.45	1013.33	0.00	0.00
80.00		421.14	989.41	0.00	0.00
85.00		413.21	965.48	0.00	0.00
87.83		229.82	536.49	0.00	0.00
88.00	(4) attachments	639.59	566.44	0.00	0.00
90.00		163.69	598.02	0.00	0.00
92.17		175.78	639.94	0.00	0.00
95.00		227.46	439.59	0.00	0.00
98.00	(35) attachments	3871.36	3226.27	0.00	0.00
100.00		156.32	269.43	0.00	0.00
105.00		385.09	659.61	0.00	0.00
109.00	(3) attachments	1750.52	2415.33	0.00	1856.47
110.00		73.83	125.52	0.00	0.00
115.00		364.11	615.65	0.00	0.00
120.00		353.04	595.72	0.00	0.00
125.00		341.62	575.78	0.00	0.00
130.00		329.87	555.84	0.00	0.00
133.37		215.47	363.74	0.00	0.00
135.00		103.60	255.72	0.00	0.00
136.62		102.09	251.83	0.00	0.00
140.00	(24) attachments	5432.33	3245.82	0.00	-1494.61
145.00		298.45	272.59	0.00	0.00
146.00	(12) attachments	4657.42	2223.16	0.00	18700.49
	Totals:	27,254.54	40,341.91	0.00	19,062.36

Calculated Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



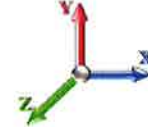
Page: 11

Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-40.28	-27.34	0.00	-2969.7	0.00	2969.70	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.695
5.00	-38.79	-27.08	0.00	-2832.9	0.00	2832.99	4552.64	2276.32	8322.99	4167.68	0.13	-0.249	0.000	0.688
10.00	-37.19	-26.82	0.00	-2697.5	0.00	2697.58	4477.51	2238.76	8003.10	4007.50	0.53	-0.502	0.000	0.682
15.00	-35.62	-26.55	0.00	-2563.4	0.00	2563.49	4395.69	2197.85	7677.64	3844.53	1.19	-0.759	0.000	0.675
20.00	-34.08	-26.26	0.00	-2430.7	0.00	2430.72	4294.12	2147.06	7325.16	3668.02	2.13	-1.021	0.000	0.671
25.00	-32.57	-25.95	0.00	-2299.4	0.00	2299.40	4192.55	2096.27	6980.95	3495.66	3.34	-1.287	0.000	0.666
30.00	-31.09	-25.63	0.00	-2169.6	0.00	2169.63	4090.97	2045.49	6645.03	3327.46	4.83	-1.557	0.000	0.660
35.00	-29.64	-25.28	0.00	-2041.5	0.00	2041.50	3989.40	1994.70	6317.40	3163.39	6.61	-1.831	0.000	0.653
40.00	-28.24	-24.91	0.00	-1915.0	0.00	1915.08	3887.82	1943.91	5998.04	3003.48	8.67	-2.108	0.000	0.645
43.34	-27.33	-24.65	0.00	-1831.9	0.00	1831.97	3820.04	1910.02	5789.54	2899.07	10.21	-2.297	0.000	0.639
45.00	-26.54	-24.54	0.00	-1790.9	0.00	1790.97	3786.25	1893.12	5686.97	2847.71	11.03	-2.394	0.000	0.636
48.67	-24.90	-24.20	0.00	-1700.9	0.00	1700.92	3251.53	1625.77	4904.15	2455.72	12.95	-2.604	0.000	0.701
50.00	-24.53	-24.15	0.00	-1668.7	0.00	1668.73	3230.14	1615.07	4836.85	2422.02	13.69	-2.682	0.000	0.697
55.00	-23.31	-23.77	0.00	-1547.9	0.00	1547.98	3143.08	1571.54	4578.34	2292.57	16.67	-2.994	0.000	0.683
60.00	-22.12	-23.39	0.00	-1429.1	0.00	1429.11	3056.01	1528.01	4326.92	2166.68	19.97	-3.308	0.000	0.667
65.00	-20.97	-23.00	0.00	-1312.1	0.00	1312.15	2968.95	1484.47	4082.61	2044.34	23.60	-3.622	0.000	0.649
70.00	-19.84	-22.61	0.00	-1197.1	0.00	1197.14	2881.88	1440.94	3845.39	1925.55	27.56	-3.935	0.000	0.629
75.00	-18.74	-22.21	0.00	-1084.1	0.00	1084.11	2794.82	1397.41	3615.28	1810.32	31.84	-4.247	0.000	0.606
80.00	-17.67	-21.81	0.00	-973.06	0.00	973.06	2707.76	1353.88	3392.26	1698.65	36.45	-4.555	0.000	0.580
85.00	-16.65	-21.39	0.00	-864.01	0.00	864.01	2620.69	1310.35	3176.35	1590.53	41.38	-4.858	0.000	0.550
87.83	-16.10	-21.14	0.00	-803.42	0.00	803.42	2571.36	1285.68	3057.15	1530.84	44.31	-5.030	0.000	0.531
88.00	-15.57	-20.47	0.00	-799.90	0.00	799.90	2568.45	1284.23	3050.20	1527.37	44.49	-5.040	0.000	0.530
90.00	-14.95	-20.28	0.00	-758.96	0.00	758.96	2533.63	1266.81	2967.53	1485.97	46.62	-5.160	0.000	0.517
92.17	-14.27	-20.09	0.00	-715.01	0.00	715.01	2130.58	1065.29	2523.85	1263.80	48.99	-5.289	0.000	0.573
95.00	-13.80	-19.86	0.00	-658.10	0.00	658.10	2089.47	1044.73	2426.88	1215.24	52.18	-5.452	0.000	0.549
98.00	-10.92	-15.73	0.00	-598.52	0.00	598.52	2045.93	1022.97	2326.27	1164.86	55.66	-5.640	0.000	0.519
100.00	-10.61	-15.58	0.00	-567.06	0.00	567.06	2016.91	1008.46	2260.38	1131.87	58.04	-5.764	0.000	0.506
105.00	-9.92	-15.18	0.00	-489.15	0.00	489.15	1944.36	972.18	2099.80	1051.46	64.23	-6.056	0.000	0.471
109.00	-7.68	-13.20	0.00	-426.59	0.00	426.59	1886.32	943.16	1975.59	989.26	69.39	-6.283	0.000	0.435
110.00	-7.52	-13.13	0.00	-413.39	0.00	413.39	1871.81	935.90	1945.13	974.01	70.71	-6.340	0.000	0.429
115.00	-6.90	-12.73	0.00	-347.74	0.00	347.74	1799.25	899.63	1796.38	899.53	77.48	-6.603	0.000	0.391
120.00	-6.29	-12.34	0.00	-284.09	0.00	284.09	1726.70	863.35	1653.55	828.00	84.51	-6.850	0.000	0.347
125.00	-5.72	-11.95	0.00	-222.42	0.00	222.42	1654.15	827.07	1516.64	759.45	91.79	-7.073	0.000	0.297
130.00	-5.18	-11.56	0.00	-162.68	0.00	162.68	1581.59	790.80	1385.64	693.85	99.29	-7.266	0.000	0.238
133.37	-4.83	-11.31	0.00	-123.67	0.00	123.67	1532.65	766.32	1300.60	651.27	104.45	-7.377	0.000	0.193
135.00	-4.58	-11.18	0.00	-105.27	0.00	105.27	1509.04	754.52	1260.56	631.22	106.96	-7.424	0.000	0.170
136.62	-4.34	-11.05	0.00	-87.13	0.00	87.13	885.20	442.60	750.52	375.82	109.49	-7.465	0.000	0.237
140.00	-1.82	-5.24	0.00	-49.82	0.00	49.82	864.59	432.29	709.24	355.15	114.78	-7.529	0.000	0.143
145.00	-1.59	-4.91	0.00	-23.61	0.00	23.61	833.10	416.55	649.44	325.20	122.69	-7.616	0.000	0.075
146.00	0.00	-4.66	0.00	-18.70	0.00	18.70	826.66	413.33	637.68	319.32	124.29	-7.628	0.000	0.059

Wind Loading - Shaft

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

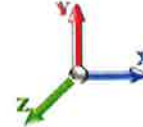


Page: 12

Load Case: 0.9D + 1.6W 97 mph Wind

Iterations 26

Dead Load Factor 0.90
Wind Load Factor 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	348.10	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	340.65	0.650	0.000	5.00	19.254	12.52	428.4	0.0	958.3
10.00		1.00	0.85	19.450	21.40	333.20	0.650	0.000	5.00	18.837	12.24	419.2	0.0	937.4
15.00		1.00	0.85	19.450	21.40	325.75	0.650	0.000	5.00	18.421	11.97	409.9	0.0	916.4
20.00		1.00	0.90	20.638	22.70	327.87	0.650	0.000	5.00	18.004	11.70	425.1	0.0	895.5
25.00		1.00	0.95	21.630	23.79	327.80	0.650	0.000	5.00	17.588	11.43	435.2	0.0	874.6
30.00		1.00	0.98	22.477	24.72	326.15	0.650	0.000	5.00	17.171	11.16	441.5	0.0	853.6
35.00		1.00	1.01	23.218	25.54	323.34	0.650	0.000	5.00	16.755	10.89	445.0	0.0	832.7
40.00		1.00	1.04	23.880	26.27	319.66	0.650	0.000	5.00	16.338	10.62	446.3	0.0	811.8
43.34	Bot - Section 2	1.00	1.06	24.286	26.71	316.81	0.650	0.000	3.34	10.671	6.94	296.5	0.0	530.1
45.00		1.00	1.07	24.479	26.93	315.29	0.650	0.000	1.66	5.356	3.48	150.0	0.0	489.2
48.67	Top - Section 1	1.00	1.09	24.887	27.38	311.72	0.650	0.000	3.67	11.654	7.58	331.8	0.0	1064.1
50.00		1.00	1.09	25.029	27.53	316.79	0.650	0.000	1.33	4.168	2.71	119.3	0.0	177.7
55.00		1.00	1.12	25.536	28.09	311.45	0.650	0.000	5.00	15.406	10.01	450.0	0.0	656.8
60.00		1.00	1.14	26.008	28.61	305.70	0.650	0.000	5.00	14.989	9.74	446.0	0.0	638.8
65.00		1.00	1.16	26.450	29.09	299.60	0.650	0.000	5.00	14.572	9.47	440.9	0.0	620.9
70.00		1.00	1.17	26.866	29.55	293.19	0.650	0.000	5.00	14.156	9.20	435.1	0.0	602.9
75.00		1.00	1.19	27.259	29.98	286.51	0.650	0.000	5.00	13.739	8.93	428.4	0.0	585.0
80.00		1.00	1.21	27.632	30.39	279.58	0.650	0.000	5.00	13.323	8.66	421.1	0.0	567.1
85.00		1.00	1.22	27.987	30.79	272.43	0.650	0.000	5.00	12.906	8.39	413.2	0.0	549.1
87.83	Bot - Section 3	1.00	1.23	28.181	31.00	268.29	0.650	0.000	2.83	7.129	4.63	229.8	0.0	303.2
88.00	Appurtenance(s)	1.00	1.23	28.192	31.01	268.04	0.650	0.000	0.17	0.424	0.28	13.7	0.0	32.7
90.00		1.00	1.24	28.325	31.16	265.08	0.650	0.000	2.00	5.052	3.28	163.7	0.0	389.7
92.17	Top - Section 2	1.00	1.24	28.468	31.31	261.84	0.650	0.000	2.17	5.397	3.51	175.8	0.0	416.3
95.00		1.00	1.25	28.650	31.51	263.29	0.650	0.000	2.83	6.940	4.51	227.5	0.0	246.4
98.00	Appurtenance(s)	1.00	1.26	28.838	31.72	258.71	0.650	0.000	3.00	7.203	4.68	237.6	0.0	255.7
100.00		1.00	1.27	28.961	31.86	255.63	0.650	0.000	2.00	4.718	3.07	156.3	0.0	167.5
105.00		1.00	1.28	29.260	32.19	247.80	0.650	0.000	5.00	11.504	7.48	385.1	0.0	408.2
109.00	Appurtenance(s)	1.00	1.29	29.491	32.44	241.44	0.650	0.000	4.00	8.904	5.79	300.4	0.0	315.8
110.00		1.00	1.29	29.548	32.50	239.84	0.650	0.000	1.00	2.184	1.42	73.8	0.0	77.5
115.00		1.00	1.30	29.826	32.81	231.74	0.650	0.000	5.00	10.671	6.94	364.1	0.0	378.3
120.00		1.00	1.32	30.094	33.10	223.51	0.650	0.000	5.00	10.255	6.67	353.0	0.0	363.4
125.00		1.00	1.33	30.354	33.39	215.16	0.650	0.000	5.00	9.838	6.39	341.6	0.0	348.4
130.00		1.00	1.34	30.605	33.67	206.71	0.650	0.000	5.00	9.421	6.12	329.9	0.0	333.4
133.37	Bot - Section 4	1.00	1.34	30.771	33.85	200.94	0.650	0.000	3.37	6.121	3.98	215.5	0.0	216.5
135.00		1.00	1.35	30.850	33.93	198.15	0.650	0.000	1.63	2.935	1.91	103.6	0.0	164.6
136.62	Top - Section 3	1.00	1.35	30.927	34.02	195.35	0.650	0.000	1.62	2.886	1.88	102.1	0.0	161.8
140.00	Appurtenance(s)	1.00	1.36	31.087	34.20	193.07	0.650	0.000	3.38	5.861	3.81	208.5	0.0	125.1
145.00		1.00	1.37	31.317	34.45	184.34	0.650	0.000	5.00	8.330	5.41	298.5	0.0	177.7
146.00	Appurtenance(s)	1.00	1.37	31.362	34.50	182.58	0.650	0.000	1.00	1.616	1.05	58.0	0.0	34.5
Totals:									146.00			11,721.4		18,478.8

Discrete Appurtenance Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

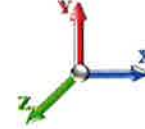


Page: 13

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	146.00	ALP 7130.16.33.00	9	31.673	34.841	0.99	1.00	47.40	142.56	0.000	7.000	2642.37	0.00	18496.62
2	146.00	Lightning Rod	1	31.519	34.671	1.00	1.00	1.05	31.50	0.000	3.500	58.25	0.00	203.87
3	146.00	Beacon	1	31.362	34.499	1.00	1.00	2.40	13.50	0.000	0.000	132.48	0.00	0.00
4	146.00	Platform w/ Hand Rails	1	31.362	34.499	0.00	1.00	32.00	1440.00	0.000	0.000	1766.34	0.00	0.00
5	140.00	ALU B13 RRH4X30-4R	3	30.993	34.092	0.54	0.80	3.47	154.44	0.000	-2.000	189.46	0.00	-378.91
6	140.00	Commscope	6	31.087	34.195	0.66	0.80	32.07	273.83	0.000	0.000	1754.69	0.00	0.00
7	140.00	Antel LPA-80063/4CF	6	31.087	34.195	0.75	0.80	27.75	108.00	0.000	0.000	1518.21	0.00	0.00
8	140.00	Raycap	2	30.993	34.092	0.54	0.80	2.70	75.60	0.000	-2.000	147.36	0.00	-294.71
9	140.00	ALU B25 RRH4x30-4R	3	30.993	34.092	0.54	0.80	3.44	137.70	0.000	-2.000	187.70	0.00	-375.41
10	140.00	ALU B66 RRH4x45	3	30.993	34.092	0.54	0.80	4.08	153.36	0.000	-2.000	222.79	0.00	-445.57
11	140.00	Low Profile Platform	1	31.087	34.195	1.00	1.00	22.00	1350.00	0.000	0.000	1203.67	0.00	0.00
12	109.00	Low Profile Platform	1	29.491	32.440	1.00	1.00	22.00	1350.00	0.000	0.000	1141.89	0.00	0.00
13	109.00	8' Omni	1	29.716	32.687	0.80	0.80	1.92	22.50	0.000	4.000	100.41	0.00	401.66
14	109.00	14'x7" Cross Omni	1	29.880	32.868	0.80	0.80	3.95	54.00	0.000	7.000	207.83	0.00	1454.81
15	98.00	KMW	3	28.838	31.722	0.63	0.80	15.21	130.95	0.000	0.000	771.77	0.00	0.00
16	98.00	Powerwave 7770	6	28.838	31.722	0.62	0.80	20.36	189.00	0.000	0.000	1033.62	0.00	0.00
17	98.00	Powerwave LGP21401	6	28.838	31.722	0.48	0.80	3.02	76.14	0.000	0.000	153.48	0.00	0.00
18	98.00	Powerwave LGP21903	6	28.838	31.722	0.48	0.80	0.58	29.70	0.000	0.000	29.23	0.00	0.00
19	98.00	Ericsson RRUS 11	6	28.838	31.722	0.54	0.80	8.27	273.78	0.000	0.000	419.49	0.00	0.00
20	98.00	Powerwave 7020 RET's	6	28.838	31.722	0.48	0.80	0.98	11.88	0.000	0.000	49.70	0.00	0.00
21	98.00	Raycap DC6-48-60-18-8F	1	28.838	31.722	0.54	0.80	1.18	14.40	0.000	0.000	59.85	0.00	0.00
22	98.00	Low Profile Platform	1	28.838	31.722	1.00	1.00	22.00	1350.00	0.000	0.000	1116.60	0.00	0.00
23	88.00	Flush Mount	1	28.192	31.011	0.56	0.75	2.81	315.00	0.000	0.000	139.55	0.00	0.00
24	88.00	RFS APXV18-206517S-C	3	28.192	31.011	0.63	0.80	9.80	71.28	0.000	0.000	486.37	0.00	0.00
Totals:								7,769.12				15,533.11		

Total Applied Force Summary

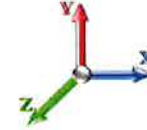
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 14

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		428.42	1028.31	0.00	0.00
10.00		419.16	1112.38	0.00	0.00
15.00		409.89	1091.44	0.00	0.00
20.00		425.07	1070.51	0.00	0.00
25.00		435.21	1049.57	0.00	0.00
30.00		441.53	1028.64	0.00	0.00
35.00		445.03	1007.70	0.00	0.00
40.00		446.33	986.77	0.00	0.00
43.34		296.48	646.86	0.00	0.00
45.00		149.99	547.41	0.00	0.00
48.67		331.80	1192.59	0.00	0.00
50.00		119.34	224.27	0.00	0.00
55.00		450.04	831.78	0.00	0.00
60.00		445.97	813.83	0.00	0.00
65.00		440.94	795.89	0.00	0.00
70.00		435.07	777.95	0.00	0.00
75.00		428.45	760.00	0.00	0.00
80.00		421.14	742.06	0.00	0.00
85.00		413.21	724.11	0.00	0.00
87.83		229.82	402.37	0.00	0.00
88.00	(4) attachments	639.59	424.83	0.00	0.00
90.00		163.69	448.52	0.00	0.00
92.17		175.78	479.96	0.00	0.00
95.00		227.46	329.69	0.00	0.00
98.00	(35) attachments	3871.36	2419.70	0.00	0.00
100.00		156.32	202.07	0.00	0.00
105.00		385.09	494.71	0.00	0.00
109.00	(3) attachments	1750.52	1811.50	0.00	1856.47
110.00		73.83	94.14	0.00	0.00
115.00		364.11	461.74	0.00	0.00
120.00		353.04	446.79	0.00	0.00
125.00		341.62	431.83	0.00	0.00
130.00		329.87	416.88	0.00	0.00
133.37		215.47	272.81	0.00	0.00
135.00		103.60	191.79	0.00	0.00
136.62		102.09	188.87	0.00	0.00
140.00	(24) attachments	5432.33	2434.37	0.00	-1494.61
145.00		298.45	204.44	0.00	0.00
146.00	(12) attachments	4657.42	1667.37	0.00	18700.49
	Totals:	27,254.54	30,256.43	0.00	19,062.36

Calculated Forces

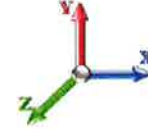
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 15

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-30.20	-27.32	0.00	-2930.4	0.00	2930.43	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.683
5.00	-29.05	-27.02	0.00	-2793.8	0.00	2793.84	4552.64	2276.32	8322.99	4167.68	0.13	-0.245	0.000	0.677
10.00	-27.83	-26.71	0.00	-2658.7	0.00	2658.76	4477.51	2238.76	8003.10	4007.50	0.52	-0.495	0.000	0.670
15.00	-26.62	-26.41	0.00	-2525.2	0.00	2525.21	4395.69	2197.85	7677.64	3844.53	1.18	-0.749	0.000	0.663
20.00	-25.44	-26.08	0.00	-2393.1	0.00	2393.17	4294.12	2147.06	7325.16	3668.02	2.10	-1.006	0.000	0.659
25.00	-24.28	-25.74	0.00	-2262.7	0.00	2262.75	4192.55	2096.27	6980.95	3495.66	3.29	-1.268	0.000	0.653
30.00	-23.15	-25.38	0.00	-2134.0	0.00	2134.06	4090.97	2045.49	6645.03	3327.46	4.76	-1.534	0.000	0.647
35.00	-22.03	-25.01	0.00	-2007.1	0.00	2007.16	3989.40	1994.70	6317.40	3163.39	6.51	-1.803	0.000	0.640
40.00	-20.96	-24.62	0.00	-1882.1	0.00	1882.11	3887.82	1943.91	5998.04	3003.48	8.55	-2.076	0.000	0.632
43.34	-20.27	-24.34	0.00	-1799.9	0.00	1799.98	3820.04	1910.02	5789.54	2899.07	10.06	-2.262	0.000	0.626
45.00	-19.66	-24.22	0.00	-1759.4	0.00	1759.49	3786.25	1893.12	5686.97	2847.71	10.87	-2.356	0.000	0.623
48.67	-18.43	-23.89	0.00	-1670.5	0.00	1670.58	3251.53	1625.77	4904.15	2455.72	12.76	-2.563	0.000	0.686
50.00	-18.13	-23.82	0.00	-1638.8	0.00	1638.82	3230.14	1615.07	4836.85	2422.02	13.48	-2.639	0.000	0.682
55.00	-17.20	-23.42	0.00	-1519.7	0.00	1519.72	3143.08	1571.54	4578.34	2292.57	16.41	-2.946	0.000	0.669
60.00	-16.28	-23.02	0.00	-1402.6	0.00	1402.62	3056.01	1528.01	4326.92	2166.68	19.66	-3.254	0.000	0.653
65.00	-15.39	-22.62	0.00	-1287.5	0.00	1287.52	2968.95	1484.47	4082.61	2044.34	23.23	-3.562	0.000	0.635
70.00	-14.53	-22.21	0.00	-1174.4	0.00	1174.45	2881.88	1440.94	3845.39	1925.55	27.13	-3.870	0.000	0.615
75.00	-13.68	-21.80	0.00	-1063.4	0.00	1063.41	2794.82	1397.41	3615.28	1810.32	31.34	-4.175	0.000	0.593
80.00	-12.86	-21.39	0.00	-954.40	0.00	954.40	2707.76	1353.88	3392.26	1698.65	35.87	-4.478	0.000	0.567
85.00	-12.09	-20.97	0.00	-847.44	0.00	847.44	2620.69	1310.35	3176.35	1590.53	40.71	-4.774	0.000	0.538
87.83	-11.68	-20.73	0.00	-788.02	0.00	788.02	2571.36	1285.68	3057.15	1530.84	43.60	-4.943	0.000	0.520
88.00	-11.29	-20.06	0.00	-784.57	0.00	784.57	2568.45	1284.23	3050.20	1527.37	43.77	-4.953	0.000	0.518
90.00	-10.81	-19.89	0.00	-744.44	0.00	744.44	2533.63	1266.81	2967.53	1485.97	45.87	-5.071	0.000	0.505
92.17	-10.30	-19.69	0.00	-701.36	0.00	701.36	2130.58	1065.29	2523.85	1263.80	48.20	-5.197	0.000	0.560
95.00	-9.93	-19.47	0.00	-645.56	0.00	645.56	2089.47	1044.73	2426.88	1215.24	51.32	-5.358	0.000	0.536
98.00	-7.85	-15.40	0.00	-587.16	0.00	587.16	2045.93	1022.97	2326.27	1164.86	54.75	-5.542	0.000	0.508
100.00	-7.61	-15.26	0.00	-556.35	0.00	556.35	2016.91	1008.46	2260.38	1131.87	57.09	-5.663	0.000	0.496
105.00	-7.09	-14.85	0.00	-480.07	0.00	480.07	1944.36	972.18	2099.80	1051.46	63.17	-5.950	0.000	0.460
109.00	-5.45	-12.94	0.00	-418.79	0.00	418.79	1886.32	943.16	1975.59	989.26	68.24	-6.172	0.000	0.426
110.00	-5.32	-12.87	0.00	-405.86	0.00	405.86	1871.81	935.90	1945.13	974.01	69.53	-6.228	0.000	0.420
115.00	-4.85	-12.48	0.00	-341.52	0.00	341.52	1799.25	899.63	1796.38	899.53	76.18	-6.487	0.000	0.383
120.00	-4.40	-12.09	0.00	-279.15	0.00	279.15	1726.70	863.35	1653.55	828.00	83.10	-6.729	0.000	0.340
125.00	-3.97	-11.71	0.00	-218.69	0.00	218.69	1654.15	827.07	1516.64	759.45	90.25	-6.949	0.000	0.291
130.00	-3.57	-11.35	0.00	-160.12	0.00	160.12	1581.59	790.80	1385.64	693.85	97.61	-7.139	0.000	0.233
133.37	-3.31	-11.10	0.00	-121.85	0.00	121.85	1532.65	766.32	1300.60	651.27	102.68	-7.248	0.000	0.189
135.00	-3.12	-10.98	0.00	-103.79	0.00	103.79	1509.04	754.52	1260.56	631.22	105.16	-7.294	0.000	0.167
136.62	-2.94	-10.85	0.00	-85.97	0.00	85.97	885.20	442.60	750.52	375.82	107.64	-7.335	0.000	0.233
140.00	-1.21	-5.16	0.00	-49.32	0.00	49.32	864.59	432.29	709.24	355.15	112.84	-7.398	0.000	0.140
145.00	-1.05	-4.84	0.00	-23.54	0.00	23.54	833.10	416.55	649.44	325.20	120.61	-7.485	0.000	0.074
146.00	0.00	-4.66	0.00	-18.70	0.00	18.70	826.66	413.33	637.68	319.32	122.18	-7.496	0.000	0.059

Wind Loading - Shaft

Structure: CT46135-A-SBA

Code: EIA/TIA-222-G

4/28/2017

Site Name: Middlefield-jacson Hill Rd

Exposure: C

Height: 146.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent Rock

Gh: 1.1

Topography: 1

Struct Class: II

Page: 16

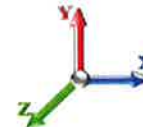


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	20.289	24.35	138.4	359.9	1637.6
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	19.947	23.94	136.1	378.2	1628.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	19.576	23.49	133.5	385.8	1607.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	19.193	23.03	138.9	388.6	1582.6
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	18.804	22.56	142.6	388.7	1554.8
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	18.409	22.09	145.1	386.9	1525.1
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	18.012	21.61	146.7	383.8	1494.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	17.612	21.13	147.5	379.7	1462.1
43.34	Bot - Section 2	1.00	1.06	6.453	7.10	0.00	1.200	1.541	3.34	11.528	13.83	98.2	251.3	958.1
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	1.66	5.785	6.94	49.7	127.1	779.4
48.67	Top - Section 1	1.00	1.09	6.613	7.27	0.00	1.200	1.559	3.67	12.608	15.13	110.0	277.6	1696.5
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	1.33	4.515	5.42	39.6	100.2	337.2
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	16.721	20.07	149.8	370.7	1246.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	16.316	19.58	148.8	364.3	1216.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	15.910	19.09	147.6	357.4	1185.3
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	15.504	18.60	146.1	350.2	1154.1
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	15.096	18.12	144.3	342.7	1122.7
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	14.689	17.63	142.3	334.9	1091.0
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	14.280	17.14	140.2	326.9	1059.0
87.83	Bot - Section 3	1.00	1.23	7.488	8.24	0.00	1.200	1.654	2.83	7.910	9.49	78.2	182.6	586.9
88.00	Appurtenance(s)	1.00	1.23	7.491	8.24	0.00	1.200	1.655	0.17	0.470	0.56	4.6	10.9	54.6
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	2.00	5.604	6.73	55.7	130.0	649.7
92.17	Top - Section 2	1.00	1.24	7.564	8.32	0.00	1.200	1.662	2.17	5.998	7.20	59.9	139.3	694.4
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	2.83	7.727	9.27	77.6	179.5	508.0
98.00	Appurtenance(s)	1.00	1.26	7.662	8.43	0.00	1.200	1.672	3.00	8.039	9.65	81.3	186.9	527.9
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	5.277	6.33	53.6	123.2	346.5
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	12.908	15.49	132.5	299.3	843.6
109.00	Appurtenance(s)	1.00	1.29	7.836	8.62	0.00	1.200	1.690	4.00	10.030	12.04	103.7	233.7	654.8
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	1.00	2.466	2.96	25.6	58.1	161.3
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	12.087	14.50	126.4	281.2	785.6
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	11.677	14.01	123.2	271.9	756.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	11.266	13.52	119.9	262.5	727.1
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	10.855	13.03	116.5	253.0	697.6
133.37	Bot - Section 4	1.00	1.34	8.176	8.99	0.00	1.200	1.725	3.37	7.091	8.51	76.5	166.3	455.0
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	1.63	3.404	4.08	36.8	80.5	300.0
136.62	Top - Section 3	1.00	1.35	8.217	9.04	0.00	1.200	1.729	1.62	3.353	4.02	36.4	79.3	295.0
140.00	Appurtenance(s)	1.00	1.36	8.260	9.09	0.00	1.200	1.733	3.38	6.837	8.20	74.5	160.6	327.3
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	9.780	11.74	107.4	227.9	464.9
146.00	Appurtenance(s)	1.00	1.37	8.333	9.17	0.00	1.200	1.741	1.00	1.906	2.29	21.0	45.2	91.1
								Totals:	146.00			3,957.1	34,265.5	

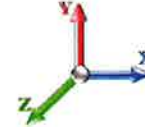
Discrete Appurtenance Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Page: 17
	Struct Class: II	



Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	146.00	ALP 7130.16.33.00	9	8.416	9.257	0.99	1.00	56.49	1802.43	0.000	7.000	522.99	0.00	3660.90
2	146.00	Lightning Rod	1	8.375	9.212	1.00	1.00	3.42	64.33	0.000	3.500	31.48	0.00	110.18
3	146.00	Beacon	1	8.333	9.166	1.00	1.00	2.40	30.41	0.000	0.000	22.00	0.00	0.00
4	146.00	Platform w/ Hand Rails	1	8.333	9.166	0.00	1.00	59.85	3414.18	0.000	0.000	548.59	0.00	0.00
5	140.00	ALU B13 RRH4X30-4R	3	8.235	9.058	0.54	0.80	4.45	345.61	0.000	-2.000	40.30	0.00	-80.59
6	140.00	Commscope	6	8.260	9.086	0.66	0.80	37.19	1562.07	0.000	0.000	337.87	0.00	0.00
7	140.00	Antel LPA-80063/4CF	6	8.260	9.086	0.75	0.80	32.40	1372.20	0.000	0.000	294.41	0.00	0.00
8	140.00	Raycap	2	8.235	9.058	0.54	0.80	3.38	369.84	0.000	-2.000	30.59	0.00	-61.19
9	140.00	ALU B25 RRH4x30-4R	3	8.235	9.058	0.54	0.80	4.41	313.95	0.000	-2.000	39.97	0.00	-79.93
10	140.00	ALU B66 RRH4x45	3	8.235	9.058	0.54	0.80	5.19	454.70	0.000	-2.000	47.03	0.00	-94.07
11	140.00	Low Profile Platform	1	8.260	9.086	1.00	1.00	39.54	2799.91	0.000	0.000	359.25	0.00	0.00
12	109.00	Low Profile Platform	1	7.836	8.619	1.00	1.00	39.11	2767.78	0.000	0.000	337.08	0.00	0.00
13	109.00	8' Omni	1	7.896	8.685	0.80	0.80	4.05	71.70	0.000	4.000	35.20	0.00	140.80
14	109.00	14'x7" Cross Omni	1	7.939	8.733	0.80	0.80	8.51	215.54	0.000	7.000	74.32	0.00	520.27
15	98.00	KMW	3	7.662	8.429	0.63	0.80	20.28	501.64	0.000	0.000	170.95	0.00	0.00
16	98.00	Powerwave 7770	6	7.662	8.429	0.62	0.80	24.09	1021.88	0.000	0.000	203.05	0.00	0.00
17	98.00	Powerwave LGP21401	6	7.662	8.429	0.48	0.80	4.90	202.68	0.000	0.000	41.31	0.00	0.00
18	98.00	Powerwave LGP21903	6	7.662	8.429	0.48	0.80	1.39	73.66	0.000	0.000	11.71	0.00	0.00
19	98.00	Ericsson RRUS 11	6	7.662	8.429	0.54	0.80	10.26	829.01	0.000	0.000	86.50	0.00	0.00
20	98.00	Powerwave 7020 RET's	6	7.662	8.429	0.48	0.80	2.12	57.25	0.000	0.000	17.83	0.00	0.00
21	98.00	Raycap DC6-48-60-18-8F	1	7.662	8.429	0.54	0.80	1.68	58.41	0.000	0.000	14.15	0.00	0.00
22	98.00	Low Profile Platform	1	7.662	8.429	1.00	1.00	38.93	2754.36	0.000	0.000	328.09	0.00	0.00
23	88.00	Flush Mount	1	7.491	8.240	0.56	0.75	4.67	597.97	0.000	0.000	38.51	0.00	0.00
24	88.00	RFS APXV18-206517S-C	3	7.491	8.240	0.63	0.80	14.07	279.32	0.000	0.000	115.94	0.00	0.00
Totals:								21,960.82				3,749.11		

Total Applied Force Summary

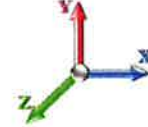
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 18

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		138.41	1730.98	0.00	0.00
10.00		136.07	1861.42	0.00	0.00
15.00		133.54	1841.07	0.00	0.00
20.00		138.92	1815.97	0.00	0.00
25.00		142.65	1788.12	0.00	0.00
30.00		145.12	1758.43	0.00	0.00
35.00		146.68	1727.44	0.00	0.00
40.00		147.51	1695.44	0.00	0.00
43.34		98.20	1113.78	0.00	0.00
45.00		49.67	857.01	0.00	0.00
48.67		110.05	1867.73	0.00	0.00
50.00		39.63	399.24	0.00	0.00
55.00		149.76	1479.75	0.00	0.00
60.00		148.83	1449.38	0.00	0.00
65.00		147.59	1418.60	0.00	0.00
70.00		146.08	1387.48	0.00	0.00
75.00		144.33	1356.04	0.00	0.00
80.00		142.35	1324.33	0.00	0.00
85.00		140.17	1292.37	0.00	0.00
87.83		78.18	719.08	0.00	0.00
88.00	(4) attachments	159.10	939.64	0.00	0.00
90.00		55.68	728.07	0.00	0.00
92.17		59.88	779.25	0.00	0.00
95.00		77.65	619.05	0.00	0.00
98.00	(35) attachments	954.89	6144.28	0.00	0.00
100.00		53.60	392.65	0.00	0.00
105.00		132.46	958.87	0.00	0.00
109.00	(3) attachments	550.35	3802.03	0.00	661.07
110.00		25.56	183.58	0.00	0.00
115.00		126.44	896.84	0.00	0.00
120.00		123.25	867.65	0.00	0.00
125.00		119.94	838.33	0.00	0.00
130.00		116.52	808.88	0.00	0.00
133.37		76.52	530.08	0.00	0.00
135.00		36.83	336.22	0.00	0.00
136.62		36.37	331.15	0.00	0.00
140.00	(24) attachments	1223.96	7620.75	0.00	-315.78
145.00		107.42	500.50	0.00	0.00
146.00	(12) attachments	1146.03	5409.60	0.00	3771.07
	Totals:	7,706.18	61,571.09	0.00	4,116.37

Calculated Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 19

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-61.57	-7.74	0.00	-840.38	0.00	840.38	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.207
5.00	-59.83	-7.68	0.00	-801.66	0.00	801.66	4552.64	2276.32	8322.99	4167.68	0.04	-0.070	0.000	0.206
10.00	-57.96	-7.61	0.00	-763.27	0.00	763.27	4477.51	2238.76	8003.10	4007.50	0.15	-0.142	0.000	0.203
15.00	-56.10	-7.54	0.00	-725.21	0.00	725.21	4395.69	2197.85	7677.64	3844.53	0.34	-0.215	0.000	0.201
20.00	-54.28	-7.47	0.00	-687.49	0.00	687.49	4294.12	2147.06	7325.16	3668.02	0.60	-0.289	0.000	0.200
25.00	-52.48	-7.39	0.00	-650.15	0.00	650.15	4192.55	2096.27	6980.95	3495.66	0.94	-0.364	0.000	0.199
30.00	-50.72	-7.30	0.00	-613.22	0.00	613.22	4090.97	2045.49	6645.03	3327.46	1.37	-0.440	0.000	0.197
35.00	-48.98	-7.20	0.00	-576.74	0.00	576.74	3989.40	1994.70	6317.40	3163.39	1.87	-0.518	0.000	0.195
40.00	-47.28	-7.09	0.00	-540.74	0.00	540.74	3887.82	1943.91	5998.04	3003.48	2.45	-0.596	0.000	0.192
43.34	-46.16	-7.01	0.00	-517.08	0.00	517.08	3820.04	1910.02	5789.54	2899.07	2.89	-0.650	0.000	0.190
45.00	-45.30	-6.99	0.00	-505.41	0.00	505.41	3786.25	1893.12	5686.97	2847.71	3.12	-0.677	0.000	0.189
48.67	-43.43	-6.89	0.00	-479.77	0.00	479.77	3251.53	1625.77	4904.15	2455.72	3.66	-0.736	0.000	0.209
50.00	-43.02	-6.88	0.00	-470.61	0.00	470.61	3230.14	1615.07	4836.85	2422.02	3.87	-0.758	0.000	0.208
55.00	-41.53	-6.78	0.00	-436.20	0.00	436.20	3143.08	1571.54	4578.34	2292.57	4.71	-0.846	0.000	0.203
60.00	-40.08	-6.67	0.00	-402.32	0.00	402.32	3056.01	1528.01	4326.92	2166.68	5.65	-0.934	0.000	0.199
65.00	-38.65	-6.55	0.00	-368.98	0.00	368.98	2968.95	1484.47	4082.61	2044.34	6.67	-1.023	0.000	0.194
70.00	-37.26	-6.44	0.00	-336.21	0.00	336.21	2881.88	1440.94	3845.39	1925.55	7.79	-1.111	0.000	0.188
75.00	-35.89	-6.32	0.00	-304.02	0.00	304.02	2794.82	1397.41	3615.28	1810.32	9.00	-1.198	0.000	0.181
80.00	-34.56	-6.20	0.00	-272.40	0.00	272.40	2707.76	1353.88	3392.26	1698.65	10.30	-1.285	0.000	0.173
85.00	-33.27	-6.07	0.00	-241.39	0.00	241.39	2620.69	1310.35	3176.35	1590.53	11.69	-1.369	0.000	0.164
87.83	-32.55	-5.99	0.00	-224.19	0.00	224.19	2571.36	1285.68	3057.15	1530.84	12.52	-1.417	0.000	0.159
88.00	-31.61	-5.82	0.00	-223.19	0.00	223.19	2568.45	1284.23	3050.20	1527.37	12.57	-1.420	0.000	0.158
90.00	-30.88	-5.76	0.00	-211.56	0.00	211.56	2533.63	1266.81	2967.53	1485.97	13.17	-1.454	0.000	0.155
92.17	-30.10	-5.70	0.00	-199.07	0.00	199.07	2130.58	1065.29	2523.85	1263.80	13.84	-1.489	0.000	0.172
95.00	-29.48	-5.64	0.00	-182.91	0.00	182.91	2089.47	1044.73	2426.88	1215.24	14.74	-1.535	0.000	0.165
98.00	-23.36	-4.53	0.00	-166.00	0.00	166.00	2045.93	1022.97	2326.27	1164.86	15.72	-1.587	0.000	0.154
100.00	-22.96	-4.49	0.00	-156.94	0.00	156.94	2016.91	1008.46	2260.38	1131.87	16.39	-1.621	0.000	0.150
105.00	-22.00	-4.36	0.00	-134.50	0.00	134.50	1944.36	972.18	2099.80	1051.46	18.13	-1.702	0.000	0.139
109.00	-18.22	-3.70	0.00	-116.41	0.00	116.41	1886.32	943.16	1975.59	989.26	19.59	-1.764	0.000	0.127
110.00	-18.03	-3.69	0.00	-112.71	0.00	112.71	1871.81	935.90	1945.13	974.01	19.96	-1.780	0.000	0.125
115.00	-17.14	-3.55	0.00	-94.27	0.00	94.27	1799.25	899.63	1796.38	899.53	21.86	-1.851	0.000	0.114
120.00	-16.27	-3.42	0.00	-76.51	0.00	76.51	1726.70	863.35	1653.55	828.00	23.84	-1.918	0.000	0.102
125.00	-15.43	-3.29	0.00	-59.42	0.00	59.42	1654.15	827.07	1516.64	759.45	25.88	-1.978	0.000	0.088
130.00	-14.63	-3.15	0.00	-42.99	0.00	42.99	1581.59	790.80	1385.64	693.85	27.98	-2.029	0.000	0.071
133.37	-14.10	-3.06	0.00	-32.36	0.00	32.36	1532.65	766.32	1300.60	651.27	29.42	-2.059	0.000	0.059
135.00	-13.76	-3.01	0.00	-27.39	0.00	27.39	1509.04	754.52	1260.56	631.22	30.13	-2.071	0.000	0.053
136.62	-13.43	-2.97	0.00	-22.49	0.00	22.49	885.20	442.60	750.52	375.82	30.83	-2.082	0.000	0.075
140.00	-5.86	-1.47	0.00	-12.47	0.00	12.47	864.59	432.29	709.24	355.15	32.31	-2.098	0.000	0.042
145.00	-5.36	-1.35	0.00	-5.12	0.00	5.12	833.10	416.55	649.44	325.20	34.52	-2.119	0.000	0.022
146.00	0.00	-1.15	0.00	-3.77	0.00	3.77	826.66	413.33	637.68	319.32	34.96	-2.121	0.000	0.012

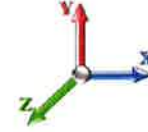
Seismic Segment Forces (Factored)

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 20

Load Case: 1.2D + 1.0E				Iterations 23
Gust Response Factor	1.10	Sds	0.12	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1 0.04
Wind Load Factor	0.00	Structure Frequency	0.32	SA 0.01
				Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1064.7	0.00	0.03	0.02	16.25	
10.00		1041.5	0.01	0.05	0.03	21.51	
15.00		1018.2	0.02	0.06	0.04	23.49	
20.00		995.00	0.04	0.07	0.04	24.13	
25.00		971.74	0.06	0.07	0.04	24.27	
30.00		948.48	0.08	0.07	0.04	24.28	
35.00		925.22	0.11	0.07	0.04	24.33	
40.00		901.96	0.14	0.07	0.03	24.40	
43.34	Bot - Section 2	588.97	0.17	0.07	0.03	16.20	
45.00		543.55	0.18	0.07	0.03	15.04	
48.67	Top - Section 1	1182.3	0.21	0.06	0.02	32.92	
50.00		197.47	0.22	0.06	0.02	5.49	
55.00		729.75	0.27	0.05	0.02	19.54	
60.00		709.81	0.32	0.04	0.01	16.81	
65.00		689.87	0.37	0.03	0.01	12.01	
70.00		669.93	0.43	0.01	0.01	4.88	
75.00		650.00	0.50	-0.02	0.01	-3.57	
80.00		630.06	0.57	-0.04	0.01	-11.19	
85.00		610.12	0.64	-0.07	0.02	-16.28	
87.83	Bot - Section 3	336.88	0.68	-0.08	0.03	-10.05	
88.00	Appurtenance(s)	465.55	0.69	-0.08	0.03	-13.95	
90.00		433.05	0.72	-0.09	0.03	-13.55	
92.17	Top - Section 2	462.54	0.75	-0.10	0.04	-14.81	
95.00		273.82	0.80	-0.11	0.05	-8.73	
98.00	Appurtenance(s)	2590.6	0.85	-0.12	0.07	-79.02	
100.00		186.08	0.89	-0.12	0.08	-5.38	
105.00		453.57	0.98	-0.11	0.12	-10.28	
109.00	Appurtenance(s)	1935.9	1.05	-0.09	0.16	-29.82	
110.00		86.06	1.07	-0.08	0.17	-1.14	
115.00		420.34	1.17	-0.02	0.23	-0.34	
120.00		403.73	1.28	0.09	0.32	5.98	
125.00		387.11	1.39	0.26	0.42	13.02	
130.00		370.50	1.50	0.50	0.54	20.67	
133.37	Bot - Section 4	240.58	1.58	0.71	0.64	17.48	
135.00		182.94	1.62	0.83	0.69	14.88	
136.62	Top - Section 3	179.76	1.66	0.96	0.75	16.25	
140.00	Appurtenance(s)	2642.2	1.74	1.27	0.87	291.80	
145.00		197.46	1.86	1.85	1.09	28.26	
146.00	Appurtenance(s)	1846.6	1.89	1.98	1.14	277.24	
Totals:		29,164.3				773.0	Total Wind: 27,254.5

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

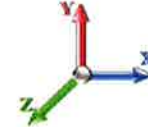


Page: 21

Load Case: 1.2D + 1.0E

Iterations 23

Gust Response Factor 1.10	Sds 0.12	Ss 0.18
Dead Load Factor 1.20	Seismic Load Factor 1.00	Sd1 0.04
Wind Load Factor 0.00	Structure Frequency 0.32	SA 0.01
Seismic Importance Factor 1.00		



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-40.34	-0.99	0.00	-113.90	0.00	113.90	4626.62	2313.31	8646.87	4329.86	0.00	0.00	0.00	0.035
5.00	-38.97	-0.98	0.00	-108.93	0.00	108.93	4552.64	2276.32	8322.99	4167.68	0.01	-0.01	0.035	
10.00	-37.49	-0.97	0.00	-104.01	0.00	104.01	4477.51	2238.76	8003.10	4007.50	0.02	-0.02	0.034	
15.00	-36.03	-0.95	0.00	-99.17	0.00	99.17	4395.69	2197.85	7677.64	3844.53	0.05	-0.03	0.034	
20.00	-34.60	-0.93	0.00	-94.42	0.00	94.42	4294.12	2147.06	7325.16	3668.02	0.08	-0.04	0.034	
25.00	-33.20	-0.91	0.00	-89.76	0.00	89.76	4192.55	2096.27	6980.95	3495.66	0.13	-0.05	0.034	
30.00	-31.83	-0.89	0.00	-85.20	0.00	85.20	4090.97	2045.49	6645.03	3327.46	0.19	-0.06	0.033	
35.00	-30.49	-0.87	0.00	-80.73	0.00	80.73	3989.40	1994.70	6317.40	3163.39	0.26	-0.07	0.033	
40.00	-29.17	-0.85	0.00	-76.37	0.00	76.37	3887.82	1943.91	5998.04	3003.48	0.34	-0.08	0.033	
43.34	-28.31	-0.84	0.00	-73.53	0.00	73.53	3820.04	1910.02	5789.54	2899.07	0.40	-0.09	0.033	
45.00	-27.58	-0.82	0.00	-72.13	0.00	72.13	3786.25	1893.12	5686.97	2847.71	0.43	-0.09	0.033	
48.67	-25.99	-0.79	0.00	-69.11	0.00	69.11	3251.53	1625.77	4904.15	2455.72	0.50	-0.10	0.036	
50.00	-25.69	-0.79	0.00	-68.06	0.00	68.06	3230.14	1615.07	4836.85	2422.02	0.53	-0.11	0.036	
55.00	-24.58	-0.77	0.00	-64.12	0.00	64.12	3143.08	1571.54	4578.34	2292.57	0.65	-0.12	0.036	
60.00	-23.50	-0.76	0.00	-60.26	0.00	60.26	3056.01	1528.01	4326.92	2166.68	0.78	-0.13	0.036	
65.00	-22.44	-0.75	0.00	-56.47	0.00	56.47	2968.95	1484.47	4082.61	2044.34	0.92	-0.14	0.035	
70.00	-21.40	-0.75	0.00	-52.72	0.00	52.72	2881.88	1440.94	3845.39	1925.55	1.08	-0.16	0.035	
75.00	-20.39	-0.75	0.00	-48.99	0.00	48.99	2794.82	1397.41	3615.28	1810.32	1.26	-0.17	0.034	
80.00	-19.40	-0.75	0.00	-45.25	0.00	45.25	2707.76	1353.88	3392.26	1698.65	1.44	-0.19	0.034	
85.00	-18.43	-0.75	0.00	-41.49	0.00	41.49	2620.69	1310.35	3176.35	1590.53	1.65	-0.20	0.033	
87.83	-17.89	-0.75	0.00	-39.37	0.00	39.37	2571.36	1285.68	3057.15	1530.84	1.77	-0.21	0.033	
88.00	-17.33	-0.75	0.00	-39.24	0.00	39.24	2568.45	1284.23	3050.20	1527.37	1.77	-0.21	0.032	
90.00	-16.73	-0.75	0.00	-37.74	0.00	37.74	2533.63	1266.81	2967.53	1485.97	1.86	-0.22	0.032	
92.17	-16.09	-0.75	0.00	-36.12	0.00	36.12	2130.58	1065.29	2523.85	1263.80	1.96	-0.22	0.036	
95.00	-15.65	-0.75	0.00	-34.00	0.00	34.00	2089.47	1044.73	2426.88	1215.24	2.10	-0.23	0.035	
98.00	-12.42	-0.74	0.00	-31.75	0.00	31.75	2045.93	1022.97	2326.27	1164.86	2.24	-0.24	0.033	
100.00	-12.15	-0.74	0.00	-30.28	0.00	30.28	2016.91	1008.46	2260.38	1131.87	2.35	-0.25	0.033	
105.00	-11.49	-0.74	0.00	-26.58	0.00	26.58	1944.36	972.18	2099.80	1051.46	2.61	-0.26	0.031	
109.00	-9.08	-0.73	0.00	-23.63	0.00	23.63	1886.32	943.16	1975.59	989.26	2.84	-0.27	0.029	
110.00	-8.95	-0.73	0.00	-22.90	0.00	22.90	1871.81	935.90	1945.13	974.01	2.90	-0.28	0.028	
115.00	-8.34	-0.73	0.00	-19.25	0.00	19.25	1799.25	899.63	1796.38	899.53	3.20	-0.29	0.026	
120.00	-7.74	-0.72	0.00	-15.61	0.00	15.61	1726.70	863.35	1653.55	828.00	3.51	-0.31	0.023	
125.00	-7.16	-0.71	0.00	-12.00	0.00	12.00	1654.15	827.07	1516.64	759.45	3.84	-0.32	0.020	
130.00	-6.61	-0.68	0.00	-8.46	0.00	8.46	1581.59	790.80	1385.64	693.85	4.17	-0.33	0.016	
133.37	-6.25	-0.66	0.00	-6.16	0.00	6.16	1532.65	766.32	1300.60	651.27	4.41	-0.33	0.014	
135.00	-5.99	-0.65	0.00	-5.08	0.00	5.08	1509.04	754.52	1260.56	631.22	4.52	-0.34	0.012	
136.62	-5.74	-0.63	0.00	-4.02	0.00	4.02	885.20	442.60	750.52	375.82	4.64	-0.34	0.017	
140.00	-2.49	-0.32	0.00	-1.89	0.00	1.89	864.59	432.29	709.24	355.15	4.88	-0.34	0.008	
145.00	-2.22	-0.29	0.00	-0.29	0.00	0.29	833.10	416.55	649.44	325.20	5.24	-0.34	0.004	
146.00	0.00	-0.28	0.00	0.00	0.00	0.00	826.66	413.33	637.68	319.32	5.31	-0.34	0.000	

Seismic Segment Forces (Factored)

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 22

Load Case: 0.9D + 1.0E

Iterations 23

Gust Response Factor 1.10	Sds 0.12	Ss 0.18	
Dead Load Factor 0.90	Seismic Load Factor 1.00	Sd1 0.04	
Wind Load Factor 0.00	Structure Frequency 0.32	SA 0.01	
		Seismic Importance Factor 1.00	

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1064.7	0.00	0.03	0.02	16.25	
10.00		1041.5	0.01	0.05	0.03	21.51	
15.00		1018.2	0.02	0.06	0.04	23.49	
20.00		995.00	0.04	0.07	0.04	24.13	
25.00		971.74	0.06	0.07	0.04	24.27	
30.00		948.48	0.08	0.07	0.04	24.28	
35.00		925.22	0.11	0.07	0.04	24.33	
40.00		901.96	0.14	0.07	0.03	24.40	
43.34	Bot - Section 2	588.97	0.17	0.07	0.03	16.20	
45.00		543.55	0.18	0.07	0.03	15.04	
48.67	Top - Section 1	1182.3	0.21	0.06	0.02	32.92	
50.00		197.47	0.22	0.06	0.02	5.49	
55.00		729.75	0.27	0.05	0.02	19.54	
60.00		709.81	0.32	0.04	0.01	16.81	
65.00		689.87	0.37	0.03	0.01	12.01	
70.00		669.93	0.43	0.01	0.01	4.88	
75.00		650.00	0.50	-0.02	0.01	-3.57	
80.00		630.06	0.57	-0.04	0.01	-11.19	
85.00		610.12	0.64	-0.07	0.02	-16.28	
87.83	Bot - Section 3	336.88	0.68	-0.08	0.03	-10.05	
88.00	Appurtenance(s)	465.55	0.69	-0.08	0.03	-13.95	
90.00		433.05	0.72	-0.09	0.03	-13.55	
92.17	Top - Section 2	462.54	0.75	-0.10	0.04	-14.81	
95.00		273.82	0.80	-0.11	0.05	-8.73	
98.00	Appurtenance(s)	2590.6	0.85	-0.12	0.07	-79.02	
100.00		186.08	0.89	-0.12	0.08	-5.38	
105.00		453.57	0.98	-0.11	0.12	-10.28	
109.00	Appurtenance(s)	1935.9	1.05	-0.09	0.16	-29.82	
110.00		86.06	1.07	-0.08	0.17	-1.14	
115.00		420.34	1.17	-0.02	0.23	-0.34	
120.00		403.73	1.28	0.09	0.32	5.98	
125.00		387.11	1.39	0.26	0.42	13.02	
130.00		370.50	1.50	0.50	0.54	20.67	
133.37	Bot - Section 4	240.58	1.58	0.71	0.64	17.48	
135.00		182.94	1.62	0.83	0.69	14.88	
136.62	Top - Section 3	179.76	1.66	0.96	0.75	16.25	
140.00	Appurtenance(s)	2642.2	1.74	1.27	0.87	291.80	
145.00		197.46	1.86	1.85	1.09	28.26	
146.00	Appurtenance(s)	1846.6	1.89	1.98	1.14	277.24	
Totals:		29,164.3				773.0	Total Wind: 27,254.5

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

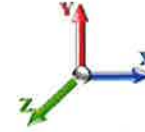


Page: 23

Load Case: 0.9D + 1.0E

Iterations 23

Gust Response Factor 1.10	Sds 0.12	Ss 0.18
Dead Load Factor 0.90	Seismic Load Factor 1.00	Sd1 0.04
Wind Load Factor 0.00	Structure Frequency 0.32	SA 0.01
		Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-30.26	-0.99	0.00	-112.28	0.00	112.28	4626.62	2313.31	8646.87	4329.86	0.00	0.00	0.00	0.032
5.00	-29.23	-0.98	0.00	-107.31	0.00	107.31	4552.64	2276.32	8322.99	4167.68	0.01	-0.01	0.032	0.032
10.00	-28.12	-0.96	0.00	-102.40	0.00	102.40	4477.51	2238.76	8003.10	4007.50	0.02	-0.02	0.032	0.032
15.00	-27.02	-0.95	0.00	-97.58	0.00	97.58	4395.69	2197.85	7677.64	3844.53	0.05	-0.03	0.032	0.031
20.00	-25.95	-0.92	0.00	-92.86	0.00	92.86	4294.12	2147.06	7325.16	3668.02	0.08	-0.04	0.031	0.031
25.00	-24.90	-0.90	0.00	-88.23	0.00	88.23	4192.55	2096.27	6980.95	3495.66	0.13	-0.05	0.031	0.031
30.00	-23.87	-0.88	0.00	-83.71	0.00	83.71	4090.97	2045.49	6645.03	3327.46	0.18	-0.06	0.031	0.031
35.00	-22.87	-0.86	0.00	-79.29	0.00	79.29	3989.40	1994.70	6317.40	3163.39	0.25	-0.07	0.031	0.031
40.00	-21.88	-0.84	0.00	-74.98	0.00	74.98	3887.82	1943.91	5998.04	3003.48	0.33	-0.08	0.031	0.030
43.34	-21.23	-0.82	0.00	-72.18	0.00	72.18	3820.04	1910.02	5789.54	2899.07	0.39	-0.09	0.030	0.030
45.00	-20.69	-0.81	0.00	-70.81	0.00	70.81	3786.25	1893.12	5686.97	2847.71	0.42	-0.09	0.030	0.030
48.67	-19.49	-0.78	0.00	-67.83	0.00	67.83	3251.53	1625.77	4904.15	2455.72	0.49	-0.10	0.034	0.034
50.00	-19.27	-0.78	0.00	-66.79	0.00	66.79	3230.14	1615.07	4836.85	2422.02	0.52	-0.10	0.034	0.033
55.00	-18.44	-0.76	0.00	-62.92	0.00	62.92	3143.08	1571.54	4578.34	2292.57	0.64	-0.12	0.033	0.033
60.00	-17.62	-0.74	0.00	-59.13	0.00	59.13	3056.01	1528.01	4326.92	2166.68	0.77	-0.13	0.033	0.033
65.00	-16.83	-0.73	0.00	-55.41	0.00	55.41	2968.95	1484.47	4082.61	2044.34	0.91	-0.14	0.033	0.032
70.00	-16.05	-0.73	0.00	-51.74	0.00	51.74	2881.88	1440.94	3845.39	1925.55	1.06	-0.16	0.032	0.032
75.00	-15.29	-0.73	0.00	-48.09	0.00	48.09	2794.82	1397.41	3615.28	1810.32	1.23	-0.17	0.032	0.032
80.00	-14.55	-0.73	0.00	-44.43	0.00	44.43	2707.76	1353.88	3392.26	1698.65	1.42	-0.18	0.032	0.031
85.00	-13.82	-0.73	0.00	-40.77	0.00	40.77	2620.69	1310.35	3176.35	1590.53	1.62	-0.20	0.031	0.030
87.83	-13.42	-0.73	0.00	-38.69	0.00	38.69	2571.36	1285.68	3057.15	1530.84	1.74	-0.21	0.030	0.030
88.00	-12.99	-0.73	0.00	-38.57	0.00	38.57	2568.45	1284.23	3050.20	1527.37	1.74	-0.21	0.030	0.034
90.00	-12.55	-0.73	0.00	-37.10	0.00	37.10	2533.63	1266.81	2967.53	1485.97	1.83	-0.21	0.034	0.033
92.17	-12.07	-0.73	0.00	-35.52	0.00	35.52	2130.58	1065.29	2523.85	1263.80	1.93	-0.22	0.034	0.031
95.00	-11.74	-0.73	0.00	-33.44	0.00	33.44	2089.47	1044.73	2426.88	1215.24	2.06	-0.23	0.031	0.031
98.00	-9.32	-0.72	0.00	-31.25	0.00	31.25	2045.93	1022.97	2326.27	1164.86	2.21	-0.24	0.031	0.029
100.00	-9.11	-0.72	0.00	-29.80	0.00	29.80	2016.91	1008.46	2260.38	1131.87	2.31	-0.24	0.029	0.027
105.00	-8.62	-0.72	0.00	-26.17	0.00	26.17	1944.36	972.18	2099.80	1051.46	2.57	-0.26	0.027	0.027
109.00	-6.81	-0.72	0.00	-23.27	0.00	23.27	1886.32	943.16	1975.59	989.26	2.79	-0.27	0.027	0.027
110.00	-6.71	-0.72	0.00	-22.56	0.00	22.56	1871.81	935.90	1945.13	974.01	2.85	-0.27	0.027	0.025
115.00	-6.25	-0.72	0.00	-18.97	0.00	18.97	1799.25	899.63	1796.38	899.53	3.14	-0.29	0.025	0.022
120.00	-5.80	-0.71	0.00	-15.38	0.00	15.38	1726.70	863.35	1653.55	828.00	3.45	-0.30	0.022	0.019
125.00	-5.37	-0.70	0.00	-11.83	0.00	11.83	1654.15	827.07	1516.64	759.45	3.77	-0.31	0.019	0.015
130.00	-4.96	-0.67	0.00	-8.35	0.00	8.35	1581.59	790.80	1385.64	693.85	4.10	-0.32	0.015	0.012
133.37	-4.68	-0.66	0.00	-6.07	0.00	6.07	1532.65	766.32	1300.60	651.27	4.33	-0.33	0.012	0.011
135.00	-4.49	-0.64	0.00	-5.01	0.00	5.01	1509.04	754.52	1260.56	631.22	4.45	-0.33	0.011	0.015
136.62	-4.30	-0.62	0.00	-3.97	0.00	3.97	885.20	442.60	750.52	375.82	4.56	-0.33	0.015	0.007
140.00	-1.87	-0.32	0.00	-1.87	0.00	1.87	864.59	432.29	709.24	355.15	4.80	-0.34	0.007	0.003
145.00	-1.67	-0.29	0.00	-0.29	0.00	0.29	833.10	416.55	649.44	325.20	5.15	-0.34	0.003	0.000
146.00	0.00	-0.28	0.00	0.00	0.00	0.00	826.66	413.33	637.68	319.32	5.22	-0.34	0.000	

Wind Loading - Shaft

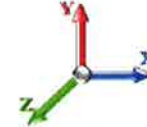
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 24

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	215.32	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	210.71	0.650	0.000	5.00	19.254	12.52	102.5	0.0	1064.8
10.00		1.00	0.85	7.442	8.19	206.10	0.650	0.000	5.00	18.837	12.24	100.2	0.0	1041.5
15.00		1.00	0.85	7.442	8.19	201.49	0.650	0.000	5.00	18.421	11.97	98.0	0.0	1018.3
20.00		1.00	0.90	7.896	8.69	202.81	0.650	0.000	5.00	18.004	11.70	101.6	0.0	995.0
25.00		1.00	0.95	8.276	9.10	202.77	0.650	0.000	5.00	17.588	11.43	104.1	0.0	971.7
30.00		1.00	0.98	8.600	9.46	201.74	0.650	0.000	5.00	17.171	11.16	105.6	0.0	948.5
35.00		1.00	1.01	8.883	9.77	200.01	0.650	0.000	5.00	16.755	10.89	106.4	0.0	925.2
40.00		1.00	1.04	9.137	10.05	197.73	0.650	0.000	5.00	16.338	10.62	106.7	0.0	902.0
43.34	Bot - Section 2	1.00	1.06	9.292	10.22	195.97	0.650	0.000	3.34	10.671	6.94	70.9	0.0	589.0
45.00		1.00	1.07	9.366	10.30	195.03	0.650	0.000	1.66	5.356	3.48	35.9	0.0	543.5
48.67	Top - Section 1	1.00	1.09	9.522	10.47	192.82	0.650	0.000	3.67	11.654	7.58	79.3	0.0	1182.4
50.00		1.00	1.09	9.576	10.53	195.96	0.650	0.000	1.33	4.168	2.71	28.5	0.0	197.5
55.00		1.00	1.12	9.770	10.75	192.65	0.650	0.000	5.00	15.406	10.01	107.6	0.0	729.7
60.00		1.00	1.14	9.951	10.95	189.09	0.650	0.000	5.00	14.989	9.74	106.6	0.0	709.8
65.00		1.00	1.16	10.120	11.13	185.32	0.650	0.000	5.00	14.572	9.47	105.4	0.0	689.9
70.00		1.00	1.17	10.279	11.31	181.35	0.650	0.000	5.00	14.156	9.20	104.0	0.0	669.9
75.00		1.00	1.19	10.430	11.47	177.22	0.650	0.000	5.00	13.739	8.93	102.5	0.0	650.0
80.00		1.00	1.21	10.572	11.63	172.93	0.650	0.000	5.00	13.323	8.66	100.7	0.0	630.1
85.00		1.00	1.22	10.708	11.78	168.51	0.650	0.000	5.00	12.906	8.39	98.8	0.0	610.1
87.83	Bot - Section 3	1.00	1.23	10.782	11.86	165.95	0.650	0.000	2.83	7.129	4.63	55.0	0.0	336.9
88.00	Appurtenance(s)	1.00	1.23	10.787	11.87	165.80	0.650	0.000	0.17	0.424	0.28	3.3	0.0	36.4
90.00		1.00	1.24	10.838	11.92	163.97	0.650	0.000	2.00	5.052	3.28	39.1	0.0	433.1
92.17	Top - Section 2	1.00	1.24	10.892	11.98	161.96	0.650	0.000	2.17	5.397	3.51	42.0	0.0	462.5
95.00		1.00	1.25	10.962	12.06	162.86	0.650	0.000	2.83	6.940	4.51	54.4	0.0	273.8
98.00	Appurtenance(s)	1.00	1.26	11.034	12.14	160.03	0.650	0.000	3.00	7.203	4.68	56.8	0.0	284.1
100.00		1.00	1.27	11.081	12.19	158.12	0.650	0.000	2.00	4.718	3.07	37.4	0.0	186.1
105.00		1.00	1.28	11.195	12.31	153.28	0.650	0.000	5.00	11.504	7.48	92.1	0.0	453.6
109.00	Appurtenance(s)	1.00	1.29	11.284	12.41	149.35	0.650	0.000	4.00	8.904	5.79	71.8	0.0	350.9
110.00		1.00	1.29	11.305	12.44	148.35	0.650	0.000	1.00	2.184	1.42	17.7	0.0	86.1
115.00		1.00	1.30	11.412	12.55	143.34	0.650	0.000	5.00	10.671	6.94	87.1	0.0	420.3
120.00		1.00	1.32	11.514	12.67	138.25	0.650	0.000	5.00	10.255	6.67	84.4	0.0	403.7
125.00		1.00	1.33	11.614	12.78	133.09	0.650	0.000	5.00	9.838	6.39	81.7	0.0	387.1
130.00		1.00	1.34	11.710	12.88	127.86	0.650	0.000	5.00	9.421	6.12	78.9	0.0	370.5
133.37	Bot - Section 4	1.00	1.34	11.773	12.95	124.29	0.650	0.000	3.37	6.121	3.98	51.5	0.0	240.6
135.00		1.00	1.35	11.803	12.98	122.57	0.650	0.000	1.63	2.935	1.91	24.8	0.0	182.9
136.62	Top - Section 3	1.00	1.35	11.833	13.02	120.83	0.650	0.000	1.62	2.886	1.88	24.4	0.0	179.8
140.00	Appurtenance(s)	1.00	1.36	11.894	13.08	119.43	0.650	0.000	3.38	5.861	3.81	49.8	0.0	139.0
145.00		1.00	1.37	11.982	13.18	114.02	0.650	0.000	5.00	8.330	5.41	71.4	0.0	197.5
146.00	Appurtenance(s)	1.00	1.37	12.000	13.20	112.93	0.650	0.000	1.00	1.616	1.05	13.9	0.0	38.3
Totals:									146.00			2,803.0		20,532.0

Discrete Appurtenance Forces

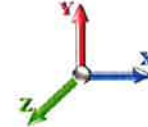
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 25

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	146.00	ALP 7130.16.33.00	9	12.119	13.330	0.99	1.00	47.40	158.40	0.000	7.000	631.88	0.00	4423.15
2	146.00	Lightning Rod	1	12.060	13.266	1.00	1.00	1.05	35.00	0.000	3.500	13.93	0.00	48.75
3	146.00	Beacon	1	12.000	13.200	1.00	1.00	2.40	15.00	0.000	0.000	31.68	0.00	0.00
4	146.00	Platform w/ Hand Rails	1	12.000	13.200	0.00	1.00	32.00	1600.00	0.000	0.000	422.39	0.00	0.00
5	140.00	ALU B13 RRH4X30-4R	3	11.858	13.044	0.54	0.80	3.47	171.60	0.000	-2.000	45.31	0.00	-90.61
6	140.00	Commscope	6	11.894	13.084	0.66	0.80	32.07	304.26	0.000	0.000	419.61	0.00	0.00
7	140.00	Antel LPA-80063/4CF	6	11.894	13.084	0.75	0.80	27.75	120.00	0.000	0.000	363.05	0.00	0.00
8	140.00	Raycap	2	11.858	13.044	0.54	0.80	2.70	84.00	0.000	-2.000	35.24	0.00	-70.48
9	140.00	ALU B25 RRH4x30-4R	3	11.858	13.044	0.54	0.80	3.44	153.00	0.000	-2.000	44.89	0.00	-89.77
10	140.00	ALU B66 RRH4x45	3	11.858	13.044	0.54	0.80	4.08	170.40	0.000	-2.000	53.28	0.00	-106.55
11	140.00	Low Profile Platform	1	11.894	13.084	1.00	1.00	22.00	1500.00	0.000	0.000	287.84	0.00	0.00
12	109.00	Low Profile Platform	1	11.284	12.412	1.00	1.00	22.00	1500.00	0.000	0.000	273.06	0.00	0.00
13	109.00	8' Omni	1	11.370	12.507	0.80	0.80	1.92	25.00	0.000	4.000	24.01	0.00	96.05
14	109.00	14'x7" Cross Omni	1	11.432	12.576	0.80	0.80	3.95	60.00	0.000	7.000	49.70	0.00	347.89
15	98.00	KMW	3	11.034	12.137	0.63	0.80	15.21	145.50	0.000	0.000	184.56	0.00	0.00
16	98.00	Powerwave 7770	6	11.034	12.137	0.62	0.80	20.36	210.00	0.000	0.000	247.17	0.00	0.00
17	98.00	Powerwave LGP21401	6	11.034	12.137	0.48	0.80	3.02	84.60	0.000	0.000	36.70	0.00	0.00
18	98.00	Powerwave LGP21903	6	11.034	12.137	0.48	0.80	0.58	33.00	0.000	0.000	6.99	0.00	0.00
19	98.00	Ericsson RRUS 11	6	11.034	12.137	0.54	0.80	8.27	304.20	0.000	0.000	100.31	0.00	0.00
20	98.00	Powerwave 7020 RET's	6	11.034	12.137	0.48	0.80	0.98	13.20	0.000	0.000	11.88	0.00	0.00
21	98.00	Raycap DC6-48-60-18-8F	1	11.034	12.137	0.54	0.80	1.18	16.00	0.000	0.000	14.31	0.00	0.00
22	98.00	Low Profile Platform	1	11.034	12.137	1.00	1.00	22.00	1500.00	0.000	0.000	267.02	0.00	0.00
23	88.00	Flush Mount	1	10.787	11.865	0.56	0.75	2.81	350.00	0.000	0.000	33.37	0.00	0.00
24	88.00	RFS APXV18-206517S-C	3	10.787	11.865	0.63	0.80	9.80	79.20	0.000	0.000	116.31	0.00	0.00
Totals:								8,632.36				3,714.47		

Total Applied Force Summary

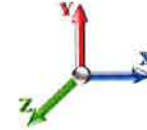
Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 26

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		102.45	1142.57	0.00	0.00
10.00		100.23	1235.98	0.00	0.00
15.00		98.02	1212.71	0.00	0.00
20.00		101.65	1189.45	0.00	0.00
25.00		104.07	1166.19	0.00	0.00
30.00		105.58	1142.93	0.00	0.00
35.00		106.42	1119.67	0.00	0.00
40.00		106.73	1096.41	0.00	0.00
43.34		70.90	718.73	0.00	0.00
45.00		35.87	608.23	0.00	0.00
48.67		79.34	1325.10	0.00	0.00
50.00		28.54	249.19	0.00	0.00
55.00		107.62	924.20	0.00	0.00
60.00		106.65	904.26	0.00	0.00
65.00		105.44	884.32	0.00	0.00
70.00		104.04	864.38	0.00	0.00
75.00		102.46	844.45	0.00	0.00
80.00		100.71	824.51	0.00	0.00
85.00		98.81	804.57	0.00	0.00
87.83		54.96	447.07	0.00	0.00
88.00	(4) attachments	152.95	472.03	0.00	0.00
90.00		39.14	498.35	0.00	0.00
92.17		42.03	533.28	0.00	0.00
95.00		54.39	366.32	0.00	0.00
98.00	(35) attachments	925.77	2688.56	0.00	0.00
100.00		37.38	224.52	0.00	0.00
105.00		92.09	549.67	0.00	0.00
109.00	(3) attachments	418.61	2012.78	0.00	443.94
110.00		17.66	104.60	0.00	0.00
115.00		87.07	513.04	0.00	0.00
120.00		84.42	496.43	0.00	0.00
125.00		81.69	479.81	0.00	0.00
130.00		78.88	463.20	0.00	0.00
133.37		51.53	303.12	0.00	0.00
135.00		24.77	213.10	0.00	0.00
136.62		24.41	209.85	0.00	0.00
140.00	(24) attachments	1299.05	2704.85	0.00	-357.41
145.00		71.37	227.16	0.00	0.00
146.00	(12) attachments	1113.74	1852.63	0.00	4471.90
	Totals:	6,517.45	33,618.26	0.00	4,558.43

Calculated Forces

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

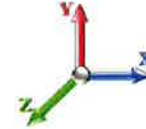


Page: 27

Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-33.61	-6.53	0.00	-705.47	0.00	705.47	4626.62	2313.31	8646.87	4329.86	0.00	0.000	0.000	0.170
5.00	-32.47	-6.47	0.00	-672.79	0.00	672.79	4552.64	2276.32	8322.99	4167.68	0.03	-0.059	0.000	0.169
10.00	-31.22	-6.40	0.00	-640.47	0.00	640.47	4477.51	2238.76	8003.10	4007.50	0.13	-0.119	0.000	0.167
15.00	-30.00	-6.33	0.00	-608.49	0.00	608.49	4395.69	2197.85	7677.64	3844.53	0.28	-0.180	0.000	0.165
20.00	-28.81	-6.25	0.00	-576.85	0.00	576.85	4294.12	2147.06	7325.16	3668.02	0.51	-0.242	0.000	0.164
25.00	-27.64	-6.17	0.00	-545.59	0.00	545.59	4192.55	2096.27	6980.95	3495.66	0.79	-0.306	0.000	0.163
30.00	-26.49	-6.09	0.00	-514.72	0.00	514.72	4090.97	2045.49	6645.03	3327.46	1.15	-0.370	0.000	0.161
35.00	-25.36	-6.01	0.00	-484.26	0.00	484.26	3989.40	1994.70	6317.40	3163.39	1.57	-0.435	0.000	0.159
40.00	-24.26	-5.91	0.00	-454.23	0.00	454.23	3887.82	1943.91	5998.04	3003.48	2.06	-0.500	0.000	0.157
43.34	-23.54	-5.85	0.00	-434.50	0.00	434.50	3820.04	1910.02	5789.54	2899.07	2.42	-0.545	0.000	0.156
45.00	-22.93	-5.82	0.00	-424.77	0.00	424.77	3786.25	1893.12	5686.97	2847.71	2.62	-0.568	0.000	0.155
48.67	-21.60	-5.74	0.00	-403.40	0.00	403.40	3251.53	1625.77	4904.15	2455.72	3.08	-0.618	0.000	0.171
50.00	-21.35	-5.73	0.00	-395.76	0.00	395.76	3230.14	1615.07	4836.85	2422.02	3.25	-0.636	0.000	0.170
55.00	-20.41	-5.64	0.00	-367.12	0.00	367.12	3143.08	1571.54	4578.34	2292.57	3.96	-0.710	0.000	0.167
60.00	-19.50	-5.54	0.00	-338.94	0.00	338.94	3056.01	1528.01	4326.92	2166.68	4.74	-0.785	0.000	0.163
65.00	-18.62	-5.45	0.00	-311.22	0.00	311.22	2968.95	1484.47	4082.61	2044.34	5.60	-0.859	0.000	0.159
70.00	-17.75	-5.36	0.00	-283.97	0.00	283.97	2881.88	1440.94	3845.39	1925.55	6.54	-0.934	0.000	0.154
75.00	-16.90	-5.26	0.00	-257.19	0.00	257.19	2794.82	1397.41	3615.28	1810.32	7.56	-1.008	0.000	0.148
80.00	-16.07	-5.16	0.00	-230.89	0.00	230.89	2707.76	1353.88	3392.26	1698.65	8.65	-1.081	0.000	0.142
85.00	-15.26	-5.07	0.00	-205.07	0.00	205.07	2620.69	1310.35	3176.35	1590.53	9.83	-1.153	0.000	0.135
87.83	-14.81	-5.01	0.00	-190.72	0.00	190.72	2571.36	1285.68	3057.15	1530.84	10.52	-1.193	0.000	0.130
88.00	-14.34	-4.85	0.00	-189.89	0.00	189.89	2568.45	1284.23	3050.20	1527.37	10.56	-1.196	0.000	0.130
90.00	-13.84	-4.81	0.00	-180.19	0.00	180.19	2533.63	1266.81	2967.53	1485.97	11.07	-1.224	0.000	0.127
92.17	-13.31	-4.76	0.00	-169.78	0.00	169.78	2130.58	1065.29	2523.85	1263.80	11.63	-1.255	0.000	0.141
95.00	-12.94	-4.71	0.00	-156.29	0.00	156.29	2089.47	1044.73	2426.88	1215.24	12.39	-1.294	0.000	0.135
98.00	-10.27	-3.73	0.00	-142.17	0.00	142.17	2045.93	1022.97	2326.27	1164.86	13.22	-1.338	0.000	0.127
100.00	-10.04	-3.69	0.00	-134.72	0.00	134.72	2016.91	1008.46	2260.38	1131.87	13.78	-1.368	0.000	0.124
105.00	-9.49	-3.60	0.00	-116.26	0.00	116.26	1944.36	972.18	2099.80	1051.46	15.25	-1.437	0.000	0.115
109.00	-7.49	-3.13	0.00	-101.43	0.00	101.43	1886.32	943.16	1975.59	989.26	16.48	-1.491	0.000	0.107
110.00	-7.38	-3.12	0.00	-98.30	0.00	98.30	1871.81	935.90	1945.13	974.01	16.80	-1.505	0.000	0.105
115.00	-6.87	-3.02	0.00	-82.72	0.00	82.72	1799.25	899.63	1796.38	899.53	18.40	-1.567	0.000	0.096
120.00	-6.37	-2.93	0.00	-67.61	0.00	67.61	1726.70	863.35	1653.55	828.00	20.08	-1.626	0.000	0.085
125.00	-5.89	-2.84	0.00	-52.96	0.00	52.96	1654.15	827.07	1516.64	759.45	21.81	-1.679	0.000	0.073
130.00	-5.43	-2.75	0.00	-38.76	0.00	38.76	1581.59	790.80	1385.64	693.85	23.59	-1.725	0.000	0.059
133.37	-5.13	-2.69	0.00	-29.48	0.00	29.48	1532.65	766.32	1300.60	651.27	24.82	-1.751	0.000	0.049
135.00	-4.91	-2.66	0.00	-25.10	0.00	25.10	1509.04	754.52	1260.56	631.22	25.42	-1.763	0.000	0.043
136.62	-4.71	-2.63	0.00	-20.78	0.00	20.78	885.20	442.60	750.52	375.82	26.02	-1.773	0.000	0.061
140.00	-2.04	-1.25	0.00	-11.89	0.00	11.89	864.59	432.29	709.24	355.15	27.28	-1.788	0.000	0.036
145.00	-1.82	-1.17	0.00	-5.64	0.00	5.64	833.10	416.55	649.44	325.20	29.17	-1.809	0.000	0.020
146.00	0.00	-1.11	0.00	-4.47	0.00	4.47	826.66	413.33	637.68	319.32	29.55	-1.811	0.000	0.014

Final Analysis Summary

Structure: CT46135-A-SBA	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 28

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	27.3	0.00	40.28	0.00	0.00	2969.70
0.9D + 1.6W 97 mph Wind	27.3	0.00	30.20	0.00	0.00	2930.43
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.7	0.00	61.57	0.00	0.00	840.38
1.2D + 1.0E	1.0	0.00	40.34	0.00	0.00	113.90
0.9D + 1.0E	1.0	0.00	30.26	0.00	0.00	112.28
1.0D + 1.0W 60 mph Wind	6.5	0.00	33.61	0.00	0.00	705.47

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-24.90	-24.20	0.00	-1700.9	0.00	-1700.9	3251.53	1625.7	4904.15	2455.72	48.67	0.701
0.9D + 1.6W 97 mph Wind	-18.43	-23.89	0.00	-1670.5	0.00	-1670.5	3251.53	1625.7	4904.15	2455.72	48.67	0.686
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-43.43	-6.89	0.00	-479.77	0.00	-479.77	3251.53	1625.7	4904.15	2455.72	48.67	0.209
1.2D + 1.0E	-25.99	-0.79	0.00	-69.11	0.00	-69.11	3251.53	1625.7	4904.15	2455.72	48.67	0.036
0.9D + 1.0E	-12.07	-0.73	0.00	-35.52	0.00	-35.52	2130.58	1065.2	2523.85	1263.80	92.17	0.034
1.0D + 1.0W 60 mph Wind	-21.60	-5.74	0.00	-403.40	0.00	-403.40	3251.53	1625.7	4904.15	2455.72	48.67	0.171

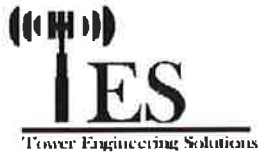
Base Plate Summary

Structure: CT46135-A-SB	Code: EIA/TIA-222-G	4/28/2017
Site Name: Middlefield-jacson Hill Rd	Exposure: C	
Height: 146.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 29

Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 55.00
Moment (kip-ft): 2626.95	Width (in): 61.00	Number Bolts: 20.00
Axial (kip): 29.58	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 23.10	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 2969.70	Effective Len (in): 12.78	Ultimate (ksi): 100.00
Axial (kip): 61.57	Moment (kip-in): 596.99	Arrangement: Radial
Shear (kip): 27.34	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 0.00
Moment Design %: 113.05	Stress Ratio: 0.68	Compression
		Force (kip): 132.67
		Allowable (kip): 260.00
		Ratio: 0.52
		Tension
		Force (kip): 126.51
		Allowable (kip): 260.00
		Ratio: 0.50



Monopole Mat Foundation Design

Date
4/28/2017

Customer Name:	Verizon	EIA/TIA Standard:	EIA-222-G
Site Name:	Middlefield-jacson Hill Rd	Structure Height (Ft.):	146
Site Number:	CT46135-A-SBA	Engineer Name:	W. Velez
Engr. Number:	33759	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

Base Reactions (Factored):

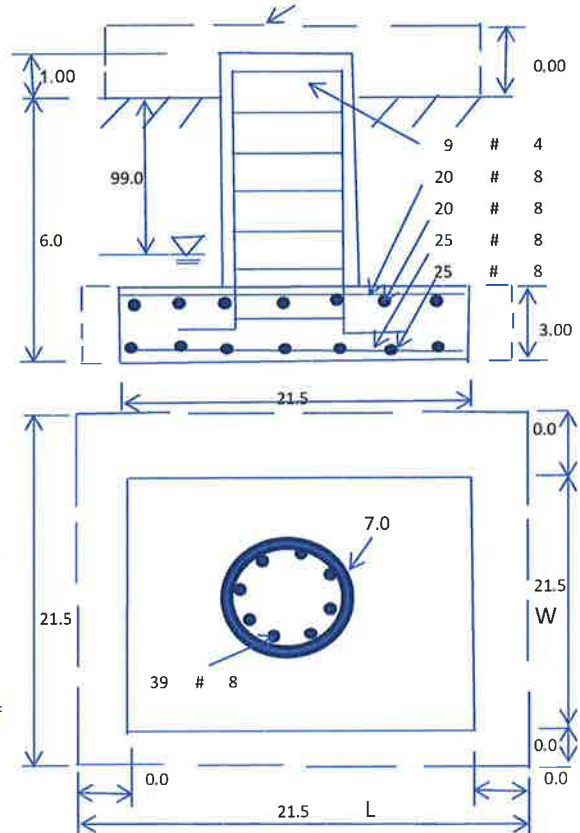
Axial Load (Kips):	40.3	Shear Force (Kips):	27.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2969.7

Foundation Geometries:

Diameter of Pier (ft.):	7.0	Mods required -Yes/No ?:	No
Pier Height A. G. (ft.):	1.00	Depth of Base BG (ft.):	6.0
Length of Pad (ft.):	21.5	Thickness of Pad (ft.):	3.00
Final Length of pad (ft)	21.5	Final width of pad (ft):	21.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	39	Tie Spacing (in):	10.5	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	25	Qty. of Rebar in Pad (W):	25	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	20	Qty. of Rebar in Pad (W):	20	



Soil Design Parameters:

Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	40000	Ultimate Skin Friction:	175	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottom of Pad:	25	
		Angle from Bottom of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	1271.30	Total Dry Soil Weight (Kips):	139.84
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	139.84	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1540.69	Total Dry Concrete Weight (Kips):	231.10
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	231.10	Total Vertical Load on Base (Kips):	411.23

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	3531	<	Allowable Factored Soil Bearing (psf):	30000	0.12	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	4021.9	>	Design Factored Momont (kips-ft):	3038	0.76	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.32					OK!

Load/
Capacity
Ratio

Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75	
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00	

Capacity
Ratio**(1) Concrete Pier:**

Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	5049.6	> Design Factored Moment (Mu, Kips-Ft)	3078.9	0.61	OK!
Calculated Shear Capacity (Kips):	679.3	> Design Factored Shear (Kips):	27.3	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1663.7	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9743.4	> Design Factored Axial Load (Pu Kips):	40.3	0.00	OK!
Moment & Axial Strength Combination:	0.61	OK! Check Tie Spacing (Design/Required):		0.875	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

(2) Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	795.5	> One-Way Factored Shear (L-D, Kips):	188.8	0.24	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	795.5	> One-Way Factored Shear (W-D., Kips)	188.8	0.24	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	866.0	> One-Way Factored Shear (C-C, Kips):	189.1	0.22	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0024	OK! Lower Steel Pad Reinf. Ratio (W-Direct	0.0024		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	2828.4	> Moment at Bottom (L-Direct. K-Ft):	428.8	0.15	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	2828.4	> Moment at Bottom (W-Direct. K-Ft):	428.8	0.15	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	3974.6	> Moment at Bottom (C-C Dir. K-Ft):	606.5	0.15	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0019	OK! Upper Steel Reinf. Ratio (W-Direct.):	0.0019		
Upper Steel Pad Moment Capacity (L-Direction, Kips-ft):	2272.3	> Moment at the top (L-Dir Kips-Ft):	51.9	0.02	OK!
Upper Steel Pad Moment Capacity (W-Direction, Kips-ft):	2272.3	> Moment at the top (W-Dir Kips-Ft):	51.9	0.02	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	3197.3	> Moment at the top (C-C Direc. K-Ft):	314.8	0.10	OK!

ATTACHMENT 4

Middlefield Volunteer Fire Company

Town Hall Rd

Main St

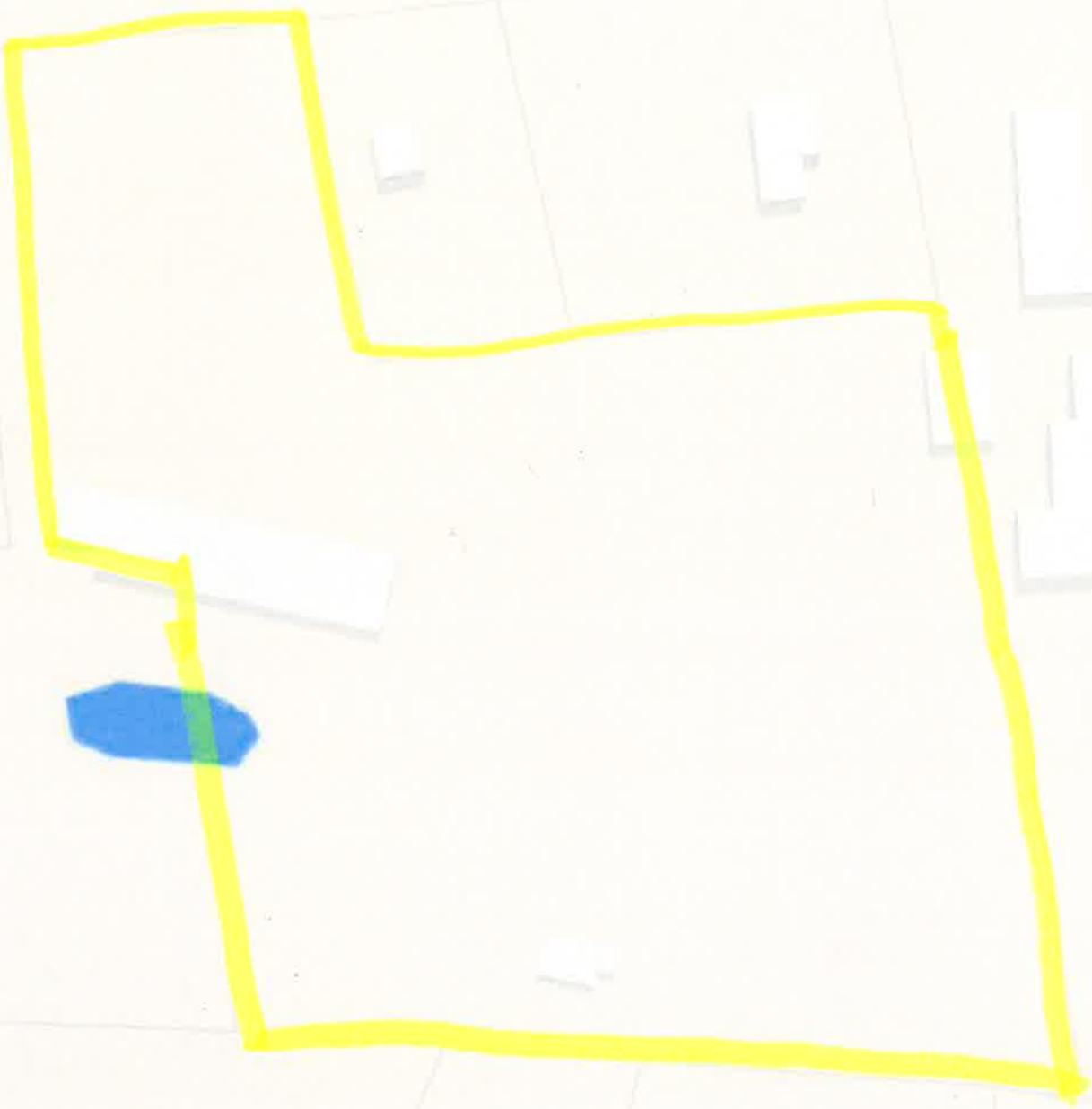
157

Jackson Hill Rd

Jackson Hill Rd

Jackson Hill Rd

Jackson Hill R



393 JACKSON HILL RD

Location 393 JACKSON HILL RD

Mblu 11 / / 242 / /

Acct# 00069300

Owner MIDDLEFIELD TOWN OF

Assessment \$659,300

PID 676

Building Count 4

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$472,000	\$187,300	\$659,300

Owner of Record

Owner MIDDLEFIELD TOWN OF
Co-Owner
Address 393 JACKSON HILL RD
MIDDLEFIELD, CT 06455

Sale Price \$0
Certificate
Book & Page /
Sale Date 01/01/1900

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
MIDDLEFIELD TOWN OF	\$0		/	01/01/1900

Building Information

Building 1 : Section 1

Year Built: 1963
Living Area: 2,916
Replacement Cost: \$494,484
Building Percent 72
Good:
Replacement Cost
Less Depreciation: \$356,000

Building Attributes	
Field	Description
STYLE	City/Town Hall
MODEL	Comm/Ind
Grade	Average

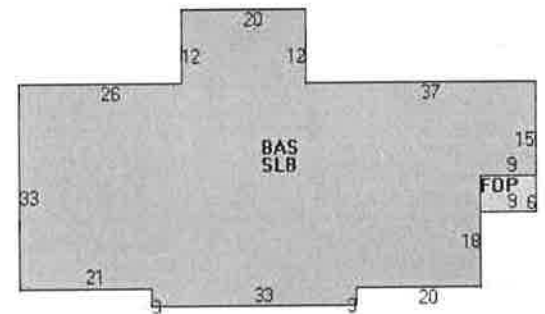
Stories:	1
Occupancy	1
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Central
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	903C
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	9
% Conn Wall	

Building Photo



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos/\01\00\17>)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	2,916	2,916
FOP	Porch, Open	54	0
SLB	Slab	2,916	0
		5,886	2,916

Building 2 : Section 1

Year Built: 1978
Living Area: 4,000
Replacement Cost: \$168,916
Building Percent Good: 84
Replacement Cost Less Depreciation: \$141,900

Building Attributes : Bldg 2 of 4	
Field	Description
STYLE	Service Shop
MODEL	Ind/Comm

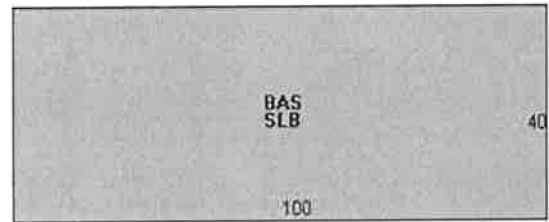
Grade	Average +
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Vinyl Siding
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil/Gas
Heating Type	Hot Air-no Duc
AC Type	None
Bldg Use	MUNICIPAL MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	LIGHT
Wall Helght	15
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17>)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	4,000	4,000
SLB	Slab	4,000	0
		8,000	4,000

Building 3 : Section 1

Year Built: 1941
Living Area: 3,527
Replacement Cost: \$181,842
Building Percent Good: 68
Replacement Cost Less Depreciation: \$123,700

Building Attributes : Bldg 3 of 4	
Field	Description
STYLE	Service Shop
MODEL	Ind/Comm
Grade	Average +

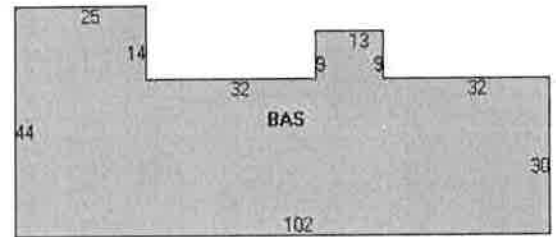
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Brick
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil/Gas
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	MUNICIPAL MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	18
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17>)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	3,527	3,527
		3,527	3,527

Building 4 : Section 1

Year Built: 2000
Living Area: 374
Replacement Cost: \$16,698
Building Percent Good: 88
Replacement Cost Less Depreciation: \$14,700

Building Attributes : Bldg 4 of 4	
Field	Description
STYLE	Warehouse
MODEL	Ind/Comm
Grade	Average
Stories:	1

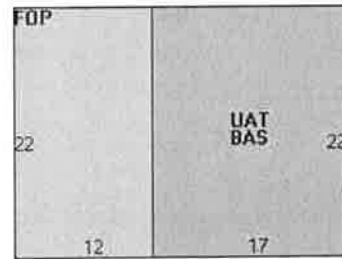
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Wall Brd/Wood
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	MUNICIPAL MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	NONE
Frame Type	WOOD FRAME
Baths/Plumbing	NONE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	9
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17>)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	374	374
FOP	Porch, Open	264	0
UAT	Attic, Unfinished	374	0
		1,012	374

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 903C

Land Line Valuation

Size (Acres) 5.47

Description MUNICIPAL MDL-94
Zone HD2
Neighborhood 0500
Alt Land Appr No
Category

Frontage
Depth
Assessed Value \$187,300

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
KEN1	KENNEL-AVG			100 S.F.	\$600	1
FN3	FENCE-6' CHAIN			71 L.F.	\$500	1
BRN8	POLE BARN			2760 S.F.	\$14,500	1
BRN8	POLE BARN			648 S.F.	\$3,400	1
SHD7	COM MAS			140 S.F.	\$3,000	1
PAV1	PAVING-ASPHALT			30000 S.F.	\$15,800	1

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