



October 25, 2019

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

Re: Notice of Exempt Modification – Antenna and RRU Add
Property Address: 382 Colebrook River Road, Colebrook, CT 06405
Applicant: AT&T Mobility, LLC

Dear Ms. Bachman:

On behalf of AT&T, please accept this application 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).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 139-feet on an existing 150-foot self-support, owned by SBA at 8051 Congress Ave, Boca Raton, FL 33487. AT&T now intends to remove three (3) 4' Kathrein 7770 Panel Antennas, currently installed in position [3+3+4], two (2) 4' KMW AM-X-CD-14-65-00T-RET Panel Antennas, each currently installed in position [3 Alpha and Gamma sectors only], and remove one (1) 4' Kathrein 800-10764 Panel Antenna, currently installed in position [4]. Swap these for four (4) 4' CCI DMP65R-BU4DA Panel Antennas, each to be installed in position [3 + 4] Alpha and Beta sectors only and add two (2) 6' CCI DMP65R-BU6DA Panel Antennas, in positions [3+4] in Gamma sector only. In addition, AT&T intends to remove one (1) RRUS-11 in position [3] all sectors add one (1) RRUS-4478 B14, one (1) RRUS-8843 B2/B66A and one (1) RRUS-4449 B5/B12 in position [3+4], all sectors, for a total of new (9) new RRUs. AT&T is also proposing to add (2) Raycap Squid, as well as one (1) fiber line and (4) DC Power Cables to their equipment configuration. All the changes will take place on the existing antenna mount.

Attached is a summary of the planned modifications including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §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., a copy of this letter is being sent to Marc Melanson - Building Official, Town of Colebrook, CT at 562 Colebrook Rd, Colebrook, CT 06021 and Thomas D. McKeon - First Selectman, Town of Colebrook, CT at 562 Colebrook Rd, Colebrook, CT 06021. A copy of this letter is being sent to the property owner, 382 Colebrook LLC, at 202 Hang Dog Lane, Wethersfield, CT 06109 and to the tower company, SBA at 8051 Congress Ave, Boca Raton, FL 33487.

The following is a list of subsequent decisions by the Connecticut Siting Council:

- **EM-CING-029-060224** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 382 Colebrook River Road, Colebrook, Connecticut.
- **EM-CING-029-121108** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 382 Colebrook River Road, Colebrook, Connecticut.
- **EM-AT&T-029-140121** – American Telephone and Telegraph (AT&T) notice of intent to modify an existing telecommunications facility located at 382 Colebrook River Road, Colebrook, Connecticut. Decision. Extension Request and CSC Decision. Extension Request and CSC Decision. Extension Request and CSC Decision.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).



1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 105-foot level of the 147-foot self-support tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require an extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

For the foregoing reasons, AT&T 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,

Kristina Cottone

CC w/enclosures:

Marc Melanson - Building Official, Town of Colebrook, CT
Thomas D. McKeon - First Selectman, Town of Colebrook, CT
382 Colebrook LLC – Property Owners
SBA – Tower Company

DOCKET NO. 296 – Tower Ventures II, LLC application for a } Connecticut
Certificate of Environmental Compatibility and Public Need for }
the construction, maintenance and operation of a wireless } Siting
telecommunications facility at one of two sites located at 382 }
Colebrook River Road, Colebrook, Connecticut. } Council

February 2, 2005

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Tower Ventures II, LLC for the construction, maintenance and operation of a wireless telecommunications facility at the site identified as A-1 at 382 Colebrook River Road in Colebrook, Connecticut. The Council denies certification of the site identified as A-2 at 382 Colebrook River Road.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be designed as a monopole and shall be constructed no taller than 150 feet above ground level to provide telecommunications services to both public and private entities.
2. The location of the tower shall be moved to the north to maintain a minimum distance of 150 feet to property line of the adjacent property to the south.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on all parties and intervenors, as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas mountings, equipment building, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.
8. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
9. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
10. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved. Any request for extensions of the period shall be filed with the Council not later than sixty days prior to expiration date of the Certificate and shall be served on all parties and intervenors, as listed in the service list. Any proposed modifications to this Decision and Order shall likewise be so served.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Waterbury Republican-American and the Winsted Journal.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

Tower Ventures II, LLC

Its Representative

Benjamin S. Proto, Jr., Esq.
2090 Cutspring Road
Stratford, CT 06614
(203) 378-9595

Kenneth I. Spigle, Esq.
Tower Ventures II, LLC
170 Westminster Street, Suite 701
Providence, RI 02903

Intervenor

Nextel Communications, Inc.

Its Representative

Thomas F. Flynn III
Nextel Zoning Manager
100 Corporate Place
Rocky Hill, CT 06067
860-513-5458
860-513-5444 – fax

Intervenor

Colebrook Planning and Zoning Commission

Its Representative

Betsy Little, Chairperson
P.O. Box 5
Colebrook, CT 06021
860-379-3359
860-379-7215 – fax

382 COLEBROOK RIVER ROAD

Location 382 COLEBROOK RIVER ROAD

Mblu 23 / / 13 / /

Acct# 100423

Owner 382 COLEBROOK LLC

Assessment \$549,000

Appraisal \$784,300

PID 698

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$599,400	\$184,900	\$784,300

Assessment			
Valuation Year	Improvements	Land	Total
2015	\$419,600	\$129,400	\$549,000

Owner of Record

Owner 382 COLEBROOK LLC

Sale Price \$0

Co-Owner

Certificate

Address 202 HANG DOG LANE
WETHERSFIELD, CT 06109

Book & Page 0087/0269

Sale Date 11/16/2015

Instrument 03

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
382 COLEBROOK LLC	\$0		0087/0269	03	11/16/2015
OLIVERI JOHN	\$275,000		0087/0266	14	11/16/2015
US BANK TRUST NA TRUSTEE FOR	\$0		0087/0205	14	10/26/2015
US BANK TRUST NA TRUSTEE	\$0		0087/0161	14	09/30/2015
JOHNSON LEONARD D ESTATE OF &	\$0		0084/0667	08	04/18/2013

Building Information

Building 1 : Section 1

Year Built: 1975

Building Photo

Replacement Cost: \$316,840

Building Percent 77

Good:

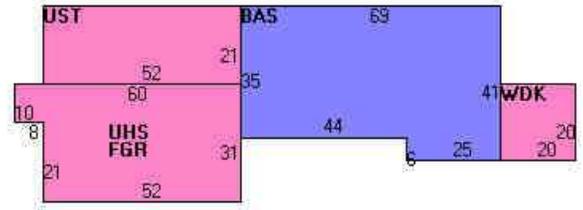
Replacement Cost

Less Depreciation: \$244,000

 Building Photo

(<http://images.vgsi.com/photos/ColebrookCTPhotos//\00\00\05\0>)

Building Layout



(<http://images.vgsi.com/photos/ColebrookCTPhotos//Sketches/6>)

Building Attributes	
Field	Description
Style	Ranch
Model	Residential
Grade:	Average +10
Stories:	1 Story
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Standing Seam
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Concr-Finished
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Forced Air-Duc
AC Type:	None
Total Bedrooms:	2 Bedrooms
Total Bthrms:	1
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	5 Rooms
Bath Style:	Average
Kitchen Style:	Avg
Num Kitchens	01
Cndtn	
Usrflid 103	
Usrflid 104	
Usrflid 105	
Usrflid 106	
Usrflid 107	
Num Park	
Fireplaces	
Usrflid 108	
Repro Rating	
Usrflid 102	

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	2,565	2,565
FGR	Garage	1,692	0
UHS	Unfinished Half Story	1,692	0
UST	Unfinished Storage	1,092	0
WDK	Wood Deck	400	0
		7,441	2,565

Usrflid 100	
Usrflid 300	
Usrflid 301	

Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

Land

Land Use

Use Code	1-3
Description	1 Family
Zone	GB
Neighborhood	R04
Alt Land Appr Category	No

Land Line Valuation

Size (Acres)	18.9
Frontage	0
Depth	0
Assessed Value	\$129,400
Appraised Value	\$184,900

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CTW	CELL TOWER			1.00 UNITS	\$300,000	1
MAS	MASONRY OUTB			240.00 S.F.	\$16,800	1
MAS	MASONRY OUTB			360.00 S.F.	\$25,200	1
MAS	MASONRY OUTB			192.00 S.F.	\$13,400	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$599,400	\$184,900	\$784,300
2017	\$599,400	\$184,900	\$784,300
2015	\$599,400	\$184,900	\$784,300

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$419,600	\$129,400	\$549,000
2017	\$419,600	\$129,400	\$549,000
2015	\$419,600	\$129,400	\$549,000

SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561 995 7670
F + 561 995 7626

sbsite.com



Structural Analysis Report

Client: AT&T

Client Site ID / Name: CTL01254 / Colebrook, CT Colebrook River Road
AppID: 121691, v3

SBA Site Name: Johnson
SBA Site ID: CT13613-A
150 ft Monopole
382 Colebrook River Rd
Colebrook, Connecticut 6021
Lat: 41.992083, Long: -73.039805

Project number: CT13616-ATT-091019

Analysis Results

Tower	56.3%	Pass
Foundation	33.4%	Pass

Client Mount modification / replacement

Net change in tower stress due to mount Modification / replacement	N/A
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Prepared by:

Serge Berthomieux
Structural Analyst
561-226-9365
SBerthomieux@sbsite.com

Reviewed by:

Nitesh Ahuja, P.E.
Director of Engineering
561-226-9452
nahuja@sbsite.com



September 10, 2019

Prepared in compliance with:

- ANSI/TIA/EIA 222-G Structural Standard for Antennas and Antenna Supporting Structures
- 2015 International Building Code (IBC)/2018 Connecticut State Building Code

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Executive Summary

The enclosed structural analysis was performed for AT&T on September 10, 2019 to verify the structural capacity of the 150 ft Monopole located at 382 Colebrook River Rd, Colebrook, Connecticut 6021 to support the proposed antenna, transmission lines and mounting equipment in addition to those currently installed. The following documents were used to determine the geotechnical characteristics, foundation data, tower geometry and member sizes/type:

Table 1 List of Documents Used

Item	Document
Tower design/drawings	Paul J. Ford, Job #29205-0113, 5/24/2005
Foundation drawings	Paul J. Ford, Job #29205-0113, 5/24/2005
Geotechnical report	JGI Eastern, Inc., Project #05268G, 5/16/2005
Latest SA	TES, Project Number: 54860 Rev 1, 08/22/2019

The analysis was performed in accordance with the following requirements:

Table 2 Code Related Data

Jurisdiction (State/County/City)	Connecticut/Litchfield/Colebrook
Governing Codes	ANSI/TIA/EIA 222-G, 2015 IBC / 2018 CSBC
Basic Wind Speed	89 mph (Ultimate Wind Speed: 115 mph 3-sec gust)
Wind Speed with Ice	40 mph (3-Sec. Gust)
Ice Thickness	1.00"
Structural Class	II
Exposure Category	B
Topographic Category	1
Crest Height	0 ft

"This structural analysis is based upon the tower being classified as a class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run."

The SBA Communications Corporation verifies that the 150 ft Monopole located at 382 Colebrook River Rd, Colebrook, Connecticut 6021 is **Sufficient** to support the proposed loadings for AT&T in addition to those currently existing based on standards set forth in governing building codes and dependent on AT&T satisfying all Installation Requirements provided herein. The analysis performed assumes the site information provided is accurate and the tower/foundation has been properly designed, manufactured, installed and maintained. Additional details regarding the assumptions and limitations are provided within the Assumptions and Limitations section of this report.

Assumptions

This analysis was completed based on the following assumptions:

- Tower has been properly maintained
- Tower erection was in accordance to manufacturer drawings
- Leg flanges have been properly designed by manufacturer to not be a limiting reaction
- Welds have been properly designed and installed by manufacturer to not be a limiting reaction
- Foundation was constructed in accordance to manufacturer drawings
- Foundation does not have structural damage
- Bolts have been properly tightened according to manufacturer specifications
- Appurtenance, mount and transmission line sizes and weights are best estimates using the TES database and manufacturer information

Limitations

The computer generated analysis performed by the TES software is limited to theoretical capacities of the towers structural members and does not account for any missing or damaged members or connections. The tower and foundation are assumed to have been properly designed, fabricated, installed and maintained, barring any conflicting findings from the most recent inspection. All leg flanges, welds and bolts are assumed to be designed by the manufacturer in such a way that these are not limiting reactions.

SBA Communications Corporation has used its due diligence to verify the information provided to perform this analysis. It is unreasonable to perform a more detailed inspection of a tower and its components. This report is not a condition assessment of the tower or foundation.

Installation Requirements

This analysis was performed under the assumption that AT&T will place the proposed equipment and feed lines at a height of 139 ft and in accordance with the coax layout shown. RRUs are to be installed on existing mounts behind tenant's antennas unless otherwise noted. No equipment is to be installed directly in the climbing path. All equipment is to be installed per mount manufacturer specifications. In case site conditions do not allow for the required installation parameters to be met AT&T must notify SBA Communications Corporation engineers for approval of an alternative placement.

Appurtenance Loading

Existing Loading:

The existing antenna and feed line information was obtained from the Site Summary and/or previous Structural Analysis. SBA Communications Corporation uses due diligence to ensure reasonably accurate information has been recorded. The existing loadings are shown in Table 3.

Table 3 Existing Appurtenances

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	150.0	12	Decibel DB846G90A-XY - Panel	Low Profile Platform	(12) 1 5/8"	Nextel
2	139.0	1	Kathrein 800 10764 - Panel	Low Profile Platform	(12) 1 5/8" (1) 3/4" Fiber (1) 7/16" DC Power (1) 3" Conduit	AT&T
3		2	KMW AM-X-CD-16-65-00T-RET - Panel			
4		6	Ericsson RRUS 11 RRU			
5		6	Powerwave 7770 - Panel			
6		1	Raycap DC6-48-60-18-8F - SP			
10		6	Powerwave LGP 21401			
11		6	Powerwave LGP 13519			
16		1	Commscope ABT-DFDM-ADBH - Bias T			
17	127.0	3	Antel BXA-171085-8BF-EDIN - Panel	Low Profile Platform	(12) 1 5/8"	Verizon
18		6	RFS FD9R6004/2C-3L			
19		12	Antel LPA-80080/6CF - Panel			
20		3	Antel BXA-70080-6CF-EDIN - Panel			
21	117.0	4	Ericsson RRU 2217 B2	(4) 4-sided Mount SitePro 1: F4P-10W Site Pro 1: P4F-HRK10 w/ Handrail	(4) 1 5/8" Fiber (1) 1/2" Fiber (2) CAT6	T-Mobile
22		4	Ericsson Air 32 KRD901146-1_B66A_B2A - Panel			
23		4	RFS APXVAA24_43-U-A20 - Panel			
24		4	RFS APXV18-206517S-A20 - Panel			
25		4	Ericsson S11B12			
26	65.0	2	Motorola RRA4905A	Direct Mount	(2) 1/2"	Verizon

Proposed Loading:

Information pertaining to proposed antennas and transmission lines were based upon the APP ID 121691, v3 from AT&T and is listed in Table 4.

Table 4 Proposed Appurtenances

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
7	139.0	3	Powerwave 7770 - Panel	Low Profile Platform	(12) 1 5/8" (6) 3/4" DC Power (3) 7/16" Fiber (3) 3" Conduit	AT&T
8		2	CCI DMP65R-BU6DA Panel			
9		4	CCI DMP65R-BU4DA Panel			
10		6	Powerwave LGP 21401			
11		6	Powerwave LGP 13519			
12		3	Ericsson RRUS 4478 B14 RRU			
13		3	Ericsson RRUS 8843 B2 B66A RRU			
14		3	Ericsson RRUS 4449 B5/B12 RRU			
15		3	Raycap DC6-48-60-18-8F - SP			
16		1	Commscope ABT-DFDM-ADBH - Bias T			



Results

Tower

The results of the structural analysis performed with the TES software are shown below. Table 5 shows the most critical member elements and the percentage of the force in the member with respect to the member capacity. Capacities of up to 105% are considered acceptable. The foundation reactions obtained from TES are shown in Table 6. Table 7 displays the twist and sway at service wind speeds. These reactions are used for the analysis of the foundation systems. Additional information for the tower analysis is provided within the Appendix.

Table 5 Tower Analysis Summary

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	56.3%	41.9%	47.9%
Pass/Fail	Pass	Pass	Pass

Table 6 Tower Base Reactions

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2844.0	25.5	50.7

Foundation System

The results of the foundation based on the geotechnical report and foundation mapping or design drawings are shown below in Table 7. Additional information for the foundation analysis is provided within the Appendix.

Table 7 Foundation Analysis Summary

Structural Component	% capacity	Analysis Result
Foundation	33.4%	Pass

Appendix

Usage Diagram - Max Ratio 56.28% at 51.0ft

Structure: CT13613-A
Site Name: Johnson
Height: 150.00 (ft)
Base Elev: 0.000 (ft)

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

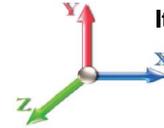
9/10/2019



Page: 1

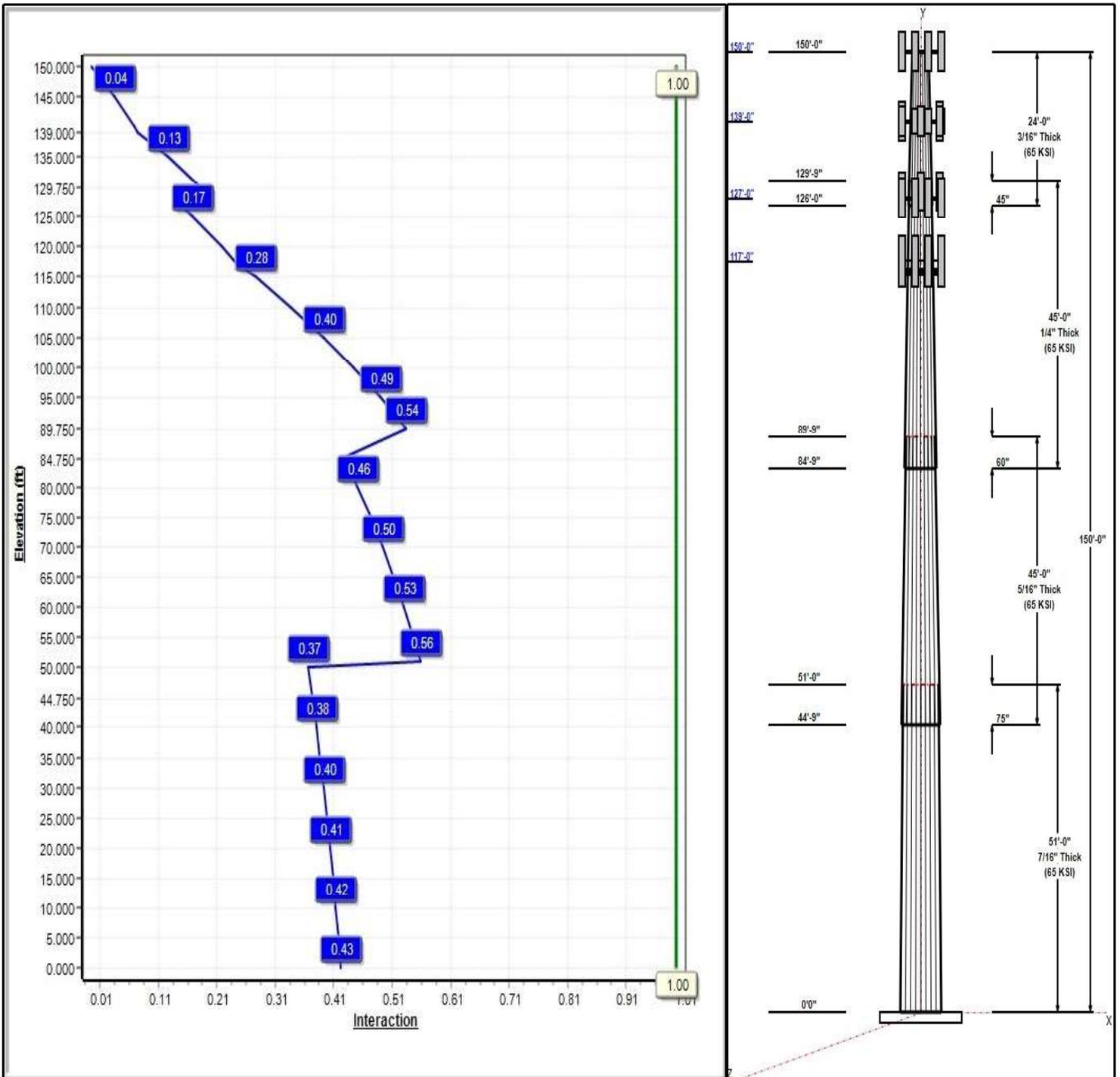
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 89 mph Wind



Iterations: 22

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Structure: CT13613-A

Type: Tapered
Site Name: Johnson
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.26000

9/10/2019

Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	51.00	46.74	60.00	0.438		0.26000	65
2	45.00	37.29	48.99	0.313	Slip	0.26000	65
3	45.00	27.39	39.09	0.250	Slip	0.26000	65
4	24.00	22.50	28.74	0.188	Slip	0.26000	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	150.00	1	Low Profile Platform	Nextel
150.00	150.00	12	Decibel DB846G90A-XY	Nextel
139.00	139.00	1	Low Profile Platform	AT&T
139.00	139.00	3	Powerwave 7770	AT&T
139.00	139.00	6	Powerwave LGP 21401	AT&T
139.00	139.00	6	Powerwave LGP 13519	AT&T
139.00	139.00	3	Raycap DC6-48-60-18-8F -	AT&T
139.00	139.00	1	Commscope	AT&T
139.00	139.00	4	CCI DMP65R-BU4DA	AT&T
139.00	139.00	2	CCI DMP65R-BU6DA	AT&T
139.00	139.00	3	Ericsson RRUS 4478 B14	AT&T
139.00	139.00	3	Ericsson RRUS 8843 B2	AT&T
139.00	139.00	3	Ericsson RRUS 4449	AT&T
127.00	128.00	3	Antel	Verizon
127.00	128.00	6	RFS FD9R6004/2C-3L	Verizon
127.00	127.00	1	Low Profile Platform	Verizon
127.00	127.00	12	Antel LPA-80080/6CF	Verizon
127.00	128.00	3	Antel	Verizon
117.00	117.00	4	Ericsson RRU 2217 B2	T-Mobile
117.00	117.00	1	SitePro F4P-10W	T-Mobile
117.00	117.00	1	F4P-HRK10	T-Mobile
117.00	117.00	4	Ericsson Air 32	T-Mobile
117.00	117.00	4	RFS	T-Mobile
117.00	117.00	4	RFS	T-Mobile
117.00	117.00	4	Ericsson S11B12	T-Mobile
65.00	65.00	2	Motorola RRA4905A	Verizon

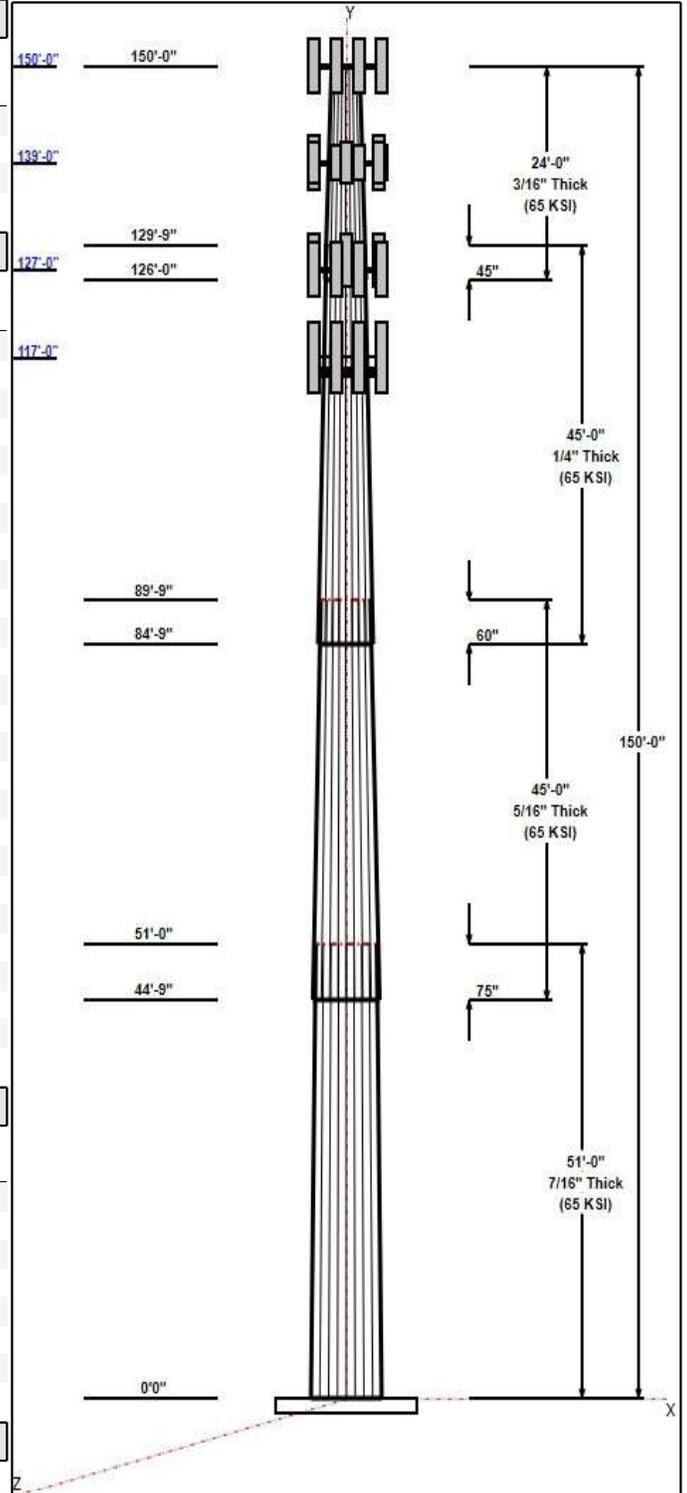
Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	150.00	Inside	1 5/8" Coax	Nextel
0.00	139.00	Inside	1 5/8" Coax	AT&T
0.00	139.00	Inside	3" Conduit	AT&T
0.00	139.00	Inside	3/4" DC Power	AT&T
0.00	139.00	Inside	7/16" DC Power	AT&T
0.00	127.00	Inside	1 5/8" Coax	Verizon
0.00	117.00	Inside	1 5/8" Fiber	T-Mobile
0.00	65.00	Outside	1/2" Coax	Verizon

Anchor Bolts

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

Base Plate



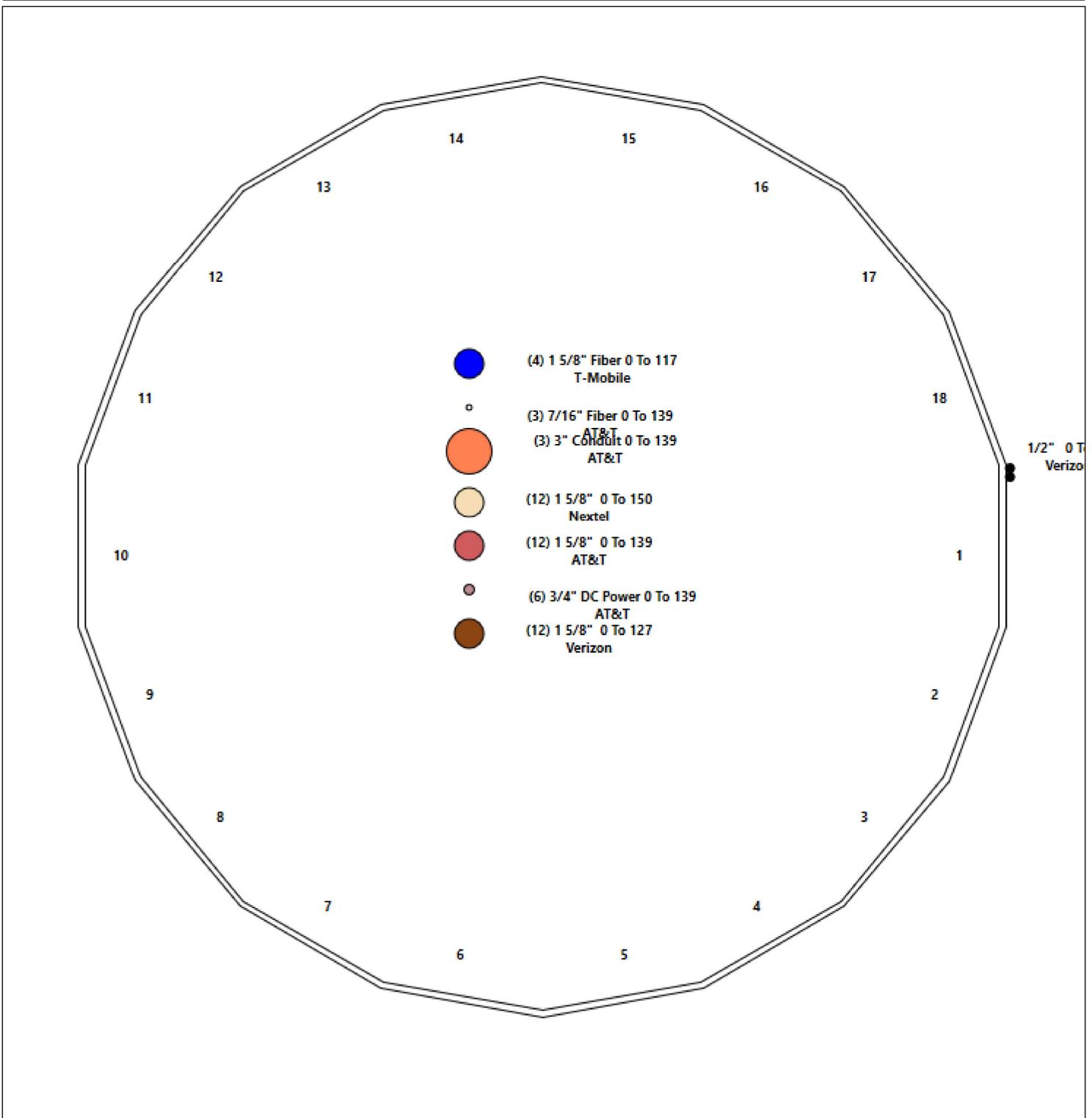
Structure: CT13613-A - Coax Line Placement

Type: Monopole
Site Name: Johnson
Height: 150.00 (ft)

9/11/2019



Page: 1



Shaft Properties

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard 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	51.000	0.4375	65		0.00	12,755
2	18	45.000	0.3125	65	Slip	75.00	6,504
3	18	45.000	0.2500	65	Slip	60.00	4,008
4	18	24.000	0.1875	65	Slip	45.00	1,236
Total Shaft Weight:							24,504

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	60.00	0.00	82.71	37071.59	22.77	137.14	46.74	51.00	64.29	17415.4	17.43	106.8	0.260000
2	48.99	44.75	48.28	14453.71	26.23	156.77	37.29	89.75	36.68	6335.88	19.63	119.3	0.260000
3	39.09	84.75	30.82	5873.84	26.16	156.36	27.39	129.75	21.53	2004.07	17.91	109.5	0.260000
4	28.74	126.0	16.99	1750.16	25.62	153.28	22.50	150.00	13.28	835.20	19.75	120.0	0.260000

Load Summary

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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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	150.00	Low Profile Platform	1	1500.00	22.00	1.00	3245.22	45.549	1.00	0.00	0.00
2	150.00	Decibel DB846G90A-XY	12	15.40	5.01	1.12	244.68	6.674	1.12	0.00	0.00
3	139.00	Low Profile Platform	1	1500.00	22.00	1.00	3231.97	45.370	1.00	0.00	0.00
4	139.00	Powerwave 7770	3	35.00	5.50	0.73	221.12	6.928	0.73	0.00	0.00
5	139.00	Powerwave LGP 21401	6	31.00	1.05	0.67	88.27	1.535	0.67	0.00	0.00
6	139.00	Powerwave LGP 13519	6	5.30	0.34	0.67	17.87	0.941	0.67	0.00	0.00
7	139.00	Raycap DC6-48-60-18-8F - SP	3	31.80	0.92	1.00	113.61	1.500	1.00	0.00	0.00
8	139.00	Commscope ABT-DFDM-ADBH -	1	1.10	0.05	1.00	4.05	0.305	1.00	0.00	0.00
9	139.00	CCI DMP65R-BU4DA Panel	4	67.90	8.28	0.72	351.80	9.926	0.72	0.00	0.00
10	139.00	CCI DMP65R-BU6DA Panel	2	79.40	12.71	0.73	477.96	14.708	0.73	0.00	0.00
11	139.00	Ericsson RRUS 4478 B14 RRU	3	59.40	2.02	0.81	114.27	2.860	0.81	0.00	0.00
12	139.00	Ericsson RRUS 8843 B2 B66A RRU	3	72.00	1.64	0.92	177.44	2.374	0.92	0.00	0.00
13	139.00	Ericsson RRUS 4449 B5/B12 RRU	3	73.00	1.64	0.90	176.34	2.380	0.90	0.00	0.00
14	127.00	Antel BXA-171085-8BF-EDIN	3	10.50	2.94	0.84	96.45	5.115	0.84	0.00	1.00
15	127.00	RFS FD9R6004/2C-3L	6	3.10	0.37	0.67	13.63	0.968	0.67	0.00	1.00
16	127.00	Low Profile Platform	1	1500.00	22.00	1.00	3216.41	45.160	1.00	0.00	0.00
17	127.00	Antel LPA-80080/6CF	12	21.00	4.33	1.70	295.03	5.931	1.70	0.00	0.00
18	127.00	Antel BXA-70080-6CF-EDIN	3	18.00	5.76	0.87	184.13	8.871	0.87	0.00	1.00
19	117.00	Ericsson RRU 2217 B2	4	44.00	2.57	0.67	126.30	3.410	0.67	0.00	0.00
20	117.00	SitePro F4P-10W	1	2396.00	58.98	1.00	5441.59	50.016	1.00	0.00	0.00
21	117.00	F4P-HRK10	1	478.27	9.00	1.00	1086.21	22.892	1.00	0.00	0.00
22	117.00	Ericsson Air 32	4	105.80	6.51	0.87	340.86	7.994	0.87	0.00	0.00
23	117.00	RFS APXVAA24_43-U-A20	4	99.00	20.24	0.73	711.39	22.739	0.73	0.00	0.00
24	117.00	RFS APXV18-206517S-A20	4	26.40	5.17	0.73	147.16	8.259	0.73	0.00	0.00
25	117.00	Ericsson S11B12	4	51.00	2.83	0.67	141.53	3.704	0.67	0.00	0.00
26	65.00	Motorola RRA4905A	2	1.00	0.14	1.00	12.56	0.616	1.00	0.00	0.00
Totals:			97	10,684.87			34,927.89				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	150.00	(12) 1 5/8" Coax	0.00	Inside
0.00	139.00	(12) 1 5/8" Coax	0.00	Inside
0.00	139.00	(3) 3" Conduit	0.00	Inside
0.00	139.00	(6) 3/4" DC Power	0.00	Inside
0.00	139.00	(3) 7/16" DC Power	0.00	Inside
0.00	127.00	(12) 1 5/8" Coax	0.00	Inside
0.00	117.00	(4) 1 5/8" Fiber	0.00	Inside
0.00	65.00	(2) 1/2" Coax	0.65	Outside

Shaft Section Properties

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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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	60.000	82.707	37071.6	22.77	137.14	74.6	1216.	0.0
5.00		0.4375	58.700	80.902	34696.8	22.25	134.17	75.2	1164.	1391.8
10.00		0.4375	57.400	79.097	32425.7	21.72	131.20	75.8	1112.	1361.1
15.00		0.4375	56.100	77.292	30255.9	21.20	128.23	76.5	1062.	1330.4
20.00		0.4375	54.800	75.486	28185.2	20.68	125.26	77.1	1013.	1299.7
25.00		0.4375	53.500	73.681	26211.1	20.15	122.29	77.7	965.0	1269.0
30.00		0.4375	52.200	71.876	24331.5	19.63	119.31	78.3	918.1	1238.2
35.00		0.4375	50.900	70.071	22543.9	19.10	116.34	78.9	872.4	1207.5
40.00		0.4375	49.600	68.266	20846.1	18.58	113.37	79.5	827.8	1176.8
44.75	Bot - Section 2	0.4375	48.365	66.551	19314.2	18.08	110.55	80.1	786.6	1089.5
45.00		0.4375	48.300	66.461	19235.7	18.06	110.40	80.2	784.4	97.6
50.00		0.4375	47.000	64.656	17710.5	17.53	107.43	80.8	742.2	1924.8
51.00	Top - Section 1	0.3125	47.365	46.669	13054.0	25.31	151.57	0.0	0.0	378.6
55.00		0.3125	46.325	45.637	12207.4	24.73	148.24	72.3	519.0	628.2
60.00		0.3125	45.025	44.348	11201.6	23.99	144.08	73.2	490.0	765.5
65.00		0.3125	43.725	43.058	10252.7	23.26	139.92	74.0	461.8	743.6
70.00		0.3125	42.425	41.769	9359.0	22.53	135.76	74.9	434.5	721.6
75.00		0.3125	41.125	40.479	8518.7	21.79	131.60	75.8	408.0	699.7
80.00		0.3125	39.825	39.190	7730.3	21.06	127.44	76.6	382.3	677.7
84.75	Bot - Section 3	0.3125	38.590	37.965	7027.9	20.36	123.49	77.4	358.7	623.5
85.00		0.3125	38.525	37.901	6992.2	20.33	123.28	77.5	357.5	58.5
89.75	Top - Section 2	0.2500	37.790	29.787	5303.6	25.24	151.16	0.0	0.0	1092.1
90.00		0.2500	37.725	29.735	5276.1	25.20	150.90	71.8	275.5	25.3
95.00		0.2500	36.425	28.704	4745.8	24.28	145.70	72.8	256.6	497.1
100.00		0.2500	35.125	27.672	4252.3	23.36	140.50	73.9	238.4	479.6
105.00		0.2500	33.825	26.641	3794.3	22.45	135.30	75.0	220.9	462.0
110.00		0.2500	32.525	25.609	3370.4	21.53	130.10	76.1	204.1	444.5
115.00		0.2500	31.225	24.578	2979.3	20.61	124.90	77.2	187.9	426.9
117.00		0.2500	30.705	24.165	2831.8	20.25	122.82	77.6	181.6	165.9
120.00		0.2500	29.925	23.546	2619.7	19.70	119.70	78.2	172.4	243.5
125.00		0.2500	28.625	22.515	2290.3	18.78	114.50	79.3	157.6	391.8
126.00	Bot - Section 4	0.2500	28.365	22.308	2227.9	18.60	113.46	79.5	154.7	76.3
127.00		0.2500	28.105	22.102	2166.7	18.41	112.42	79.7	151.8	133.1
129.75	Top - Section 3	0.1875	27.765	16.411	1576.9	24.70	148.08	0.0	0.0	359.7
130.00		0.1875	27.700	16.373	1565.8	24.64	147.73	72.4	111.3	13.9
135.00		0.1875	26.400	15.599	1354.2	23.42	140.80	73.9	101.0	272.0
139.00		0.1875	25.360	14.980	1199.3	22.44	135.25	75.0	93.1	208.1
140.00		0.1875	25.100	14.826	1162.5	22.19	133.87	75.3	91.2	50.7
145.00		0.1875	23.800	14.052	989.9	20.97	126.93	76.7	81.9	245.7
150.00		0.1875	22.500	13.278	835.2	19.75	120.00	78.2	73.1	232.5

24504.2

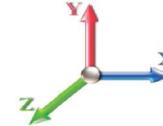
Wind Loading - Shaft

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 8



Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 22

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	0.70	13.485	14.83	378.06	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	13.485	14.83	369.87	0.650	0.000	5.00	25.111	16.32	387.4	0.0	1670.2
10.00		1.00	0.70	13.485	14.83	361.67	0.650	0.000	5.00	24.561	15.96	378.9	0.0	1633.3
15.00		1.00	0.70	13.485	14.83	353.48	0.650	0.000	5.00	24.011	15.61	370.4	0.0	1596.5
20.00		1.00	0.70	13.485	14.83	345.29	0.650	0.000	5.00	23.461	15.25	361.9	0.0	1559.6
25.00		1.00	0.70	13.485	14.83	337.10	0.650	0.000	5.00	22.911	14.89	353.4	0.0	1522.8
30.00		1.00	0.70	13.496	14.85	329.05	0.650	0.000	5.00	22.361	14.53	345.2	0.0	1485.9
35.00		1.00	0.73	14.104	15.51	328.00	0.650	0.000	5.00	21.811	14.18	351.9	0.0	1449.0
40.00		1.00	0.76	14.652	16.12	325.78	0.650	0.000	5.00	21.260	13.82	356.4	0.0	1412.2
44.75	Bot - Section 2	1.00	0.79	15.130	16.64	322.80	0.650	0.000	4.75	19.688	12.80	340.8	0.0	1307.4
45.00		1.00	0.79	15.154	16.67	322.62	0.650	0.000	0.25	1.036	0.67	18.0	0.0	117.1
50.00		1.00	0.81	15.617	17.18	318.70	0.650	0.000	5.00	20.425	13.28	364.9	0.0	2309.7
51.00	Top - Section 1	1.00	0.82	15.705	17.28	317.83	0.650	0.000	1.00	4.019	2.61	72.2	0.0	454.4
55.00		1.00	0.83	16.048	17.65	318.43	0.650	0.000	4.00	15.856	10.31	291.1	0.0	753.8
60.00		1.00	0.85	16.452	18.10	313.36	0.650	0.000	5.00	19.325	12.56	363.7	0.0	918.6
65.00	Appurtenance(s)	1.00	0.87	16.833	18.52	307.81	0.650	0.000	5.00	18.775	12.20	361.5	0.0	892.3
70.00		1.00	0.89	17.193	18.91	301.84	0.650	0.000	5.00	18.225	11.85	358.5	0.0	865.9
75.00		1.00	0.91	17.535	19.29	295.49	0.650	0.000	5.00	17.675	11.49	354.6	0.0	839.6
80.00		1.00	0.93	17.861	19.65	288.80	0.650	0.000	5.00	17.125	11.13	349.9	0.0	813.3
84.75	Bot - Section 3	1.00	0.94	18.158	19.97	282.16	0.650	0.000	4.75	15.759	10.24	327.4	0.0	748.2
85.00		1.00	0.94	18.173	19.99	281.80	0.650	0.000	0.25	0.826	0.54	17.2	0.0	70.2
89.75	Top - Section 2	1.00	0.96	18.458	20.30	274.90	0.650	0.000	4.75	15.437	10.03	326.0	0.0	1310.5
90.00		1.00	0.96	18.473	20.32	278.21	0.650	0.000	0.25	0.799	0.52	16.9	0.0	30.4
95.00		1.00	0.97	18.760	20.64	270.71	0.650	0.000	5.00	15.686	10.20	336.7	0.0	596.6
100.00		1.00	0.99	19.037	20.94	262.97	0.650	0.000	5.00	15.136	9.84	329.6	0.0	575.5
105.00		1.00	1.00	19.304	21.23	255.01	0.650	0.000	5.00	14.586	9.48	322.1	0.0	554.4
110.00		1.00	1.02	19.563	21.52	246.84	0.650	0.000	5.00	14.036	9.12	314.1	0.0	533.4
115.00		1.00	1.03	19.813	21.79	238.48	0.650	0.000	5.00	13.486	8.77	305.7	0.0	512.3
117.00	Appurtenance(s)	1.00	1.03	19.911	21.90	235.09	0.650	0.000	2.00	5.240	3.41	119.4	0.0	199.0
120.00		1.00	1.04	20.055	22.06	229.95	0.650	0.000	3.00	7.696	5.00	176.6	0.0	292.2
125.00		1.00	1.05	20.290	22.32	221.25	0.650	0.000	5.00	12.386	8.05	287.5	0.0	470.2
126.00	Bot - Section 4	1.00	1.06	20.337	22.37	219.49	0.650	0.000	1.00	2.411	1.57	56.1	0.0	91.5
127.00	Appurtenance(s)	1.00	1.06	20.383	22.42	217.72	0.650	0.000	1.00	2.421	1.57	56.5	0.0	159.7
129.75	Top - Section 3	1.00	1.06	20.508	22.56	212.83	0.650	0.000	2.75	6.544	4.25	153.5	0.0	431.7
130.00		1.00	1.07	20.519	22.57	215.30	0.650	0.000	0.25	0.587	0.38	13.8	0.0	16.7
135.00		1.00	1.08	20.742	22.82	206.30	0.650	0.000	5.00	11.445	7.44	271.6	0.0	326.4
139.00	Appurtenance(s)	1.00	1.09	20.915	23.01	199.01	0.650	0.000	4.00	8.760	5.69	209.6	0.0	249.7
140.00		1.00	1.09	20.958	23.05	197.17	0.650	0.000	1.00	2.135	1.39	51.2	0.0	60.9
145.00		1.00	1.10	21.169	23.29	187.90	0.650	0.000	5.00	10.345	6.72	250.5	0.0	294.8
150.00	Appurtenance(s)	1.00	1.11	21.375	23.51	178.49	0.650	0.000	5.00	9.795	6.37	239.5	0.0	279.0
Totals:									150.00			9,961.9		29,405.0

Discrete Appurtenance Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

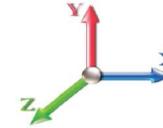


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Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

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	150.00	Low Profile Platform	1	21.375	23.513	1.00	1.00	22.00	1800.00	0.000	0.000	827.65	0.00	0.00
2	150.00	Decibel DB846G90A-XY	12	21.375	23.513	1.01	0.90	60.60	221.76	0.000	0.000	2279.85	0.00	0.00
3	139.00	Raycap DC6-48-60-18-8F	3	20.915	23.007	1.00	1.00	2.76	114.48	0.000	0.000	101.60	0.00	0.00
4	139.00	Low Profile Platform	1	20.915	23.007	1.00	1.00	22.00	1800.00	0.000	0.000	809.84	0.00	0.00
5	139.00	Powerwave 7770	3	20.915	23.007	0.58	0.80	9.64	126.00	0.000	0.000	354.71	0.00	0.00
6	139.00	Powerwave LGP 21401	6	20.915	23.007	0.54	0.80	3.38	223.20	0.000	0.000	124.30	0.00	0.00
7	139.00	Powerwave LGP 13519	6	20.915	23.007	0.54	0.80	1.09	38.16	0.000	0.000	40.25	0.00	0.00
8	139.00	CCI DMP65R-BU4DA	4	20.915	23.007	0.58	0.80	19.08	325.92	0.000	0.000	702.25	0.00	0.00
9	139.00	Commscope	1	20.915	23.007	1.00	1.00	0.05	1.32	0.000	0.000	1.84	0.00	0.00
10	139.00	CCI DMP65R-BU6DA	2	20.915	23.007	0.58	0.80	14.85	190.56	0.000	0.000	546.47	0.00	0.00
11	139.00	Ericsson RRUS 4478 B14	3	20.915	23.007	0.65	0.80	3.93	213.84	0.000	0.000	144.55	0.00	0.00
12	139.00	Ericsson RRUS 8843 B2	3	20.915	23.007	0.74	0.80	3.62	259.20	0.000	0.000	133.30	0.00	0.00
13	139.00	Ericsson RRUS 4449	3	20.915	23.007	0.72	0.80	3.54	262.80	0.000	0.000	130.40	0.00	0.00
14	127.00	Antel	3	20.428	22.471	0.70	0.80	12.03	64.80	0.000	1.000	432.41	0.00	432.41
15	127.00	Low Profile Platform	1	20.383	22.421	1.00	1.00	22.00	1800.00	0.000	0.000	789.22	0.00	0.00
16	127.00	RFS FD9R6004/2C-3L	6	20.428	22.471	0.54	0.80	1.19	22.32	0.000	1.000	42.78	0.00	42.78
17	127.00	Antel	3	20.428	22.471	0.67	0.80	5.93	37.80	0.000	1.000	213.10	0.00	213.10
18	127.00	Antel LPA-80080/6CF	12	20.383	22.421	1.36	0.80	70.67	302.40	0.000	0.000	2535.02	0.00	0.00
19	117.00	F4P-HRK10	1	19.911	21.902	1.00	1.00	9.00	573.92	0.000	0.000	315.38	0.00	0.00
20	117.00	Ericsson RRU 2217 B2	4	19.911	21.902	0.50	0.75	5.17	211.20	0.000	0.000	181.02	0.00	0.00
21	117.00	SitePro F4P-10W	1	19.911	21.902	1.00	1.00	58.98	2875.20	0.000	0.000	2066.81	0.00	0.00
22	117.00	RFS	4	19.911	21.902	0.55	0.75	11.32	126.72	0.000	0.000	396.76	0.00	0.00
23	117.00	Ericsson Air 32	4	19.911	21.902	0.65	0.75	16.99	507.84	0.000	0.000	595.41	0.00	0.00
24	117.00	RFS	4	19.911	21.902	0.55	0.75	44.33	475.20	0.000	0.000	1553.28	0.00	0.00
25	117.00	Ericsson S11B12	4	19.911	21.902	0.50	0.75	5.69	244.80	0.000	0.000	199.33	0.00	0.00
26	65.00	Motorola RRA4905A	2	16.833	18.516	1.00	1.00	0.28	2.40	0.000	0.000	8.30	0.00	0.00

Totals: 12,821.84

15,525.84

Total Applied Force Summary

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

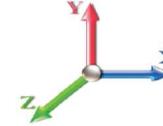


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Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

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		387.37	1982.17	0.00	0.00
10.00		378.88	1945.32	0.00	0.00
15.00		370.40	1908.46	0.00	0.00
20.00		361.91	1871.61	0.00	0.00
25.00		353.43	1834.75	0.00	0.00
30.00		345.24	1797.90	0.00	0.00
35.00		351.91	1761.04	0.00	0.00
40.00		356.37	1724.19	0.00	0.00
44.75		340.77	1603.84	0.00	0.00
45.00		17.95	132.74	0.00	0.00
50.00		364.90	2621.72	0.00	0.00
51.00		72.21	516.76	0.00	0.00
55.00		291.10	1003.43	0.00	0.00
60.00		363.71	1230.59	0.00	0.00
65.00	(2) attachments	369.83	1206.67	0.00	0.00
70.00		358.45	1176.02	0.00	0.00
75.00		354.56	1149.70	0.00	0.00
80.00		349.92	1123.37	0.00	0.00
84.75		327.36	1042.82	0.00	0.00
85.00		17.18	85.66	0.00	0.00
89.75		325.98	1605.06	0.00	0.00
90.00		16.88	45.89	0.00	0.00
95.00		336.65	906.65	0.00	0.00
100.00		329.64	885.59	0.00	0.00
105.00		322.12	864.53	0.00	0.00
110.00		314.13	843.47	0.00	0.00
115.00		305.67	822.41	0.00	0.00
117.00	(22) attachments	5427.38	5337.95	0.00	0.00
120.00		176.56	463.30	0.00	0.00
125.00		287.51	755.33	0.00	0.00
126.00		56.10	148.54	0.00	0.00
127.00	(25) attachments	4068.98	2444.08	0.00	688.30
129.75		153.53	547.31	0.00	0.00
130.00		13.77	27.25	0.00	0.00
135.00		271.56	536.62	0.00	0.00
139.00	(35) attachments	3299.10	3973.40	0.00	0.00
140.00		51.19	75.83	0.00	0.00
145.00		250.52	369.67	0.00	0.00
150.00	(13) attachments	<u>3347.02</u>	<u>2375.64</u>	<u>0.00</u>	<u>0.00</u>
	Totals:	25,487.75	50,747.27	0.00	688.30

Linear Appurtenance Segment Forces (Factored)

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 89 mph Wind	Iterations 22
Dead Load Factor 1.20	
Wind Load Factor 1.60	

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	13.485	0.00	1.92
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	13.485	0.00	1.92
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	13.485	0.00	1.92
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	13.485	0.00	1.92
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	13.485	0.00	1.92
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	13.496	0.00	1.92
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	14.104	0.00	1.92
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	14.652	0.00	1.92
44.75	1/2" Coax	Yes	4.75	0.000	0.65	0.26	0.00	0.013	0.000	15.130	0.00	1.82
45.00	1/2" Coax	Yes	0.25	0.000	0.65	0.01	0.00	0.013	0.000	15.154	0.00	0.10
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	15.617	0.00	1.92
51.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.014	0.000	15.705	0.00	0.38
55.00	1/2" Coax	Yes	4.00	0.000	0.65	0.22	0.00	0.014	0.000	16.048	0.00	1.54
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	16.452	0.00	1.92
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	16.833	0.00	1.92
Totals:											0.0	25.0

Calculated Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 89 mph Wind	Iterations 22
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	-50.72	-25.54	0.00	-2843.9	0.00	2843.95	5554.25	2777.13	13600.6	6810.41	0.00	0.000	0.000	0.427
5.00	-48.69	-25.24	0.00	-2716.2	0.00	2716.27	5477.89	2738.95	13118.7	6569.12	0.06	-0.107	0.000	0.422
10.00	-46.70	-24.94	0.00	-2590.0	0.00	2590.09	5399.54	2699.77	12640.4	6329.59	0.23	-0.215	0.000	0.418
15.00	-44.75	-24.65	0.00	-2465.3	0.00	2465.38	5319.17	2659.59	12165.9	6092.00	0.51	-0.326	0.000	0.413
20.00	-42.83	-24.36	0.00	-2342.1	0.00	2342.13	5236.81	2618.40	11695.6	5856.50	0.92	-0.439	0.000	0.408
25.00	-40.95	-24.08	0.00	-2220.3	0.00	2220.32	5152.44	2576.22	11229.8	5623.26	1.44	-0.554	0.000	0.403
30.00	-39.11	-23.79	0.00	-2099.9	0.00	2099.95	5066.07	2533.04	10768.8	5392.43	2.08	-0.672	0.000	0.397
35.00	-37.30	-23.50	0.00	-1980.9	0.00	1980.99	4977.70	2488.85	10313.0	5164.19	2.85	-0.791	0.000	0.391
40.00	-35.53	-23.19	0.00	-1863.5	0.00	1863.52	4887.33	2443.67	9862.71	4938.68	3.74	-0.912	0.000	0.385
44.75	-33.91	-22.86	0.00	-1753.3	0.00	1753.38	4799.62	2399.81	9440.25	4727.14	4.71	-1.030	0.000	0.378
45.00	-33.75	-22.87	0.00	-1747.6	0.00	1747.66	4794.96	2397.48	9418.17	4716.08	4.77	-1.036	0.000	0.378
50.00	-31.11	-22.50	0.00	-1633.2	0.00	1633.29	4700.58	2350.29	8979.75	4496.55	5.92	-1.161	0.000	0.370
51.00	-30.57	-22.45	0.00	-1610.7	0.00	1610.79	3008.41	1504.20	5823.48	2916.07	6.16	-1.187	0.000	0.563
55.00	-29.52	-22.21	0.00	-1520.9	0.00	1520.99	2970.26	1485.13	5621.72	2815.04	7.20	-1.289	0.000	0.550
60.00	-28.23	-21.90	0.00	-1409.9	0.00	1409.94	2920.78	1460.39	5370.82	2689.40	8.65	-1.460	0.000	0.534
65.00	-26.97	-21.58	0.00	-1300.4	0.00	1300.43	2869.29	1434.64	5121.68	2564.65	10.27	-1.632	0.000	0.517
70.00	-25.74	-21.27	0.00	-1192.5	0.00	1192.53	2815.80	1407.90	4874.61	2440.93	12.07	-1.805	0.000	0.498
75.00	-24.54	-20.95	0.00	-1086.2	0.00	1086.21	2760.31	1380.15	4629.95	2318.41	14.06	-1.978	0.000	0.478
80.00	-23.37	-20.63	0.00	-981.48	0.00	981.48	2702.81	1351.41	4388.01	2197.26	16.22	-2.151	0.000	0.456
84.75	-22.31	-20.29	0.00	-883.51	0.00	883.51	2646.34	1323.17	4160.98	2083.58	18.44	-2.314	0.000	0.433
85.00	-22.20	-20.30	0.00	-878.44	0.00	878.44	2643.31	1321.66	4149.11	2077.64	18.57	-2.323	0.000	0.431
89.75	-20.58	-19.94	0.00	-782.00	0.00	782.00	1922.43	961.22	2968.94	1486.68	20.96	-2.483	0.000	0.537
90.00	-20.49	-19.96	0.00	-777.01	0.00	777.01	1920.55	960.27	2960.86	1482.63	21.09	-2.492	0.000	0.535
95.00	-19.54	-19.65	0.00	-677.22	0.00	677.22	1881.78	940.89	2799.79	1401.97	23.81	-2.688	0.000	0.494
100.00	-18.61	-19.33	0.00	-578.99	0.00	578.99	1841.02	920.51	2640.02	1321.97	26.72	-2.876	0.000	0.449
105.00	-17.71	-19.02	0.00	-482.32	0.00	482.32	1798.25	899.12	2481.89	1242.79	29.83	-3.054	0.000	0.398
110.00	-16.83	-18.71	0.00	-387.21	0.00	387.21	1753.48	876.74	2325.70	1164.58	33.12	-3.217	0.000	0.343
115.00	-16.00	-18.38	0.00	-293.69	0.00	293.69	1706.70	853.35	2171.78	1087.50	36.57	-3.361	0.000	0.280
117.00	-10.97	-12.66	0.00	-256.93	0.00	256.93	1687.43	843.72	2110.92	1057.03	37.99	-3.413	0.000	0.250
120.00	-10.50	-12.47	0.00	-218.95	0.00	218.95	1657.93	828.96	2020.46	1011.73	40.16	-3.485	0.000	0.223
125.00	-9.76	-12.15	0.00	-156.59	0.00	156.59	1607.15	803.57	1872.06	937.42	43.86	-3.587	0.000	0.173
126.00	-9.61	-12.09	0.00	-144.45	0.00	144.45	1596.75	798.38	1842.76	922.75	44.62	-3.606	0.000	0.163
127.00	-7.42	-7.87	0.00	-131.67	0.00	131.67	1586.28	793.14	1813.59	908.14	45.37	-3.623	0.000	0.150
129.75	-6.88	-7.69	0.00	-110.02	0.00	110.02	1068.62	534.31	1212.20	607.00	47.47	-3.667	0.000	0.188
130.00	-6.85	-7.68	0.00	-108.10	0.00	108.10	1067.16	533.58	1207.67	604.73	47.66	-3.671	0.000	0.185
135.00	-6.32	-7.38	0.00	-69.70	0.00	69.70	1036.93	518.46	1117.63	559.65	51.55	-3.752	0.000	0.131
139.00	-2.57	-3.83	0.00	-40.18	0.00	40.18	1011.29	505.65	1046.45	524.00	54.72	-3.798	0.000	0.079
140.00	-2.50	-3.77	0.00	-36.36	0.00	36.36	1004.68	502.34	1028.80	515.16	55.51	-3.807	0.000	0.073
145.00	-2.15	-3.50	0.00	-17.49	0.00	17.49	970.44	485.22	941.49	471.44	59.52	-3.840	0.000	0.039
150.00	0.00	-3.35	0.00	0.00	0.00	0.00	934.20	467.10	856.03	428.65	63.54	-3.852	0.000	0.000

Wind Loading - Shaft

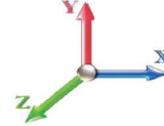
Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II
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Load Case: 0.9D + 1.6W 89 mph Wind

Iterations 22

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	0.70	13.485	14.83	378.06	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	13.485	14.83	369.87	0.650	0.000	5.00	25.111	16.32	387.4	0.0	1252.6
10.00		1.00	0.70	13.485	14.83	361.67	0.650	0.000	5.00	24.561	15.96	378.9	0.0	1225.0
15.00		1.00	0.70	13.485	14.83	353.48	0.650	0.000	5.00	24.011	15.61	370.4	0.0	1197.3
20.00		1.00	0.70	13.485	14.83	345.29	0.650	0.000	5.00	23.461	15.25	361.9	0.0	1169.7
25.00		1.00	0.70	13.485	14.83	337.10	0.650	0.000	5.00	22.911	14.89	353.4	0.0	1142.1
30.00		1.00	0.70	13.496	14.85	329.05	0.650	0.000	5.00	22.361	14.53	345.2	0.0	1114.4
35.00		1.00	0.73	14.104	15.51	328.00	0.650	0.000	5.00	21.811	14.18	351.9	0.0	1086.8
40.00		1.00	0.76	14.652	16.12	325.78	0.650	0.000	5.00	21.260	13.82	356.4	0.0	1059.1
44.75	Bot - Section 2	1.00	0.79	15.130	16.64	322.80	0.650	0.000	4.75	19.688	12.80	340.8	0.0	980.6
45.00		1.00	0.79	15.154	16.67	322.62	0.650	0.000	0.25	1.036	0.67	18.0	0.0	87.9
50.00		1.00	0.81	15.617	17.18	318.70	0.650	0.000	5.00	20.425	13.28	364.9	0.0	1732.3
51.00	Top - Section 1	1.00	0.82	15.705	17.28	317.83	0.650	0.000	1.00	4.019	2.61	72.2	0.0	340.8
55.00		1.00	0.83	16.048	17.65	318.43	0.650	0.000	4.00	15.856	10.31	291.1	0.0	565.4
60.00		1.00	0.85	16.452	18.10	313.36	0.650	0.000	5.00	19.325	12.56	363.7	0.0	688.9
65.00	Appurtenance(s)	1.00	0.87	16.833	18.52	307.81	0.650	0.000	5.00	18.775	12.20	361.5	0.0	669.2
70.00		1.00	0.89	17.193	18.91	301.84	0.650	0.000	5.00	18.225	11.85	358.5	0.0	649.5
75.00		1.00	0.91	17.535	19.29	295.49	0.650	0.000	5.00	17.675	11.49	354.6	0.0	629.7
80.00		1.00	0.93	17.861	19.65	288.80	0.650	0.000	5.00	17.125	11.13	349.9	0.0	610.0
84.75	Bot - Section 3	1.00	0.94	18.158	19.97	282.16	0.650	0.000	4.75	15.759	10.24	327.4	0.0	561.2
85.00		1.00	0.94	18.173	19.99	281.80	0.650	0.000	0.25	0.826	0.54	17.2	0.0	52.6
89.75	Top - Section 2	1.00	0.96	18.458	20.30	274.90	0.650	0.000	4.75	15.437	10.03	326.0	0.0	982.9
90.00		1.00	0.96	18.473	20.32	278.21	0.650	0.000	0.25	0.799	0.52	16.9	0.0	22.8
95.00		1.00	0.97	18.760	20.64	270.71	0.650	0.000	5.00	15.686	10.20	336.7	0.0	447.4
100.00		1.00	0.99	19.037	20.94	262.97	0.650	0.000	5.00	15.136	9.84	329.6	0.0	431.6
105.00		1.00	1.00	19.304	21.23	255.01	0.650	0.000	5.00	14.586	9.48	322.1	0.0	415.8
110.00		1.00	1.02	19.563	21.52	246.84	0.650	0.000	5.00	14.036	9.12	314.1	0.0	400.0
115.00		1.00	1.03	19.813	21.79	238.48	0.650	0.000	5.00	13.486	8.77	305.7	0.0	384.2
117.00	Appurtenance(s)	1.00	1.03	19.911	21.90	235.09	0.650	0.000	2.00	5.240	3.41	119.4	0.0	149.3
120.00		1.00	1.04	20.055	22.06	229.95	0.650	0.000	3.00	7.696	5.00	176.6	0.0	219.2
125.00		1.00	1.05	20.290	22.32	221.25	0.650	0.000	5.00	12.386	8.05	287.5	0.0	352.7
126.00	Bot - Section 4	1.00	1.06	20.337	22.37	219.49	0.650	0.000	1.00	2.411	1.57	56.1	0.0	68.6
127.00	Appurtenance(s)	1.00	1.06	20.383	22.42	217.72	0.650	0.000	1.00	2.421	1.57	56.5	0.0	119.8
129.75	Top - Section 3	1.00	1.06	20.508	22.56	212.83	0.650	0.000	2.75	6.544	4.25	153.5	0.0	323.8
130.00		1.00	1.07	20.519	22.57	215.30	0.650	0.000	0.25	0.587	0.38	13.8	0.0	12.6
135.00		1.00	1.08	20.742	22.82	206.30	0.650	0.000	5.00	11.445	7.44	271.6	0.0	244.8
139.00	Appurtenance(s)	1.00	1.09	20.915	23.01	199.01	0.650	0.000	4.00	8.760	5.69	209.6	0.0	187.3
140.00		1.00	1.09	20.958	23.05	197.17	0.650	0.000	1.00	2.135	1.39	51.2	0.0	45.6
145.00		1.00	1.10	21.169	23.29	187.90	0.650	0.000	5.00	10.345	6.72	250.5	0.0	221.1
150.00	Appurtenance(s)	1.00	1.11	21.375	23.51	178.49	0.650	0.000	5.00	9.795	6.37	239.5	0.0	209.2
Totals:									150.00			9,961.9	22,053.8	

Discrete Appurtenance Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

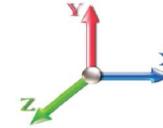


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Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

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	150.00	Low Profile Platform	1	21.375	23.513	1.00	1.00	22.00	1350.00	0.000	0.000	827.65	0.00	0.00
2	150.00	Decibel DB846G90A-XY	12	21.375	23.513	1.01	0.90	60.60	166.32	0.000	0.000	2279.85	0.00	0.00
3	139.00	Raycap DC6-48-60-18-8F	3	20.915	23.007	1.00	1.00	2.76	85.86	0.000	0.000	101.60	0.00	0.00
4	139.00	Low Profile Platform	1	20.915	23.007	1.00	1.00	22.00	1350.00	0.000	0.000	809.84	0.00	0.00
5	139.00	Powerwave 7770	3	20.915	23.007	0.58	0.80	9.64	94.50	0.000	0.000	354.71	0.00	0.00
6	139.00	Powerwave LGP 21401	6	20.915	23.007	0.54	0.80	3.38	167.40	0.000	0.000	124.30	0.00	0.00
7	139.00	Powerwave LGP 13519	6	20.915	23.007	0.54	0.80	1.09	28.62	0.000	0.000	40.25	0.00	0.00
8	139.00	CCI DMP65R-BU4DA	4	20.915	23.007	0.58	0.80	19.08	244.44	0.000	0.000	702.25	0.00	0.00
9	139.00	Commscope	1	20.915	23.007	1.00	1.00	0.05	0.99	0.000	0.000	1.84	0.00	0.00
10	139.00	CCI DMP65R-BU6DA	2	20.915	23.007	0.58	0.80	14.85	142.92	0.000	0.000	546.47	0.00	0.00
11	139.00	Ericsson RRUS 4478 B14	3	20.915	23.007	0.65	0.80	3.93	160.38	0.000	0.000	144.55	0.00	0.00
12	139.00	Ericsson RRUS 8843 B2	3	20.915	23.007	0.74	0.80	3.62	194.40	0.000	0.000	133.30	0.00	0.00
13	139.00	Ericsson RRUS 4449	3	20.915	23.007	0.72	0.80	3.54	197.10	0.000	0.000	130.40	0.00	0.00
14	127.00	Antel	3	20.428	22.471	0.70	0.80	12.03	48.60	0.000	1.000	432.41	0.00	432.41
15	127.00	Low Profile Platform	1	20.383	22.421	1.00	1.00	22.00	1350.00	0.000	0.000	789.22	0.00	0.00
16	127.00	RFS FD9R6004/2C-3L	6	20.428	22.471	0.54	0.80	1.19	16.74	0.000	1.000	42.78	0.00	42.78
17	127.00	Antel	3	20.428	22.471	0.67	0.80	5.93	28.35	0.000	1.000	213.10	0.00	213.10
18	127.00	Antel LPA-80080/6CF	12	20.383	22.421	1.36	0.80	70.67	226.80	0.000	0.000	2535.02	0.00	0.00
19	117.00	F4P-HRK10	1	19.911	21.902	1.00	1.00	9.00	430.44	0.000	0.000	315.38	0.00	0.00
20	117.00	Ericsson RRU 2217 B2	4	19.911	21.902	0.50	0.75	5.17	158.40	0.000	0.000	181.02	0.00	0.00
21	117.00	SitePro F4P-10W	1	19.911	21.902	1.00	1.00	58.98	2156.40	0.000	0.000	2066.81	0.00	0.00
22	117.00	RFS	4	19.911	21.902	0.55	0.75	11.32	95.04	0.000	0.000	396.76	0.00	0.00
23	117.00	Ericsson Air 32	4	19.911	21.902	0.65	0.75	16.99	380.88	0.000	0.000	595.41	0.00	0.00
24	117.00	RFS	4	19.911	21.902	0.55	0.75	44.33	356.40	0.000	0.000	1553.28	0.00	0.00
25	117.00	Ericsson S11B12	4	19.911	21.902	0.50	0.75	5.69	183.60	0.000	0.000	199.33	0.00	0.00
26	65.00	Motorola RRA4905A	2	16.833	18.516	1.00	1.00	0.28	1.80	0.000	0.000	8.30	0.00	0.00

Totals: 9,616.38

15,525.84

Total Applied Force Summary

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

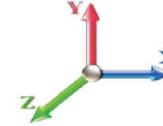


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Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

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		387.37	1486.63	0.00	0.00
10.00		378.88	1458.99	0.00	0.00
15.00		370.40	1431.35	0.00	0.00
20.00		361.91	1403.71	0.00	0.00
25.00		353.43	1376.06	0.00	0.00
30.00		345.24	1348.42	0.00	0.00
35.00		351.91	1320.78	0.00	0.00
40.00		356.37	1293.14	0.00	0.00
44.75		340.77	1202.88	0.00	0.00
45.00		17.95	99.56	0.00	0.00
50.00		364.90	1966.29	0.00	0.00
51.00		72.21	387.57	0.00	0.00
55.00		291.10	752.57	0.00	0.00
60.00		363.71	922.94	0.00	0.00
65.00	(2) attachments	369.83	905.00	0.00	0.00
70.00		358.45	882.02	0.00	0.00
75.00		354.56	862.27	0.00	0.00
80.00		349.92	842.53	0.00	0.00
84.75		327.36	782.12	0.00	0.00
85.00		17.18	64.25	0.00	0.00
89.75		325.98	1203.79	0.00	0.00
90.00		16.88	34.41	0.00	0.00
95.00		336.65	679.98	0.00	0.00
100.00		329.64	664.19	0.00	0.00
105.00		322.12	648.39	0.00	0.00
110.00		314.13	632.60	0.00	0.00
115.00		305.67	616.80	0.00	0.00
117.00	(22) attachments	5427.38	4003.46	0.00	0.00
120.00		176.56	347.48	0.00	0.00
125.00		287.51	566.49	0.00	0.00
126.00		56.10	111.40	0.00	0.00
127.00	(25) attachments	4068.98	1833.06	0.00	688.30
129.75		153.53	410.48	0.00	0.00
130.00		13.77	20.43	0.00	0.00
135.00		271.56	402.47	0.00	0.00
139.00	(35) attachments	3299.10	2980.05	0.00	0.00
140.00		51.19	56.87	0.00	0.00
145.00		250.52	277.25	0.00	0.00
150.00	(13) attachments	3347.02	1781.73	0.00	0.00
	Totals:	25,487.75	38,060.45	0.00	688.30

Linear Appurtenance Segment Forces (Factored)

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

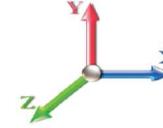


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Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	13.485	0.00	1.44
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	13.485	0.00	1.44
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	13.485	0.00	1.44
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	13.485	0.00	1.44
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	13.485	0.00	1.44
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	13.496	0.00	1.44
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	14.104	0.00	1.44
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	14.652	0.00	1.44
44.75	1/2" Coax	Yes	4.75	0.000	0.65	0.26	0.00	0.013	0.000	15.130	0.00	1.37
45.00	1/2" Coax	Yes	0.25	0.000	0.65	0.01	0.00	0.013	0.000	15.154	0.00	0.07
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	15.617	0.00	1.44
51.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.014	0.000	15.705	0.00	0.29
55.00	1/2" Coax	Yes	4.00	0.000	0.65	0.22	0.00	0.014	0.000	16.048	0.00	1.15
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	16.452	0.00	1.44
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	16.833	0.00	1.44
Totals:											0.0	18.7

Calculated Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 89 mph Wind	Iterations 22
Dead Load Factor 0.90	
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	-38.04	-25.52	0.00	-2819.6	0.00	2819.61	5554.25	2777.13	13600.6	6810.41	0.00	0.000	0.000	0.421
5.00	-36.50	-25.20	0.00	-2692.0	0.00	2692.00	5477.89	2738.95	13118.7	6569.12	0.06	-0.106	0.000	0.417
10.00	-35.00	-24.89	0.00	-2565.9	0.00	2565.99	5399.54	2699.77	12640.4	6329.59	0.23	-0.214	0.000	0.412
15.00	-33.52	-24.57	0.00	-2441.5	0.00	2441.56	5319.17	2659.59	12165.9	6092.00	0.51	-0.323	0.000	0.407
20.00	-32.07	-24.27	0.00	-2318.7	0.00	2318.70	5236.81	2618.40	11695.6	5856.50	0.91	-0.435	0.000	0.402
25.00	-30.65	-23.96	0.00	-2197.3	0.00	2197.37	5152.44	2576.22	11229.8	5623.26	1.43	-0.549	0.000	0.397
30.00	-29.26	-23.66	0.00	-2077.5	0.00	2077.56	5066.07	2533.04	10768.8	5392.43	2.06	-0.665	0.000	0.391
35.00	-27.89	-23.35	0.00	-1959.2	0.00	1959.26	4977.70	2488.85	10313.0	5164.19	2.82	-0.783	0.000	0.385
40.00	-26.56	-23.03	0.00	-1842.5	0.00	1842.50	4887.33	2443.67	9862.71	4938.68	3.71	-0.903	0.000	0.379
44.75	-25.34	-22.70	0.00	-1733.1	0.00	1733.11	4799.62	2399.81	9440.25	4727.14	4.67	-1.019	0.000	0.372
45.00	-25.21	-22.71	0.00	-1727.4	0.00	1727.43	4794.96	2397.48	9418.17	4716.08	4.72	-1.025	0.000	0.372
50.00	-23.22	-22.33	0.00	-1613.9	0.00	1613.91	4700.58	2350.29	8979.75	4496.55	5.86	-1.149	0.000	0.364
51.00	-22.81	-22.28	0.00	-1591.5	0.00	1591.57	3008.41	1504.20	5823.48	2916.07	6.10	-1.175	0.000	0.554
55.00	-22.01	-22.02	0.00	-1502.4	0.00	1502.46	2970.26	1485.13	5621.72	2815.04	7.13	-1.276	0.000	0.541
60.00	-21.04	-21.70	0.00	-1392.3	0.00	1392.34	2920.78	1460.39	5370.82	2689.40	8.56	-1.445	0.000	0.525
65.00	-20.08	-21.37	0.00	-1283.8	0.00	1283.84	2869.29	1434.64	5121.68	2564.65	10.16	-1.614	0.000	0.508
70.00	-19.14	-21.04	0.00	-1177.0	0.00	1177.00	2815.80	1407.90	4874.61	2440.93	11.95	-1.785	0.000	0.489
75.00	-18.23	-20.71	0.00	-1071.8	0.00	1071.81	2760.31	1380.15	4629.95	2318.41	13.91	-1.956	0.000	0.469
80.00	-17.34	-20.38	0.00	-968.25	0.00	968.25	2702.81	1351.41	4388.01	2197.26	16.05	-2.126	0.000	0.447
84.75	-16.55	-20.05	0.00	-871.44	0.00	871.44	2646.34	1323.17	4160.98	2083.58	18.25	-2.287	0.000	0.425
85.00	-16.45	-20.05	0.00	-866.43	0.00	866.43	2643.31	1321.66	4149.11	2077.64	18.37	-2.296	0.000	0.423
89.75	-15.24	-19.70	0.00	-771.18	0.00	771.18	1922.43	961.22	2968.94	1486.68	20.73	-2.454	0.000	0.527
90.00	-15.17	-19.71	0.00	-766.25	0.00	766.25	1920.55	960.27	2960.86	1482.63	20.86	-2.463	0.000	0.525
95.00	-14.44	-19.39	0.00	-667.71	0.00	667.71	1881.78	940.89	2799.79	1401.97	23.55	-2.656	0.000	0.484
100.00	-13.73	-19.07	0.00	-570.76	0.00	570.76	1841.02	920.51	2640.02	1321.97	26.43	-2.842	0.000	0.440
105.00	-13.04	-18.76	0.00	-475.40	0.00	475.40	1798.25	899.12	2481.89	1242.79	29.50	-3.017	0.000	0.390
110.00	-12.38	-18.44	0.00	-381.63	0.00	381.63	1753.48	876.74	2325.70	1164.58	32.75	-3.177	0.000	0.335
115.00	-11.75	-18.12	0.00	-289.42	0.00	289.42	1706.70	853.35	2171.78	1087.50	36.16	-3.319	0.000	0.273
117.00	-8.06	-12.48	0.00	-253.19	0.00	253.19	1687.43	843.72	2110.92	1057.03	37.56	-3.371	0.000	0.245
120.00	-7.70	-12.29	0.00	-215.76	0.00	215.76	1657.93	828.96	2020.46	1011.73	39.70	-3.442	0.000	0.218
125.00	-7.15	-11.98	0.00	-154.30	0.00	154.30	1607.15	803.57	1872.06	937.42	43.36	-3.542	0.000	0.169
126.00	-7.03	-11.92	0.00	-142.32	0.00	142.32	1596.75	798.38	1842.76	922.75	44.10	-3.560	0.000	0.159
127.00	-5.45	-7.74	0.00	-129.72	0.00	129.72	1586.28	793.14	1813.59	908.14	44.85	-3.578	0.000	0.146
129.75	-5.05	-7.57	0.00	-108.42	0.00	108.42	1068.62	534.31	1212.20	607.00	46.92	-3.621	0.000	0.184
130.00	-5.03	-7.56	0.00	-106.53	0.00	106.53	1067.16	533.58	1207.67	604.73	47.11	-3.625	0.000	0.181
135.00	-4.63	-7.26	0.00	-68.75	0.00	68.75	1036.93	518.46	1117.63	559.65	50.95	-3.704	0.000	0.128
139.00	-1.87	-3.78	0.00	-39.69	0.00	39.69	1011.29	505.65	1046.45	524.00	54.07	-3.750	0.000	0.078
140.00	-1.82	-3.73	0.00	-35.91	0.00	35.91	1004.68	502.34	1028.80	515.16	54.86	-3.759	0.000	0.072
145.00	-1.56	-3.46	0.00	-17.29	0.00	17.29	970.44	485.22	941.49	471.44	58.81	-3.791	0.000	0.038
150.00	0.00	-3.35	0.00	0.00	0.00	0.00	934.20	467.10	856.03	428.65	62.79	-3.804	0.000	0.000

Wind Loading - Shaft

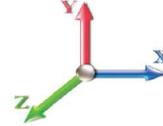
Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 18



Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 22

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	0.70	2.724	3.00	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	2.724	3.00	0.00	1.200	1.656	5.00	26.491	31.79	95.2	626.1	2296.3
10.00		1.00	0.70	2.724	3.00	0.00	1.200	1.775	5.00	26.040	31.25	93.6	657.9	2291.2
15.00		1.00	0.70	2.724	3.00	0.00	1.200	1.848	5.00	25.551	30.66	91.9	670.9	2267.4
20.00		1.00	0.70	2.724	3.00	0.00	1.200	1.902	5.00	25.046	30.06	90.1	675.6	2235.2
25.00		1.00	0.70	2.724	3.00	0.00	1.200	1.945	5.00	24.532	29.44	88.2	675.5	2198.3
30.00		1.00	0.70	2.726	3.00	0.00	1.200	1.981	5.00	24.011	28.81	86.4	672.3	2158.2
35.00		1.00	0.73	2.849	3.13	0.00	1.200	2.012	5.00	23.487	28.18	88.3	666.7	2115.7
40.00		1.00	0.76	2.960	3.26	0.00	1.200	2.039	5.00	22.960	27.55	89.7	659.4	2071.6
44.75	Bot - Section 2	1.00	0.79	3.056	3.36	0.00	1.200	2.062	4.75	21.320	25.58	86.0	618.6	1926.0
45.00		1.00	0.79	3.061	3.37	0.00	1.200	2.063	0.25	1.122	1.35	4.5	32.9	150.1
50.00		1.00	0.81	3.155	3.47	0.00	1.200	2.085	5.00	22.162	26.59	92.3	649.0	2958.8
51.00	Top - Section 1	1.00	0.82	3.172	3.49	0.00	1.200	2.089	1.00	4.367	5.24	18.3	129.4	583.8
55.00		1.00	0.83	3.242	3.57	0.00	1.200	2.105	4.00	17.259	20.71	73.9	510.7	1264.5
60.00		1.00	0.85	3.323	3.66	0.00	1.200	2.123	5.00	21.094	25.31	92.5	626.9	1545.5
65.00	Appurtenance(s)	1.00	0.87	3.400	3.74	0.00	1.200	2.140	5.00	20.558	24.67	92.3	614.7	1507.0
70.00		1.00	0.89	3.473	3.82	0.00	1.200	2.156	5.00	20.022	24.03	91.8	601.9	1467.9
75.00		1.00	0.91	3.542	3.90	0.00	1.200	2.171	5.00	19.484	23.38	91.1	588.6	1428.2
80.00		1.00	0.93	3.608	3.97	0.00	1.200	2.185	5.00	18.946	22.73	90.2	574.8	1388.1
84.75	Bot - Section 3	1.00	0.94	3.668	4.03	0.00	1.200	2.198	4.75	17.499	21.00	84.7	533.2	1281.5
85.00		1.00	0.94	3.671	4.04	0.00	1.200	2.198	0.25	0.918	1.10	4.4	28.4	98.5
89.75	Top - Section 2	1.00	0.96	3.728	4.10	0.00	1.200	2.210	4.75	17.187	20.62	84.6	525.9	1836.4
90.00		1.00	0.96	3.731	4.10	0.00	1.200	2.211	0.25	0.891	1.07	4.4	27.6	58.0
95.00		1.00	0.97	3.789	4.17	0.00	1.200	2.223	5.00	17.539	21.05	87.7	537.9	1134.5
100.00		1.00	0.99	3.845	4.23	0.00	1.200	2.234	5.00	16.998	20.40	86.3	522.7	1098.2
105.00		1.00	1.00	3.899	4.29	0.00	1.200	2.245	5.00	16.457	19.75	84.7	507.1	1061.5
110.00		1.00	1.02	3.952	4.35	0.00	1.200	2.256	5.00	15.916	19.10	83.0	491.2	1024.6
115.00		1.00	1.03	4.002	4.40	0.00	1.200	2.266	5.00	15.374	18.45	81.2	475.1	987.4
117.00	Appurtenance(s)	1.00	1.03	4.022	4.42	0.00	1.200	2.270	2.00	5.997	7.20	31.8	187.4	386.5
120.00		1.00	1.04	4.051	4.46	0.00	1.200	2.276	3.00	8.833	10.60	47.2	275.2	567.5
125.00		1.00	1.05	4.099	4.51	0.00	1.200	2.285	5.00	14.290	17.15	77.3	442.1	912.3
126.00	Bot - Section 4	1.00	1.06	4.108	4.52	0.00	1.200	2.287	1.00	2.792	3.35	15.1	87.7	179.3
127.00	Appurtenance(s)	1.00	1.06	4.117	4.53	0.00	1.200	2.289	1.00	2.802	3.36	15.2	88.2	247.9
129.75	Top - Section 3	1.00	1.06	4.142	4.56	0.00	1.200	2.293	2.75	7.595	9.11	41.5	237.3	669.0
130.00		1.00	1.07	4.145	4.56	0.00	1.200	2.294	0.25	0.682	0.82	3.7	21.5	38.3
135.00		1.00	1.08	4.190	4.61	0.00	1.200	2.303	5.00	13.364	16.04	73.9	413.7	740.0
139.00	Appurtenance(s)	1.00	1.09	4.225	4.65	0.00	1.200	2.309	4.00	10.299	12.36	57.4	319.9	569.7
140.00		1.00	1.09	4.233	4.66	0.00	1.200	2.311	1.00	2.520	3.02	14.1	79.3	140.1
145.00		1.00	1.10	4.276	4.70	0.00	1.200	2.319	5.00	12.277	14.73	69.3	379.1	673.9
150.00	Appurtenance(s)	1.00	1.11	4.318	4.75	0.00	1.200	2.327	5.00	11.734	14.08	66.9	361.5	640.5
Totals:								150.00			2,571.0	46,199.2		

Discrete Appurtenance Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

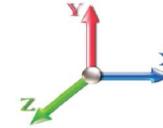


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 22

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	150.00	Low Profile Platform	1	4.318	4.749	1.00	1.00	45.55	3245.22	0.000	0.000	216.33	0.00	0.00
2	150.00	Decibel DB846G90A-XY	12	4.318	4.749	1.01	0.90	80.73	2973.14	0.000	0.000	383.41	0.00	0.00
3	139.00	Raycap DC6-48-60-18-8F	3	4.225	4.647	1.00	1.00	4.50	306.80	0.000	0.000	20.91	0.00	0.00
4	139.00	Low Profile Platform	1	4.225	4.647	1.00	1.00	45.37	3231.97	0.000	0.000	210.85	0.00	0.00
5	139.00	Powerwave 7770	3	4.225	4.647	0.58	0.80	12.14	789.37	0.000	0.000	56.40	0.00	0.00
6	139.00	Powerwave LGP 21401	6	4.225	4.647	0.54	0.80	4.94	752.82	0.000	0.000	22.94	0.00	0.00
7	139.00	Powerwave LGP 13519	6	4.225	4.647	0.54	0.80	3.03	97.36	0.000	0.000	14.06	0.00	0.00
8	139.00	CCI DMP65R-BU4DA	4	4.225	4.647	0.58	0.80	22.87	1461.54	0.000	0.000	106.28	0.00	0.00
9	139.00	Commscope	1	4.225	4.647	1.00	1.00	0.30	3.57	0.000	0.000	1.42	0.00	0.00
10	139.00	CCI DMP65R-BU6DA	2	4.225	4.647	0.58	0.80	17.18	987.68	0.000	0.000	79.83	0.00	0.00
11	139.00	Ericsson RRUS 4478 B14	3	4.225	4.647	0.65	0.80	5.56	350.25	0.000	0.000	25.83	0.00	0.00
12	139.00	Ericsson RRUS 8843 B2	3	4.225	4.647	0.74	0.80	5.24	575.51	0.000	0.000	24.36	0.00	0.00
13	139.00	Ericsson RRUS 4449	3	4.225	4.647	0.72	0.80	5.14	572.83	0.000	0.000	23.89	0.00	0.00
14	127.00	Antel	3	4.126	4.539	0.70	0.80	18.52	454.28	0.000	1.000	84.08	0.00	84.08
15	127.00	Low Profile Platform	1	4.117	4.529	1.00	1.00	45.16	3216.41	0.000	0.000	204.53	0.00	0.00
16	127.00	RFS FD9R6004/2C-3L	6	4.126	4.539	0.54	0.80	3.11	71.67	0.000	1.000	14.12	0.00	14.12
17	127.00	Antel	3	4.126	4.539	0.67	0.80	10.31	239.55	0.000	1.000	46.80	0.00	46.80
18	127.00	Antel LPA-80080/6CF	12	4.117	4.529	1.36	0.80	96.80	3842.82	0.000	0.000	438.40	0.00	0.00
19	117.00	F4P-HRK10	1	4.022	4.424	1.00	1.00	22.89	1660.13	0.000	0.000	101.27	0.00	0.00
20	117.00	Ericsson RRU 2217 B2	4	4.022	4.424	0.50	0.75	6.85	481.98	0.000	0.000	30.32	0.00	0.00
21	117.00	SitePro F4P-10W	1	4.022	4.424	1.00	1.00	150.02	5229.79	0.000	0.000	663.67	0.00	0.00
22	117.00	RFS	4	4.022	4.424	0.55	0.75	18.09	503.36	0.000	0.000	80.02	0.00	0.00
23	117.00	Ericsson Air 32	4	4.022	4.424	0.65	0.75	20.86	1283.68	0.000	0.000	92.30	0.00	0.00
24	117.00	RFS	4	4.022	4.424	0.55	0.75	49.80	2510.78	0.000	0.000	220.31	0.00	0.00
25	117.00	Ericsson S11B12	4	4.022	4.424	0.50	0.75	7.44	542.50	0.000	0.000	32.93	0.00	0.00
26	65.00	Motorola RRA4905A	2	3.400	3.740	1.00	1.00	1.23	20.13	0.000	0.000	4.61	0.00	0.00

Totals: 35,405.14

3,199.88

Total Applied Force Summary

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

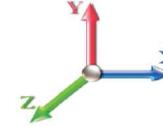


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 22

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		95.25	2633.76	0.00	0.00
10.00		93.63	2631.78	0.00	0.00
15.00		91.87	2609.92	0.00	0.00
20.00		90.05	2579.29	0.00	0.00
25.00		88.20	2543.58	0.00	0.00
30.00		86.41	2504.49	0.00	0.00
35.00		88.32	2462.98	0.00	0.00
40.00		89.70	2419.62	0.00	0.00
44.75		86.01	2257.35	0.00	0.00
45.00		4.53	167.52	0.00	0.00
50.00		92.28	3308.21	0.00	0.00
51.00		18.29	653.67	0.00	0.00
55.00		73.85	1544.57	0.00	0.00
60.00		92.53	1896.12	0.00	0.00
65.00	(2) attachments	96.88	1878.28	0.00	0.00
70.00		91.78	1777.97	0.00	0.00
75.00		91.10	1738.32	0.00	0.00
80.00		90.23	1698.20	0.00	0.00
84.75		84.72	1576.06	0.00	0.00
85.00		4.45	114.04	0.00	0.00
89.75		84.59	2131.00	0.00	0.00
90.00		4.39	73.53	0.00	0.00
95.00		87.73	1444.59	0.00	0.00
100.00		86.28	1408.25	0.00	0.00
105.00		84.71	1371.60	0.00	0.00
110.00		83.02	1334.67	0.00	0.00
115.00		81.22	1297.48	0.00	0.00
117.00	(22) attachments	1252.66	12722.71	0.00	0.00
120.00		47.24	738.53	0.00	0.00
125.00		77.31	1197.42	0.00	0.00
126.00		15.14	236.29	0.00	0.00
127.00	(25) attachments	803.15	8129.64	0.00	145.00
129.75		41.53	784.64	0.00	0.00
130.00		3.73	48.78	0.00	0.00
135.00		73.91	950.28	0.00	0.00
139.00	(35) attachments	644.21	9867.57	0.00	0.00
140.00		14.08	155.12	0.00	0.00
145.00		69.30	748.74	0.00	0.00
150.00	(13) attachments	666.62	6933.74	0.00	0.00
	Totals:	5,770.89	90,570.31	0.00	145.00

Linear Appurtenance Segment Forces (Factored)

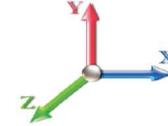
Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II
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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	1.65	0.00	0.011	0.000	2.724	0.00	27.40
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.75	0.00	0.011	0.000	2.724	0.00	30.49
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.81	0.00	0.011	0.000	2.724	0.00	32.49
20.00	1/2" Coax	Yes	5.00	0.000	0.65	1.86	0.00	0.012	0.000	2.724	0.00	34.00
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.89	0.00	0.012	0.000	2.724	0.00	35.22
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.92	0.00	0.012	0.000	2.726	0.00	36.26
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.95	0.00	0.012	0.000	2.849	0.00	37.17
40.00	1/2" Coax	Yes	5.00	0.000	0.65	1.97	0.00	0.013	0.000	2.960	0.00	37.97
44.75	1/2" Coax	Yes	4.75	0.000	0.65	1.89	0.00	0.013	0.000	3.056	0.00	36.73
45.00	1/2" Coax	Yes	0.25	0.000	0.65	0.10	0.00	0.013	0.000	3.061	0.00	1.94
50.00	1/2" Coax	Yes	5.00	0.000	0.65	2.01	0.00	0.013	0.000	3.155	0.00	39.36
51.00	1/2" Coax	Yes	1.00	0.000	0.65	0.40	0.00	0.014	0.000	3.172	0.00	7.90
55.00	1/2" Coax	Yes	4.00	0.000	0.65	1.62	0.00	0.014	0.000	3.242	0.00	31.98
60.00	1/2" Coax	Yes	5.00	0.000	0.65	2.04	0.00	0.014	0.000	3.323	0.00	40.54
65.00	1/2" Coax	Yes	5.00	0.000	0.65	2.05	0.00	0.014	0.000	3.400	0.00	41.08
Totals:											0.0	470.5

Calculated Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

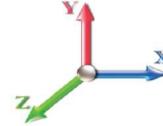


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 22

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	-90.57	-5.79	0.00	-653.91	0.00	653.91	5554.25	2777.13	13600.6	6810.41	0.00	0.000	0.000	0.112
5.00	-87.93	-5.73	0.00	-624.95	0.00	624.95	5477.89	2738.95	13118.7	6569.12	0.01	-0.025	0.000	0.111
10.00	-85.30	-5.67	0.00	-596.29	0.00	596.29	5399.54	2699.77	12640.4	6329.59	0.05	-0.050	0.000	0.110
15.00	-82.69	-5.62	0.00	-567.92	0.00	567.92	5319.17	2659.59	12165.9	6092.00	0.12	-0.075	0.000	0.109
20.00	-80.10	-5.56	0.00	-539.83	0.00	539.83	5236.81	2618.40	11695.6	5856.50	0.21	-0.101	0.000	0.107
25.00	-77.56	-5.50	0.00	-512.03	0.00	512.03	5152.44	2576.22	11229.8	5623.26	0.33	-0.128	0.000	0.106
30.00	-75.05	-5.45	0.00	-484.52	0.00	484.52	5066.07	2533.04	10768.8	5392.43	0.48	-0.155	0.000	0.105
35.00	-72.59	-5.39	0.00	-457.29	0.00	457.29	4977.70	2488.85	10313.0	5164.19	0.66	-0.182	0.000	0.103
40.00	-70.16	-5.32	0.00	-430.36	0.00	430.36	4887.33	2443.67	9862.71	4938.68	0.86	-0.210	0.000	0.102
44.75	-67.91	-5.24	0.00	-405.08	0.00	405.08	4799.62	2399.81	9440.25	4727.14	1.09	-0.237	0.000	0.100
45.00	-67.74	-5.26	0.00	-403.77	0.00	403.77	4794.96	2397.48	9418.17	4716.08	1.10	-0.239	0.000	0.100
50.00	-64.43	-5.17	0.00	-377.49	0.00	377.49	4700.58	2350.29	8979.75	4496.55	1.36	-0.268	0.000	0.098
51.00	-63.77	-5.16	0.00	-372.32	0.00	372.32	3008.41	1504.20	5823.48	2916.07	1.42	-0.274	0.000	0.149
55.00	-62.23	-5.12	0.00	-351.66	0.00	351.66	2970.26	1485.13	5621.72	2815.04	1.66	-0.297	0.000	0.146
60.00	-60.33	-5.06	0.00	-326.08	0.00	326.08	2920.78	1460.39	5370.82	2689.40	1.99	-0.337	0.000	0.142
65.00	-58.45	-4.99	0.00	-300.80	0.00	300.80	2869.29	1434.64	5121.68	2564.65	2.37	-0.377	0.000	0.138
70.00	-56.67	-4.92	0.00	-275.86	0.00	275.86	2815.80	1407.90	4874.61	2440.93	2.78	-0.417	0.000	0.133
75.00	-54.92	-4.86	0.00	-251.24	0.00	251.24	2760.31	1380.15	4629.95	2318.41	3.24	-0.457	0.000	0.128
80.00	-53.22	-4.79	0.00	-226.95	0.00	226.95	2702.81	1351.41	4388.01	2197.26	3.74	-0.497	0.000	0.123
84.75	-51.65	-4.71	0.00	-204.20	0.00	204.20	2646.34	1323.17	4160.98	2083.58	4.26	-0.534	0.000	0.118
85.00	-51.53	-4.72	0.00	-203.03	0.00	203.03	2643.31	1321.66	4149.11	2077.64	4.28	-0.536	0.000	0.117
89.75	-49.40	-4.63	0.00	-180.60	0.00	180.60	1922.43	961.22	2968.94	1486.68	4.84	-0.574	0.000	0.147
90.00	-49.32	-4.65	0.00	-179.45	0.00	179.45	1920.55	960.27	2960.86	1482.63	4.87	-0.576	0.000	0.147
95.00	-47.88	-4.58	0.00	-156.21	0.00	156.21	1881.78	940.89	2799.79	1401.97	5.49	-0.621	0.000	0.137
100.00	-46.47	-4.51	0.00	-133.30	0.00	133.30	1841.02	920.51	2640.02	1321.97	6.17	-0.664	0.000	0.126
105.00	-45.09	-4.44	0.00	-110.73	0.00	110.73	1798.25	899.12	2481.89	1242.79	6.89	-0.705	0.000	0.114
110.00	-43.76	-4.37	0.00	-88.51	0.00	88.51	1753.48	876.74	2325.70	1164.58	7.65	-0.742	0.000	0.101
115.00	-42.46	-4.29	0.00	-66.66	0.00	66.66	1706.70	853.35	2171.78	1087.50	8.44	-0.775	0.000	0.086
117.00	-29.75	-2.87	0.00	-58.09	0.00	58.09	1687.43	843.72	2110.92	1057.03	8.77	-0.787	0.000	0.073
120.00	-29.01	-2.82	0.00	-49.48	0.00	49.48	1657.93	828.96	2020.46	1011.73	9.27	-0.803	0.000	0.066
125.00	-27.82	-2.73	0.00	-35.37	0.00	35.37	1607.15	803.57	1872.06	937.42	10.12	-0.826	0.000	0.055
126.00	-27.58	-2.72	0.00	-32.63	0.00	32.63	1596.75	798.38	1842.76	922.75	10.30	-0.830	0.000	0.053
127.00	-19.46	-1.80	0.00	-29.77	0.00	29.77	1586.28	793.14	1813.59	908.14	10.47	-0.834	0.000	0.045
129.75	-18.68	-1.75	0.00	-24.82	0.00	24.82	1068.62	534.31	1212.20	607.00	10.95	-0.844	0.000	0.058
130.00	-18.63	-1.75	0.00	-24.39	0.00	24.39	1067.16	533.58	1207.67	604.73	11.00	-0.845	0.000	0.058
135.00	-17.68	-1.66	0.00	-15.66	0.00	15.66	1036.93	518.46	1117.63	559.65	11.89	-0.863	0.000	0.045
139.00	-7.83	-0.87	0.00	-9.01	0.00	9.01	1011.29	505.65	1046.45	524.00	12.62	-0.874	0.000	0.025
140.00	-7.67	-0.85	0.00	-8.14	0.00	8.14	1004.68	502.34	1028.80	515.16	12.81	-0.876	0.000	0.023
145.00	-6.92	-0.77	0.00	-3.87	0.00	3.87	970.44	485.22	941.49	471.44	13.73	-0.883	0.000	0.015
150.00	0.00	-0.67	0.00	0.00	0.00	0.00	934.20	467.10	856.03	428.65	14.65	-0.886	0.000	0.000

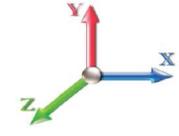
Seismic Segment Forces (Factored)

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E		Iterations 20
Gust Response Factor 1.10	Sds 0.09	Ss 0.17
Dead Load Factor 1.20	Seismic Load Factor 1.00	S1 0.07
Wind Load Factor 0.00	Structure Frequency (f1) 0.41	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		1391.8	0.00	0.03	0.02	13.82	
10.00		1361.1	0.01	0.05	0.03	19.14	
15.00		1330.3	0.02	0.06	0.04	21.32	
20.00		1299.6	0.03	0.07	0.04	22.12	
25.00		1268.9	0.05	0.07	0.04	22.33	
30.00		1238.2	0.08	0.07	0.04	22.34	
35.00		1207.5	0.10	0.07	0.04	22.32	
40.00		1176.8	0.13	0.07	0.03	22.28	
44.75	Bot - Section 2	1089.5	0.17	0.07	0.03	20.99	
45.00		97.62	0.17	0.07	0.03	1.88	
50.00		1924.7	0.21	0.06	0.02	37.18	
51.00	Top - Section 1	378.64	0.22	0.06	0.02	7.29	
55.00		628.19	0.25	0.05	0.02	11.76	
60.00		765.49	0.30	0.04	0.01	13.05	
65.00	Appurtenance(s)	745.56	0.35	0.03	0.01	10.29	
70.00		721.62	0.41	0.01	0.01	6.23	
75.00		699.68	0.47	-0.01	0.01	1.20	
80.00		677.74	0.54	-0.03	0.01	-4.06	
84.75	Bot - Section 3	623.54	0.60	-0.05	0.01	-7.91	
85.00		58.46	0.61	-0.06	0.02	-0.76	
89.75	Top - Section 2	1092.0	0.68	-0.08	0.03	-19.49	
90.00		25.32	0.68	-0.08	0.03	-0.46	
95.00		497.14	0.76	-0.10	0.04	-10.21	
100.00		479.59	0.84	-0.12	0.07	-9.77	
105.00		462.04	0.93	-0.12	0.10	-8.17	
110.00		444.49	1.02	-0.11	0.14	-5.57	
115.00		426.94	1.11	-0.06	0.19	-2.14	
117.00	Appurtenance(s)	4344.9	1.15	-0.04	0.22	-5.80	
120.00		243.53	1.21	0.01	0.26	1.19	
125.00		391.84	1.31	0.14	0.35	6.72	
126.00	Bot - Section 4	76.26	1.33	0.17	0.37	1.52	
127.00	Appurtenance(s)	1989.2	1.35	0.20	0.39	45.23	
129.75	Top - Section 3	359.73	1.41	0.31	0.45	11.17	
130.00		13.94	1.42	0.32	0.45	0.44	
135.00		271.98	1.53	0.58	0.58	13.34	
139.00	Appurtenance(s)	3171.0	1.62	0.85	0.70	204.87	
140.00		50.71	1.65	0.93	0.73	3.49	
145.00		245.66	1.77	1.39	0.92	22.38	
150.00	Appurtenance(s)	1917.3	1.89	1.98	1.14	222.60	
Totals:		35,189.1				734.1	Total Wind: 25,487.7

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

Calculated Forces

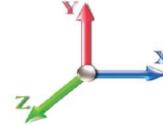
Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E

Iterations 20

Gust Response Factor 1.10	Sds 0.09	Ss 0.17
Dead Load Factor 1.20	Seismic Load Factor 1.00	S1 0.07
Wind Load Factor 0.00	Structure Frequency (f1) 0.41	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	-50.75	-0.81	0.00	-88.70	0.00	88.70	5554.25	2777.13	13600.6	6810.41	0.00	0.00	0.00	0.022
5.00	-48.77	-0.80	0.00	-84.66	0.00	84.66	5477.89	2738.95	13118.7	6569.12	0.00	0.00	0.00	0.022
10.00	-46.82	-0.78	0.00	-80.66	0.00	80.66	5399.54	2699.77	12640.4	6329.59	0.01	-0.01	-0.01	0.021
15.00	-44.91	-0.76	0.00	-76.75	0.00	76.75	5319.17	2659.59	12165.9	6092.00	0.02	-0.01	-0.01	0.021
20.00	-43.04	-0.74	0.00	-72.94	0.00	72.94	5236.81	2618.40	11695.6	5856.50	0.03	-0.01	-0.01	0.021
25.00	-41.20	-0.72	0.00	-69.22	0.00	69.22	5152.44	2576.22	11229.8	5623.26	0.04	-0.02	-0.02	0.020
30.00	-39.41	-0.70	0.00	-65.61	0.00	65.61	5066.07	2533.04	10768.8	5392.43	0.06	-0.02	-0.02	0.020
35.00	-37.65	-0.68	0.00	-62.10	0.00	62.10	4977.70	2488.85	10313.0	5164.19	0.09	-0.02	-0.02	0.020
40.00	-35.92	-0.66	0.00	-58.68	0.00	58.68	4887.33	2443.67	9862.71	4938.68	0.12	-0.03	-0.03	0.019
44.75	-34.32	-0.64	0.00	-55.54	0.00	55.54	4799.62	2399.81	9440.25	4727.14	0.15	-0.03	-0.03	0.019
45.00	-34.18	-0.64	0.00	-55.38	0.00	55.38	4794.96	2397.48	9418.17	4716.08	0.15	-0.03	-0.03	0.019
50.00	-31.56	-0.60	0.00	-52.18	0.00	52.18	4700.58	2350.29	8979.75	4496.55	0.18	-0.04	-0.04	0.018
51.00	-31.05	-0.60	0.00	-51.58	0.00	51.58	3008.41	1504.20	5823.48	2916.07	0.19	-0.04	-0.04	0.028
55.00	-30.04	-0.59	0.00	-49.20	0.00	49.20	2970.26	1485.13	5621.72	2815.04	0.22	-0.04	-0.04	0.028
60.00	-28.81	-0.57	0.00	-46.27	0.00	46.27	2920.78	1460.39	5370.82	2689.40	0.27	-0.05	-0.05	0.027
65.00	-27.61	-0.57	0.00	-43.39	0.00	43.39	2869.29	1434.64	5121.68	2564.65	0.32	-0.05	-0.05	0.027
70.00	-26.43	-0.56	0.00	-40.56	0.00	40.56	2815.80	1407.90	4874.61	2440.93	0.38	-0.06	-0.06	0.026
75.00	-25.28	-0.56	0.00	-37.75	0.00	37.75	2760.31	1380.15	4629.95	2318.41	0.44	-0.06	-0.06	0.025
80.00	-24.16	-0.56	0.00	-34.95	0.00	34.95	2702.81	1351.41	4388.01	2197.26	0.51	-0.07	-0.07	0.025
84.75	-23.11	-0.56	0.00	-32.27	0.00	32.27	2646.34	1323.17	4160.98	2083.58	0.58	-0.08	-0.08	0.024
85.00	-23.03	-0.56	0.00	-32.13	0.00	32.13	2643.31	1321.66	4149.11	2077.64	0.59	-0.08	-0.08	0.024
89.75	-21.42	-0.56	0.00	-29.45	0.00	29.45	1922.43	961.22	2968.94	1486.68	0.67	-0.08	-0.08	0.031
90.00	-21.38	-0.56	0.00	-29.31	0.00	29.31	1920.55	960.27	2960.86	1482.63	0.67	-0.08	-0.08	0.031
95.00	-20.47	-0.57	0.00	-26.49	0.00	26.49	1881.78	940.89	2799.79	1401.97	0.76	-0.09	-0.09	0.030
100.00	-19.58	-0.57	0.00	-23.66	0.00	23.66	1841.02	920.51	2640.02	1321.97	0.86	-0.10	-0.10	0.029
105.00	-18.72	-0.57	0.00	-20.82	0.00	20.82	1798.25	899.12	2481.89	1242.79	0.96	-0.10	-0.10	0.027
110.00	-17.88	-0.57	0.00	-17.98	0.00	17.98	1753.48	876.74	2325.70	1164.58	1.08	-0.11	-0.11	0.026
115.00	-17.05	-0.57	0.00	-15.14	0.00	15.14	1706.70	853.35	2171.78	1087.50	1.20	-0.12	-0.12	0.024
117.00	-11.72	-0.56	0.00	-14.00	0.00	14.00	1687.43	843.72	2110.92	1057.03	1.25	-0.12	-0.12	0.020
120.00	-11.25	-0.56	0.00	-12.33	0.00	12.33	1657.93	828.96	2020.46	1011.73	1.33	-0.13	-0.13	0.019
125.00	-10.50	-0.55	0.00	-9.55	0.00	9.55	1607.15	803.57	1872.06	937.42	1.46	-0.13	-0.13	0.017
126.00	-10.35	-0.55	0.00	-9.00	0.00	9.00	1596.75	798.38	1842.76	922.75	1.49	-0.13	-0.13	0.016
127.00	-7.90	-0.50	0.00	-8.45	0.00	8.45	1586.28	793.14	1813.59	908.14	1.52	-0.13	-0.13	0.014
129.75	-7.36	-0.48	0.00	-7.08	0.00	7.08	1068.62	534.31	1212.20	607.00	1.60	-0.14	-0.14	0.019
130.00	-7.33	-0.48	0.00	-6.96	0.00	6.96	1067.16	533.58	1207.67	604.73	1.60	-0.14	-0.14	0.018
135.00	-6.79	-0.47	0.00	-4.54	0.00	4.54	1036.93	518.46	1117.63	559.65	1.75	-0.14	-0.14	0.015
139.00	-2.82	-0.26	0.00	-2.66	0.00	2.66	1011.29	505.65	1046.45	524.00	1.87	-0.15	-0.15	0.008
140.00	-2.74	-0.25	0.00	-2.40	0.00	2.40	1004.68	502.34	1028.80	515.16	1.90	-0.15	-0.15	0.007
145.00	-2.38	-0.23	0.00	-1.14	0.00	1.14	970.44	485.22	941.49	471.44	2.05	-0.15	-0.15	0.005
150.00	0.00	-0.22	0.00	0.00	0.00	0.00	934.20	467.10	856.03	428.65	2.21	-0.15	-0.15	0.000

Seismic Segment Forces (Factored)

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

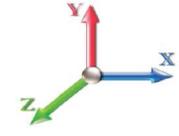


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Load Case: 0.9D + 1.0E

Iterations 20

Gust Response Factor 1.10	Sds 0.09	Ss 0.17
Dead Load Factor 0.90	Seismic Load Factor 1.00	Sd1 0.03
Wind Load Factor 0.00	Structure Frequency (f1) 0.41	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		1391.8	0.00	0.03	0.02	13.82	
10.00		1361.1	0.01	0.05	0.03	19.14	
15.00		1330.3	0.02	0.06	0.04	21.32	
20.00		1299.6	0.03	0.07	0.04	22.12	
25.00		1268.9	0.05	0.07	0.04	22.33	
30.00		1238.2	0.08	0.07	0.04	22.34	
35.00		1207.5	0.10	0.07	0.04	22.32	
40.00		1176.8	0.13	0.07	0.03	22.28	
44.75	Bot - Section 2	1089.5	0.17	0.07	0.03	20.99	
45.00		97.62	0.17	0.07	0.03	1.88	
50.00		1924.7	0.21	0.06	0.02	37.18	
51.00	Top - Section 1	378.64	0.22	0.06	0.02	7.29	
55.00		628.19	0.25	0.05	0.02	11.76	
60.00		765.49	0.30	0.04	0.01	13.05	
65.00	Appurtenance(s)	745.56	0.35	0.03	0.01	10.29	
70.00		721.62	0.41	0.01	0.01	6.23	
75.00		699.68	0.47	-0.01	0.01	1.20	
80.00		677.74	0.54	-0.03	0.01	-4.06	
84.75	Bot - Section 3	623.54	0.60	-0.05	0.01	-7.91	
85.00		58.46	0.61	-0.06	0.02	-0.76	
89.75	Top - Section 2	1092.0	0.68	-0.08	0.03	-19.49	
90.00		25.32	0.68	-0.08	0.03	-0.46	
95.00		497.14	0.76	-0.10	0.04	-10.21	
100.00		479.59	0.84	-0.12	0.07	-9.77	
105.00		462.04	0.93	-0.12	0.10	-8.17	
110.00		444.49	1.02	-0.11	0.14	-5.57	
115.00		426.94	1.11	-0.06	0.19	-2.14	
117.00	Appurtenance(s)	4344.9	1.15	-0.04	0.22	-5.80	
120.00		243.53	1.21	0.01	0.26	1.19	
125.00		391.84	1.31	0.14	0.35	6.72	
126.00	Bot - Section 4	76.26	1.33	0.17	0.37	1.52	
127.00	Appurtenance(s)	1989.2	1.35	0.20	0.39	45.23	
129.75	Top - Section 3	359.73	1.41	0.31	0.45	11.17	
130.00		13.94	1.42	0.32	0.45	0.44	
135.00		271.98	1.53	0.58	0.58	13.34	
139.00	Appurtenance(s)	3171.0	1.62	0.85	0.70	204.87	
140.00		50.71	1.65	0.93	0.73	3.49	
145.00		245.66	1.77	1.39	0.92	22.38	
150.00	Appurtenance(s)	1917.3	1.89	1.98	1.14	222.60	
Totals:		35,189.1				734.1	Total Wind: 25,487.7

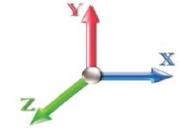
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E		Iterations 20
Gust Response Factor 1.10	Sds 0.09	Ss 0.17
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.07
Wind Load Factor 0.00	Structure Frequency (f1) 0.41	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	-38.06	-0.81	0.00	-87.89	0.00	87.89	5554.25	2777.13	13600.6	6810.41	0.00	0.00	0.00	0.020
5.00	-36.57	-0.80	0.00	-83.85	0.00	83.85	5477.89	2738.95	13118.7	6569.12	0.00	0.00	0.00	0.019
10.00	-35.11	-0.78	0.00	-79.86	0.00	79.86	5399.54	2699.77	12640.4	6329.59	0.01	-0.01	-0.01	0.019
15.00	-33.68	-0.76	0.00	-75.96	0.00	75.96	5319.17	2659.59	12165.9	6092.00	0.02	-0.01	-0.01	0.019
20.00	-32.28	-0.74	0.00	-72.16	0.00	72.16	5236.81	2618.40	11695.6	5856.50	0.03	-0.01	-0.01	0.018
25.00	-30.90	-0.72	0.00	-68.46	0.00	68.46	5152.44	2576.22	11229.8	5623.26	0.04	-0.02	-0.02	0.018
30.00	-29.55	-0.70	0.00	-64.86	0.00	64.86	5066.07	2533.04	10768.8	5392.43	0.06	-0.02	-0.02	0.018
35.00	-28.23	-0.68	0.00	-61.37	0.00	61.37	4977.70	2488.85	10313.0	5164.19	0.09	-0.02	-0.02	0.018
40.00	-26.94	-0.66	0.00	-57.98	0.00	57.98	4887.33	2443.67	9862.71	4938.68	0.12	-0.03	-0.03	0.017
44.75	-25.74	-0.64	0.00	-54.86	0.00	54.86	4799.62	2399.81	9440.25	4727.14	0.15	-0.03	-0.03	0.017
45.00	-25.64	-0.63	0.00	-54.70	0.00	54.70	4794.96	2397.48	9418.17	4716.08	0.15	-0.03	-0.03	0.017
50.00	-23.67	-0.60	0.00	-51.53	0.00	51.53	4700.58	2350.29	8979.75	4496.55	0.18	-0.04	-0.04	0.016
51.00	-23.28	-0.59	0.00	-50.93	0.00	50.93	3008.41	1504.20	5823.48	2916.07	0.19	-0.04	-0.04	0.025
55.00	-22.53	-0.58	0.00	-48.57	0.00	48.57	2970.26	1485.13	5621.72	2815.04	0.22	-0.04	-0.04	0.025
60.00	-21.61	-0.57	0.00	-45.67	0.00	45.67	2920.78	1460.39	5370.82	2689.40	0.27	-0.05	-0.05	0.024
65.00	-20.70	-0.56	0.00	-42.83	0.00	42.83	2869.29	1434.64	5121.68	2564.65	0.32	-0.05	-0.05	0.024
70.00	-19.82	-0.55	0.00	-40.03	0.00	40.03	2815.80	1407.90	4874.61	2440.93	0.37	-0.06	-0.06	0.023
75.00	-18.96	-0.55	0.00	-37.26	0.00	37.26	2760.31	1380.15	4629.95	2318.41	0.44	-0.06	-0.06	0.023
80.00	-18.12	-0.56	0.00	-34.49	0.00	34.49	2702.81	1351.41	4388.01	2197.26	0.51	-0.07	-0.07	0.022
84.75	-17.33	-0.56	0.00	-31.85	0.00	31.85	2646.34	1323.17	4160.98	2083.58	0.58	-0.07	-0.07	0.022
85.00	-17.27	-0.56	0.00	-31.71	0.00	31.71	2643.31	1321.66	4149.11	2077.64	0.58	-0.07	-0.07	0.022
89.75	-16.07	-0.56	0.00	-29.07	0.00	29.07	1922.43	961.22	2968.94	1486.68	0.66	-0.08	-0.08	0.028
90.00	-16.03	-0.56	0.00	-28.93	0.00	28.93	1920.55	960.27	2960.86	1482.63	0.66	-0.08	-0.08	0.028
95.00	-15.35	-0.56	0.00	-26.15	0.00	26.15	1881.78	940.89	2799.79	1401.97	0.75	-0.09	-0.09	0.027
100.00	-14.69	-0.56	0.00	-23.36	0.00	23.36	1841.02	920.51	2640.02	1321.97	0.85	-0.10	-0.10	0.026
105.00	-14.04	-0.56	0.00	-20.57	0.00	20.57	1798.25	899.12	2481.89	1242.79	0.95	-0.10	-0.10	0.024
110.00	-13.41	-0.56	0.00	-17.78	0.00	17.78	1753.48	876.74	2325.70	1164.58	1.07	-0.11	-0.11	0.023
115.00	-12.79	-0.56	0.00	-14.98	0.00	14.98	1706.70	853.35	2171.78	1087.50	1.19	-0.12	-0.12	0.021
117.00	-8.79	-0.55	0.00	-13.86	0.00	13.86	1687.43	843.72	2110.92	1057.03	1.24	-0.12	-0.12	0.018
120.00	-8.44	-0.55	0.00	-12.21	0.00	12.21	1657.93	828.96	2020.46	1011.73	1.31	-0.12	-0.12	0.017
125.00	-7.87	-0.54	0.00	-9.46	0.00	9.46	1607.15	803.57	1872.06	937.42	1.45	-0.13	-0.13	0.015
126.00	-7.76	-0.54	0.00	-8.92	0.00	8.92	1596.75	798.38	1842.76	922.75	1.47	-0.13	-0.13	0.015
127.00	-5.93	-0.49	0.00	-8.37	0.00	8.37	1586.28	793.14	1813.59	908.14	1.50	-0.13	-0.13	0.013
129.75	-5.52	-0.48	0.00	-7.02	0.00	7.02	1068.62	534.31	1212.20	607.00	1.58	-0.13	-0.13	0.017
130.00	-5.50	-0.48	0.00	-6.90	0.00	6.90	1067.16	533.58	1207.67	604.73	1.58	-0.14	-0.14	0.017
135.00	-5.09	-0.47	0.00	-4.50	0.00	4.50	1036.93	518.46	1117.63	559.65	1.73	-0.14	-0.14	0.013
139.00	-2.12	-0.25	0.00	-2.64	0.00	2.64	1011.29	505.65	1046.45	524.00	1.85	-0.14	-0.14	0.007
140.00	-2.06	-0.25	0.00	-2.39	0.00	2.39	1004.68	502.34	1028.80	515.16	1.88	-0.14	-0.14	0.007
145.00	-1.78	-0.23	0.00	-1.14	0.00	1.14	970.44	485.22	941.49	471.44	2.03	-0.15	-0.15	0.004
150.00	0.00	-0.22	0.00	0.00	0.00	0.00	934.20	467.10	856.03	428.65	2.18	-0.15	-0.15	0.000

Wind Loading - Shaft

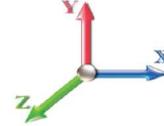
Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 27



Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 21

Dead Load Factor 1.00
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	0.70	6.129	6.74	254.87	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	249.35	0.650	0.000	5.00	25.111	16.32	110.0	0.0	1391.8
10.00		1.00	0.70	6.129	6.74	243.83	0.650	0.000	5.00	24.561	15.96	107.6	0.0	1361.1
15.00		1.00	0.70	6.129	6.74	238.30	0.650	0.000	5.00	24.011	15.61	105.2	0.0	1330.4
20.00		1.00	0.70	6.129	6.74	232.78	0.650	0.000	5.00	23.461	15.25	102.8	0.0	1299.7
25.00		1.00	0.70	6.129	6.74	227.26	0.650	0.000	5.00	22.911	14.89	100.4	0.0	1269.0
30.00		1.00	0.70	6.134	6.75	221.83	0.650	0.000	5.00	22.361	14.53	98.1	0.0	1238.2
35.00		1.00	0.73	6.410	7.05	221.12	0.650	0.000	5.00	21.811	14.18	100.0	0.0	1207.5
40.00		1.00	0.76	6.659	7.33	219.62	0.650	0.000	5.00	21.260	13.82	101.2	0.0	1176.8
44.75	Bot - Section 2	1.00	0.79	6.876	7.56	217.62	0.650	0.000	4.75	19.688	12.80	96.8	0.0	1089.5
45.00		1.00	0.79	6.887	7.58	217.50	0.650	0.000	0.25	1.036	0.67	5.1	0.0	97.6
50.00		1.00	0.81	7.098	7.81	214.85	0.650	0.000	5.00	20.425	13.28	103.7	0.0	1924.8
51.00	Top - Section 1	1.00	0.82	7.138	7.85	214.27	0.650	0.000	1.00	4.019	2.61	20.5	0.0	378.6
55.00		1.00	0.83	7.294	8.02	214.67	0.650	0.000	4.00	15.856	10.31	82.7	0.0	628.2
60.00		1.00	0.85	7.477	8.22	211.26	0.650	0.000	5.00	19.325	12.56	103.3	0.0	765.5
65.00	Appurtenance(s)	1.00	0.87	7.650	8.42	207.52	0.650	0.000	5.00	18.775	12.20	102.7	0.0	743.6
70.00		1.00	0.89	7.814	8.60	203.49	0.650	0.000	5.00	18.225	11.85	101.8	0.0	721.6
75.00		1.00	0.91	7.969	8.77	199.21	0.650	0.000	5.00	17.675	11.49	100.7	0.0	699.7
80.00		1.00	0.93	8.118	8.93	194.70	0.650	0.000	5.00	17.125	11.13	99.4	0.0	677.7
84.75	Bot - Section 3	1.00	0.94	8.253	9.08	190.22	0.650	0.000	4.75	15.759	10.24	93.0	0.0	623.5
85.00		1.00	0.94	8.260	9.09	189.98	0.650	0.000	0.25	0.826	0.54	4.9	0.0	58.5
89.75	Top - Section 2	1.00	0.96	8.389	9.23	185.32	0.650	0.000	4.75	15.437	10.03	92.6	0.0	1092.1
90.00		1.00	0.96	8.396	9.24	187.56	0.650	0.000	0.25	0.799	0.52	4.8	0.0	25.3
95.00		1.00	0.97	8.526	9.38	182.50	0.650	0.000	5.00	15.686	10.20	95.6	0.0	497.1
100.00		1.00	0.99	8.652	9.52	177.28	0.650	0.000	5.00	15.136	9.84	93.6	0.0	479.6
105.00		1.00	1.00	8.774	9.65	171.91	0.650	0.000	5.00	14.586	9.48	91.5	0.0	462.0
110.00		1.00	1.02	8.891	9.78	166.41	0.650	0.000	5.00	14.036	9.12	89.2	0.0	444.5
115.00		1.00	1.03	9.005	9.91	160.78	0.650	0.000	5.00	13.486	8.77	86.8	0.0	426.9
117.00	Appurtenance(s)	1.00	1.03	9.049	9.95	158.49	0.650	0.000	2.00	5.240	3.41	33.9	0.0	165.9
120.00		1.00	1.04	9.115	10.03	155.02	0.650	0.000	3.00	7.696	5.00	50.2	0.0	243.5
125.00		1.00	1.05	9.222	10.14	149.15	0.650	0.000	5.00	12.386	8.05	81.7	0.0	391.8
126.00	Bot - Section 4	1.00	1.06	9.243	10.17	147.97	0.650	0.000	1.00	2.411	1.57	15.9	0.0	76.3
127.00	Appurtenance(s)	1.00	1.06	9.264	10.19	146.78	0.650	0.000	1.00	2.421	1.57	16.0	0.0	133.1
129.75	Top - Section 3	1.00	1.06	9.321	10.25	143.48	0.650	0.000	2.75	6.544	4.25	43.6	0.0	359.7
130.00		1.00	1.07	9.326	10.26	145.15	0.650	0.000	0.25	0.587	0.38	3.9	0.0	13.9
135.00		1.00	1.08	9.427	10.37	139.08	0.650	0.000	5.00	11.445	7.44	77.1	0.0	272.0
139.00	Appurtenance(s)	1.00	1.09	9.506	10.46	134.16	0.650	0.000	4.00	8.760	5.69	59.5	0.0	208.1
140.00		1.00	1.09	9.525	10.48	132.92	0.650	0.000	1.00	2.135	1.39	14.5	0.0	50.7
145.00		1.00	1.10	9.621	10.58	126.67	0.650	0.000	5.00	10.345	6.72	71.2	0.0	245.7
150.00	Appurtenance(s)	1.00	1.11	9.715	10.69	120.33	0.650	0.000	5.00	9.795	6.37	68.0	0.0	232.5
Totals:									150.00			2,829.7	24,504.2	

Discrete Appurtenance Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II

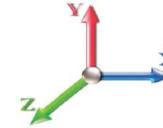


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

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	150.00	Low Profile Platform	1	9.715	10.686	1.00	1.00	22.00	1500.00	0.000	0.000	235.10	0.00	0.00
2	150.00	Decibel DB846G90A-XY	12	9.715	10.686	1.01	0.90	60.60	184.80	0.000	0.000	647.60	0.00	0.00
3	139.00	Raycap DC6-48-60-18-8F	3	9.506	10.456	1.00	1.00	2.76	95.40	0.000	0.000	28.86	0.00	0.00
4	139.00	Low Profile Platform	1	9.506	10.456	1.00	1.00	22.00	1500.00	0.000	0.000	230.04	0.00	0.00
5	139.00	Powerwave 7770	3	9.506	10.456	0.58	0.80	9.64	105.00	0.000	0.000	100.76	0.00	0.00
6	139.00	Powerwave LGP 21401	6	9.506	10.456	0.54	0.80	3.38	186.00	0.000	0.000	35.31	0.00	0.00
7	139.00	Powerwave LGP 13519	6	9.506	10.456	0.54	0.80	1.09	31.80	0.000	0.000	11.43	0.00	0.00
8	139.00	CCI DMP65R-BU4DA	4	9.506	10.456	0.58	0.80	19.08	271.60	0.000	0.000	199.48	0.00	0.00
9	139.00	Commscope	1	9.506	10.456	1.00	1.00	0.05	1.10	0.000	0.000	0.52	0.00	0.00
10	139.00	CCI DMP65R-BU6DA	2	9.506	10.456	0.58	0.80	14.85	158.80	0.000	0.000	155.23	0.00	0.00
11	139.00	Ericsson RRUS 4478 B14	3	9.506	10.456	0.65	0.80	3.93	178.20	0.000	0.000	41.06	0.00	0.00
12	139.00	Ericsson RRUS 8843 B2	3	9.506	10.456	0.74	0.80	3.62	216.00	0.000	0.000	37.86	0.00	0.00
13	139.00	Ericsson RRUS 4449	3	9.506	10.456	0.72	0.80	3.54	219.00	0.000	0.000	37.04	0.00	0.00
14	127.00	Antel	3	9.284	10.213	0.70	0.80	12.03	54.00	0.000	1.000	122.83	0.00	122.83
15	127.00	Low Profile Platform	1	9.264	10.190	1.00	1.00	22.00	1500.00	0.000	0.000	224.18	0.00	0.00
16	127.00	RFS FD9R6004/2C-3L	6	9.284	10.213	0.54	0.80	1.19	18.60	0.000	1.000	12.15	0.00	12.15
17	127.00	Antel	3	9.284	10.213	0.67	0.80	5.93	31.50	0.000	1.000	60.53	0.00	60.53
18	127.00	Antel LPA-80080/6CF	12	9.264	10.190	1.36	0.80	70.67	252.00	0.000	0.000	720.08	0.00	0.00
19	117.00	F4P-HRK10	1	9.049	9.954	1.00	1.00	9.00	478.27	0.000	0.000	89.59	0.00	0.00
20	117.00	Ericsson RRU 2217 B2	4	9.049	9.954	0.50	0.75	5.17	176.00	0.000	0.000	51.42	0.00	0.00
21	117.00	SitePro F4P-10W	1	9.049	9.954	1.00	1.00	58.98	2396.00	0.000	0.000	587.09	0.00	0.00
22	117.00	RFS	4	9.049	9.954	0.55	0.75	11.32	105.60	0.000	0.000	112.70	0.00	0.00
23	117.00	Ericsson Air 32	4	9.049	9.954	0.65	0.75	16.99	423.20	0.000	0.000	169.13	0.00	0.00
24	117.00	RFS	4	9.049	9.954	0.55	0.75	44.33	396.00	0.000	0.000	441.22	0.00	0.00
25	117.00	Ericsson S11B12	4	9.049	9.954	0.50	0.75	5.69	204.00	0.000	0.000	56.62	0.00	0.00
26	65.00	Motorola RRA4905A	2	7.650	8.415	1.00	1.00	0.28	2.00	0.000	0.000	2.36	0.00	0.00

Totals: 10,684.87

4,410.19

Total Applied Force Summary

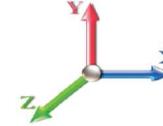
Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

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		110.03	1651.81	0.00	0.00
10.00		107.62	1621.10	0.00	0.00
15.00		105.21	1590.39	0.00	0.00
20.00		102.80	1559.67	0.00	0.00
25.00		100.39	1528.96	0.00	0.00
30.00		98.07	1498.25	0.00	0.00
35.00		99.96	1467.54	0.00	0.00
40.00		101.23	1436.82	0.00	0.00
44.75		96.80	1336.53	0.00	0.00
45.00		5.10	110.62	0.00	0.00
50.00		103.65	2184.77	0.00	0.00
51.00		20.51	430.64	0.00	0.00
55.00		82.69	836.19	0.00	0.00
60.00		103.31	1025.49	0.00	0.00
65.00	(2) attachments	105.05	1005.56	0.00	0.00
70.00		101.82	980.02	0.00	0.00
75.00		100.71	958.08	0.00	0.00
80.00		99.40	936.14	0.00	0.00
84.75		92.99	869.02	0.00	0.00
85.00		4.88	71.38	0.00	0.00
89.75		92.60	1337.55	0.00	0.00
90.00		4.79	38.24	0.00	0.00
95.00		95.63	755.54	0.00	0.00
100.00		93.64	737.99	0.00	0.00
105.00		91.50	720.44	0.00	0.00
110.00		89.23	702.89	0.00	0.00
115.00		86.83	685.34	0.00	0.00
117.00	(22) attachments	1541.67	4448.29	0.00	0.00
120.00		50.15	386.09	0.00	0.00
125.00		81.67	629.44	0.00	0.00
126.00		15.93	123.78	0.00	0.00
127.00	(25) attachments	1155.81	2036.74	0.00	195.51
129.75		43.61	456.09	0.00	0.00
130.00		3.91	22.70	0.00	0.00
135.00		77.14	447.18	0.00	0.00
139.00	(35) attachments	937.13	3311.17	0.00	0.00
140.00		14.54	63.19	0.00	0.00
145.00		71.16	308.06	0.00	0.00
150.00	(13) attachments	950.74	1979.70	0.00	0.00
Totals:		7,239.92	42,289.39	0.00	195.51

Linear Appurtenance Segment Forces (Factored)

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind	Iterations 21
Dead Load Factor 1.00	
Wind Load Factor 1.00	

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	6.129	0.00	1.60
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	6.129	0.00	1.60
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	6.129	0.00	1.60
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	6.129	0.00	1.60
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	6.129	0.00	1.60
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	6.134	0.00	1.60
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	6.410	0.00	1.60
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	6.659	0.00	1.60
44.75	1/2" Coax	Yes	4.75	0.000	0.65	0.26	0.00	0.013	0.000	6.876	0.00	1.52
45.00	1/2" Coax	Yes	0.25	0.000	0.65	0.01	0.00	0.013	0.000	6.887	0.00	0.08
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	7.098	0.00	1.60
51.00	1/2" Coax	Yes	1.00	0.000	0.65	0.05	0.00	0.014	0.000	7.138	0.00	0.32
55.00	1/2" Coax	Yes	4.00	0.000	0.65	0.22	0.00	0.014	0.000	7.294	0.00	1.28
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	7.477	0.00	1.60
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.014	0.000	7.650	0.00	1.60
Totals:											0.0	20.8

Calculated Forces

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind	Iterations 21
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	-42.29	-7.25	0.00	-803.55	0.00	803.55	5554.25	2777.13	13600.6	6810.41	0.00	0.000	0.000	0.126
5.00	-40.63	-7.16	0.00	-767.30	0.00	767.30	5477.89	2738.95	13118.7	6569.12	0.02	-0.030	0.000	0.124
10.00	-39.01	-7.07	0.00	-731.49	0.00	731.49	5399.54	2699.77	12640.4	6329.59	0.06	-0.061	0.000	0.123
15.00	-37.41	-6.99	0.00	-696.13	0.00	696.13	5319.17	2659.59	12165.9	6092.00	0.15	-0.092	0.000	0.121
20.00	-35.85	-6.90	0.00	-661.19	0.00	661.19	5236.81	2618.40	11695.6	5856.50	0.26	-0.124	0.000	0.120
25.00	-34.32	-6.82	0.00	-626.69	0.00	626.69	5152.44	2576.22	11229.8	5623.26	0.41	-0.157	0.000	0.118
30.00	-32.82	-6.73	0.00	-592.61	0.00	592.61	5066.07	2533.04	10768.8	5392.43	0.59	-0.190	0.000	0.116
35.00	-31.34	-6.65	0.00	-558.94	0.00	558.94	4977.70	2488.85	10313.0	5164.19	0.80	-0.223	0.000	0.115
40.00	-29.90	-6.56	0.00	-525.71	0.00	525.71	4887.33	2443.67	9862.71	4938.68	1.06	-0.258	0.000	0.113
44.75	-28.57	-6.46	0.00	-494.57	0.00	494.57	4799.62	2399.81	9440.25	4727.14	1.33	-0.291	0.000	0.111
45.00	-28.45	-6.47	0.00	-492.95	0.00	492.95	4794.96	2397.48	9418.17	4716.08	1.35	-0.292	0.000	0.110
50.00	-26.27	-6.36	0.00	-460.62	0.00	460.62	4700.58	2350.29	8979.75	4496.55	1.67	-0.328	0.000	0.108
51.00	-25.83	-6.35	0.00	-454.26	0.00	454.26	3008.41	1504.20	5823.48	2916.07	1.74	-0.335	0.000	0.164
55.00	-24.99	-6.27	0.00	-428.88	0.00	428.88	2970.26	1485.13	5621.72	2815.04	2.03	-0.364	0.000	0.161
60.00	-23.96	-6.18	0.00	-397.51	0.00	397.51	2920.78	1460.39	5370.82	2689.40	2.44	-0.412	0.000	0.156
65.00	-22.95	-6.09	0.00	-366.59	0.00	366.59	2869.29	1434.64	5121.68	2564.65	2.90	-0.461	0.000	0.151
70.00	-21.97	-6.00	0.00	-336.14	0.00	336.14	2815.80	1407.90	4874.61	2440.93	3.41	-0.509	0.000	0.146
75.00	-21.01	-5.91	0.00	-306.14	0.00	306.14	2760.31	1380.15	4629.95	2318.41	3.97	-0.558	0.000	0.140
80.00	-20.07	-5.82	0.00	-276.60	0.00	276.60	2702.81	1351.41	4388.01	2197.26	4.58	-0.607	0.000	0.133
84.75	-19.20	-5.72	0.00	-248.97	0.00	248.97	2646.34	1323.17	4160.98	2083.58	5.21	-0.653	0.000	0.127
85.00	-19.12	-5.72	0.00	-247.54	0.00	247.54	2643.31	1321.66	4149.11	2077.64	5.24	-0.655	0.000	0.126
89.75	-17.79	-5.62	0.00	-220.36	0.00	220.36	1922.43	961.22	2968.94	1486.68	5.92	-0.700	0.000	0.158
90.00	-17.74	-5.63	0.00	-218.95	0.00	218.95	1920.55	960.27	2960.86	1482.63	5.95	-0.703	0.000	0.157
95.00	-16.98	-5.54	0.00	-190.82	0.00	190.82	1881.78	940.89	2799.79	1401.97	6.72	-0.758	0.000	0.145
100.00	-16.24	-5.45	0.00	-163.14	0.00	163.14	1841.02	920.51	2640.02	1321.97	7.54	-0.811	0.000	0.132
105.00	-15.52	-5.36	0.00	-135.90	0.00	135.90	1798.25	899.12	2481.89	1242.79	8.42	-0.861	0.000	0.118
110.00	-14.81	-5.27	0.00	-109.10	0.00	109.10	1753.48	876.74	2325.70	1164.58	9.35	-0.907	0.000	0.102
115.00	-14.13	-5.18	0.00	-82.75	0.00	82.75	1706.70	853.35	2171.78	1087.50	10.32	-0.948	0.000	0.084
117.00	-9.70	-3.57	0.00	-72.39	0.00	72.39	1687.43	843.72	2110.92	1057.03	10.72	-0.962	0.000	0.074
120.00	-9.32	-3.51	0.00	-61.69	0.00	61.69	1657.93	828.96	2020.46	1011.73	11.33	-0.983	0.000	0.067
125.00	-8.69	-3.42	0.00	-44.12	0.00	44.12	1607.15	803.57	1872.06	937.42	12.38	-1.011	0.000	0.052
126.00	-8.57	-3.41	0.00	-40.70	0.00	40.70	1596.75	798.38	1842.76	922.75	12.59	-1.017	0.000	0.049
127.00	-6.55	-2.22	0.00	-37.10	0.00	37.10	1586.28	793.14	1813.59	908.14	12.80	-1.022	0.000	0.045
129.75	-6.09	-2.16	0.00	-31.00	0.00	31.00	1068.62	534.31	1212.20	607.00	13.40	-1.034	0.000	0.057
130.00	-6.07	-2.16	0.00	-30.46	0.00	30.46	1067.16	533.58	1207.67	604.73	13.45	-1.035	0.000	0.056
135.00	-5.62	-2.08	0.00	-19.66	0.00	19.66	1036.93	518.46	1117.63	559.65	14.55	-1.058	0.000	0.041
139.00	-2.33	-1.08	0.00	-11.34	0.00	11.34	1011.29	505.65	1046.45	524.00	15.44	-1.071	0.000	0.024
140.00	-2.27	-1.06	0.00	-10.26	0.00	10.26	1004.68	502.34	1028.80	515.16	15.66	-1.073	0.000	0.022
145.00	-1.96	-0.99	0.00	-4.94	0.00	4.94	970.44	485.22	941.49	471.44	16.79	-1.083	0.000	0.013
150.00	0.00	-0.95	0.00	0.00	0.00	0.00	934.20	467.10	856.03	428.65	17.93	-1.086	0.000	0.000

Final Analysis Summary

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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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 89 mph Wind	25.5	0.00	50.72	0.00	0.00	2843.95
0.9D + 1.6W 89 mph Wind	25.5	0.00	38.04	0.00	0.00	2819.61
1.2D + 1.0Di + 1.0Wi 40 mph Wind	5.8	0.00	90.57	0.00	0.00	653.91
1.2D + 1.0E	0.8	0.00	50.75	0.00	0.00	88.70
0.9D + 1.0E	0.8	0.00	38.06	0.00	0.00	87.89
1.0D + 1.0W 60 mph Wind	7.3	0.00	42.29	0.00	0.00	803.55

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 89 mph Wind	-30.57	-22.45	0.00	-1610.7	0.00	-1610.7	3008.41	1504.2	5823.48	2916.07	51.00	0.563
0.9D + 1.6W 89 mph Wind	-22.81	-22.28	0.00	-1591.5	0.00	-1591.5	3008.41	1504.2	5823.48	2916.07	51.00	0.554
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-63.77	-5.16	0.00	-372.32	0.00	-372.32	3008.41	1504.2	5823.48	2916.07	51.00	0.149
1.2D + 1.0E	-21.42	-0.56	0.00	-29.45	0.00	-29.45	1922.43	961.22	2968.94	1486.68	89.75	0.031
0.9D + 1.0E	-16.07	-0.56	0.00	-29.07	0.00	-29.07	1922.43	961.22	2968.94	1486.68	89.75	0.028
1.0D + 1.0W 60 mph Wind	-25.83	-6.35	0.00	-454.26	0.00	-454.26	3008.41	1504.2	5823.48	2916.07	51.00	0.164

Base Plate Summary

Structure: CT13613-A	Code: EIA/TIA-222-G	9/10/2019
Site Name: Johnson	Exposure: B	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: A - Hard Rock	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 33



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 67.00
Moment (kip-ft): 4200.00	Width (in): 66.00	Number Bolts: 20.00
Axial (kip): 36.00	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 39.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 14.00	Yield (ksi): 75.00
Moment (kip-ft): 2843.95	Effective Len (in): 9.14	Ultimate (ksi): 100.00
Axial (kip): 90.57	Moment (kip-in): 372.40	Arrangement: Clustered
Shear (kip): 25.54	Allow Stress (ksi): 67.50	Cluster Dist (in): 6.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 45.00
Moment Design %: 67.71	Stress Ratio: 0.48	Compression
		Force (kip): 106.40
		Allowable (kip): 260.00
		Ratio: 0.42
		Tension
		Force (kip): 97.34
		Allowable (kip): 260.00
		Ratio: 0.38



Monopole Mat Foundation Design			Date
Customer Name:	SBA Communications Corp	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	53
Site Number:	CT13613-A	Engineer Name:	S. Berthomieu
Engr. Number:		Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

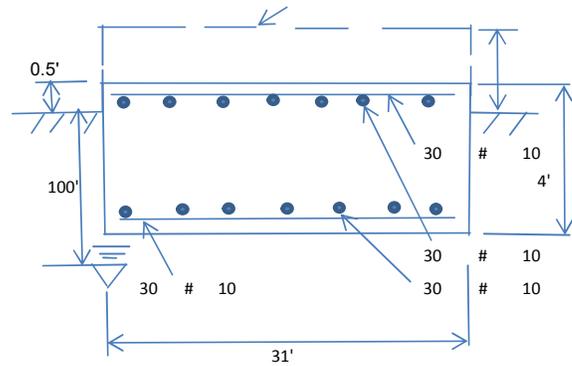
Axial Load (Kips):	50.7	Shear Force (Kips):	25.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2844.0

Allowable overstress %: 5.0%

Foundation Geometries:

Anchor Bolt Circle (ft.):	5.58	Mod's required -Yes/No ?:	No
Thickness of Pad (ft):	4.00	Depth of Base BG (ft.):	3.50
Length of Pad (ft.):	31	Width of Pad (ft.):	31

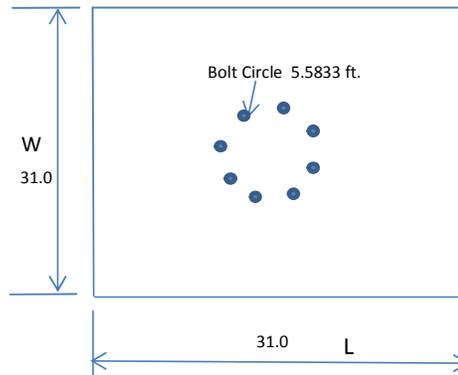
Final Length of pad (ft) 31.0 Final width of pad (ft): 31.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	12.0	
Pad Steel Rebar Size (#):	10	Unit Weight of Concrete:	150.0	pcf
Concrete Cover (in.):	3			
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30	

Apply 1.35 factor for e/w Per G: 1.35



Soil Design Parameters:

Water Table B.G.S. (ft):	100.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	20000	Ultimate Skin Friction:	0	Psf	Angle from Botm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Botm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3844.00	Total Dry Concrete Weight (Kips):	576.60
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	576.60	Total Vertical Load on Base (Kips):	627.32

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1474	<	Allowable Factored Soil Bearing (psf):	15000	0.10	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	8829.7	>	Design Factored Momont (kips-ft):	2947	0.33	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.00					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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1356.2	>	One-Way Factored Shear (L-D. Kips):	280.0	0.21	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1356.2	>	One-Way Factored Shear (W-D., Kips):	280.0	0.21	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	1651.9	>	One-Way Factored Shear (C-C, Kips):	413.0	0.25	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0023	OK!	Lower Steel Pad Reinf. Ratio (W-Direct	0.0023		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	7401.5	>	Moment at Bottom (L-Direct. K-Ft):	1226.6	0.17	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	7401.5	>	Moment at Bottom (W-Direct. K-Ft):	1226.6	0.17	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	10420.2	>	Moment at Bottom (C-C Dir. K-Ft):	1734.7	0.17	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0023	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0023		
Upper Steel Pad Moment Capacity (L-Direction, Kips-ft):	7401.5	>	Moment at the top (L-Dir Kips-Ft):	141.9	0.02	OK!
Upper Steel Pad Moment Capacity (W-Direction, Kips-ft):	7401.5	>	Moment at the top (W-Dir Kips-Ft):	141.9	0.02	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	10420.2	>	Moment at the top (C-C Direc. K-Ft):	449.3	0.04	OK!



Non-Ionizing Radiation Report

Compiled For: Smartlink on behalf of AT&T

Site Name: Colebrook CT Colebrook River RD

Site FA: 10113275

Site ID: CTL01254

382 Colebrook River Road, Colebrook, CT 06021

Latitude: 41.9921889 Longitude: -73.0396739

Structure Type: Monopole

Report Date: October 6, 2019

Status: AT&T will be compliant with FCC rules on RF Exposure with the signage recommendation in section 4 of this report.

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1. Executive Summary:

Smartlink on behalf of AT&T has contracted Infinigy Solutions, LLC to determine whether the site Colebrook CT Colebrook River RD located at 322 Beaver Brook Road in Old Lyme, CT Will Be Compliant with all Federal Communications Commission (FCC) rules and regulations for radio frequency (RF) exposure as indicated in **47CFR§1.1310**.

The report incorporates a theoretical RF field analysis in accordance with the FCC Rules and Regulations for all individuals classified as “Occupational or Controlled” and “General Public or Uncontrolled” (see Appendix A and B).

This document and the conclusions herein are based on information provided by Smartlink on behalf of AT&T.

As a result of the analysis, **AT&T Will Be Compliant with FCC rules with the installation of signage recommended in section 4.**

Engineering assumptions were made regarding the collation operator(s). The assumptions were made based upon typical deployment configurations and practices of the operator(s).

All Bands Cumulative Exposure %		
Uncontrolled / General Population	Exposure values at the site (mW/cm ²)	0.0103
	% Exposure	1.20%
Controlled / Occupational	Exposure values at the site (mW/cm ²)	0.0103
	% Exposure	0.26%

2. Site Summary:

Site Information	
Site Name: Colebrook CT Colebrook River RD	
Site Address: 382 Colebrook River Road, Colebrook, CT 06021	
Site Type: Monopole	
Compliance Status	Will Be Compliant
Mitigation Required	No
Signage Required	Yes
Barriers Required	No
Access Locked	No
Area Controlled or Uncontrolled	Uncontrolled

3. Site Compliance

This report also incorporates overview of the site information:

- Antenna Inventory Table
- Calculation Tables showing exposure for each carrier transmit frequency
- Total exposure for all carriers existing and proposed at ground level considering the centerline of all antennas and horizontal distance from the tower.
- Maximum Effective Radiated Power Assumed as Worst Case for Calculations used in this study
- Calculations based on flat ground around base of the structure

4. Site Compliance Recommendations

Infinigy recommends the following upon the installation of antennas at the site:

Base of tower

Caution 2 sign.

Note: The above signage recommendation is moot if there is an existing caution 2 sign at the base of the tower.

5. Antenna Inventory Table

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency	Rad Ctr (Ft)	Total ERP Power (Watts)
1	Alpha	AT&T	Powerwave	7770	850	150	321
2a	Alpha	AT&T	CCI	DMP65R-BU4DA	700	150	2951
2a	Alpha	AT&T	CCI	DMP65R-BU4DA	700	150	2951
2b	Alpha	AT&T	CCI	DMP65R-BU4DA	1900	150	3837
3a	Alpha	AT&T	CCI	DMP65R-BU4DA	700	150	1475
3b	Alpha	AT&T	CCI	DMP65R-BU4DA	850	150	1000
3c	Alpha	AT&T	CCI	DMP65R-BU4DA	2100	150	3664
3d	Alpha	AT&T	CCI	DMP65R-BU4DA	850	150	1000
4	Beta	AT&T	Powerwave	7770	850	150	321
5a	Beta	AT&T	CCI	DMP65R-BU4DA	700	150	2951
5b	Beta	AT&T	CCI	DMP65R-BU4DA	1900	150	3837
6a	Beta	AT&T	CCI	DMP65R-BU4DA	700	150	1475
6b	Beta	AT&T	CCI	DMP65R-BU4DA	850	150	1000
6c	Beta	AT&T	CCI	DMP65R-BU4DA	2100	150	3664
6d	Beta	AT&T	CCI	DMP65R-BU4DA	850	150	1000
7	Gamma	AT&T	Powerwave	7770	850	150	321
8a	Gamma	AT&T	CCI	DMP65R-BU4DA	700	150	2951
8b	Gamma	AT&T	CCI	DMP65R-BU4DA	1900	150	3837
9a	Gamma	AT&T	CCI	DMP65R-BU4DA	700	150	1475
9b	Gamma	AT&T	CCI	DMP65R-BU4DA	850	150	1000
9c	Gamma	AT&T	CCI	DMP65R-BU4DA	2100	150	3664
9d	Gamma	AT&T	CCI	DMP65R-BU4DA	850	150	1000

6. RF Guidelines

To ensure safety of company workers, the following points need to be taken into consideration and implemented at wireless sites in accordance with the Carriers policies:

- a) **Worksite:** Any employee at the site should avoid working directly in front of the antenna or in areas predicted to exceed general population exposure limits by 100%. Workers should insist that the transmitters be switched off during the work period.
- b) **RF Safety Training and Awareness:** All employees working in areas exceeding the general population limits should have a basic awareness of RF safety measures. Videos, classroom lectures and online courses are all appropriate training methods on these topics.
- c) **Site Access:** Restricting access to transmitting antenna locations is one of the most important elements of RF safety. This can be done with:
 - Locked doors/gates/ladder access
 - Alarmed doors
 - Restrictive barriers
- d) **Three-foot Buffer:** There is an inverse relationship between the strength of the field and the distance from the antenna. The RF field diminishes with distance from the antenna. Workers should maintain a three-foot distance from the antennas.
- e) **Antennas:** Workers should always assume that the antenna is transmitting and should never stop right in front of the antenna. If someone must pass by an antenna, he/she should move quickly, thus reducing RF exposure.

Attachment 1: AT&T Exposure Analysis

AT&T 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm ²)	0.5
	Exposure values at the site (mW/cm ²)	0.0032
	% Exposure	0.64%
Controlled / Occupational	FCC's Exposure limits(mW/cm ²)	2.3
	Exposure values at the site (mW/cm ²)	0.0032
	% Exposure	0.14%

AT&T 850 MHz UMTS		
Uncontrolled / General Population	FCC's exposure limits (mW/cm ²)	0.6
	Exposure values at the site (mW/cm ²)	0.0002
	% Exposure	0.04%
Controlled / Occupational	FCC's Exposure limits(mW/cm ²)	2.8
	Exposure values at the site (mW/cm ²)	0.0002
	% Exposure	0.01%

AT&T 850 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm ²)	0.6
	Exposure values at the site (mW/cm ²)	0.0007
	% Exposure	0.12%
Controlled / Occupational	FCC's Exposure limits(mW/cm ²)	2.8
	Exposure values at the site (mW/cm ²)	0.0007
	% Exposure	0.03%

AT&T 850 MHz 5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm ²)	0.6
	Exposure values at the site (mW/cm ²)	0.0007
	% Exposure	0.12%
Controlled / Occupational	FCC's Exposure limits(mW/cm ²)	2.8
	Exposure values at the site (mW/cm ²)	0.0007
	% Exposure	0.03%

AT&T 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm ²)	1.0
	Exposure values at the site (mW/cm ²)	0.0028
	% Exposure	0.28%
Controlled / Occupational	FCC's Exposure limits(mW/cm ²)	5.0
	Exposure values at the site (mW/cm ²)	0.0028
	% Exposure	0.06%

AT&T 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm ²)	1.0
	Exposure values at the site (mW/cm ²)	0.0027
	% Exposure	0.27%
Controlled / Occupational	FCC's Exposure limits(mW/cm ²)	5.0
	Exposure values at the site (mW/cm ²)	0.0027
	% Exposure	0.05%

7. Appendix A: FCC Guidelines

FCC Policies

The Federal Communications Commission (FCC) in 1996 implemented regulations and policies for analysis of RF propagation to evaluate RF emissions. All the analysis and results of this report are compared with FCC's (Federal Communications Commission) rules to determine whether a site is compliant for Occupational/Controlled or General Public/Uncontrolled exposure. All the analysis of RF propagation is done in terms of a percentage. The limits primarily indicate the power density and are generally expressed in terms of milliwatts per centimeter square, mW/cm².

FCC guidelines incorporate two separate tiers of exposure limits that are dependent on the scenario/ situation in which that exposure takes place or the status of the individuals who are subjected to that exposure. The decision as to which tier is applied to a scenario is based on the following definitions:

Occupational / Controlled

These limits apply in situations when someone is exposed to RF energy through his/her occupation, is fully aware of the harmful effects of the RF exposure and has an ability to exercise control over this exposure. Occupational / controlled exposure limits also apply when exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. limits for Occupational/Controlled exposure can be found on Table 1(A).

General Population / Uncontrolled

These limits apply to situations in which the general public may be exposed or in which persons who are exposed because of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure to RF. Therefore, members of the general public would always be considered under this category, for example, in the case of a telecommunications tower that exposes people in a nearby residential area. Exposure limits for General Population/Uncontrolled can be found on Table 1(B).

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

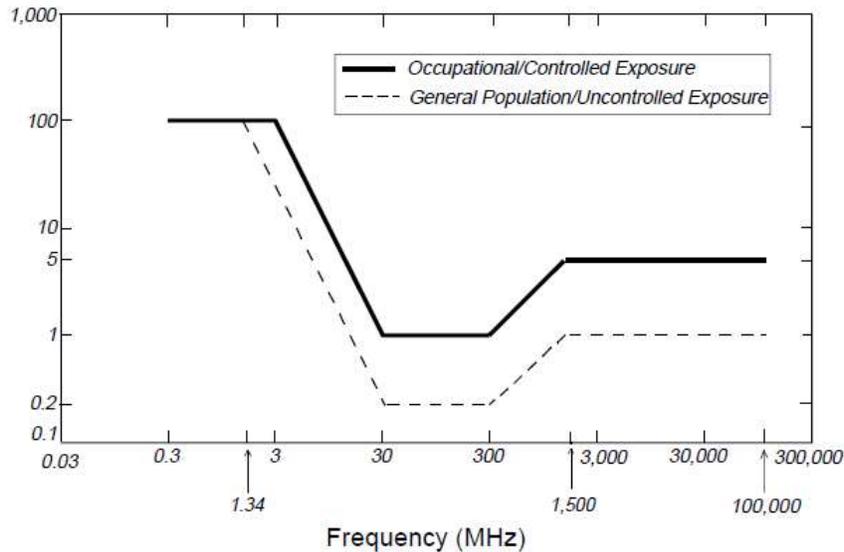
(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density



OSHA Statement:

The objective of the OSHA Act is to ensure the safety and health of the working men and women by enforcing certain standards. The act also assists and encourages the states in their efforts to ensure safe and healthy working conditions through means of research, information, education and training in the field of occupational safety and health and for other purposes.

According to OSHA Act section 5, important duties to be considered are:

(a) Each employer

- 1) Shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious harm to his employees
- 2) Shall comply with occupational safety and health standards promulgated under this act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

8. Appendix B: Preparer Certification

I, Tim Harris, preparer of this report, certify that I am fully trained and aware of the rules and regulations of both the Federal Communications Commission and the Occupational Safety and Health Administration regarding Human Exposure to Radio Frequency Radiation. In addition, I have been trained in 1) RF safety and 2) RF modeling using RoofView modeling software.

I certify that the information contained in this report is true and correct to the best of my knowledge.

Timothy A. Harris

10/6/2019

Signature

Date



Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Thursday, October 24, 2019 11:57 AM
To: Kristina Cottone
Subject: FedEx Shipment 776758546004 Delivered

Your package has been delivered

Tracking # [776758546004](#)

Ship date: Wed, 10/23/2019	Delivery date: Thu, 10/24/2019 11:56 am
Smartlink LLC NORTH BILLERICA, MA 01862 US	382 Colebrook LLC 382 COLEBROOK LLC 202 HANG DOG LN WETHERSFIELD, CT 06109402502 US



Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	776758546004
Status:	Delivered: 10/24/2019 11:56 AM Signed for By: Signature on File
Reference:	CTL01254 Colebrook
Signed for by:	Signature on File
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.
Standard transit:	10/24/2019

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:57 AM CDT on 10/24/2019.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Monday, October 28, 2019 2:50 PM
To: Kristina Cottone
Subject: FedEx Shipment 776735080586 Delivered

Your package has been delivered

Tracking # [776735080586](#)

Ship date: Wed, 10/23/2019	Delivery date: Mon, 10/28/2019
Kristina Cottone Smartlink LLC NORTH BILLERICA, MA 01862 US	Carla Shorter SBA COMMUNICATIONS CORP. 8051 CONGRESS AVE BOCA RATON, FL 33487131099 US


Delivered

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	776735080586
Status:	Delivered: 10/28/2019
Reference:	CTL01254 Colebrook
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.
Standard transit:	10/28/2019

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 1:50 PM CDT on 10/28/2019.

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Standard transit is the date the package should be delivered by, based on the selected service, destination, and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

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Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Thursday, October 24, 2019 1:27 PM
To: Kristina Cottone
Subject: FedEx Shipment 776735058952 Delivered

Your package has been delivered

Tracking # 776735058952

Ship date: Wed, 10/23/2019	Delivery date: Thu, 10/24/2019 1:25 pm
Kristina Cottone Smartlink LLC NORTH BILLERICA, MA 01862 US	 Delivered ATTN: Thomas D. McKeon TOWN OF COLEBROOK 562 COLEBROOK RD COLEBROOK, CT 06021101062 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	776735058952
Status:	Delivered: 10/24/2019 1:25 PM
Reference:	CTL01254 - Colebrook
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.
Standard transit:	10/24/2019

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 12:27 PM CDT on 10/24/2019.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date the package should be delivered by, based on the selected service, destination, and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Kristina Cottone

From: TrackingUpdates@fedex.com
Sent: Thursday, October 24, 2019 1:27 PM
To: Kristina Cottone
Subject: FedEx Shipment 776735002630 Delivered

Your package has been delivered

Tracking # [776735002630](#)

Ship date: Wed, 10/23/2019	Delivery date: Thu, 10/24/2019 1:25 pm
Kristina Cottone Smartlink LLC NORTH BILLERICA, MA 01862 US	ATTN: Marc Melanson TOWN OF COLEBROOK 562 COLEBROOK RD COLEBROOK, CT 06021101062 US


Delivered

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	776735002630
Status:	Delivered: 10/24/2019 1:25 PM
Reference:	CTL01254 - Colebrook
Service type:	FedEx Ground
Packaging type:	Package
Number of pieces:	1
Weight:	1.00 lb.
Standard transit:	10/24/2019

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 12:27 PM CDT on 10/24/2019.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date the package should be delivered by, based on the selected service, destination, and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

SHEET INDEX

NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	OVERALL SITE PLAN
C2A	ENLARGED SITE PLAN
C3	ELEVATION VIEW
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C6	PLUMBING DIAGRAM
C7	GROUNDING DETAILS

DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I-90 EAST/MASSACHUSETTS TURNPIKE. HEAD NORTHEAST TOWARD LEGGATT MCCALL CONN. TURN LEFT ONTO LEGGATT MCCALL CONN. CONTINUE ONTO BURR STREET. TURN LEFT ONTO COCHITUATE ROAD. USE THE RIGHT LANE TO TAKE THE RAMP TO I-90 EAST/MASSPIKE WEST/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 WEST/MASSACHUSETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 WEST/MASSACHUSETTS TURNPIKE. FOLLOW I-90 WEST/MASSACHUSETTS TURNPIKE TO WESTFIELD. TAKE EXIT 3 FROM I-90 WEST/MASSACHUSETTS TURNPIKE. MERGE ONTO I-90 WEST/MASSACHUSETTS TURNPIKE. TAKE EXIT 3 TOWARD US-202/MA-10/WESTFIELD/NORTHAMPTON. TAKE GRANVILLE ROAD, OLD WESTFIELD ROAD, MA-57 WEST AND MA-8 SOUTH TO CT-8 SOUTH IN COLEBROOK. TURN RIGHT ONTO MA-10 SOUTH/US-202 SOUTH/SOUTHAMPTON ROAD (SIGNS FOR SOUTH 202/WESTFIELD). TURN RIGHT ONTO ORANGE STREET. TURN LEFT ONTO CORNER AVE. TURN RIGHT ONTO FRANKLIN STREET. CONTINUE ONTO RUSSELL ROAD. TURN LEFT ONTO LLOYDS HILL ROAD. TURN RIGHT ONTO WESTERN AVE. TURN LEFT ONTO BROADWAY. TURN RIGHT ONTO GRANVILLE ROAD. TURN RIGHT TO STAY ON GRANVILLE ROAD. CONTINUE ONTO OLD WESTFIELD ROAD. TURN RIGHT ONTO MA-57 WEST. TURN LEFT ONTO MA-8 SOUTH. CONTINUE ONTO CT-8 SOUTH.

LOCATION MAP



**PROJECT
LTE 2C/3C/4C**

**SITE NAME
COLEBROOK CT COLEBROOK RIVER RD**

**CELL SITE ID
CTL01254**

**FA SITE NUMBER
10113275**

**PAGE ID
MRCTB041406/MRCTB041573
MRCTB041705**

**SITE ADDRESS
382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021**

**STRUCTURE TYPE
MONOPOLE**

PROJECT TEAM

PROJECT MANAGER

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

ENGINEER

SCOPE OF WORK (PER LTE RFDS, DATED 07/16/2019 V3.00):

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.

TOWER

- REMOVE (6) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- REMOVE (3) RRUS-11 B12
- INSTALL (3) 4449 B2/B66A
- INSTALL (3) 8843 B5/B12
- INSTALL (3) B14 4478
- PROPOSED (2) DC6 SQUID W/ (1) FIBER AND (4) DC CABLES IN (3) 3" CONDUITS

GROUND

- REMOVE (E) 6601 & INSTALL (2) 6630
- ADD IDLe CABLE
- INSTALL (1) RACK MOUNTED DC12
- INSTALL ADDITIONAL CABLE ENTRY PORT

PROJECT SUMMARY

SITE NAME: COLEBROOK CT COLEBROOK RIVER RD

CELL SITE ID: CTL01254

FA SITE #: 10113275

SITE ADDRESS: 382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

COUNTY: LITCHFIELD

SITE COORDINATES:

LATITUDE: 41.9921889° N (NAD 83)

LONGITUDE: 73.0396739° W (NAD 83)

ELEVATION: ±1160' (AMSL)

RAD CENTER: ±139' (AGL)

LANDLORD: 678 MASS AVE. LLC
825 BEACON STREET, SUITE 1
NEWTON, MA 02459

APPLICANT: AT&T MOBILITY
550 COCHITUATE RD.
FRAMINGHAM, MA 01701

CLIENT REPRESENTATIVE: SMARTLINK, LLC
85 RANGEWAY RD., BUILDING 3, SUITE 102
NORTH BILLERICA, MA 01862

CONTACT: EDWARD WEISSMAN
(917)528-1857

ENGINEER: INFINIGY
1033 WATERVLIET SHAKER ROAD
ALBANY, NY 12205

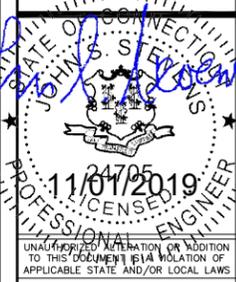
CONTACT: ALEX WELLER
(518) 690-0790

BUILDING CODE: CT BUILDING CODE
UNIFORM BUILDING CODE
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UNIFORM MECHANICAL CODE
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LOCAL BUILDING CODE
CITY/COUNTY ORDINANCES

ELECTRICAL CODE: NATIONAL ELECTRICAL CODE (LATEST EDITION)

**Know what's below.
Call before you dig.**

INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793



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Project Number: 499-006

Project Title:
**COLEBROOK CT
COLEBROOK
RIVER ROAD
CTL01254
FA# 10113275**
382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

Prepared For:

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GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

- 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
 - A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
 - B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
 - C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
 - D. AND NFPA 101 (LIFE SAFETY CODE).
 - E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
 - F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).
- 1.2 DEFINITIONS:
 - A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
 - B. COMPANY: AT&T CORPORATION
 - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
 - D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
 - E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- 1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.
- 1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
 - A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
- 1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.7 NOTICE TO PROCEED:
 - A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
 - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE AT&T WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – EXECUTION

- 2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HERewith, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

- 2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
 - A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY AT&T TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.
- 2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.
- 2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR AT&T PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
 - A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
 - B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
 - C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
 - D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO AT&T OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
 - E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
 - F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

- 4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
- 4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
- 4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
 - A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
 - B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
- 4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.
- 4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

- 5.1 TESTS AND INSPECTIONS:
 - A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
 - B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
 - C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
 - D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
 - E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.

- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

- 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.
 - A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.
 - B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.
 - C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
 - D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.
 - E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.
 - F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.
 - G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
	TRANSFORMER
	KILOWATT HOUR METER
	JUNCTION BOX
	PULL BOX TO NEC/TELCO STANDARDS
-----	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
	GROUND ROD
	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
	DC POWER CABLES
	REPRESENTS DETAIL NUMBER
	REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL

INFINIGY ENGINEERING, PLLC
1033 Waterlily Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

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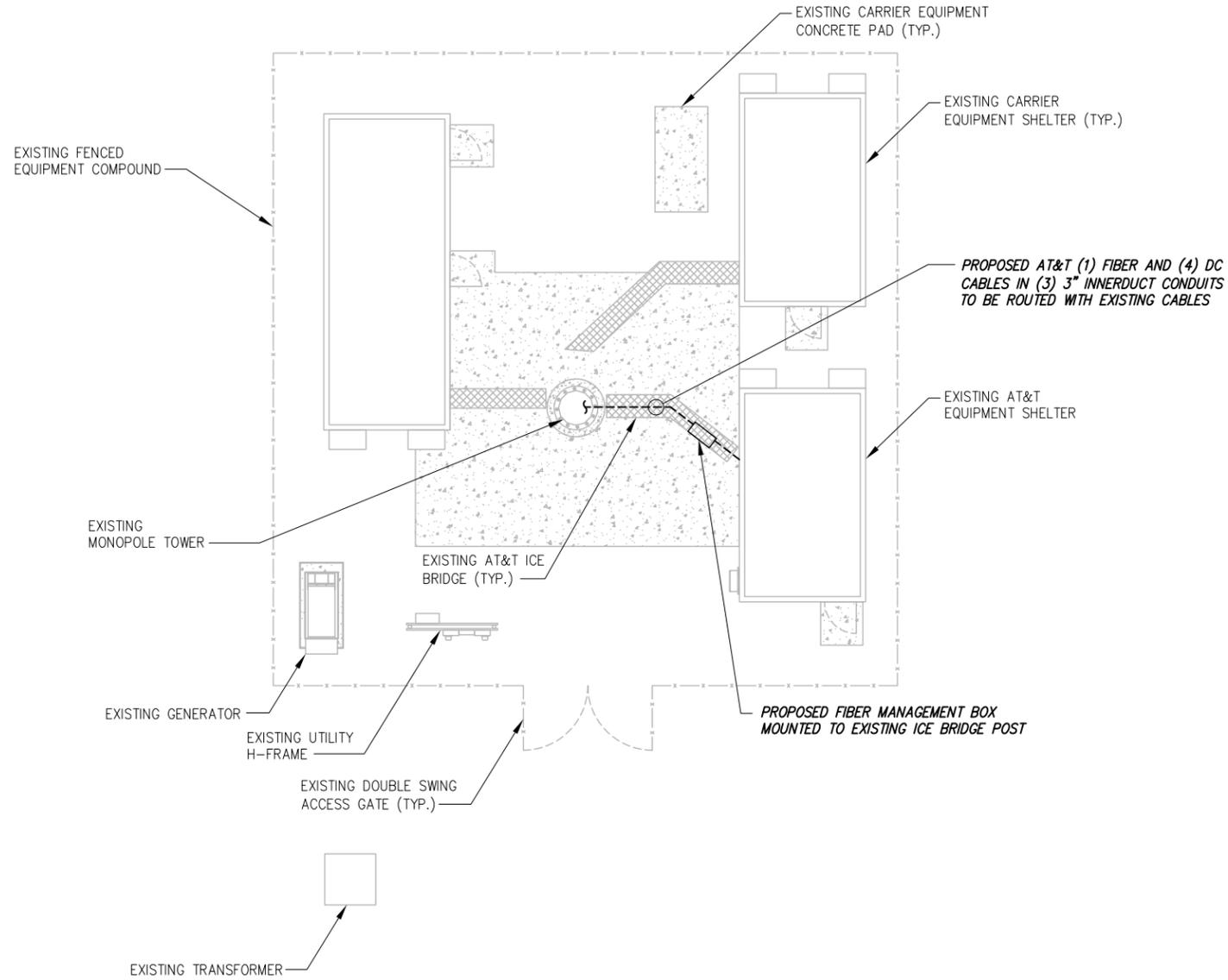
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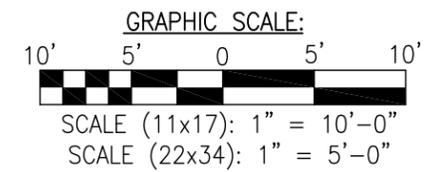
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**OVERALL
 SITE PLAN**

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C2



1 SITE PLAN
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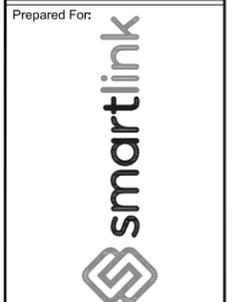
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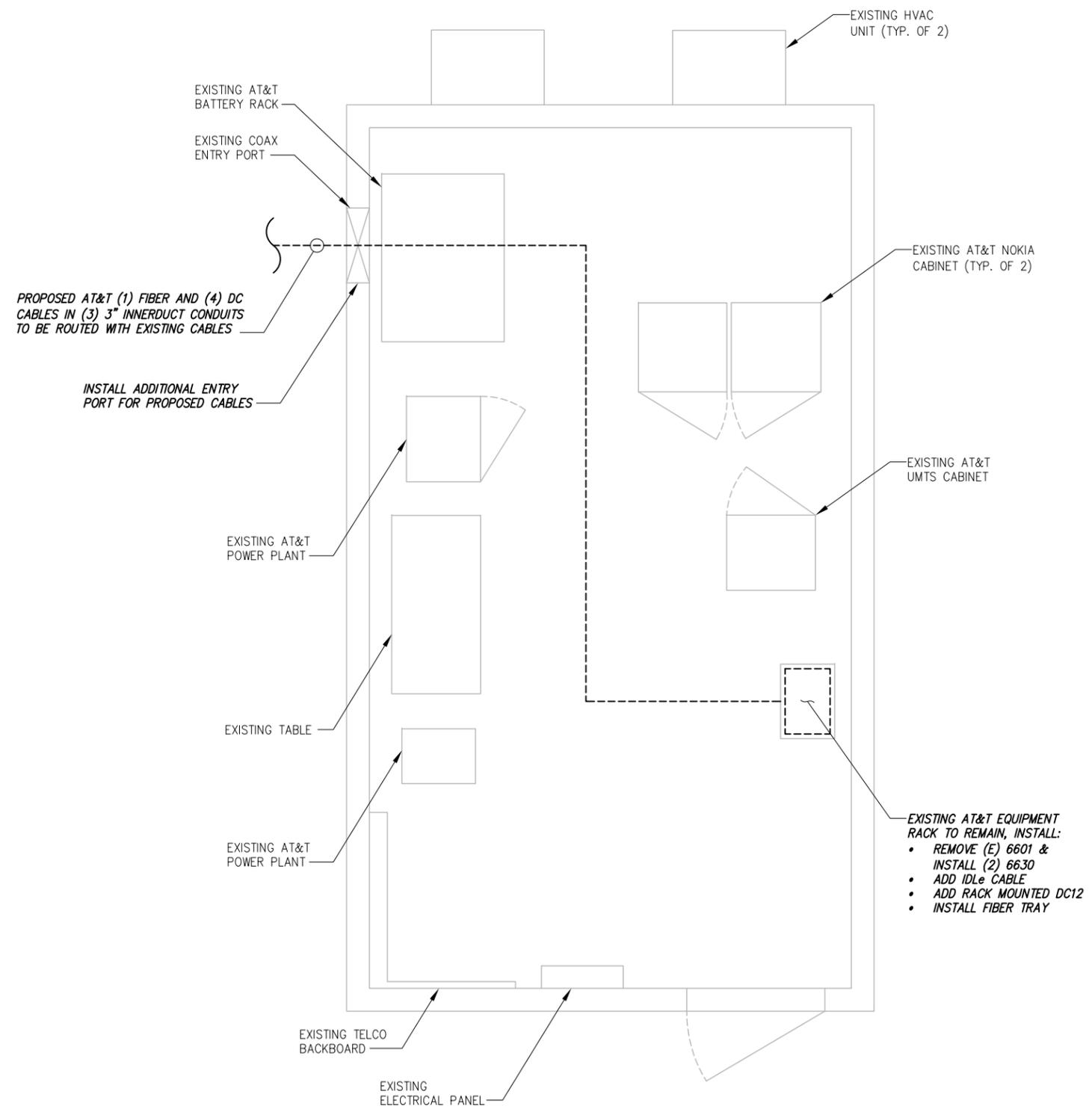
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Drawing Title
ENLARGED SITE PLAN

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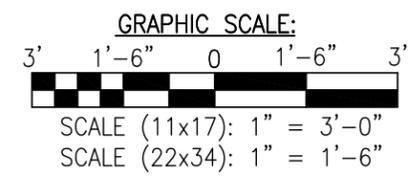
PROPOSED AT&T (1) FIBER AND (4) DC CABLES IN (3) 3" INNERDUCT CONDUITS TO BE ROUTED WITH EXISTING CABLES

INSTALL ADDITIONAL ENTRY PORT FOR PROPOSED CABLES

- EXISTING AT&T EQUIPMENT RACK TO REMAIN, INSTALL:
- REMOVE (E) 6601 & INSTALL (2) 6630
 - ADD IDLE CABLE
 - ADD RACK MOUNTED DC12
 - INSTALL FIBER TRAY

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2 ENLARGED EQUIPMENT PLAN
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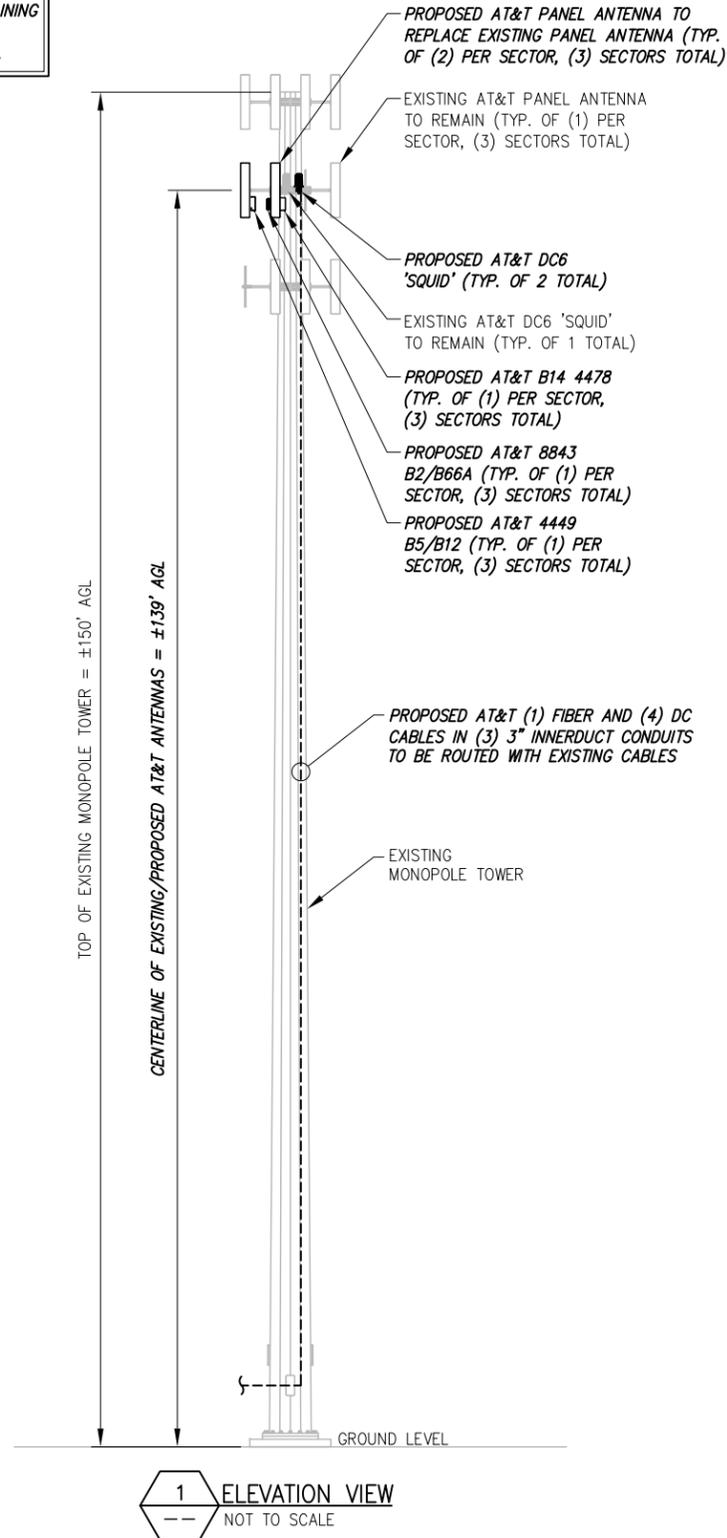


NOTE:

- INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNTS, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 8/19/19.

NOTE:

- 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS
- 6' MINIMUM SEPARATION BETWEEN 700 BC/700 DE ANTENNAS



FINAL ANTENNA CONFIGURATION & CABLE SCHEDULE BASED ON LTE RFDS DATED 07/16/19, V 2.00

SECTOR	ANTENNA POSITION	ANTENNA STATUS & TECHNOLOGY	ANTENNA MANF/MODEL	TMA/DIPLEXER	RRUS	AZIMUTH	ANTENNA CL. HEIGHT	CABLE FEEDER		RAYCAP UNIT
								TYPE	LENGTH	
ALPHA	A-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	100°	±139'	(2) (E) 1-5/8" COAX CABLES	±160'	(1) (E) DC6 'SQUID' (2) (P) DC6 'SQUID'
	A-2	--	--	--	--	--	--	(2) (E) 1-5/8" COAX CABLES	±160'	
	A-3	(P) LTE 700/1900	CCI DMP65R-BU4DA	--	(1) (P) B14 4478 (1) (P) 8843 B2/B66A	100°	±139'	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	A-4	(P) LTE 700/850/AWG/5G 850	CCI DMP65R-BU4DA	--	(1) (P) 4449 B5/B12	100°	±139'	SEE A-3 FOR CABLE INFORMATION	--	
BETA	B-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	200°	±139'	(2) (E) 1-5/8" COAX CABLES	±160'	
	B-2	--	--	--	--	--	--	(2) (E) 1-5/8" COAX CABLES	±160'	
	B-3	(P) LTE 700/1900	CCI DMP65R-BU4DA	--	(1) (P) B14 4478 (1) (P) 8843 B2/B66A	220°	±139'	(1) (P) FIBER CABLE (4) (P) DC CABLES	--	
	B-4	(P) LTE 700/850/AWG/5G 850	CCI DMP65R-BU4DA	--	(1) (P) 4449 B5/B12	220°	±139'	SEE A-3 FOR CABLE INFORMATION	--	
GAMMA	G-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	350°	±139'	(2) (E) 1-5/8" COAX CABLES	±160'	
	G-2	--	--	--	--	--	--	(2) (E) 1-5/8" COAX CABLES	±160'	
	G-3	(P) LTE 700/1900	CCI DMP65R-BU6DA	--	(1) (P) B14 4478 (1) (P) 8843 B2/B66A	350°	±139'	SEE A-3 FOR CABLE INFORMATION	--	
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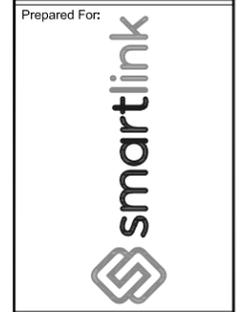
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1 ELEVATION VIEW
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2 AT&T ANTENNA SCHEDULE
 NOT TO SCALE

NOTE:

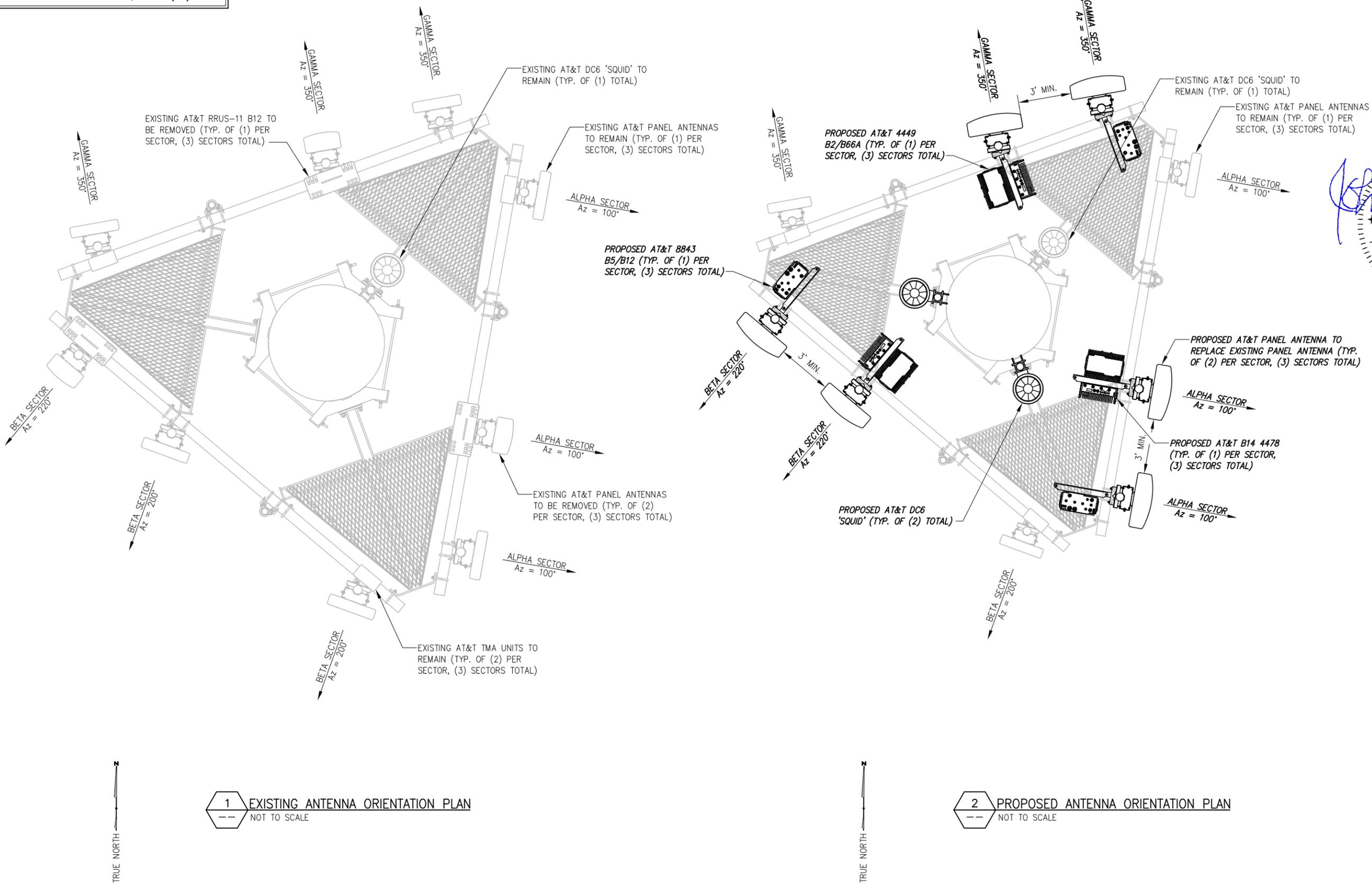
- INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY STRUCTURAL ANALYSIS.
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNTS, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 8/19/19.

NOTE:

- 3' MINIMUM SEPARATION BETWEEN ALL LTE ANTENNAS
- 6' MINIMUM SEPARATION BETWEEN 700 BC/700 DE ANTENNAS

NOTE:

- PROPOSED RRUS TO BE INSTALLED ON B2B MOUNTS

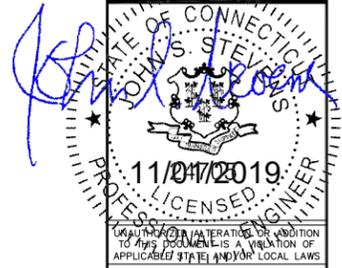


1 EXISTING ANTENNA ORIENTATION PLAN
--- NOT TO SCALE

2 PROPOSED ANTENNA ORIENTATION PLAN
--- NOT TO SCALE

INFINIGY

INFINIGY ENGINEERING, PLLC
1033 Waterlily Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793



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0	ISSUED FOR REVIEW	BMM	08/13/19

Drawn: BMM Date: 08/13/19
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Checked: AD Date: 08/13/19

Project Number: 499-006

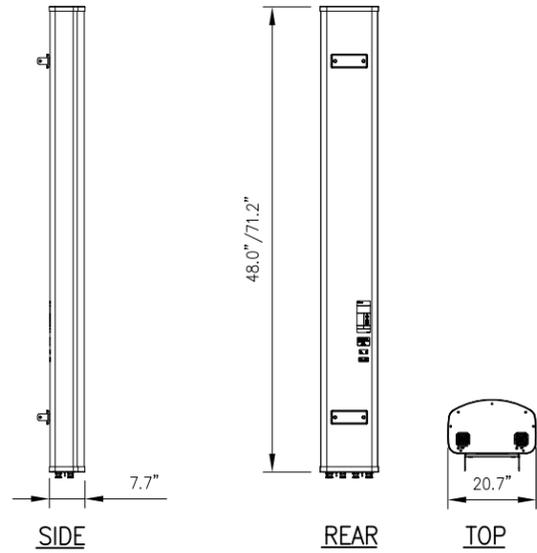
Project Title:
COLEBROOK CT
COLEBROOK
RIVER ROAD
CTL01254
FA# 10113275
382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021



Drawing Scale: AS NOTED
Date: 11/01/19
CD

Drawing Title:
ANTENNA ORIENTATION PLAN

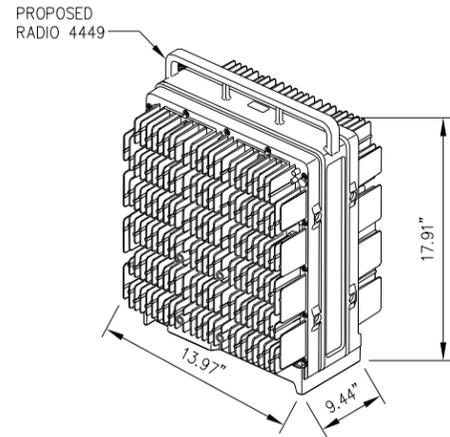
Drawing Number:
C4



CCI MODEL NO.: DMP65R-BU4DA/BU6DA

RADOME MATERIAL: FIBERGLASS
 RADOME COLOR: LIGHT GRAY
 DIMENSIONS, HxWxD: (48.0"x20.7"x7.7")/(71.2"x20.7"x7.7")
 WEIGHT, W/
 PRE-MOUNTED BRACKETS: 67.9/79.4 LBS
 CONNECTOR: 7-16 DIN FEMALE

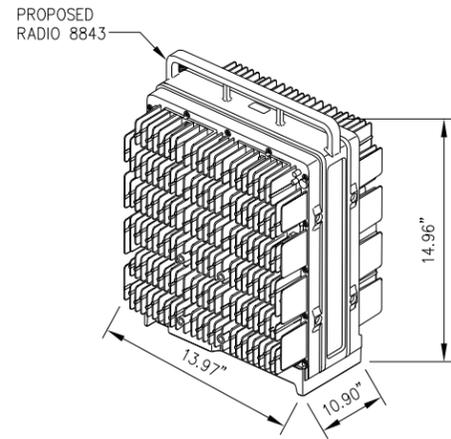
1 ANTENNA DETAIL
 NOT TO SCALE



RADIO 4449 SPECIFICATIONS

- HxWxD, (INCHES) : 17.91"x13.97"x9.44"
- WEIGHT (LBS) : 70.54
- COLOR : GRAY

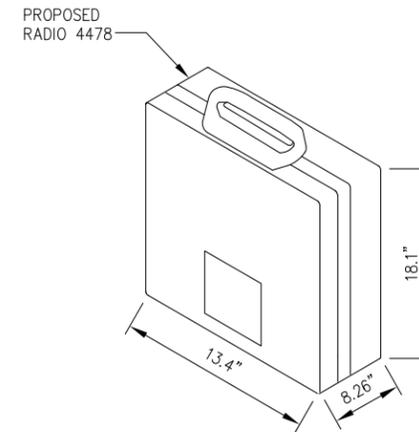
2 ERICSSON RADIO 4449 DETAIL
 NOT TO SCALE



RADIO 8843 SPECIFICATIONS

- HxWxD, (INCHES) : 14.96"x13.97"x10.90"
- WEIGHT (LBS) : 71.87
- COLOR : GRAY

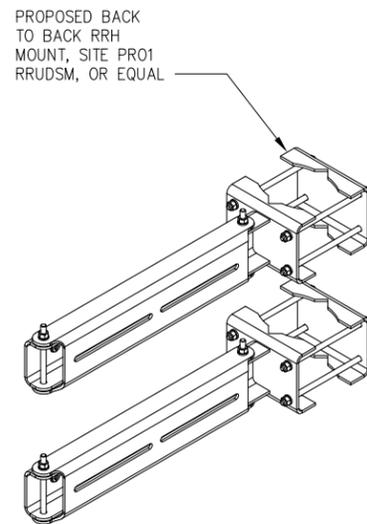
3 ERICSSON RADIO 8843 DETAIL
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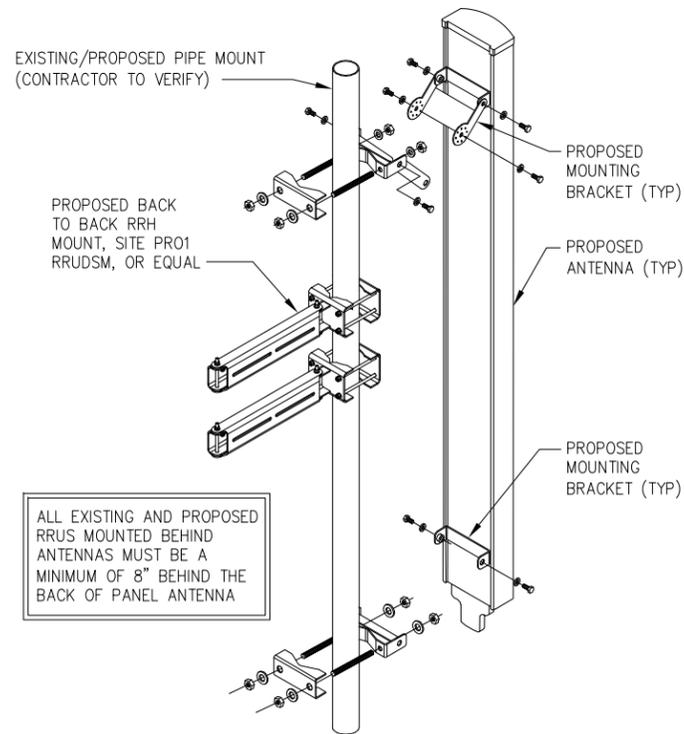
RADIO 4478-B14 SPECIFICATIONS

- HxWxD, (INCHES) : 18.1"x13.4"x8.26"
- WEIGHT (LBS) : 59.5
- COLOR : GRAY

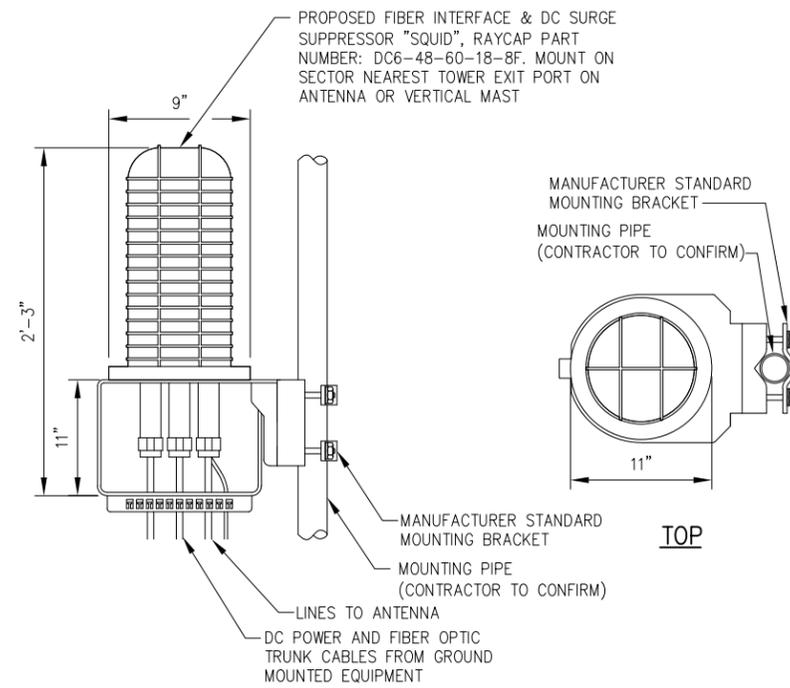
4 ERICSSON RADIO 4478-B14 DETAIL
 NOT TO SCALE



5 BACK TO BACK PIPE MOUNT DETAIL
 NOT TO SCALE

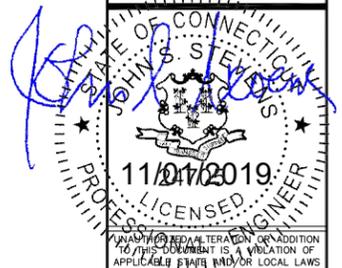


6 ANTENNA MOUNTING DETAIL
 NOT TO SCALE



7 SQUID DETAIL
 NOT TO SCALE

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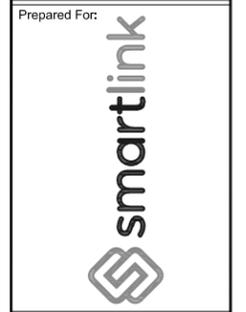
THIS DOCUMENT IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS

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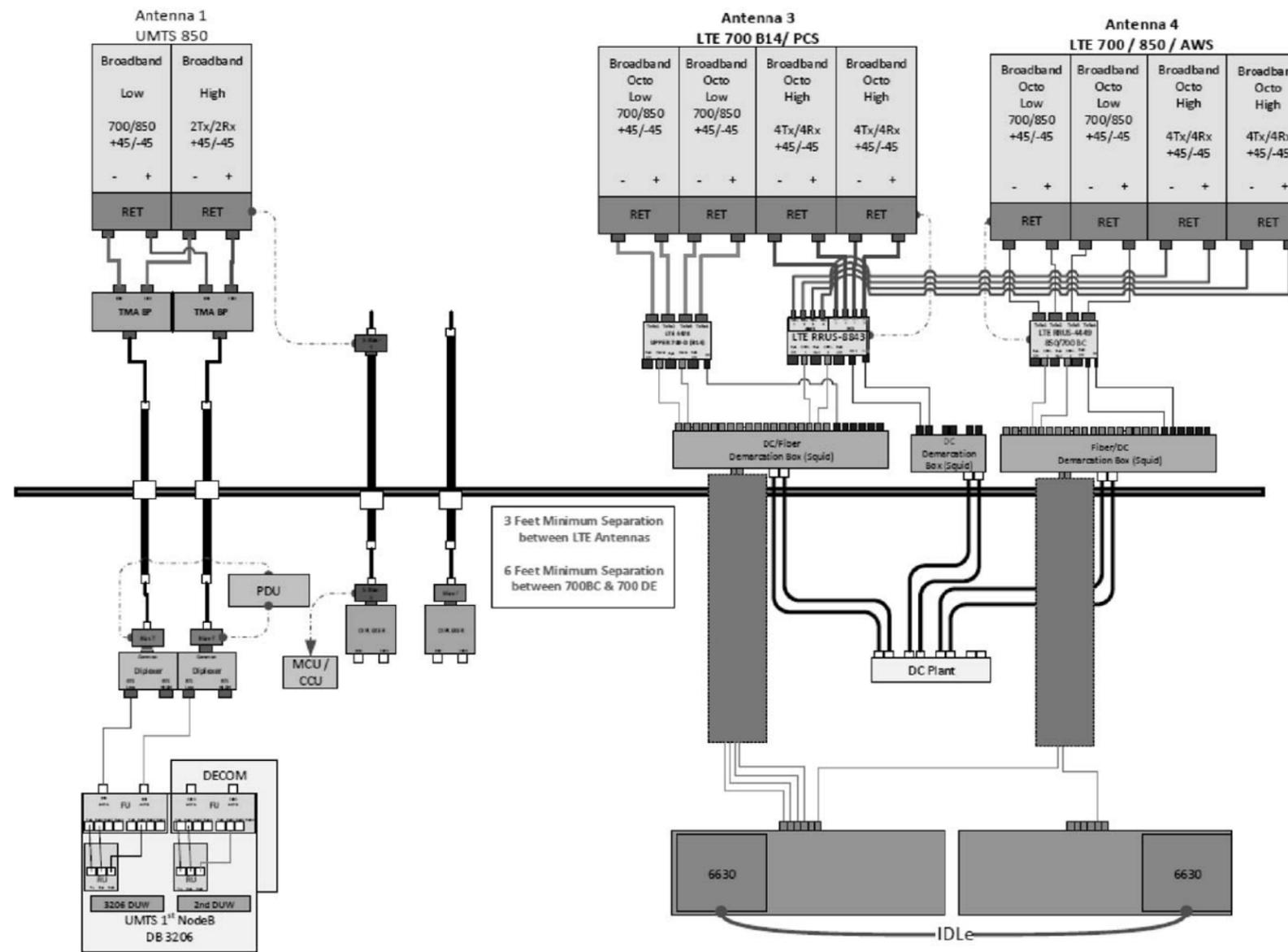
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 COLEBROOK
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 CTL01254
 FA# 10113275
 382 COLEBROOK RIVER ROAD
 COLEBROOK, CT 06021



Drawing Scale: AS NOTED
 Date: 11/01/19

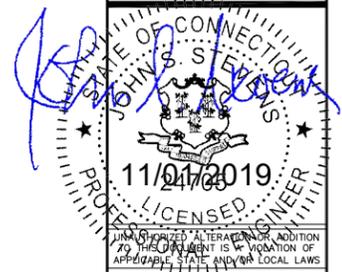
Drawing Title:
EQUIPMENT DETAILS

Drawing Number:
C5



ALPHA/BETA/GAMMA

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
 -- NOT TO SCALE

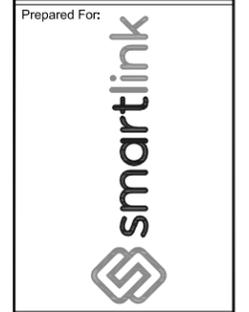


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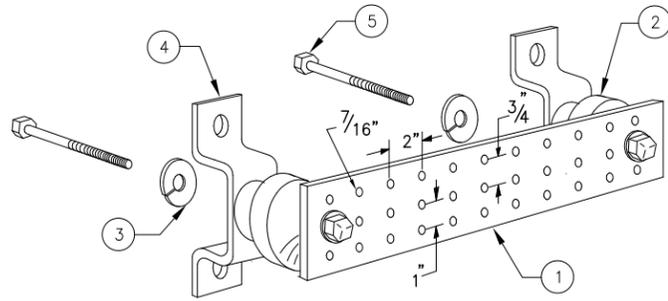
Drawing Scale: AS NOTED
 Date: 11/01/19

CD

Drawing Title
PLUMBING DIAGRAM

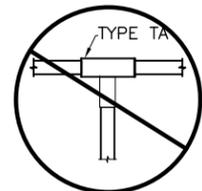
Drawing Number
C6

*BASED ON LTE RFDS,
 DATED 07/16/2019, V2.00

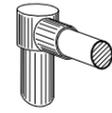


LEGEND

- 1 - SOLID TINNED COPPER GROUND BAR, 1/4"x 4"x 20" MIN., NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
- 2 - INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
- 3 - 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
- 4 - WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056
- 5 - 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
- 6 - GROUND BAR SHALL BE SIZED TO ACCOMMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
- 7 - GROUND BARS SHALL NEITHER BE FIELD FABRICATED NOR NEW HOLES DRILLED
- 8 - GROUND LUGS SHALL MATCH THE HOLE SPACING ON THE BAR
- 9 - HARDWARE DIAMETER SHALL BE MINIMUM 3/8"



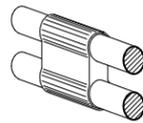
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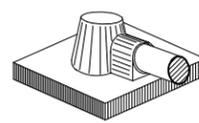
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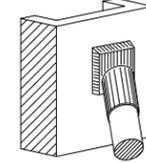
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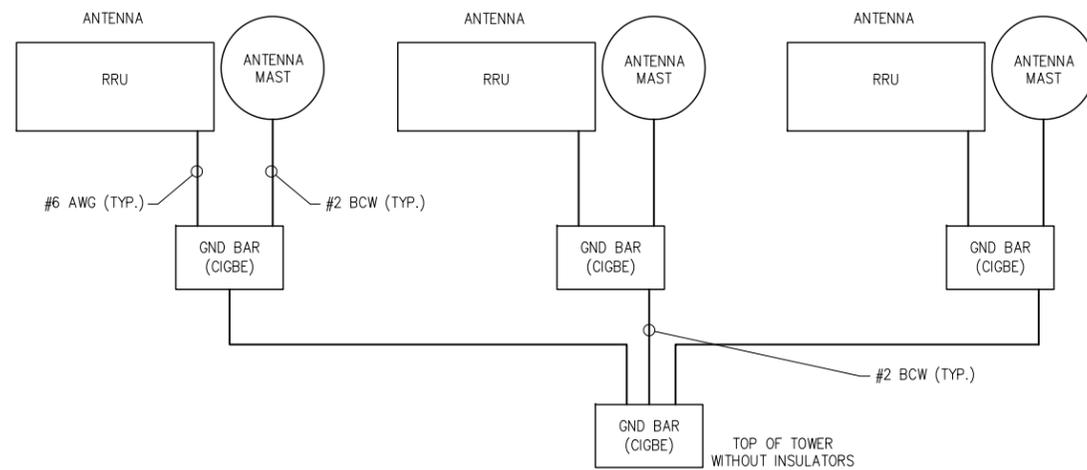
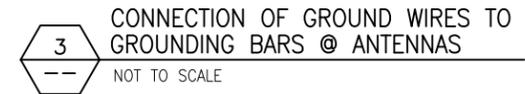
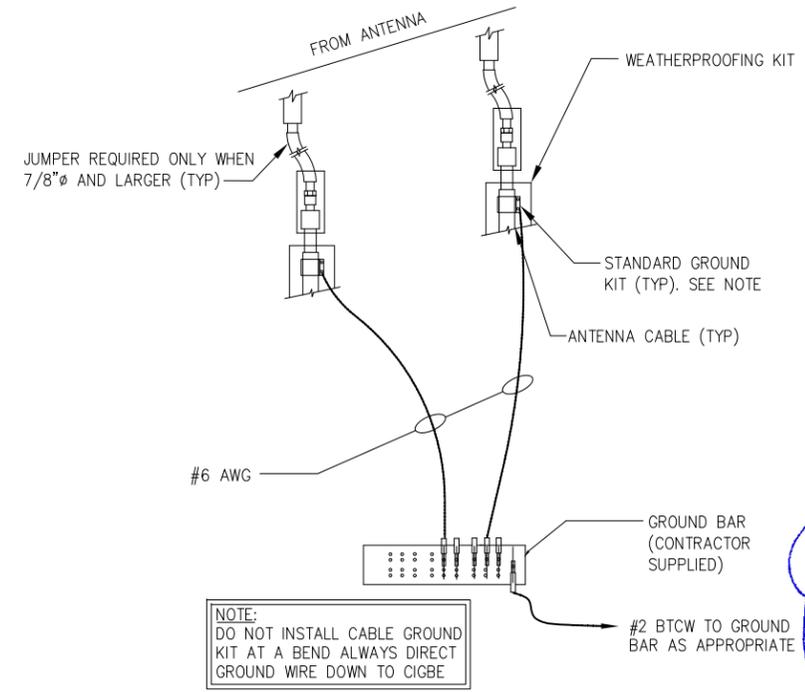
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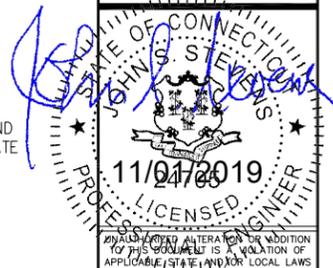
TYPE KA



TYPE VS



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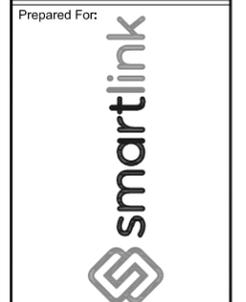


PROPOSED ALTERATION IN ADDITION TO THIS PERMIT IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS

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Drawing Scale: AS NOTED
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Drawing Title: **GROUNDING DETAILS**

Drawing Number: **C7**