



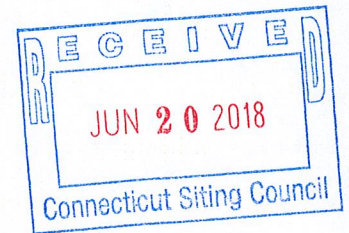
Aaron Meyers, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W. Center St., Floor 3
West Bridgewater, MA 02379
Mobile: (774) 420-4202
ameyers@clinellc.com

DATE June 18, 2018

EM-CING-087-180620

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

RE: Notice of Exempt Modification // Site Number: CT1174
310 Watertown Rd., Morris, CT 06763 (Morris)
N 41.667219 // W -73.170516



ORIGINAL

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains nine (9) antennas at the 165-foot level of the existing 195-foot Monopole tower at 310 Watertown. Rd., Morris, CT 06763. The tower is owned by SBA Communications Corp.. The property is owned by Sugar Mountain Farms. AT&T now intends to swap three (3) Antennas for its LTE upgrade. These Antennas would be installed at the 116-foot level of the tower. AT&T also intends to add (9) Remote Radio Units and (1) Surge Arrestor with ancillary cables.

Please accept this letter as notification pursuant to Regulations 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. § 16-50j-73, a copy of this letter is being sent to Tom Weik as the First Selectman, as well as the tower owner, SBA Communications Corp. and the ground owner, Sugar Mountain Farms.

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

Attached to accommodate this filing are construction drawings dated March 20, 2018 by Infinigy, a structural analysis dated April 10, 2018 by Tower Engineering Solutions and an Emissions Analysis Report dated May 10, 2018 by Centerline Communications, LLC.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading as shown in the attached structural analysis by American Tower Corporation, dated February 1, 2018

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

Sincerely,



Aaron Meyers, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W. Center St., Floor 3
West Bridgewater, MA 02379
Mobile: (774) 420-4202
ameyers@centerlincommunications.com

Attachments

cc: Tom Weik, First Selectman - as elected official
SBA Communications Corp. - as tower owner
Sugar Mountain Farm - as property owner



Tower Engineering Solutions

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

Structural Analysis Report

Existing 195 ft Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01501-S

Customer Site Name: Morris

Carrier Name: AT&T

Carrier Site ID / Name: CT1174 / 1449-Morris

Site Location: 310 Watertown Road

Bethlehem, Connecticut

Litchfield County

Latitude: 41.667219

Longitude: -73.170516

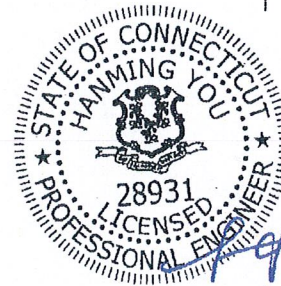
Analysis Result:

Max Structural Usage: 82.3% [Pass]

Max Foundation Usage: 76.1% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Mariana Franco



4/10/18



Tower Engineering Solutions

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Analysis Result:

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Max Foundation Usage: 76.1% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Mariana Franco

Introduction

The purpose of this report is to summarize the analysis results on the 195 ft Nudd Corporation Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Fred A. Nudd Corporation (Drawing No. 00-7627-1) original design drawings dated May 8, 2000 o2wireless Solutions (Job No. 2230-043) Monopole Tower Structural Analysis Report dated September 4, 2002
Foundation Drawing	Fred A. Nudd Corporation (Drawing No. 00-7627-1) original design drawings dated May 8, 2000
Geotechnical Report	Jaworski Geotech, Inc., Project # 99290G, Dated 11/17/1999
Modification Drawings	N/A

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 120.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft

This structural analysis is based upon the tower being classified as a Structure 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.

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	195.0	3	RFS APXVSP18-C-A20 - Panel	Low Profile Platform & RRH Collar Mount	(3) 1 1/4"	Sprint
2		3	ALU 800MHz RRH			
3		4	RFS ACU-A20-N			
4		3	ALU 1900MHz RRH			
5		3	ALU 800MHz Filter			
6	175.0	6	Commscope JAHH-65B-R3B - Panel	Low Profile Platform & [(3) Commscope BSAMNT-SDS-2-2]	(6) 1 5/8" (2) 1 5/8" Hybrid	Verizon
7		6	Antel LPA-80080/6CF - Panel			
8		3	Alcatel-Lucent B66A - RRU			
9		3	Alcatel-Lucent B13 RRH4X30-4R - RRU			
10	165.0	1	RFS DB-C1-12C-24AB-0Z	Low Profile Platform	(12) 1 5/8" (2) 3/4" DC (1) 7/16" Fiber	AT&T
-		6	Powerwave 7770.00 - Panel			
-		12	Powerwave LGP2140X TMA			
-		6	Ericsson RRUS-11			
-		1	KMW AM-X-CD-16-65-00T-RET - Panel			
-		1	Andrew ABT-DF-DMADBH			
-		1	Raycap DC6-48-60-18-8F			
-	2	Kathrein 800 10764 - Panel				
22	155.0	3	RFS APXV18-209014-CT2 - Panel	Low Profile Platform	(12) 1 5/8"	T-Mobile
23		3	Kathrein 782 11056 Bias T			
24		3	Commscope LNX-6565DS - Panel			
25		3	REMC S20057A1			
26		3	Ericsson KRY 112 144/1 TMA			

* (2) 3/4" DC and (1) 7/16" Fiber are inside (1) 3" Conduit.

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
11	165.0	1	Kathrein 800 10965 - Panel	Low Profile Platform	(12) RFS 1 5/8" (4) 3/4" DC (2) 7/16" Fiber	AT&T
12		2	Kathrein 800 10964 - Panel			
13		3	Ericsson RRUS 32 B2			
14		3	Ericsson B14 4478			
15		3	Powerwave 7770 - Panel			
16		12	Powerwave LGP21401 TMA			
17		3	Ericsson RRUS-11			
18		1	KMW AM-X-CD-16-65-00T-RET (54")- Panel			
19		3	Andrew ABT-DFDM-ADBH			
20		2	Raycap DC6-48-60-18-8F			
21		2	Kathrein 800 10764 K - Panel			

* (2) 3/4" DC and (1) 7/16" Fiber are inside (1) 3" Conduit.

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

Analysis Results

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

	Pole shafts	Anchor Bolts
Max. Usage:	82.3%	59.3%
Pass/Fail	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	4878.0	35.6
Analysis Reactions	4956.3	36.6
Factored Reactions*	6585.3	48.1
% of Design Reactions	75.3%	76.1%

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

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.8524 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-G Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

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

Usage Diagram - Max Ratio 82.29% at 0.0ft

Structure: CT01501-S-SBA
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.000 (ft)

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

4/10/2018



TES

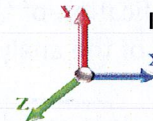
Tower Engineering Solutions

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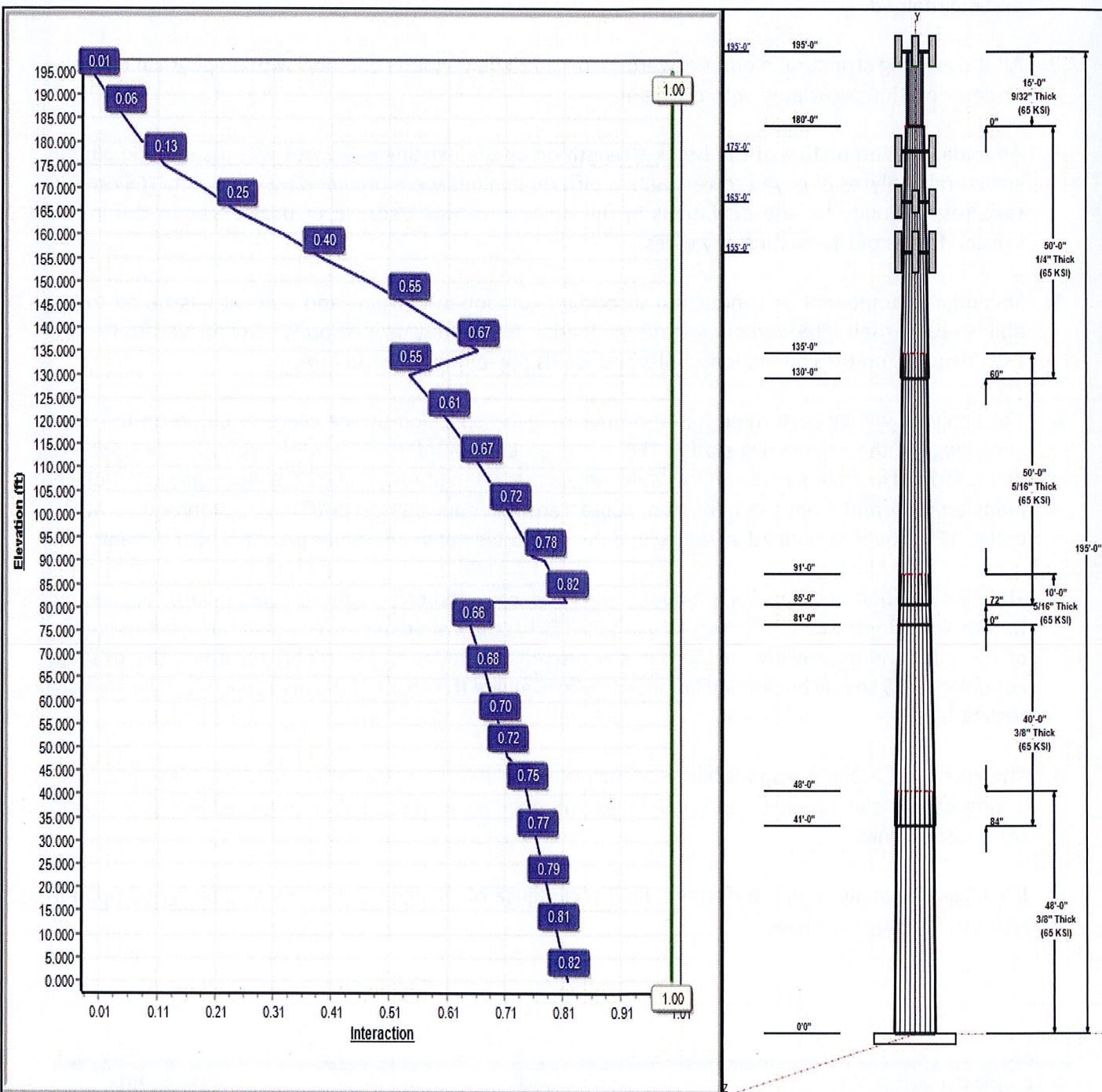
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Iterations: 27

Load Case : 1.2D + 1.6W 93 mph Wind



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Structure: CT01501-S-SBA

Type: Custom
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.00000

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Shaft Properties

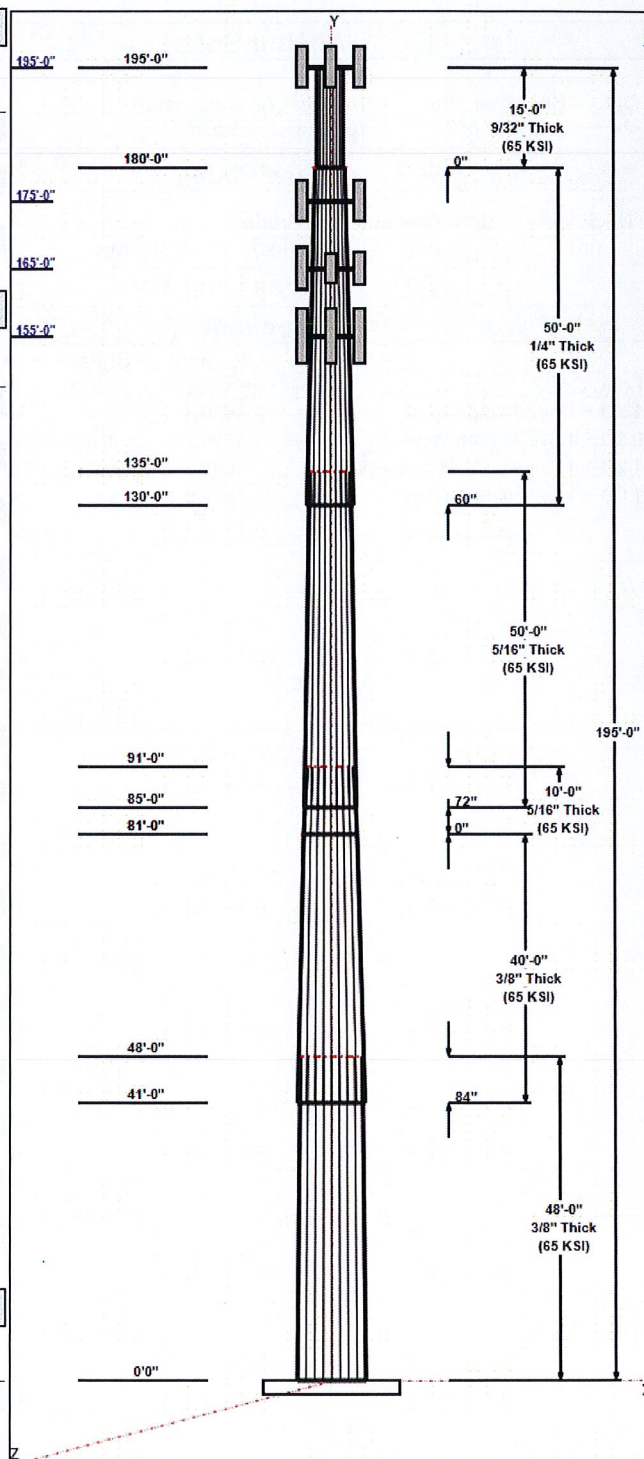
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	53.20	64.50	0.375		0.23542	65
2	40.00	46.18	55.60	0.375	Slip	0.23542	65
3	10.00	43.83	46.18	0.313	Butt	0.23542	65
4	50.00	34.09	45.86	0.313	Slip	0.23542	65
5	50.00	24.00	35.77	0.250	Slip	0.23542	65
6	15.00	24.00	24.00	0.281	Butt	0.00000	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
195.00	195.00	3	APXVSP18-C-A20	Sprint Nextel
195.00	195.00	3	800 Mhz	Sprint Nextel
195.00	195.00	4	ACU-A20-N	Sprint Nextel
195.00	195.00	3	1900MHz RRH	Sprint Nextel
195.00	195.00	3	800 Mhz Filter	Sprint Nextel
195.00	195.00	1	Low Profile Platform	Sprint Nextel
193.00	193.00	1	Collar Mount	Sprint Nextel
175.00	175.00	1	Low Profile Platform	Verizon
175.00	175.00	1	(3) mounting kit	Verizon
175.00	175.00	6	JAHH-65B-R3B	Verizon
175.00	175.00	6	LPA-80063/6cf	Verizon
175.00	175.00	3	B66A	Verizon
175.00	175.00	3	B13 RRH4X30-4R	Verizon
175.00	175.00	1	DB-C1-12C-24AB-0Z	Verizon
165.00	165.00	1	800 10965	AT&T
165.00	165.00	2	800 10964	AT&T
165.00	165.00	3	RRUS 32 B2	AT&T
165.00	165.00	3	B14 4478	AT&T
165.00	165.00	3	7770.00	AT&T
165.00	165.00	12	LGP21401 TMA	AT&T
165.00	165.00	3	RRUS-11	AT&T
165.00	165.00	1	AM-X-CD-16-65-00T-RET	AT&T
165.00	165.00	3	ABT-DFDM-ADBH	AT&T
165.00	165.00	2	DC6-48-60-18-8F	AT&T
165.00	165.00	2	800 10764	AT&T
165.00	165.00	1	Low Profile Platform	AT&T
155.00	155.00	3	APXV18-209014-CT2	T-Mobile
155.00	155.00	3	782 11056	T-Mobile
155.00	155.00	3	LNX-6565DS	T-Mobile
155.00	155.00	3	S20057A1	T-Mobile
155.00	155.00	3	KRY 112 144/1	T-Mobile
155.00	155.00	1	Low Profile Platform	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	195.00	Inside	1-1/4" Hybrid	Sprint Nextel
0.00	175.00	Inside	1 5/8" Coax	Verizon
0.00	175.00	Inside	1 5/8" Hybrid	Verizon
0.00	165.00	Inside	1 5/8" Coax	AT&T
0.00	165.00	Inside	3" Conduit	AT&T
0.00	165.00	Inside	3/4" DC	AT&T
0.00	165.00	Inside	7/16" Fiber	AT&T
0.00	155.00	Inside	1 5/8" Coax	T-Mobile



Structure: CT01501-S-SBA

Type: Custom
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.00000

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Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	77.0	45.0	Round

Reactions

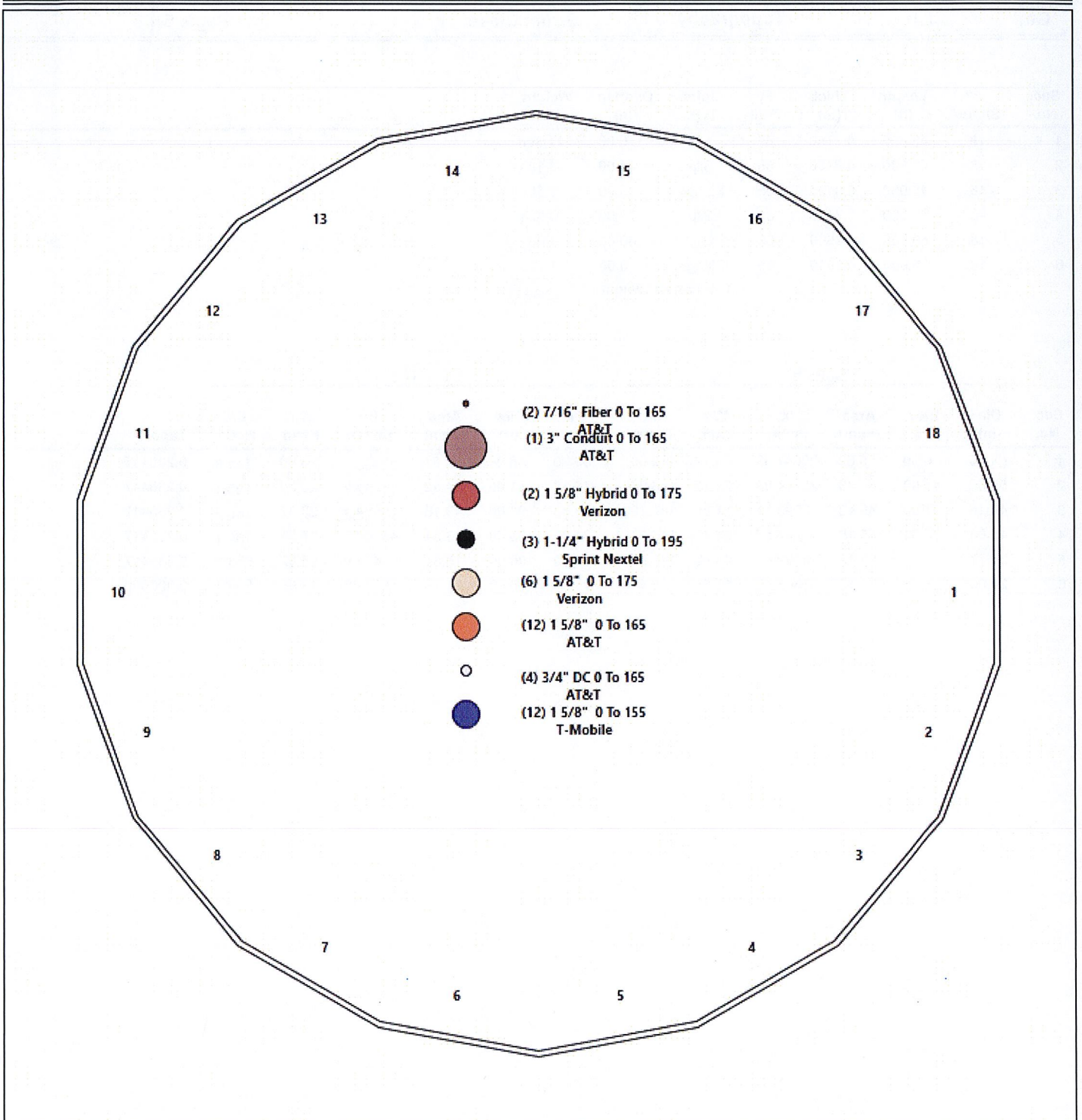
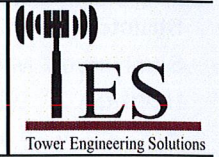
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	4956.3	36.6	58.9
0.9D + 1.6W 93 mph Wind	4885.2	36.5	44.2
1.2D + 1.0Di + 1.0Wi 40 mph Wind	1095.5	7.8	98.9
1.0D + 1.0W 60 mph Wind	1279.6	9.5	49.1

Structure: CT01501-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Morris
Height: 195.00 (ft)

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Shaft Properties

Structure: CT01501-S-SBA

Code: EIA/TIA-222-G

4/10/2018

Site Name: Morris

Exposure: C

Height: 195.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent Rock

Gh: 1.1

Topography: 1

Struct Class: II

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3750	65		0.00	11,368
2	18	40.000	0.3750	65	Slip	84.00	8,183
3	18	10.000	0.3125	65	Flange	0.00	1,508
4	18	50.000	0.3125	65	Slip	72.00	6,694
5	18	50.000	0.2500	65	Slip	60.00	4,001
6	18	15.000	0.2810	65	Flange	0.00	1,080
Total Shaft Weight:							32,834

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	64.50	0.00	76.32	39651.33	28.92	172.00	53.20	48.00	62.87	22166.3	23.60	141.8	0.235417
2	55.60	41.00	65.73	25324.08	24.73	148.26	46.18	81.00	54.52	14452.7	20.30	123.1	0.235417
3	46.18	81.00	45.49	12093.31	24.65	147.78	43.83	91.00	43.16	10325.2	23.32	140.2	0.235417
4	45.86	85.00	45.18	11844.57	24.47	146.77	34.09	135.00	33.51	4830.83	17.83	109.1	0.235417
5	35.77	130.0	28.18	4492.97	23.82	143.08	24.00	180.00	18.84	1343.00	15.52	96.00	0.235417
6	24.00	180.0	21.15	1503.63	13.65	85.41	24.00	195.00	21.15	1503.63	13.65	85.41	0.000000

Load Summary

Structure: CT01501-S-SBA	Code: EIA/TIA-222-G	4/10/2018
Site Name: Morris	Exposure: C	
Height: 195.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent 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	195.00	APXVSP18-C-A20	3	57.00	8.02	0.83	293.60	11.844	0.83	0.00	0.00
2	195.00	800 Mhz	3	68.30	3.46	0.67	192.10	5.258	0.67	0.00	0.00
3	195.00	ACU-A20-N	4	1.00	0.14	0.79	6.88	0.546	0.79	0.00	0.00
4	195.00	1900MHz RRH	3	44.00	3.80	0.88	193.42	5.703	0.88	0.00	0.00
5	195.00	800 Mhz Filter	3	10.00	0.49	0.70	31.97	1.258	0.70	0.00	0.00
6	195.00	Low Profile Platform	1	1500.00	22.00	1.00	3291.61	46.175	1.00	0.00	0.00
7	193.00	Collar Mount	1	350.00	5.00	1.00	750.91	9.773	1.00	0.00	0.00
8	175.00	Low Profile Platform	1	1500.00	22.00	1.00	3272.33	45.915	1.00	0.00	0.00
9	175.00	(3) mounting kit	1	350.00	5.00	1.00	747.00	9.726	1.00	0.00	0.00
10	175.00	JAHH-65B-R3B	6	63.30	9.11	0.83	394.71	10.972	0.83	0.00	0.00
11	175.00	LPA-80063/6cf	6	21.00	4.33	1.70	303.47	5.980	1.70	0.00	0.00
12	175.00	B66A	3	56.80	2.54	0.82	180.75	3.509	0.82	0.00	0.00
13	175.00	B13 RRH4X30-4R	3	57.20	2.16	0.88	141.55	2.987	0.88	0.00	0.00
14	175.00	DB-C1-12C-24AB-0Z	1	32.00	3.79	1.00	187.32	5.083	1.00	0.00	0.00
15	165.00	800 10965	1	108.60	13.81	0.71	530.87	15.970	0.71	0.00	0.00
16	165.00	800 10964	2	94.80	10.00	0.71	422.29	11.779	0.71	0.00	0.00
17	165.00	RRUS 32 B2	3	53.00	2.74	0.67	181.49	3.748	0.67	0.00	0.00
18	165.00	B14 4478	3	59.40	1.65	0.67	115.22	2.348	0.67	0.00	0.00
19	165.00	7770.00	3	35.00	5.50	0.73	231.52	6.966	0.73	0.00	0.00
20	165.00	LGP21401 TMA	12	19.00	1.30	0.67	52.48	2.450	0.67	0.00	0.00
21	165.00	RRUS-11	3	51.00	2.52	0.71	148.29	3.373	0.71	0.00	0.00
22	165.00	AM-X-CD-16-65-00T-RET	1	48.50	8.02	1.00	266.94	11.781	1.00	0.00	0.00
23	165.00	ABT-DFDM-ADBH	3	1.10	0.05	1.00	4.10	0.309	1.00	0.00	0.00
24	165.00	DC6-48-60-18-8F	2	31.80	0.92	1.00	115.02	1.510	1.00	0.00	0.00
25	165.00	800 10764	2	40.80	5.88	0.90	212.45	8.764	0.90	0.00	0.00
26	165.00	Low Profile Platform	1	1500.00	22.00	1.00	3261.93	45.774	1.00	0.00	0.00
27	155.00	APXV18-209014-CT2	3	18.70	3.58	0.74	150.00	4.865	0.74	0.00	0.00
28	155.00	782 11056	3	5.30	0.28	0.87	17.94	0.817	0.87	0.00	0.00
29	155.00	LNx-6565DS	3	50.80	11.46	0.80	358.06	15.816	0.80	0.00	0.00
30	155.00	S20057A1	3	11.00	0.82	0.73	36.25	1.753	0.73	0.00	0.00
31	155.00	KRY 112 144/1	3	11.00	0.41	0.70	25.42	1.046	0.70	0.00	0.00
32	155.00	Low Profile Platform	1	1500.00	22.00	1.00	3250.95	45.626	1.00	0.00	0.00
Totals:			91	9,730.50			28,810.69				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	195.00	(3) 1-1/4" Hybrid	0.00	Inside
0.00	175.00	(6) 1 5/8" Coax	0.00	Inside
0.00	175.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	165.00	(12) 1 5/8" Coax	0.00	Inside
0.00	165.00	(1) 3" Conduit	0.00	Inside
0.00	165.00	(4) 3/4" DC	0.00	Inside
0.00	165.00	(2) 7/16" Fiber	0.00	Inside
0.00	155.00	(12) 1 5/8" Coax	0.00	Inside

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		

Shaft Section Properties

Structure: CT01501-S-SBA
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: B - Competent Rock
Struct Class: II

4/10/2018
 Page: 8



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		0.3750	64.500	76.322	39651.3	28.92	172.00	67.4	1210.	0.0
5.00		0.3750	63.323	74.921	37507.6	28.36	168.86	68.0	1166.	1286.6
10.00		0.3750	62.146	73.520	35442.6	27.81	165.72	68.7	1123.	1262.8
15.00		0.3750	60.969	72.119	33454.9	27.26	162.58	69.3	1080.	1238.9
20.00		0.3750	59.792	70.718	31542.8	26.70	159.44	70.0	1039.	1215.1
25.00		0.3750	58.615	69.317	29705.1	26.15	156.31	70.6	998.2	1191.3
30.00		0.3750	57.437	67.916	27940.1	25.60	153.17	71.3	958.1	1167.4
35.00		0.3750	56.260	66.515	26246.5	25.04	150.03	71.9	918.9	1143.6
40.00		0.3750	55.083	65.114	24622.7	24.49	146.89	72.6	880.4	1119.8
41.00	Bot - Section 2	0.3750	54.848	64.834	24306.2	24.38	146.26	72.7	872.8	221.1
45.00		0.3750	53.906	63.713	23067.4	23.94	143.75	73.2	842.8	1761.8
48.00	Top - Section 1	0.3750	53.950	63.765	23124.0	23.96	143.87	0.0	0.0	1301.3
50.00		0.3750	53.479	63.205	22519.6	23.74	142.61	73.5	829.4	432.1
55.00		0.3750	52.302	61.804	21055.1	23.18	139.47	74.1	792.9	1063.4
60.00		0.3750	51.125	60.403	19655.5	22.63	136.33	74.8	757.2	1039.6
65.00		0.3750	49.948	59.002	18319.3	22.08	133.19	75.4	722.4	1015.8
70.00		0.3750	48.771	57.601	17045.1	21.52	130.06	76.1	688.4	991.9
75.00		0.3750	47.594	56.200	15831.4	20.97	126.92	76.7	655.2	968.1
80.00		0.3750	46.417	54.799	14676.7	20.41	123.78	77.4	622.8	944.3
81.00	Top - Section 2	0.3750	46.181	54.519	14452.7	20.30	123.15	77.5	616.4	186.0
81.00	Bot - Section 3	0.3125	46.181	45.494	12093.3	24.36	147.78	72.4	515.8	
85.00	Bot - Section 4	0.3125	45.240	44.560	11363.7	24.12	144.77	73.0	494.7	612.9
90.00		0.3125	44.062	43.393	10493.7	23.45	141.00	73.8	469.1	1507.0
91.00	Top - Section 3	0.3125	44.452	43.779	10776.5	23.67	142.25	0.0	0.0	296.6
95.00		0.3125	43.510	42.845	10101.4	23.14	139.23	74.2	457.3	589.5
100.00		0.3125	42.333	41.678	9298.0	22.48	135.47	75.0	432.6	719.0
105.00		0.3125	41.156	40.510	8538.3	21.81	131.70	75.7	408.6	699.2
110.00		0.3125	39.979	39.343	7821.2	21.15	127.93	76.5	385.3	679.3
115.00		0.3125	38.802	38.175	7145.4	20.48	124.17	77.3	362.7	659.4
120.00		0.3125	37.625	37.008	6509.6	19.82	120.40	78.1	340.8	639.6
125.00		0.3125	36.448	35.841	5912.8	19.15	116.63	78.9	319.5	619.7
130.00	Bot - Section 5	0.3125	35.271	34.673	5353.6	18.49	112.87	79.7	299.0	599.9
135.00	Top - Section 4	0.2500	34.594	27.251	4060.9	22.99	138.37	0.0	0.0	1051.6
140.00		0.2500	33.417	26.317	3657.5	22.16	133.67	75.3	215.6	455.7
145.00		0.2500	32.240	25.383	3281.8	21.33	128.96	76.3	200.5	439.8
150.00		0.2500	31.062	24.449	2932.7	20.50	124.25	77.3	186.0	423.9
155.00		0.2500	29.885	23.515	2609.3	19.67	119.54	78.3	172.0	408.0
160.00		0.2500	28.708	22.581	2310.5	18.84	114.83	79.2	158.5	392.1
165.00		0.2500	27.531	21.647	2035.5	18.01	110.12	80.2	145.6	376.2
170.00		0.2500	26.354	20.713	1783.3	17.18	105.42	81.2	133.3	360.4
175.00		0.2500	25.177	19.779	1552.7	16.35	100.71	82.2	121.5	344.5
180.00	Top - Section 5	0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	328.6
180.00	Bot - Section 6	0.2810	24.000	21.154	1503.6	13.80	85.41	82.5	123.4	
185.00		0.2810	24.000	21.154	1503.6	13.65	85.41	82.5	123.4	359.9
190.00		0.2810	24.000	21.154	1503.6	13.65	85.41	82.5	123.4	359.9
193.00		0.2810	24.000	21.154	1503.6	13.65	85.41	82.5	123.4	215.9
195.00		0.2810	24.000	21.154	1503.6	13.65	85.41	82.5	123.4	144.0

32833.6

Discrete Appurtenance Forces

Structure: CT01501-S-SBA
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: B - Competent Rock
Struct Class: II

4/10/2018

Page: 10

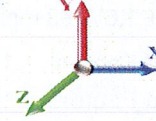


Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 27

Dead Load Factor 1.20

Wind Load Factor 1.60



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	195.00	800 Mhz Filter	3	30.640	33.704	0.63	0.90	0.93	36.00	0.000	0.000	49.94	0.00	0.00
2	195.00	1900MHz RRH	3	30.640	33.704	0.79	0.90	9.03	158.40	0.000	0.000	486.89	0.00	0.00
3	195.00	ACU-A20-N	4	30.640	33.704	0.71	0.90	0.40	4.80	0.000	0.000	21.47	0.00	0.00
4	195.00	800 Mhz	3	30.640	33.704	0.60	0.90	6.26	245.88	0.000	0.000	337.54	0.00	0.00
5	195.00	APXVSP18-C-A20	3	30.640	33.704	0.75	0.90	17.97	205.20	0.000	0.000	969.22	0.00	0.00
6	195.00	Low Profile Platform	1	30.640	33.704	1.00	1.00	22.00	1800.00	0.000	0.000	1186.39	0.00	0.00
7	193.00	Collar Mount	1	30.574	33.631	1.00	1.00	5.00	420.00	0.000	0.000	269.05	0.00	0.00
8	175.00	JAHH-65B-R3B	6	29.950	32.945	0.66	0.80	36.29	455.76	0.000	0.000	1913.15	0.00	0.00
9	175.00	Low Profile Platform	1	29.950	32.945	1.00	1.00	22.00	1800.00	0.000	0.000	1159.67	0.00	0.00
10	175.00	(3) mounting kit	1	29.950	32.945	1.00	1.00	5.00	420.00	0.000	0.000	263.56	0.00	0.00
11	175.00	DB-C1-12C-24AB-OZ	1	29.950	32.945	1.00	1.00	3.79	38.40	0.000	0.000	199.78	0.00	0.00
12	175.00	LPA-80063/6cf	6	29.950	32.945	1.36	0.80	35.33	151.20	0.000	0.000	1862.47	0.00	0.00
13	175.00	B66A	3	29.950	32.945	0.66	0.80	5.00	204.48	0.000	0.000	263.49	0.00	0.00
14	175.00	B13 RRH4X30-4R	3	29.950	32.945	0.70	0.80	4.56	205.92	0.000	0.000	240.47	0.00	0.00
15	165.00	Low Profile Platform	1	29.581	32.540	1.00	1.00	22.00	1800.00	0.000	0.000	1145.39	0.00	0.00
16	165.00	800 10764	2	29.581	32.540	0.72	0.80	8.47	97.92	0.000	0.000	440.83	0.00	0.00
17	165.00	DC6-48-60-18-8F	2	29.581	32.540	1.00	1.00	1.84	76.32	0.000	0.000	95.80	0.00	0.00
18	165.00	B14 4478	3	29.581	32.540	0.54	0.80	2.65	213.84	0.000	0.000	138.13	0.00	0.00
19	165.00	800 10965	1	29.581	32.540	0.57	0.80	7.84	130.32	0.000	0.000	408.39	0.00	0.00
20	165.00	800 10964	2	29.581	32.540	0.57	0.80	11.36	227.52	0.000	0.000	591.44	0.00	0.00
21	165.00	RRUS 32 B2	3	29.581	32.540	0.54	0.80	4.41	190.80	0.000	0.000	229.39	0.00	0.00
22	165.00	ABT-DFDM-ADBH	3	29.581	32.540	1.00	1.00	0.15	3.96	0.000	0.000	7.81	0.00	0.00
23	165.00	7770.00	3	29.581	32.540	0.58	0.80	9.64	126.00	0.000	0.000	501.68	0.00	0.00
24	165.00	LGP21401 TMA	12	29.581	32.540	0.54	0.80	8.36	273.60	0.000	0.000	435.33	0.00	0.00
25	165.00	RRUS-11	3	29.581	32.540	0.57	0.80	4.29	183.60	0.000	0.000	223.56	0.00	0.00
26	165.00	AM-X-CD-16-65-00T-RET	1	29.581	32.540	1.00	1.00	8.02	58.20	0.000	0.000	417.55	0.00	0.00
27	155.00	Low Profile Platform	1	29.195	32.114	1.00	1.00	22.00	1800.00	0.000	0.000	1130.41	0.00	0.00
28	155.00	KRY 112 144/1	3	29.195	32.114	0.56	0.80	0.69	39.60	0.000	0.000	35.39	0.00	0.00
29	155.00	S20057A1	3	29.195	32.114	0.58	0.80	1.44	39.60	0.000	0.000	73.82	0.00	0.00
30	155.00	LNx-6565DS	3	29.195	32.114	0.64	0.80	22.00	182.88	0.000	0.000	1130.58	0.00	0.00
31	155.00	782 11056	3	29.195	32.114	0.70	0.80	0.58	19.08	0.000	0.000	30.04	0.00	0.00
32	155.00	APXV18-209014-CT2	3	29.195	32.114	0.59	0.80	6.36	67.32	0.000	0.000	326.69	0.00	0.00

Totals: 11,676.60

16,585.32

Total Applied Force Summary

Structure: CT01501-S-SBA

Code: EI/TIA-222-G

4/10/2018

Site Name: Morris

Exposure: C

Height: 195.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent Rock

Gh: 1.1

Topography: 1

Struct Class: II

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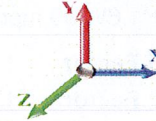
Load Case: 1.2D + 1.6W 93 mph Wind

Iterations

27

Dead Load Factor 1.20

Wind Load Factor 1.60



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		553.08	1781.73	0.00	0.00
10.00		542.90	1753.13	0.00	0.00
15.00		532.71	1724.53	0.00	0.00
20.00		554.42	1695.92	0.00	0.00
25.00		569.76	1667.32	0.00	0.00
30.00		580.28	1638.72	0.00	0.00
35.00		587.26	1610.11	0.00	0.00
40.00		591.50	1581.51	0.00	0.00
41.00		117.41	312.87	0.00	0.00
45.00		480.33	2304.42	0.00	0.00
48.00		359.72	1704.29	0.00	0.00
50.00		239.26	613.58	0.00	0.00
55.00		600.92	1513.92	0.00	0.00
60.00		598.40	1485.32	0.00	0.00
65.00		594.72	1456.72	0.00	0.00
70.00		590.00	1428.12	0.00	0.00
75.00		584.36	1399.51	0.00	0.00
80.00		577.88	1370.91	0.00	0.00
81.00		114.14	270.75	0.00	0.00
85.00		455.35	925.68	0.00	0.00
90.00		570.60	2046.16	0.00	0.00
91.00		112.60	403.51	0.00	0.00
95.00		448.50	897.67	0.00	0.00
100.00		553.06	1100.63	0.00	0.00
105.00		543.45	1076.80	0.00	0.00
110.00		533.32	1052.96	0.00	0.00
115.00		522.72	1029.13	0.00	0.00
120.00		511.66	1005.29	0.00	0.00
125.00		500.18	981.45	0.00	0.00
130.00		488.30	957.62	0.00	0.00
135.00		482.90	1499.69	0.00	0.00
140.00		470.33	784.63	0.00	0.00
145.00		457.42	765.56	0.00	0.00
150.00		444.18	746.49	0.00	0.00
155.00	(16) attachments	3157.56	2875.90	0.00	0.00
160.00		416.76	633.47	0.00	0.00
165.00	(36) attachments	5037.92	3996.48	0.00	0.00
170.00		388.20	500.23	0.00	0.00
175.00	(21) attachments	6276.10	3756.93	0.00	0.00
180.00		358.57	411.46	0.00	0.00
185.00		352.01	449.07	0.00	0.00
190.00		353.99	449.07	0.00	0.00
193.00	(1) attachments	482.15	689.44	0.00	0.00
195.00	(17) attachments	3193.82	2629.91	0.00	0.00
	Totals:	36,480.70	58,978.61	0.00	0.00

Calculated Forces

Structure: CT01501-S-SBA

Site Name: Morris

Height: 195.00 (ft)

Base Elev: 0.000 (ft)

Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G

Exposure: C

Crest Height: 0.00

Site Class: B - Competent Rock

Struct Class: II

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Discrete Appurtenance Forces

Structure: CT01501-S-SBA
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: B - Competent Rock
Struct Class: II

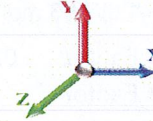
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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	195.00	800 Mhz Filter	3	30.640	33.704	0.63	0.90	0.93	27.00	0.000	0.000	49.94	0.00	0.00
2	195.00	1900MHz RRH	3	30.640	33.704	0.79	0.90	9.03	118.80	0.000	0.000	486.89	0.00	0.00
3	195.00	ACU-A20-N	4	30.640	33.704	0.71	0.90	0.40	3.60	0.000	0.000	21.47	0.00	0.00
4	195.00	800 Mhz	3	30.640	33.704	0.60	0.90	6.26	184.41	0.000	0.000	337.54	0.00	0.00
5	195.00	APXVSP18-C-A20	3	30.640	33.704	0.75	0.90	17.97	153.90	0.000	0.000	969.22	0.00	0.00
6	195.00	Low Profile Platform	1	30.640	33.704	1.00	1.00	22.00	1350.00	0.000	0.000	1186.39	0.00	0.00
7	193.00	Collar Mount	1	30.574	33.631	1.00	1.00	5.00	315.00	0.000	0.000	269.05	0.00	0.00
8	175.00	JAHH-65B-R3B	6	29.950	32.945	0.66	0.80	36.29	341.82	0.000	0.000	1913.15	0.00	0.00
9	175.00	Low Profile Platform	1	29.950	32.945	1.00	1.00	22.00	1350.00	0.000	0.000	1159.67	0.00	0.00
10	175.00	(3) mounting kit	1	29.950	32.945	1.00	1.00	5.00	315.00	0.000	0.000	263.56	0.00	0.00
11	175.00	DB-C1-12C-24AB-OZ	1	29.950	32.945	1.00	1.00	3.79	28.80	0.000	0.000	199.78	0.00	0.00
12	175.00	LPA-80063/6cf	6	29.950	32.945	1.36	0.80	35.33	113.40	0.000	0.000	1862.47	0.00	0.00
13	175.00	B66A	3	29.950	32.945	0.66	0.80	5.00	153.36	0.000	0.000	263.49	0.00	0.00
14	175.00	B13 RRH4X30-4R	3	29.950	32.945	0.70	0.80	4.56	154.44	0.000	0.000	240.47	0.00	0.00
15	165.00	Low Profile Platform	1	29.581	32.540	1.00	1.00	22.00	1350.00	0.000	0.000	1145.39	0.00	0.00
16	165.00	800 10764	2	29.581	32.540	0.72	0.80	8.47	73.44	0.000	0.000	440.83	0.00	0.00
17	165.00	DC6-48-60-18-8F	2	29.581	32.540	1.00	1.00	1.84	57.24	0.000	0.000	95.80	0.00	0.00
18	165.00	B14 4478	3	29.581	32.540	0.54	0.80	2.65	160.38	0.000	0.000	138.13	0.00	0.00
19	165.00	800 10965	1	29.581	32.540	0.57	0.80	7.84	97.74	0.000	0.000	408.39	0.00	0.00
20	165.00	800 10964	2	29.581	32.540	0.57	0.80	11.36	170.64	0.000	0.000	591.44	0.00	0.00
21	165.00	RRUS 32 B2	3	29.581	32.540	0.54	0.80	4.41	143.10	0.000	0.000	229.39	0.00	0.00
22	165.00	ABT-DFDM-ADBH	3	29.581	32.540	1.00	1.00	0.15	2.97	0.000	0.000	7.81	0.00	0.00
23	165.00	7770.00	3	29.581	32.540	0.58	0.80	9.64	94.50	0.000	0.000	501.68	0.00	0.00
24	165.00	LGP21401 TMA	12	29.581	32.540	0.54	0.80	8.36	205.20	0.000	0.000	435.33	0.00	0.00
25	165.00	RRUS-11	3	29.581	32.540	0.57	0.80	4.29	137.70	0.000	0.000	223.56	0.00	0.00
26	165.00	AM-X-CD-16-65-00T-RET	1	29.581	32.540	1.00	1.00	8.02	43.65	0.000	0.000	417.55	0.00	0.00
27	155.00	Low Profile Platform	1	29.195	32.114	1.00	1.00	22.00	1350.00	0.000	0.000	1130.41	0.00	0.00
28	155.00	KRY 112 144/1	3	29.195	32.114	0.56	0.80	0.69	29.70	0.000	0.000	35.39	0.00	0.00
29	155.00	S20057A1	3	29.195	32.114	0.58	0.80	1.44	29.70	0.000	0.000	73.82	0.00	0.00
30	155.00	LNx-6565DS	3	29.195	32.114	0.64	0.80	22.00	137.16	0.000	0.000	1130.58	0.00	0.00
31	155.00	782 11056	3	29.195	32.114	0.70	0.80	0.58	14.31	0.000	0.000	30.04	0.00	0.00
32	155.00	APXV18-209014-CT2	3	29.195	32.114	0.59	0.80	6.36	50.49	0.000	0.000	326.69	0.00	0.00
Totals:								8,757.45			16,585.32			

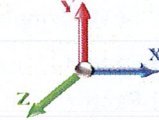
Total Applied Force Summary

Structure: CT01501-S-SBA	Code: EIA/TIA-222-G	4/10/2018
Site Name: Morris	Exposure: C	
Height: 195.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 16



Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		553.08	1336.30	0.00	0.00
10.00		542.90	1314.85	0.00	0.00
15.00		532.71	1293.39	0.00	0.00
20.00		554.42	1271.94	0.00	0.00
25.00		569.76	1250.49	0.00	0.00
30.00		580.28	1229.04	0.00	0.00
35.00		587.26	1207.58	0.00	0.00
40.00		591.50	1186.13	0.00	0.00
41.00		117.41	234.65	0.00	0.00
45.00		480.33	1728.31	0.00	0.00
48.00		359.72	1278.22	0.00	0.00
50.00		239.26	460.18	0.00	0.00
55.00		600.92	1135.44	0.00	0.00
60.00		598.40	1113.99	0.00	0.00
65.00		594.72	1092.54	0.00	0.00
70.00		590.00	1071.09	0.00	0.00
75.00		584.36	1049.63	0.00	0.00
80.00		577.88	1028.18	0.00	0.00
81.00		114.14	203.06	0.00	0.00
85.00		455.35	694.26	0.00	0.00
90.00		570.60	1534.62	0.00	0.00
91.00		112.60	302.63	0.00	0.00
95.00		448.50	673.25	0.00	0.00
100.00		553.06	825.48	0.00	0.00
105.00		543.45	807.60	0.00	0.00
110.00		533.32	789.72	0.00	0.00
115.00		522.72	771.84	0.00	0.00
120.00		511.66	753.97	0.00	0.00
125.00		500.18	736.09	0.00	0.00
130.00		488.30	718.21	0.00	0.00
135.00		482.90	1124.76	0.00	0.00
140.00		470.33	588.47	0.00	0.00
145.00		457.42	574.17	0.00	0.00
150.00		444.18	559.87	0.00	0.00
155.00	(16) attachments	3157.56	2156.93	0.00	0.00
160.00		416.76	475.10	0.00	0.00
165.00	(36) attachments	5037.92	2997.36	0.00	0.00
170.00		388.20	375.18	0.00	0.00
175.00	(21) attachments	6276.10	2817.69	0.00	0.00
180.00		358.57	308.59	0.00	0.00
185.00		352.01	336.80	0.00	0.00
190.00		353.99	336.80	0.00	0.00
193.00	(1) attachments	482.15	517.08	0.00	0.00
195.00	(17) attachments	3193.82	1972.43	0.00	0.00
	Totals:	36,480.70	44,233.95	0.00	0.00

Calculated Forces

Structure: CT01501-S-SBA

Code: EIA/TIA-222-G

4/10/2018

Site Name: Morris

Exposure: C

Height: 195.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent Rock

Gh: 1.1

Topography: 1

Struct Class: II

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Wind Loading - Shaft

Structure: CT01501-S-SBA

Code: EIA/TIA-222-G

4/10/2018

Site Name: Morris

Exposure: C

Height: 195.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent Rock

Gh: 1.1

Topography: 1

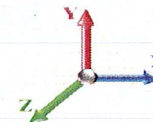
Struct Class: II

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Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations

26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	3.308	3.64	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	3.308	3.64	0.00	1.200	1.656	5.00	28.421	34.10	124.1	674.1	2218.0
10.00		1.00	0.85	3.308	3.64	0.00	1.200	1.775	5.00	28.022	33.63	122.3	710.7	2226.0
15.00		1.00	0.85	3.308	3.64	0.00	1.200	1.848	5.00	27.585	33.10	120.4	727.3	2214.0
20.00		1.00	0.90	3.509	3.86	0.00	1.200	1.902	5.00	27.132	32.56	125.7	735.1	2193.2
25.00		1.00	0.95	3.678	4.05	0.00	1.200	1.945	5.00	26.670	32.00	129.5	737.9	2167.4
30.00		1.00	0.98	3.822	4.20	0.00	1.200	1.981	5.00	26.201	31.44	132.2	737.3	2138.2
35.00		1.00	1.01	3.948	4.34	0.00	1.200	2.012	5.00	25.729	30.87	134.1	734.3	2106.6
40.00		1.00	1.04	4.061	4.47	0.00	1.200	2.039	5.00	25.253	30.30	135.4	729.4	2073.2
41.00	Bot - Section 2	1.00	1.05	4.082	4.49	0.00	1.200	2.044	1.00	4.992	5.99	26.9	145.7	411.0
45.00		1.00	1.07	4.163	4.58	0.00	1.200	2.063	4.00	20.035	24.04	110.1	586.3	2700.5
48.00	Top - Section 1	1.00	1.08	4.220	4.64	0.00	1.200	2.076	3.00	14.823	17.79	82.6	437.2	1998.8
50.00		1.00	1.09	4.256	4.68	0.00	1.200	2.085	2.00	9.785	11.74	55.0	290.2	808.7
55.00		1.00	1.12	4.342	4.78	0.00	1.200	2.105	5.00	24.132	28.96	138.3	717.2	1993.3
60.00		1.00	1.14	4.423	4.86	0.00	1.200	2.123	5.00	23.649	28.38	138.1	708.1	1955.6
65.00		1.00	1.16	4.498	4.95	0.00	1.200	2.140	5.00	23.165	27.80	137.5	698.2	1917.1
70.00		1.00	1.17	4.569	5.03	0.00	1.200	2.156	5.00	22.681	27.22	136.8	687.7	1878.0
75.00		1.00	1.19	4.635	5.10	0.00	1.200	2.171	5.00	22.195	26.63	135.8	676.6	1838.4
80.00		1.00	1.21	4.699	5.17	0.00	1.200	2.185	5.00	21.709	26.05	134.6	665.1	1798.2
81.00	Top - Section 2	1.00	1.21	4.711	5.18	0.00	1.200	2.188	1.00	4.282	5.14	26.6	132.5	355.7
85.00	Bot - Section 4	1.00	1.22	4.759	5.24	0.00	1.200	2.198	4.00	16.938	20.33	106.4	522.5	1257.9
90.00		1.00	1.24	4.817	5.30	0.00	1.200	2.211	5.00	20.999	25.20	133.5	649.4	2457.7
91.00	Top - Section 3	1.00	1.24	4.828	5.31	0.00	1.200	2.214	1.00	4.140	4.97	26.4	129.4	485.3
95.00		1.00	1.25	4.872	5.36	0.00	1.200	2.223	4.00	16.369	19.64	105.3	509.3	1216.8
100.00		1.00	1.27	4.925	5.42	0.00	1.200	2.234	5.00	20.022	24.03	130.2	623.6	1486.4
105.00		1.00	1.28	4.976	5.47	0.00	1.200	2.245	5.00	19.533	23.44	128.3	610.2	1449.2
110.00		1.00	1.29	5.025	5.53	0.00	1.200	2.256	5.00	19.044	22.85	126.3	596.6	1411.8
115.00		1.00	1.30	5.072	5.58	0.00	1.200	2.266	5.00	18.554	22.27	124.2	582.7	1374.0
120.00		1.00	1.32	5.117	5.63	0.00	1.200	2.276	5.00	18.064	21.68	122.0	568.5	1336.0
125.00		1.00	1.33	5.162	5.68	0.00	1.200	2.285	5.00	17.574	21.09	119.7	554.1	1297.8
130.00	Bot - Section 5	1.00	1.34	5.204	5.72	0.00	1.200	2.294	5.00	17.083	20.50	117.4	539.5	1259.3
135.00	Top - Section 4	1.00	1.35	5.246	5.77	0.00	1.200	2.303	5.00	16.804	20.17	116.4	531.9	1793.8
140.00		1.00	1.36	5.286	5.81	0.00	1.200	2.311	5.00	16.313	19.58	113.8	516.9	1063.7
145.00		1.00	1.37	5.325	5.86	0.00	1.200	2.319	5.00	15.822	18.99	111.2	501.7	1029.5
150.00		1.00	1.38	5.364	5.90	0.00	1.200	2.327	5.00	15.331	18.40	108.5	486.4	995.1
155.00	Appurtenance(s)	1.00	1.39	5.401	5.94	0.00	1.200	2.335	5.00	14.839	17.81	105.8	470.9	960.5
160.00		1.00	1.40	5.437	5.98	0.00	1.200	2.342	5.00	14.347	17.22	103.0	455.2	925.8
165.00	Appurtenance(s)	1.00	1.41	5.472	6.02	0.00	1.200	2.349	5.00	13.855	16.63	100.1	439.4	890.9
170.00		1.00	1.42	5.507	6.06	0.00	1.200	2.356	5.00	13.363	16.04	97.1	423.4	855.8
175.00	Appurtenance(s)	1.00	1.42	5.541	6.09	0.00	1.200	2.363	5.00	12.871	15.44	94.1	407.3	820.7
180.00	Top - Section 5	1.00	1.43	5.574	6.13	0.00	1.200	2.370	5.00	12.378	14.85	91.1	391.1	785.4
185.00		1.00	1.44	5.606	6.17	0.00	1.200	2.376	5.00	12.134	14.56	89.8	392.2	824.1
190.00		1.00	1.45	5.637	6.20	0.00	1.200	2.383	5.00	12.140	14.57	90.3	393.4	825.3
193.00	Appurtenance(s)	1.00	1.45	5.656	6.22	0.00	1.200	2.386	3.00	7.286	8.74	54.4	236.4	495.6
195.00	Appurtenance(s)	1.00	1.46	5.668	6.24	0.00	1.200	2.389	2.00	4.858	5.83	36.3	157.8	330.6
Totals:									195.00			4,697.6		62,620.7

Discrete Appurtenance Forces

Structure: CT01501-S-SBA
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: B - Competent Rock
Struct Class: II

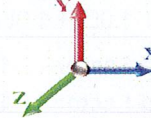
4/10/2018

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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 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	195.00	800 Mhz Filter	3	5.668	6.235	0.63	0.90	2.38	88.10	0.000	0.000	14.82	0.00	0.00
2	195.00	1900MHz RRH	3	5.668	6.235	0.79	0.90	13.55	513.06	0.000	0.000	84.48	0.00	0.00
3	195.00	ACU-A20-N	4	5.668	6.235	0.71	0.90	1.55	23.12	0.000	0.000	9.68	0.00	0.00
4	195.00	800 Mhz	3	5.668	6.235	0.60	0.90	9.51	539.59	0.000	0.000	59.31	0.00	0.00
5	195.00	APXVSP18-C-A20	3	5.668	6.235	0.75	0.90	26.54	766.49	0.000	0.000	165.49	0.00	0.00
6	195.00	Low Profile Platform	1	5.668	6.235	1.00	1.00	46.17	3291.61	0.000	0.000	287.90	0.00	0.00
7	193.00	Collar Mount	1	5.656	6.222	1.00	1.00	9.77	720.91	0.000	0.000	60.80	0.00	0.00
8	175.00	JAHH-65B-R3B	6	5.541	6.095	0.66	0.80	43.71	2444.22	0.000	0.000	266.40	0.00	0.00
9	175.00	Low Profile Platform	1	5.541	6.095	1.00	1.00	45.91	3272.33	0.000	0.000	279.83	0.00	0.00
10	175.00	(3) mounting kit	1	5.541	6.095	1.00	1.00	9.73	717.00	0.000	0.000	59.28	0.00	0.00
11	175.00	DB-C1-12C-24AB-0Z	1	5.541	6.095	1.00	1.00	5.08	168.72	0.000	0.000	30.98	0.00	0.00
12	175.00	LPA-80063/6cf	6	5.541	6.095	1.36	0.80	48.80	1846.02	0.000	0.000	297.41	0.00	0.00
13	175.00	B66A	3	5.541	6.095	0.66	0.80	6.91	576.32	0.000	0.000	42.09	0.00	0.00
14	175.00	B13 RRH4X30-4R	3	5.541	6.095	0.70	0.80	6.31	413.06	0.000	0.000	38.45	0.00	0.00
15	165.00	Low Profile Platform	1	5.472	6.020	1.00	1.00	45.77	3261.93	0.000	0.000	275.54	0.00	0.00
16	165.00	800 10764	2	5.472	6.020	0.72	0.80	12.62	368.21	0.000	0.000	75.97	0.00	0.00
17	165.00	DC6-48-60-18-8F	2	5.472	6.020	1.00	1.00	3.02	207.36	0.000	0.000	18.17	0.00	0.00
18	165.00	B14 4478	3	5.472	6.020	0.54	0.80	3.78	353.09	0.000	0.000	22.72	0.00	0.00
19	165.00	800 10965	1	5.472	6.020	0.57	0.80	9.07	552.59	0.000	0.000	54.60	0.00	0.00
20	165.00	800 10964	2	5.472	6.020	0.57	0.80	13.38	882.50	0.000	0.000	80.54	0.00	0.00
21	165.00	RRUS 32 B2	3	5.472	6.020	0.54	0.80	6.03	576.26	0.000	0.000	36.27	0.00	0.00
22	165.00	ABT-DFDM-ADBH	3	5.472	6.020	1.00	1.00	0.93	10.87	0.000	0.000	5.58	0.00	0.00
23	165.00	7770.00	3	5.472	6.020	0.58	0.80	12.21	715.57	0.000	0.000	73.47	0.00	0.00
24	165.00	LGP21401 TMA	12	5.472	6.020	0.54	0.80	15.76	590.12	0.000	0.000	94.84	0.00	0.00
25	165.00	RRUS-11	3	5.472	6.020	0.57	0.80	5.75	427.46	0.000	0.000	34.59	0.00	0.00
26	165.00	AM-X-CD-16-65-00T-RET	1	5.472	6.020	1.00	1.00	11.78	230.14	0.000	0.000	70.91	0.00	0.00
27	155.00	Low Profile Platform	1	5.401	5.941	1.00	1.00	45.63	3250.95	0.000	0.000	271.06	0.00	0.00
28	155.00	KRY 112 144/1	3	5.401	5.941	0.56	0.80	1.76	73.57	0.000	0.000	10.44	0.00	0.00
29	155.00	S20057A1	3	5.401	5.941	0.58	0.80	3.07	99.15	0.000	0.000	18.25	0.00	0.00
30	155.00	LNx-6565DS	3	5.401	5.941	0.64	0.80	30.37	907.27	0.000	0.000	180.40	0.00	0.00
31	155.00	782 11056	3	5.401	5.941	0.70	0.80	1.71	48.89	0.000	0.000	10.13	0.00	0.00
32	155.00	APXV18-209014-CT2	3	5.401	5.941	0.59	0.80	8.64	461.22	0.000	0.000	51.33	0.00	0.00
Totals:								28,397.69				3,081.78		

Total Applied Force Summary

Structure: CT01501-S-SBA

Code: EIA/TIA-222-G

4/10/2018

Site Name: Morris

Exposure: C

Height: 195.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent Rock

Gh: 1.1

Topography: 1

Struct Class: II

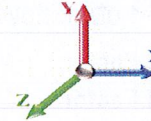
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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations

26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		124.08	2455.82	0.00	0.00
10.00		122.34	2463.81	0.00	0.00
15.00		120.43	2451.81	0.00	0.00
20.00		125.69	2431.04	0.00	0.00
25.00		129.49	2405.19	0.00	0.00
30.00		132.19	2375.99	0.00	0.00
35.00		134.09	2344.38	0.00	0.00
40.00		135.36	2310.95	0.00	0.00
41.00		26.90	458.53	0.00	0.00
45.00		110.09	2890.71	0.00	0.00
48.00		82.57	2141.45	0.00	0.00
50.00		54.98	903.79	0.00	0.00
55.00		138.32	2231.14	0.00	0.00
60.00		138.06	2193.38	0.00	0.00
65.00		137.53	2154.91	0.00	0.00
70.00		136.77	2115.81	0.00	0.00
75.00		135.80	2076.15	0.00	0.00
80.00		134.65	2036.00	0.00	0.00
81.00		26.63	403.29	0.00	0.00
85.00		106.40	1448.16	0.00	0.00
90.00		133.51	2695.53	0.00	0.00
91.00		26.39	532.88	0.00	0.00
95.00		105.26	1406.99	0.00	0.00
100.00		130.16	1724.23	0.00	0.00
105.00		128.29	1687.03	0.00	0.00
110.00		126.31	1649.55	0.00	0.00
115.00		124.22	1611.80	0.00	0.00
120.00		122.03	1573.80	0.00	0.00
125.00		119.74	1535.56	0.00	0.00
130.00		117.36	1497.11	0.00	0.00
135.00		116.36	2031.57	0.00	0.00
140.00		113.83	1301.52	0.00	0.00
145.00		111.22	1267.28	0.00	0.00
150.00		108.54	1232.87	0.00	0.00
155.00	(16) attachments	647.40	6039.32	0.00	0.00
160.00		102.97	1088.66	0.00	0.00
165.00	(36) attachments	943.32	9229.89	0.00	0.00
170.00		97.13	923.64	0.00	0.00
175.00	(21) attachments	1108.57	10326.13	0.00	0.00
180.00		91.07	802.53	0.00	0.00
185.00		89.79	841.31	0.00	0.00
190.00		90.34	842.45	0.00	0.00
193.00	(1) attachments	115.20	1226.78	0.00	0.00
195.00	(17) attachments	658.04	5559.40	0.00	0.00
Totals:		7,779.40	98,920.12	0.00	0.00

Calculated Forces

Structure: CT01501-S-SBA

Code: EIA/TIA-222-G

4/10/2018

Site Name: Morris

Exposure: C

Height: 195.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent Rock

Gh: 1.1

Topography: 1

Struct Class: II

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Wind Loading - Shaft

Structure: CT01501-S-SBA
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: B - Competent Rock
Struct Class: II

4/10/2018

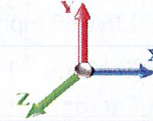
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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

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	0.85	7.442	8.19	301.92	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	296.41	0.650	0.000	5.00	27.041	17.58	143.9	0.0	1286.6
10.00		1.00	0.85	7.442	8.19	290.90	0.650	0.000	5.00	26.543	17.25	141.2	0.0	1262.8
15.00		1.00	0.85	7.442	8.19	285.39	0.650	0.000	5.00	26.045	16.93	138.6	0.0	1238.9
20.00		1.00	0.90	7.896	8.69	288.29	0.650	0.000	5.00	25.547	16.61	144.2	0.0	1215.1
25.00		1.00	0.95	8.276	9.10	289.33	0.650	0.000	5.00	25.049	16.28	148.2	0.0	1191.3
30.00		1.00	0.98	8.600	9.46	289.02	0.650	0.000	5.00	24.550	15.96	151.0	0.0	1167.4
35.00		1.00	1.01	8.883	9.77	287.73	0.650	0.000	5.00	24.052	15.63	152.8	0.0	1143.6
40.00		1.00	1.04	9.137	10.05	285.69	0.650	0.000	5.00	23.554	15.31	153.9	0.0	1119.8
41.00 Bot - Section 2		1.00	1.05	9.184	10.10	285.21	0.650	0.000	1.00	4.651	3.02	30.5	0.0	221.1
45.00		1.00	1.07	9.366	10.30	283.08	0.650	0.000	4.00	18.659	12.13	125.0	0.0	1761.8
48.00 Top - Section 1		1.00	1.08	9.494	10.44	281.27	0.650	0.000	3.00	13.785	8.96	93.6	0.0	1301.3
50.00		1.00	1.09	9.576	10.53	283.97	0.650	0.000	2.00	9.091	5.91	62.2	0.0	432.1
55.00		1.00	1.12	9.770	10.75	280.52	0.650	0.000	5.00	22.378	14.55	156.3	0.0	1063.4
60.00		1.00	1.14	9.951	10.95	276.73	0.650	0.000	5.00	21.880	14.22	155.7	0.0	1039.6
65.00		1.00	1.16	10.120	11.13	272.64	0.650	0.000	5.00	21.382	13.90	154.7	0.0	1015.8
70.00		1.00	1.17	10.279	11.31	268.30	0.650	0.000	5.00	20.884	13.57	153.5	0.0	991.9
75.00		1.00	1.19	10.430	11.47	263.74	0.650	0.000	5.00	20.386	13.25	152.0	0.0	968.1
80.00		1.00	1.21	10.572	11.63	258.97	0.650	0.000	5.00	19.888	12.93	150.3	0.0	944.3
81.00 Top - Section 2		1.00	1.21	10.600	11.66	257.99	0.650	0.000	1.00	3.918	2.55	29.7	0.0	186.0
85.00 Bot - Section 4		1.00	1.22	10.708	11.78	254.01	0.650	0.000	4.00	15.472	10.06	118.5	0.0	612.9
90.00		1.00	1.24	10.838	11.92	248.90	0.650	0.000	5.00	19.156	12.45	148.4	0.0	1507.0
91.00 Top - Section 3		1.00	1.24	10.863	11.95	247.86	0.650	0.000	1.00	3.771	2.45	29.3	0.0	296.6
95.00		1.00	1.25	10.962	12.06	247.18	0.650	0.000	4.00	14.887	9.68	116.7	0.0	589.5
100.00		1.00	1.27	11.081	12.19	241.80	0.650	0.000	5.00	18.160	11.80	143.9	0.0	719.0
105.00		1.00	1.28	11.195	12.31	236.29	0.650	0.000	5.00	17.662	11.48	141.4	0.0	699.2
110.00		1.00	1.29	11.305	12.44	230.65	0.650	0.000	5.00	17.164	11.16	138.7	0.0	679.3
115.00		1.00	1.30	11.412	12.55	224.91	0.650	0.000	5.00	16.666	10.83	136.0	0.0	659.4
120.00		1.00	1.32	11.514	12.67	219.07	0.650	0.000	5.00	16.168	10.51	133.1	0.0	639.6
125.00		1.00	1.33	11.614	12.78	213.13	0.650	0.000	5.00	15.670	10.19	130.1	0.0	619.7
130.00 Bot - Section 5		1.00	1.34	11.710	12.88	207.10	0.650	0.000	5.00	15.172	9.86	127.0	0.0	599.9
135.00 Top - Section 4		1.00	1.35	11.803	12.98	200.99	0.650	0.000	5.00	14.885	9.68	125.6	0.0	1051.6
140.00		1.00	1.36	11.894	13.08	197.75	0.650	0.000	5.00	14.387	9.35	122.4	0.0	455.7
145.00		1.00	1.37	11.982	13.18	191.49	0.650	0.000	5.00	13.889	9.03	119.0	0.0	439.8
150.00		1.00	1.38	12.068	13.27	185.16	0.650	0.000	5.00	13.391	8.70	115.6	0.0	423.9
155.00 Appurtenance(s)		1.00	1.39	12.152	13.37	178.76	0.650	0.000	5.00	12.893	8.38	112.0	0.0	408.0
160.00		1.00	1.40	12.233	13.46	172.29	0.650	0.000	5.00	12.395	8.06	108.4	0.0	392.1
165.00 Appurtenance(s)		1.00	1.41	12.313	13.54	165.76	0.650	0.000	5.00	11.897	7.73	104.7	0.0	376.2
170.00		1.00	1.42	12.390	13.63	159.18	0.650	0.000	5.00	11.399	7.41	101.0	0.0	360.4
175.00 Appurtenance(s)		1.00	1.42	12.466	13.71	152.53	0.650	0.000	5.00	10.901	7.09	97.2	0.0	344.5
180.00 Top - Section 5		1.00	1.43	12.540	13.79	145.83	0.650	0.000	5.00	10.403	6.76	93.3	0.0	328.6
185.00		1.00	1.44	12.613	13.87	146.25	0.650	0.000	5.00	10.154	6.60	91.6	0.0	359.9
190.00		1.00	1.45	12.684	13.95	146.66	0.650	0.000	5.00	10.154	6.60	92.1	0.0	359.9
193.00 Appurtenance(s)		1.00	1.45	12.726	14.00	146.91	0.650	0.000	3.00	6.093	3.96	55.4	0.0	215.9
195.00 Appurtenance(s)		1.00	1.46	12.753	14.03	147.07	0.650	0.000	2.00	4.062	2.64	37.0	0.0	144.0
Totals:									195.00			5,175.7		32,833.6

Discrete Appurtenance Forces

Structure: CT01501-S-SBA
Site Name: Morris
Height: 195.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: B - Competent Rock
Struct Class: II

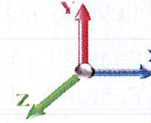
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	195.00	800 Mhz Filter	3	12.753	14.029	0.63	0.90	0.93	30.00	0.000	0.000	12.99	0.00	0.00
2	195.00	1900MHz RRH	3	12.753	14.029	0.79	0.90	9.03	132.00	0.000	0.000	126.66	0.00	0.00
3	195.00	ACU-A20-N	4	12.753	14.029	0.71	0.90	0.40	4.00	0.000	0.000	5.59	0.00	0.00
4	195.00	800 Mhz	3	12.753	14.029	0.60	0.90	6.26	204.90	0.000	0.000	87.81	0.00	0.00
5	195.00	APXVSP18-C-A20	3	12.753	14.029	0.75	0.90	17.97	171.00	0.000	0.000	252.14	0.00	0.00
6	195.00	Low Profile Platform	1	12.753	14.029	1.00	1.00	22.00	1500.00	0.000	0.000	308.63	0.00	0.00
7	193.00	Collar Mount	1	12.726	13.998	1.00	1.00	5.00	350.00	0.000	0.000	69.99	0.00	0.00
8	175.00	JAHH-65B-R3B	6	12.466	13.713	0.66	0.80	36.29	379.80	0.000	0.000	497.70	0.00	0.00
9	175.00	Low Profile Platform	1	12.466	13.713	1.00	1.00	22.00	1500.00	0.000	0.000	301.68	0.00	0.00
10	175.00	(3) mounting kit	1	12.466	13.713	1.00	1.00	5.00	350.00	0.000	0.000	68.56	0.00	0.00
11	175.00	DB-C1-12C-24AB-OZ	1	12.466	13.713	1.00	1.00	3.79	32.00	0.000	0.000	51.97	0.00	0.00
12	175.00	LPA-80063/6cf	6	12.466	13.713	1.36	0.80	35.33	126.00	0.000	0.000	484.51	0.00	0.00
13	175.00	B66A	3	12.466	13.713	0.66	0.80	5.00	170.40	0.000	0.000	68.55	0.00	0.00
14	175.00	B13 RRH4X30-4R	3	12.466	13.713	0.70	0.80	4.56	171.60	0.000	0.000	62.56	0.00	0.00
15	165.00	Low Profile Platform	1	12.313	13.544	1.00	1.00	22.00	1500.00	0.000	0.000	297.97	0.00	0.00
16	165.00	800 10764	2	12.313	13.544	0.72	0.80	8.47	81.60	0.000	0.000	114.68	0.00	0.00
17	165.00	DC6-48-60-18-8F	2	12.313	13.544	1.00	1.00	1.84	63.60	0.000	0.000	24.92	0.00	0.00
18	165.00	B14 4478	3	12.313	13.544	0.54	0.80	2.65	178.20	0.000	0.000	35.94	0.00	0.00
19	165.00	800 10965	1	12.313	13.544	0.57	0.80	7.84	108.60	0.000	0.000	106.24	0.00	0.00
20	165.00	800 10964	2	12.313	13.544	0.57	0.80	11.36	189.60	0.000	0.000	153.86	0.00	0.00
21	165.00	RRUS 32 B2	3	12.313	13.544	0.54	0.80	4.41	159.00	0.000	0.000	59.67	0.00	0.00
22	165.00	ABT-DFDM-ADBH	3	12.313	13.544	1.00	1.00	0.15	3.30	0.000	0.000	2.03	0.00	0.00
23	165.00	7770.00	3	12.313	13.544	0.58	0.80	9.64	105.00	0.000	0.000	130.51	0.00	0.00
24	165.00	LGP21401 TMA	12	12.313	13.544	0.54	0.80	8.36	228.00	0.000	0.000	113.25	0.00	0.00
25	165.00	RRUS-11	3	12.313	13.544	0.57	0.80	4.29	153.00	0.000	0.000	58.16	0.00	0.00
26	165.00	AM-X-CD-16-65-00T-RET	1	12.313	13.544	1.00	1.00	8.02	48.50	0.000	0.000	108.62	0.00	0.00
27	155.00	Low Profile Platform	1	12.152	13.367	1.00	1.00	22.00	1500.00	0.000	0.000	294.07	0.00	0.00
28	155.00	KRY 112 144/1	3	12.152	13.367	0.56	0.80	0.69	33.00	0.000	0.000	9.21	0.00	0.00
29	155.00	S20057A1	3	12.152	13.367	0.58	0.80	1.44	33.00	0.000	0.000	19.20	0.00	0.00
30	155.00	LNx-6565DS	3	12.152	13.367	0.64	0.80	22.00	152.40	0.000	0.000	294.12	0.00	0.00
31	155.00	782 11056	3	12.152	13.367	0.70	0.80	0.58	15.90	0.000	0.000	7.81	0.00	0.00
32	155.00	APXV18-209014-CT2	3	12.152	13.367	0.59	0.80	6.36	56.10	0.000	0.000	84.99	0.00	0.00
Totals:								9,730.50				4,314.60		

Total Applied Force Summary

Structure: CT01501-S-SBA	Code: EIA/TIA-222-G	4/10/2018
Site Name: Morris	Exposure: C	
Height: 195.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

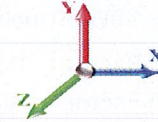


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

Dead Load Factor 1.00
Wind Load Factor 1.00



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		143.88	1484.78	0.00	0.00
10.00		141.23	1460.94	0.00	0.00
15.00		138.58	1437.10	0.00	0.00
20.00		144.23	1413.27	0.00	0.00
25.00		148.22	1389.43	0.00	0.00
30.00		150.96	1365.60	0.00	0.00
35.00		152.77	1341.76	0.00	0.00
40.00		153.88	1317.92	0.00	0.00
41.00		30.54	260.72	0.00	0.00
45.00		124.96	1920.35	0.00	0.00
48.00		93.58	1420.24	0.00	0.00
50.00		62.24	511.32	0.00	0.00
55.00		156.33	1261.60	0.00	0.00
60.00		155.67	1237.77	0.00	0.00
65.00		154.71	1213.93	0.00	0.00
70.00		153.49	1190.10	0.00	0.00
75.00		152.02	1166.26	0.00	0.00
80.00		150.33	1142.42	0.00	0.00
81.00		29.69	225.62	0.00	0.00
85.00		118.46	771.40	0.00	0.00
90.00		148.44	1705.14	0.00	0.00
91.00		29.29	336.26	0.00	0.00
95.00		116.68	748.06	0.00	0.00
100.00		143.88	917.20	0.00	0.00
105.00		141.38	897.33	0.00	0.00
110.00		138.74	877.47	0.00	0.00
115.00		135.98	857.61	0.00	0.00
120.00		133.11	837.74	0.00	0.00
125.00		130.12	817.88	0.00	0.00
130.00		127.03	798.02	0.00	0.00
135.00		125.62	1249.74	0.00	0.00
140.00		122.35	653.86	0.00	0.00
145.00		119.00	637.97	0.00	0.00
150.00		115.55	622.08	0.00	0.00
155.00	(16) attachments	821.42	2396.58	0.00	0.00
160.00		108.42	527.89	0.00	0.00
165.00	(36) attachments	1310.59	3330.40	0.00	0.00
170.00		100.99	416.86	0.00	0.00
175.00	(21) attachments	1632.70	3130.77	0.00	0.00
180.00		93.28	342.88	0.00	0.00
185.00		91.57	374.22	0.00	0.00
190.00		92.09	374.22	0.00	0.00
193.00	(1) attachments	125.43	574.53	0.00	0.00
195.00	(17) attachments	830.86	2191.59	0.00	0.00
Totals:		9,490.30	49,148.84	0.00	0.00

Calculated Forces

Structure: CT01501-S-SBA	Code: EIA/TIA-222-G	4/10/2018
Site Name: Morris	Exposure: C	
Height: 195.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

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Final Analysis Summary

Structure: CT01501-S-SBA

Code: EIA/TIA-222-G

4/10/2018

Site Name: Morris

Exposure: C

Height: 195.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: B - Competent 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 93 mph Wind	36.6	0.00	58.92	0.00	0.00	4956.27
0.9D + 1.6W 93 mph Wind	36.5	0.00	44.18	0.00	0.00	4885.20
1.2D + 1.0Di + 1.0Wi 40 mph Wind	7.8	0.00	98.92	0.00	0.00	1095.50
1.0D + 1.0W 60 mph Wind	9.5	0.00	49.14	0.00	0.00	1279.64

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 93 mph Wind	-58.92	-36.57	0.00	-4956.2	0.00	-4956.2	4628.91	2314.4	12221.1	6119.66	0.00	0.823
0.9D + 1.6W 93 mph Wind	-44.18	-36.55	0.00	-4885.2	0.00	-4885.2	4628.91	2314.4	12221.1	6119.66	0.00	0.808
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-60.00	-6.40	0.00	-510.19	0.00	-510.19	3803.65	1901.8	7156.86	3583.75	81.00	0.202
1.0D + 1.0W 60 mph Wind	-49.14	-9.51	0.00	-1279.6	0.00	-1279.6	4628.91	2314.4	12221.1	6119.66	0.00	0.220

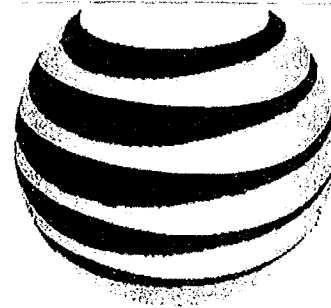
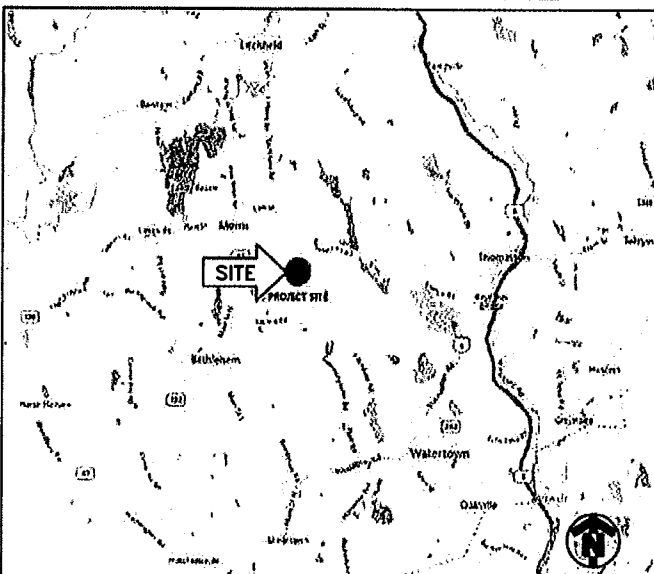
SHEET INDEX

NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	GENERAL NOTES
Z1	SITE PLAN
C3	COMPOUND PLAN
C4	EQUIPMENT SITE PLAN
C5	ELEVATION VIEW
C6	EQUIPMENT DETAILS
C7	EQUIPMENT DETAILS
C8	SCHEMATICS, DIAGRAMS & NOTES
C9	PLUMBING DIAGRAM

DRIVING DIRECTIONS

- DEPART RT-30 WEST/COCHITUATE ROAD TOWARD BURR STREET.
- TURN BACK ON RT-30 EAST/COCHITUATE ROAD.
- TAKE RAMP RIGHT FOR I-90 WEST TOWARD SPRINGFIELD/WORCESTER.
- TAKE EXIT 9, TAKE RAMP RIGHT FOR I-84 TOWARD HARTFORD/NEW YORK CITY.
- AT EXIT 17, TAKE RAMP RIGHT FOR CT-64 TOWARD MIDDLEBURY/WATERTOWN.
- BEAR RIGHT ONTO CT-64/CHASE PARKWAY.
- TURN RIGHT ONTO CT-83 STRAITS TPKE.
- ARRIVE AT CT-63 WATERTOWN ROAD.

LOCATION MAP



at&t

SITE NAME
MORRIS CT
 PROJECT
LTE 2C/3C
 SITE ID
CT1174
 FA SITE NUMBER
10107954
 PACE ID

MRCTB023543/MRCTB023597

SITE ADDRESS
 310 WATERTOWN ROAD
 MORRIS, CT 06763
 STRUCTURE TYPE
MONOPOLE TOWER



Know what's below.
Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG TOLL FREE: 1-800-922-4455 OR www.cbyd.com CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

PROJECT TEAM



95 Ryan Drive Suite 1 | Raynham, MA 02767
 Office: 781.713.4725 - Fax: 413-541-8158
PROJECT MANAGER



1033 Watervliet Shaker Rd
 Albany, NY 12205
 Office # (518) 890-0790
 Fax # (518) 890-0793
ENGINEER

SCOPE OF WORK:

- 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.
- ADD GROUND ISOLATION WHERE NEEDED.

TOWER SCOPE

- REMOVE (3) PANEL ANTENNAS
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) B14 4478 (700)
- INSTALL (3) RRUS-32 B2 (PCS)
- INSTALL (1) DC6 SQUID WITH (2) DC CABLES, (1) 18P FIBER & (1) ALARM CABLE

GROUND SCOPE

- UPGRADE BASEBAND TO 5216
- ADD XMU
- INSTALL NEW COAX PORT
- INSTALL (1) FIBER MANAGEMENT BOX TO ICE BRIDGE POST
- INSTALL (1) FIBER STORAGE TRAY IN LTE RACK
- INSTALL (3) INSERTS TO DC12 IN LTE RACK
- INSTALL (2) 150 AMP POLE BREAKERS TO POWER PLANT
- INSTALL (1) 48V CONVERTER SHELF WITH (4) MODULES
- INSTALL (1) CONVERTER MODULE TO EXISTING 48V CONVERTER SHELF
- INSTALL (3) 25 AMP BREAKERS & (3) 30 AMP BREAKERS TO EXISTING/PROPOSED 48V CONVERTER SHELF

PROJECT SUMMARY

SITE NAME:	MORRIS CT
FA SITE NO.:	10107954
PAGE ID:	MRCTB023543/MRCTB023597
SITE ID:	CT1174
SITE ADDRESS:	310 WATERTOWN ROAD MORRIS, CT 06763
COUNTY:	LITCHFIELD
SITE COORDINATES:	
LATITUDE:	41° 40' 02.06" N (NAD 83)
LONGITUDE:	73° 10' 13.77" W (NAD 83)
GROUND ELEVATION:	±696' (AMSL)
ANTENNA RAD:	±165' (AGL)
JURISDICTION:	TOWN OF BETHLEHEM
PROPERTY OWNER:	SBA TOWERS SBA SITE ID: 1149-MORRIS
APPLICANT:	AT&T MOBILITY 550 COCHITUATE ROAD FARMINGHAM, MA 01701
PROJECT MANAGER:	CENTERLINE 95 RYAN DRIVE SUITE 1 RAYNHAM, MA 02767
CONTACT:	PETER LAMONTAGNE (508) 341-7854
ENGINEER:	INFINIGY 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205
CONTACT:	ALEX WELLER (518) 690-0790
BUILDING CODE:	CT BUILDING CODE UNIFORM BUILDING CODE BUILDING OFFICIALS & CODE ADMINISTRATORS UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE LOCAL BUILDING CODE CITY/COUNTY ORDINANCES
ELECTRICAL CODE:	NATIONAL ELECTRICAL CODE (LATEST EDITION)

ENGINEER'S LICENSE

CERTIFICATION STATEMENT:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

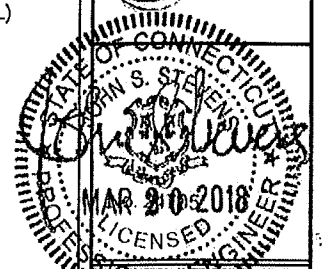
LICENSED ENGINEER - STATE OF CONNECTICUT

APPROVALS

CONSTRUCTION MGR.	DATE
AT&T PROJECT MGR.	DATE
SITE ACQ.	DATE
SITE OWNER	NAME/COMPANY: TITLE:
	DATE

INFINIGY

1033 Watervliet Shaker Rd
 Albany, NY 12205
 Office # (518) 890-0790
 Fax # (518) 890-0793



STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 LICENSED

ISSUED FOR PERMIT	DATE

Drawn: BMW Date: 01/28/18
 Designed: ASW Date: 01/25/18
 Checked: ASW Date: 01/25/18

Project Number:
555-022

Project Title:

FA# 10107954
 CT1174
 MORRIS CT

310 WATERTOWN ROAD
 MORRIS, CT 06763

Prepared For:



Drawing Scale:
AS NOTED

Date:
03/20/18

Drawing Title

TITLE SHEET

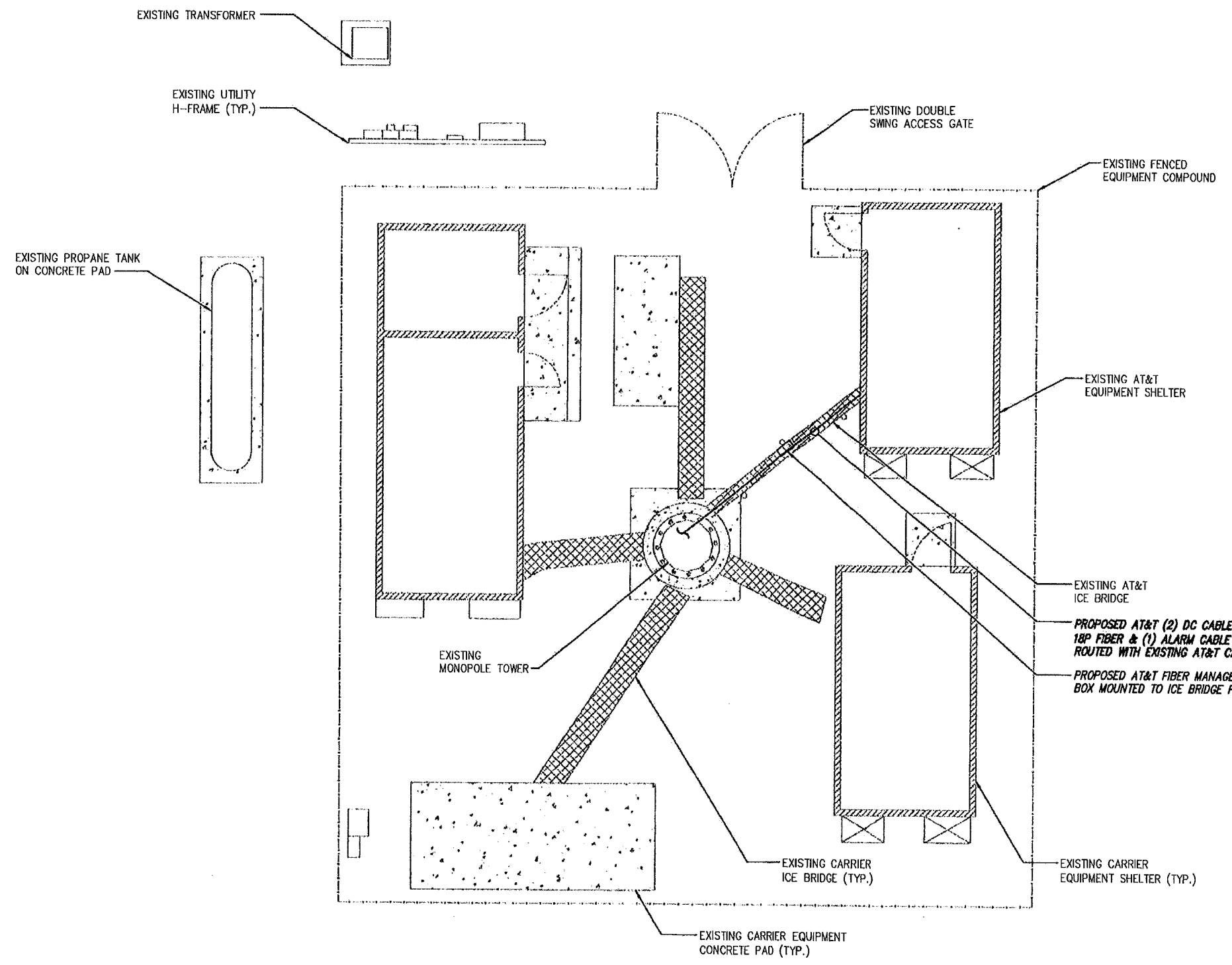
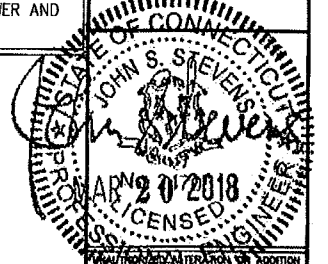
Drawing Number

T1

NOTE:
 INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING TOWER STRUCTURE OR MOUNT FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. STRUCTURAL AND MOUNT ANALYSIS TO BE COMPLETED PRIOR TO INSTALLATION.

- NOTES:**
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 - INSTALLER SHALL PROVIDE ALL NECESSARY CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETED INSTALLATION AND SHALL COMPLY WITH EQUIPMENT MANUFACTURER'S INSTALLATION REQUIREMENTS.
 - INSTALLER SHALL PROVIDE ALL STRAIN RELIEF FOR ALL CABLE ASSEMBLIES ROUTING TO THE ANTENNAS. UTILIZATION OF HOISTING GRIPS ON ALL DC POWER AND FIBER OPTIC CABLES SHALL BE UTILIZED.

INFINIGY
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ISSUED FOR PERMIT	BUM	03/20/18
No	Submittal / Revision	App'd Date

Drawn: BUM Date: 01/25/18
 Designed: ASW Date: 01/25/18
 Checked: ASW Date: 01/25/18

Project Number:
 555-022

Project Title:
 FA# 10107954
 CT1174
 MORRIS CT
 310 WATERTOWN ROAD
 MORRIS, CT 06763

Prepared For:

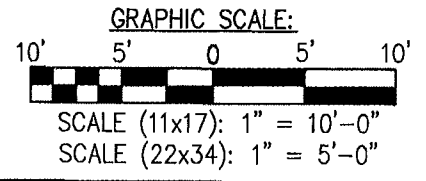
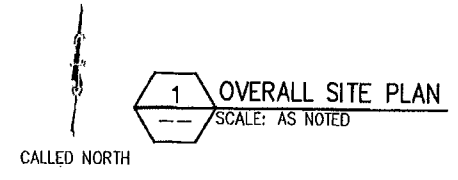
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Date:
 03/20/18

COMPOUND PLAN

Drawing Number
C3



- EXISTING AT&T LTE EQUIPMENT RACK TO REMAIN:**
- UPGRADE BASEBAND TO 5216
 - ADD XMU
 - INSTALL (1) FIBER STORAGE TRAY IN LTE RACK
 - INSTALL (3) INSERTS TO DC12 IN LTE RACK
 - INSTALL (1) 48V CONVERTER SHELF WITH (4) MODULES
 - INSTALL (1) CONVERTER MODULE TO EXISTING 48V CONVERTER SHELF
 - INSTALL (3) 25 AMP BREAKERS & (3) 30 AMP BREAKERS TO EXISTING/PROPOSED 48V CONVERTER SHELF

NOTES:
CONTRACTOR TO GROUND ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

PROPOSED AT&T (2) DC CABLES, (1) 18P FIBER & (1) ALARM CABLE TO BE ROUTED WITH EXISTING AT&T CABLES

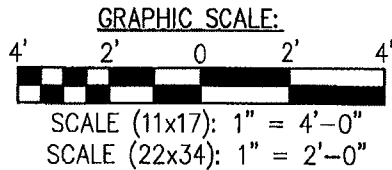
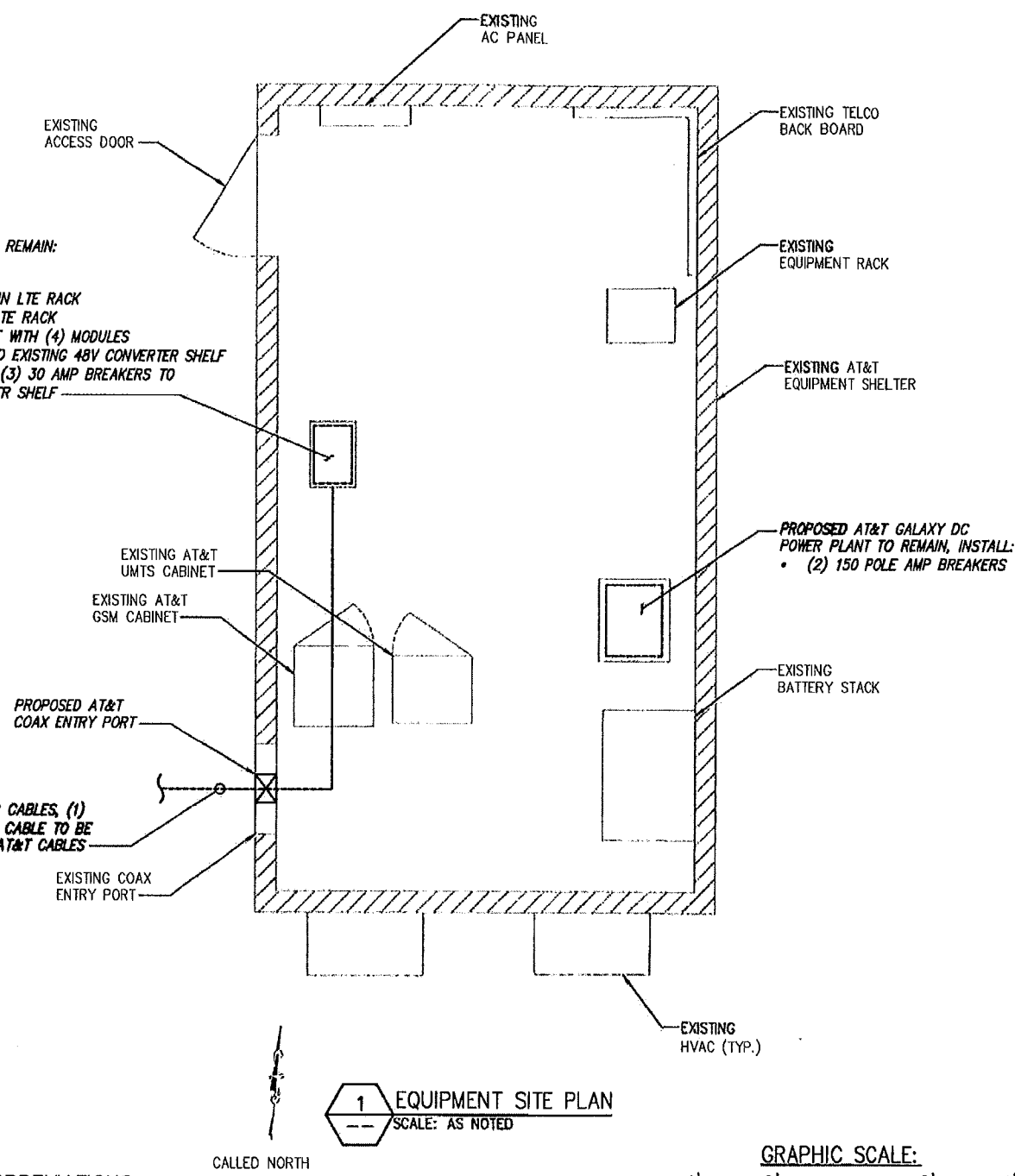
SYMBOL	
	COPPER GROUND ROD
	CONNECT PER MANUFACTURER SPECS
	CADWELDED CONNECTION
	MECHANICAL CONNECTION
	GROUND BAR
	ELECTRICAL CONDUIT
	GROUND WIRE
	DC/FIBER LINE

- NOTES:**
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 - THESE DRAWINGS DO NOT REFLECT ADEQUACY OF EXISTING OR PROPOSED ANTENNA MOUNTS, MOUNT CONNECTIONS, OR CABLE ATTACHMENTS. INFINIGY DOES NOT ACCEPT LIABILITY FOR ANY OF THESE STRUCTURAL ELEMENTS.
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 - INSTALLER SHALL PROVIDE ALL STRAIN RELIEF FOR ALL CABLE ASSEMBLIES ROUTING TO THE ANTENNAS. UTILIZATION OF HOISTING GRIPS ON ALL DC POWER AND FIBER OPTIC CABLES SHALL BE UTILIZED.

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
TLNLA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL

NOTE:
INFINIGY ENGINEERING HAS NOT CONDUCTED AN ELECTRICAL LOAD STUDY FOR THIS SITE. CONTRACTOR IS TO VERIFY EXISTING ELECTRICAL LOADS PRIOR TO CONSTRUCTION TO ENSURE THERE IS AMPLE SERVICE AVAILABLE TO ACCOMMODATE THE EXISTING AND PROPOSED EQUIPMENT.



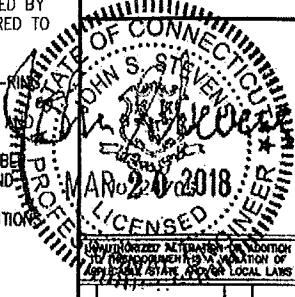
ELECTRICAL NOTES:

- ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES.
- GROUNDING SHALL COMPLY WITH THE ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
- ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
- CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
- LABEL AT&T SERVICE DISCONNECTS WITH SWITCH AND PANEL WITH ENGRAVED LAMACOID LABELS, LETTERS 1" IN HEIGHT.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
- ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE DOES NOT EXCEED 5 OHMS TO GROUND. TEST GROUND RING RESISTANCE PRIOR TO MAKING FINAL GROUND CONNECTIONS TO INFRASTRUCTURE AND EQUIPMENT. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY AT&T REPRESENTATIVE.
- PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360 DEGREES.
- OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO AT&T REPRESENTATIVE.
- SCHEDULE AND ATTEND INSPECTIONS RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
- REDLINED AS-BUILTS ARE TO BE DELIVERED TO AN AT&T REPRESENTATIVE.
- PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
- FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, TELCO CONDUIT, THE COMPLETE GROUNDING SYSTEM.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER AND SHALL BE SUBJECT TO APPROVAL BY AN AT&T REPRESENTATIVE.
- CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
- PROJECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE, REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
- REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY.
- UPON COMPLETION OF WORK, THE SITE SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
- PRIOR TO ANY TRENCHING, CONTACT LOCAL UTILITY TO VERIFY LOCATION OF ANY EXISTING BURIED SERVICE CONDUITS.
- DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS TO IT WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE A SITE "PUNCH LIST" WALK TO AT&T'S REPRESENTATIVE.
- ALL ABOVE GRADE CONDUIT TO BE RIGID METALLIC.

GROUNDING NOTES:

- ALL DOWN CONDUCTORS AND GROUND RING AND CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNO. ALL CONNECTIONS TO GROUND RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE A MINIMUM DEPTH BELOW GRADE OF 30 INCHES OR TO THE LEDGE. MINIMUM BEND RADIUS SHALL BE 8 INCHES. CONDUCTOR SHALL BE AT LEAST 24 INCHES FROM ANY FOUNDATION, UNO.
- WHERE MECHANICAL CONDUCTOR CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
- GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6 INCHES ABOVE GRADE R FOUNDATION, WHICHEVER IS HIGHER. COLD-GALY AFTER, EXOTHERMICALLY WELD OTHER END TO THE GROUND.
- GROUND CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN 3/4" PVC CONDUIT TO GRADE. MOUNT PVC WITH GALVANIZED "C" CLAMPS. SEAL TOP ENDS.
- FOLLOWING COMPLETION OF WORK, CONDUCT GROUND TEST. SUBMIT WRITTEN TEST TO CONSTRUCTION MANAGER AND PROJECT MANAGER.
- ALL GROUNDING WORK SHALL COMPLY WITH CARRIER(S) STANDARDS.
- GROUNDING REQUIREMENTS SHOWN ON THIS PLAN ARE FOR ITEMS THAT ARE LOCATED NEAR GRADE LEVEL AND THAT NEED TO BE TIED TO THE BELOW GRADE GROUND RING.
- UNLESS NOTED OTHERWISE, ALL GROUNDING SHALL BE IN ACCORDANCE WITH AT&T'S SSEQ DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES", AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING". ALL GROUNDING SHALL ALSO COMPLY WITH ALL STATE AND LOCAL CODES, AND THE NATIONAL ELECTRICAL CODE (NEC).
- UNLESS NOTED OTHERWISE, ALL GROUNDING CONNECTIONS SHALL BE MADE BY AN EXOTHERMIC WELD.
- RESISTANCE TO EARTH TESTING IS REQUIRED PER AT&T STANDARDS ON ALL NEW SITES.

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 890-0790
Fax # (518) 890-0793



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0	ISSUED FOR PERMIT	01/25/18
1	Submittal/Revision	01/25/18
2	Submittal/Revision	01/25/18

Drawn: **ASW** Date: 01/25/18
Designed: **ASW** Date: 01/25/18
Checked: **ASW** Date: 01/25/18

Project Number: 555-022

Project Title:
**FA# 10107954
CT1174
MORRIS CT**

310 WATERTOWN ROAD
MORRIS, CT 06763

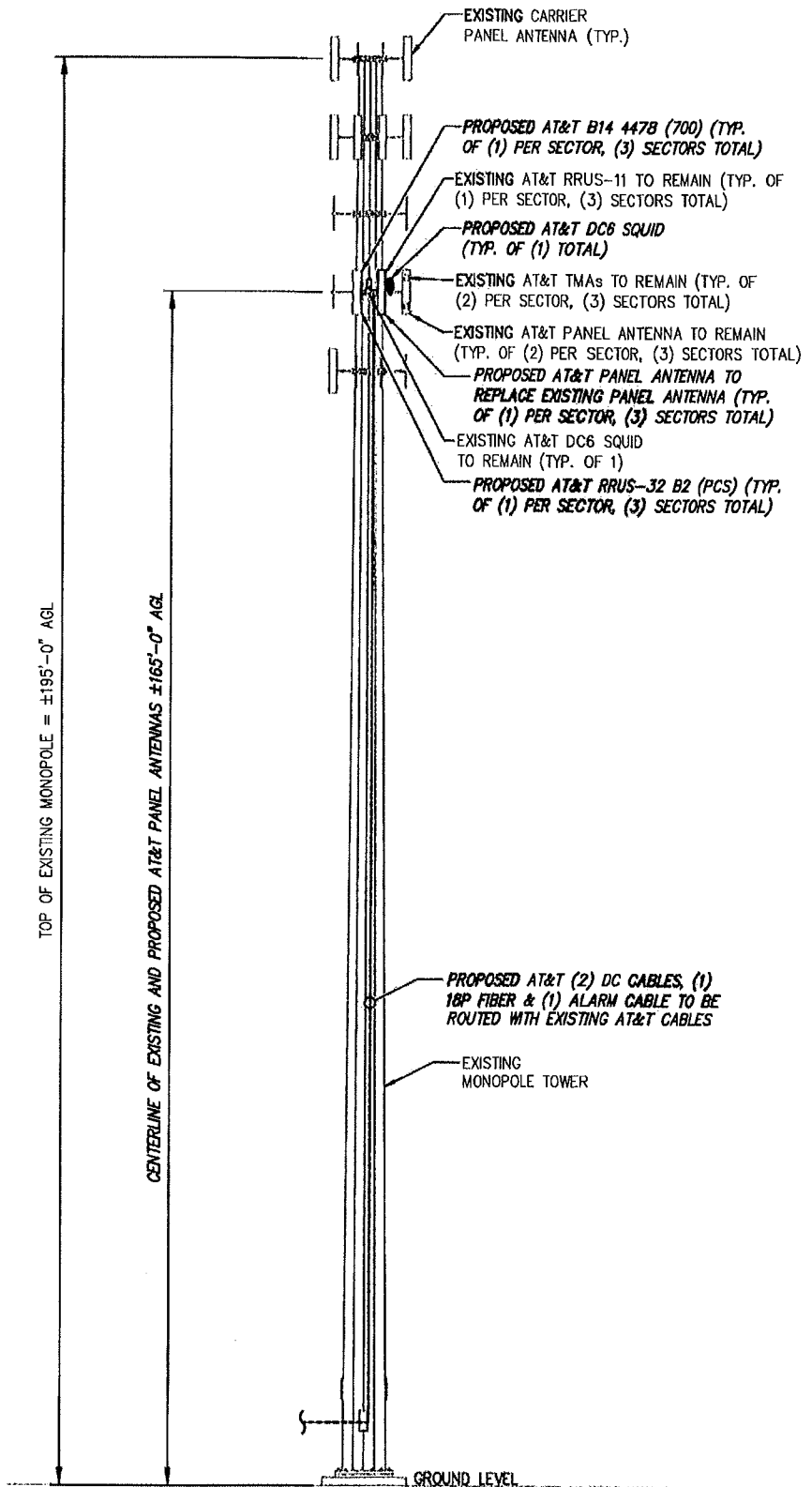


Drawing Scale: **AS NOTED**
Date: 03/20/18

Drawing Title:
EQUIPMENT SITE PLAN

Drawing Number:
C4

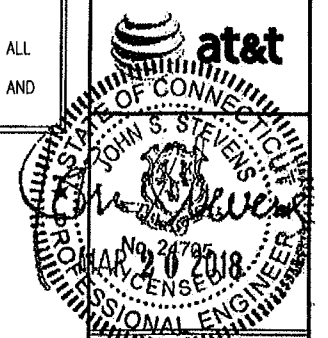
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1 ELEVATION VIEW
 NOT TO SCALE

- NOTES:**
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 Checked: ASW Date: 01/25/18

Project Number: 555-022

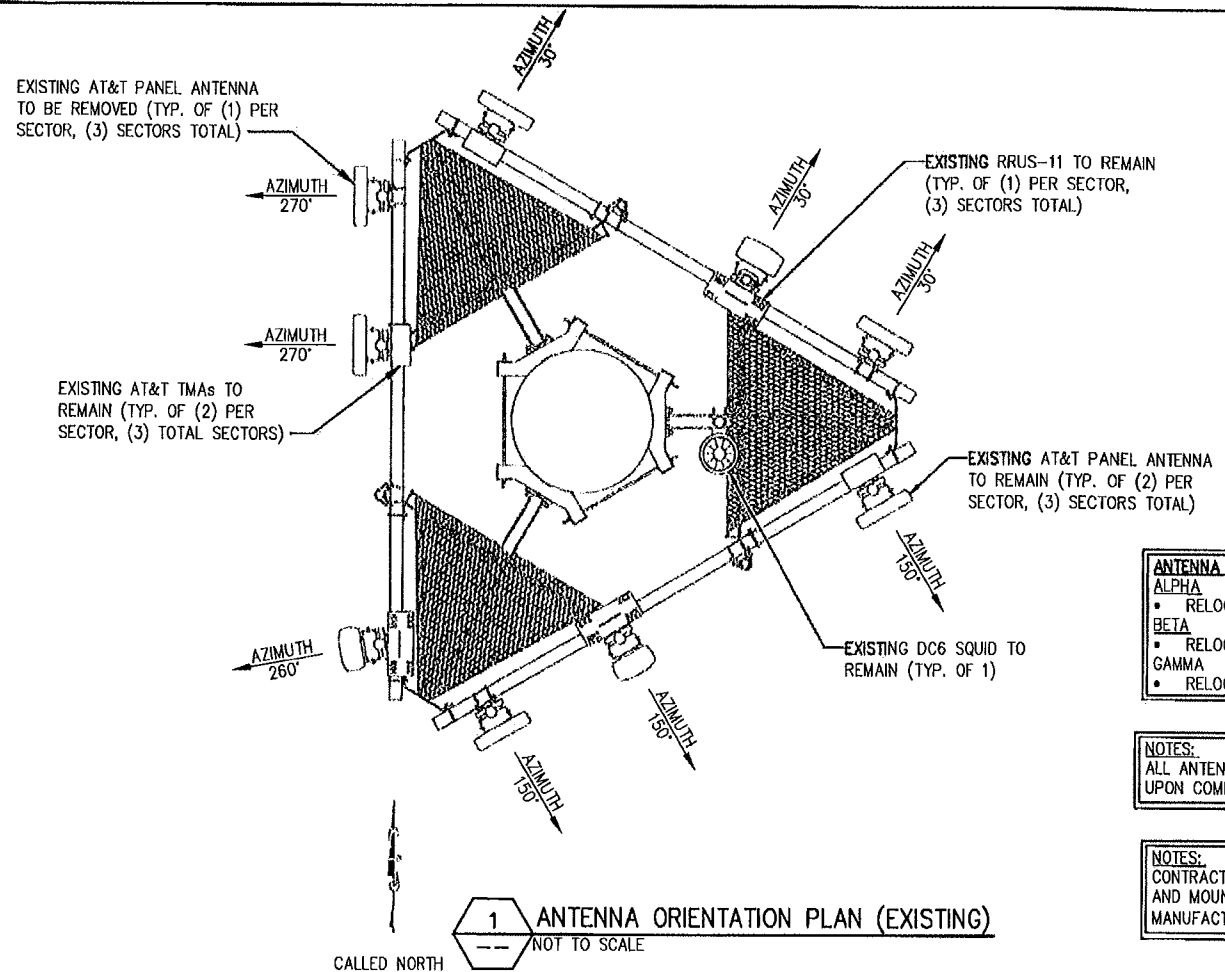
Project Title:
 FA# 10107954
 CT1174
 MORRIS CT
 310 WATERTOWN ROAD
 MORRIS, CT 06783

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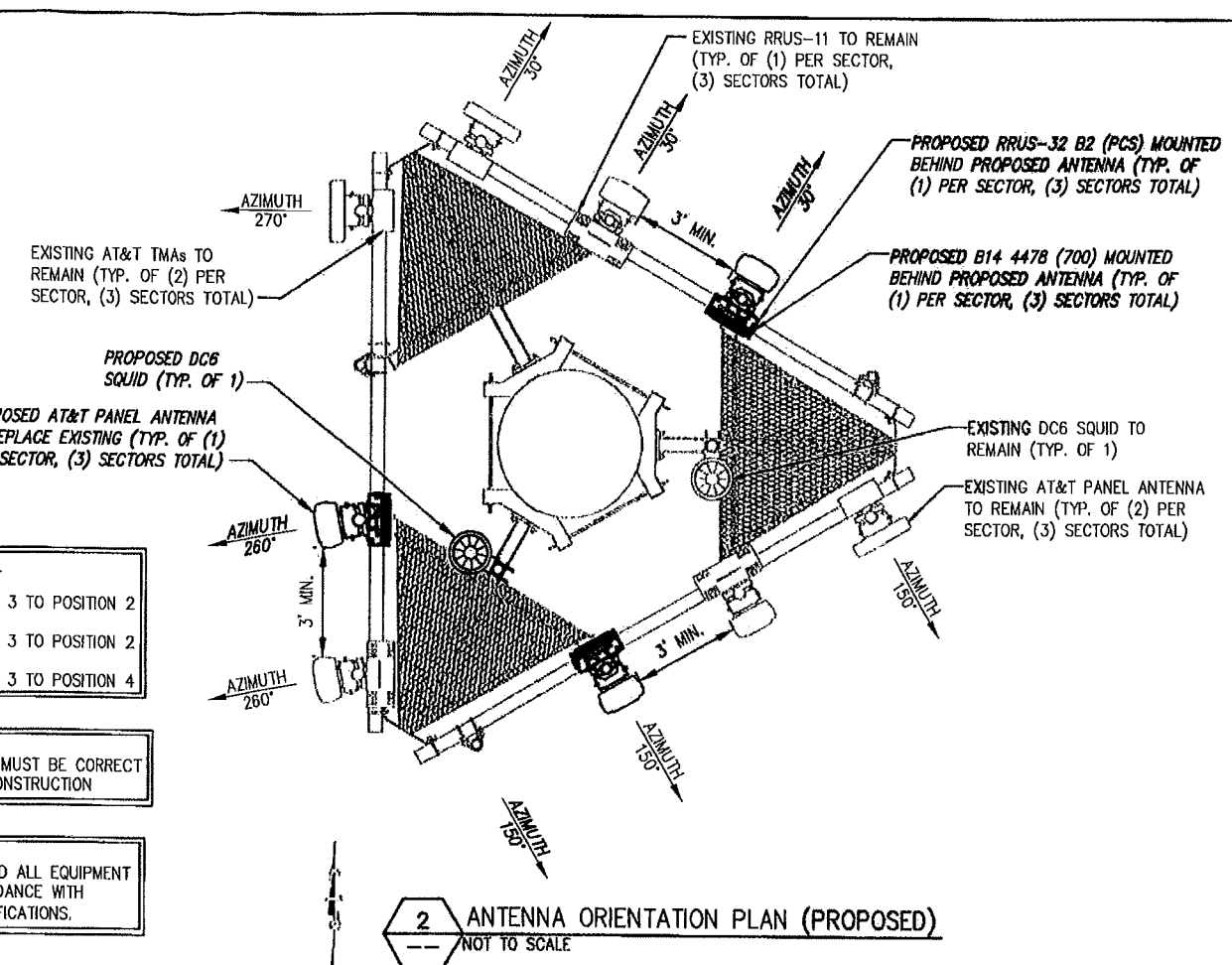
Drawing Title:
ELEVATION VIEW

Drawing Number:
C5



1 ANTENNA ORIENTATION PLAN (EXISTING)
NOT TO SCALE
CALLED NORTH

- ANTENNA RELOCATIONS:**
- ALPHA**
 - RELOCATE POSITION 3 TO POSITION 2
 - BETA**
 - RELOCATE POSITION 3 TO POSITION 2
 - GAMMA**
 - RELOCATE POSITION 3 TO POSITION 4
- NOTES:**
ALL ANTENNA AZIMUTHS MUST BE CORRECT UPON COMPLETION OF CONSTRUCTION
- NOTES:**
CONTRACTOR TO GROUND ALL EQUIPMENT AND MOUNTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.



2 ANTENNA ORIENTATION PLAN (PROPOSED)
NOT TO SCALE
CALLED NORTH

SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	ANTENNA HEIGHT	AZIMUTH	TMA	RRU	CABLE	RAYCAP
ALPHA	EXISTING	UMTS 850	7770	±165'	30°	(2) (E) LGP 21401	--	(2) 1-5/8" COAX	--
	EXISTING	LTE 700	AM-X-CD-16-65-00T-RET	±165'	30°	--	(1) (E) RRUS-11 (700)	--	(1) (E) DC6
	PROPOSED	LTE 700/1900	80010965	±165'	30°	--	(1) (P) B14 4478 (700) (1) (P) RRUS-32 B2 (PCS)	--	(1) (P) DC6
BETA	EXISTING	UMTS 850	7770	±165'	150°	(2) (E) LGP 21401	--	(2) 1-5/8" COAX	--
	EXISTING	LTE 700	80010764	±165'	150°	--	(1) (E) RRUS-11 (700)	--	SHARED WITH ALPHA
	PROPOSED	LTE 700/1900	80010964	±165'	150°	--	(1) (P) B14 4478 (700) (1) (P) RRUS-32 B2 (PCS)	--	
GAMMA	EXISTING	LTE 700	80010764	±165'	260°	--	(1) (E) RRUS-11 (700)	--	SHARED WITH ALPHA
	PROPOSED	LTE 700/1900	80010964	±165'	260°	--	(1) (P) B14 4478 (700) (1) (P) RRUS-32 B2 (PCS)	--	
	--	--	--	--	--	--	--	(2) 1-5/8" COAX	--
	EXISTING	UMTS 850	7770	±165'	270°	(2) (E) LGP 21401	--	(2) 1-5/8" COAX	--

SECTOR	FIBER TRUNK	SINGLE FIBER	DC 3-PAIR	DC 1-PAIR	RRU'S
ALPHA		(4) 5 METER		(4) #8 AWG, 15'	(1) (E) RRUS-11 (700) (1) (P) RRUS-32 B2 (PCS) (1) (P) B14 4478 (700)
BETA	(1) 18P, ±195°*	(4) 5 METER	(2) ±195°*	(4) #8 AWG, 15'	(1) (E) RRUS-11 (700) (1) (P) RRUS-32 B2 (PCS) (1) (P) B14 4478 (700)
GAMMA		(4) 5 METER		(4) #8 AWG, 15'	(1) (E) RRUS-11 (700) (1) (P) RRUS-32 B2 (PCS) (1) (P) B14 4478 (700)

* CABLE LENGTH FROM RFDS, CONTRACTOR TO VERIFY PRIOR TO ORDERING

3 RF EQUIPMENT SCHEDULE
NOT TO SCALE

INFINIGY
1033 Watertown Shaker Rd
Albany, NY 12205
Office # (518) 890-0790
Fax # (518) 890-0793

at&t

STATE OF CONNECTICUT
S. STEVENS
Professional Engineer
No. 24099-018
LICENSED
MAR 20 2018

ISSUED FOR PERMIT	DATE
Submittal / Revision	Apply / Date

Drawn: **ASW** Date: 01/26/18
Designed: **ASW** Date: 01/25/18
Checked: **ASW** Date: 01/25/18

Project Number:
555-022

Project Title:
FA# 10107954
CT1174
MORRIS CT
310 WATERTOWN ROAD
MORRIS, CT 06763

Prepared For:
CENTERLINE COMMUNICATIONS

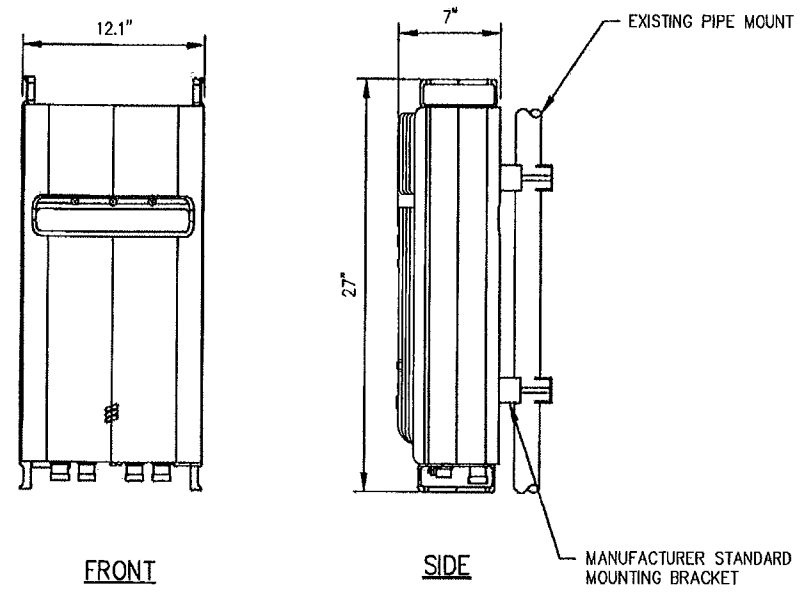
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Drawing Scale:
AS NOTED

Date:
03/20/18

Drawing Title:
EQUIPMENT DETAILS

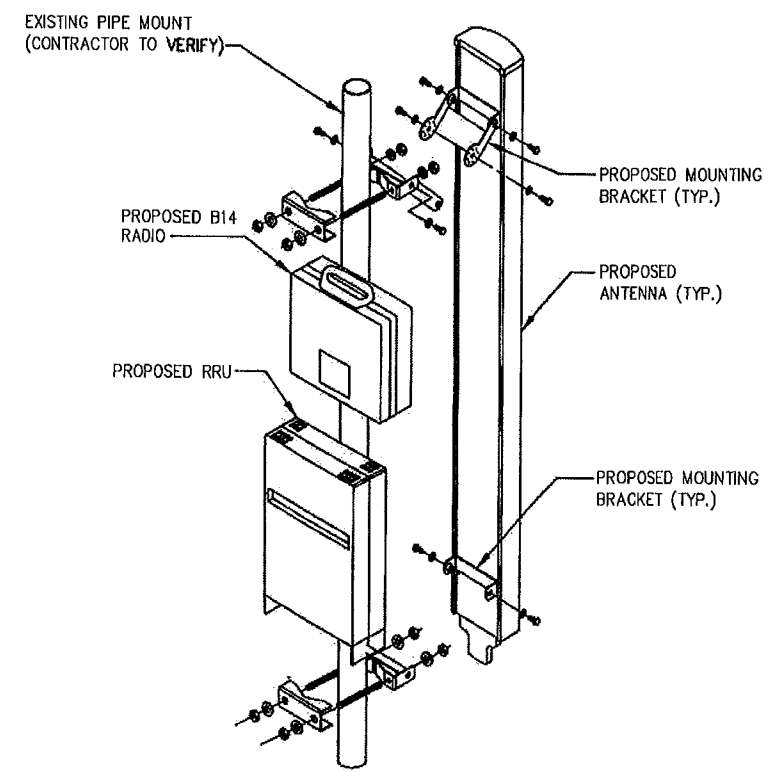
Drawing Number:
C6



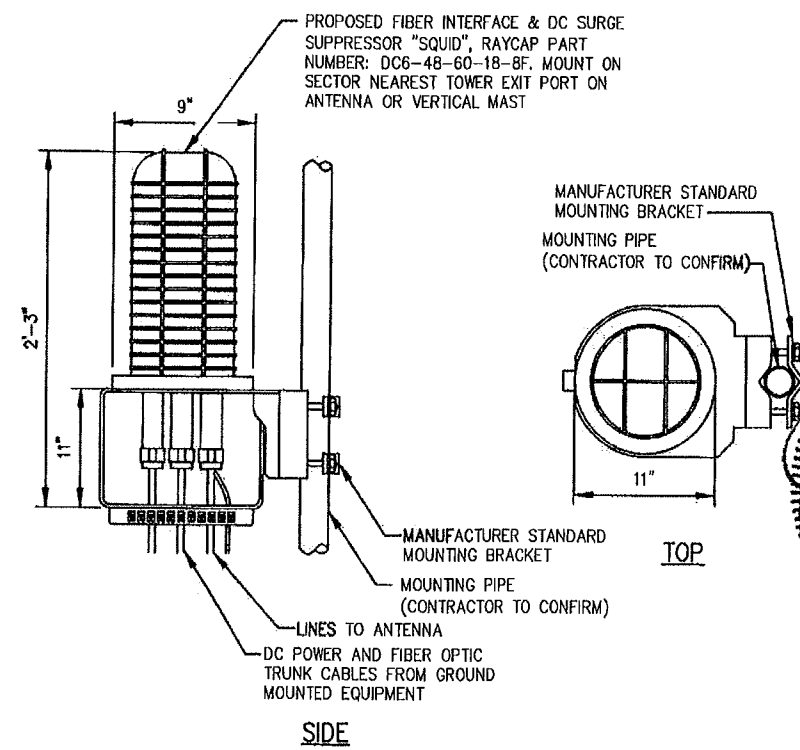
RRUS-32 SPECIFICATIONS

- HXWXD, (INCHES) : 27.2"x12.1"x7"
- WEIGHT (LBS) : 53
- COLOR : GRAY
- MOUNTING BRACKET: SXK1250245/1

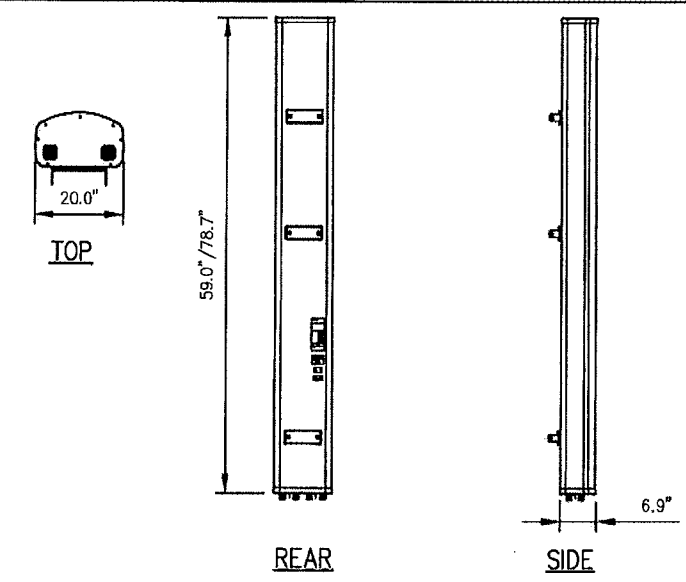
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2 MOUNTING DETAIL
--- NOT TO SCALE



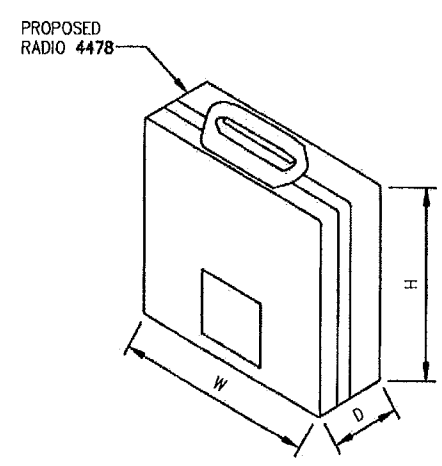
3 SQUID DETAIL
--- NOT TO SCALE



KATHREIN MODEL NO.: 800-10964/5

RADOME MATERIAL: FIBERGLASS, UV RESISTANT
 RADOME COLOR: LIGHT GRAY
 DIMENSIONS, HxWxD: 59.0"/78.7"x20.0"x6.9"
 WEIGHT, w/ PRE-MOUNTED BRACKETS: 83.8/108.6 LBS
 CONNECTOR: (6) 7-16 DIN FEMALE

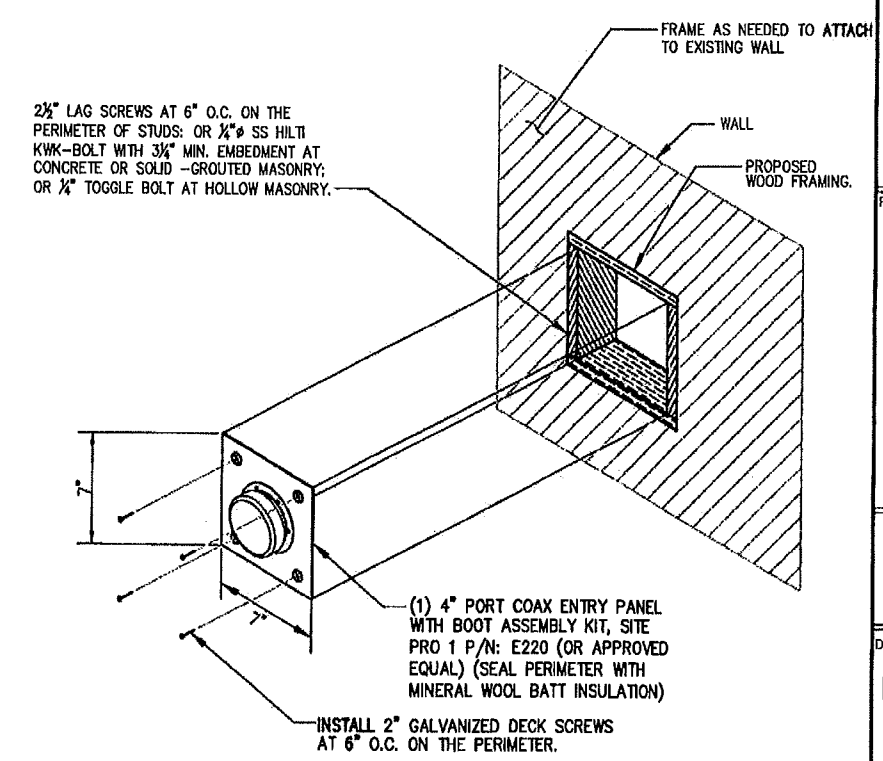
4 ANTENNA DETAIL
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RADIO 4478 SPECIFICATIONS

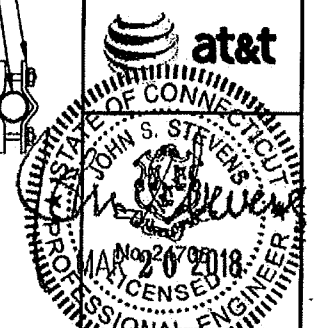
- HXWXD, (INCHES) : TBD
- WEIGHT (LBS) : 59.5
- COLOR : GRAY
- MOUNTING BRACKET: SXK1250244/1

5 ERICSSON RADIO 4478 DETAIL
--- NOT TO SCALE



6 COAX ENTRY PORT DETAIL
--- NOT TO SCALE

INFINIGY8
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 860-0790
Fax # (518) 860-0793



UNLESS OTHERWISE SPECIFIED OR ADDITION TO THIS PLAN IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS.

NO.	ISSUED FOR PERMIT	DATE
0	ISSUED FOR PERMIT	01/25/18
1	Submittal / Revision	01/25/18
2	App'd	01/25/18

Drawn: *ASW* Date: 01/25/18
 Designed: *ASW* Date: 01/25/18
 Checked: *ASW* Date: 01/25/18

Project Number: **555-022**

Project Title:
FA# 10107954
CT1174
MORRIS CT
 310 WATERTOWN ROAD
 MORRIS, CT 06763

Prepared For:

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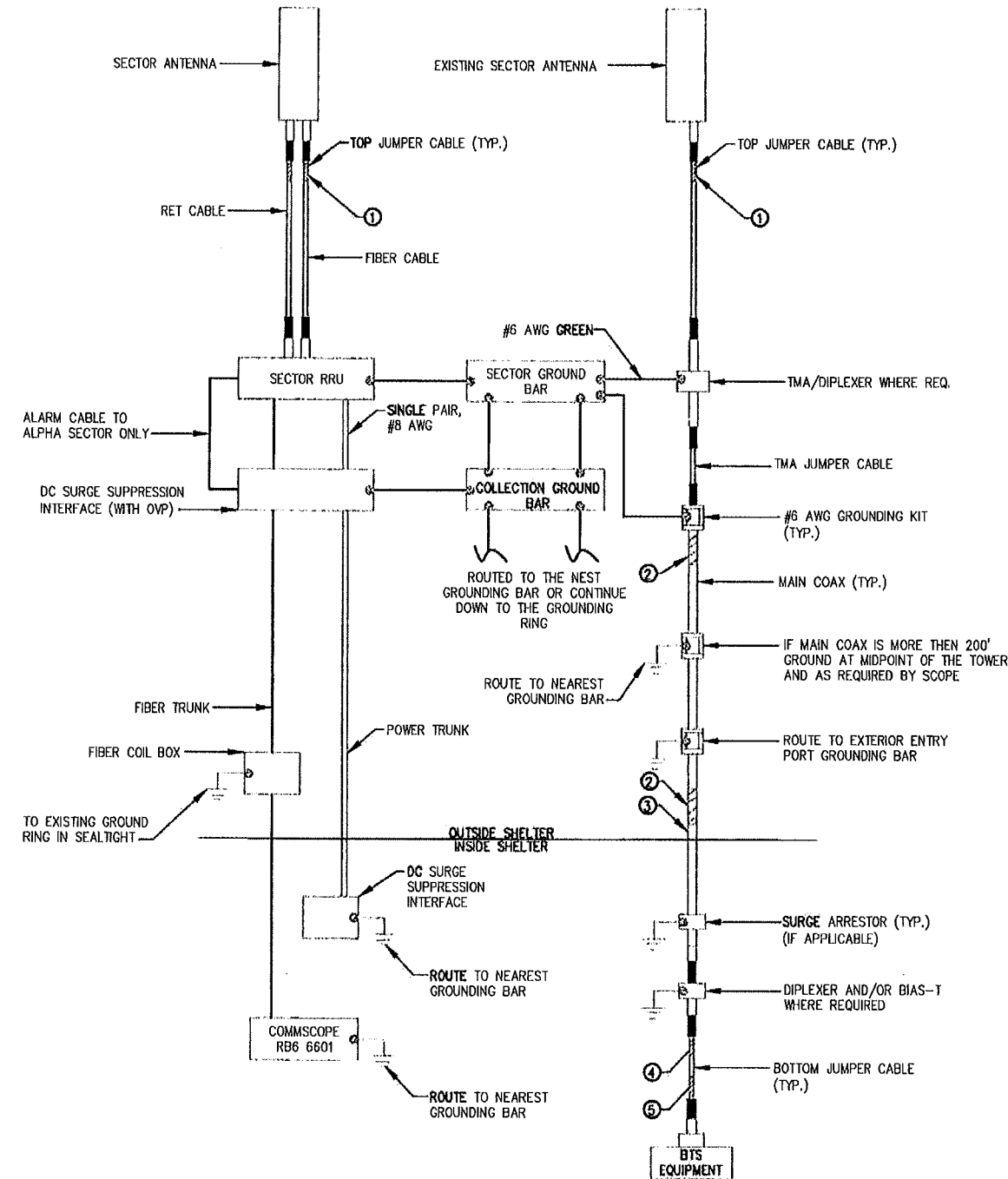
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Date:
 03/20/18

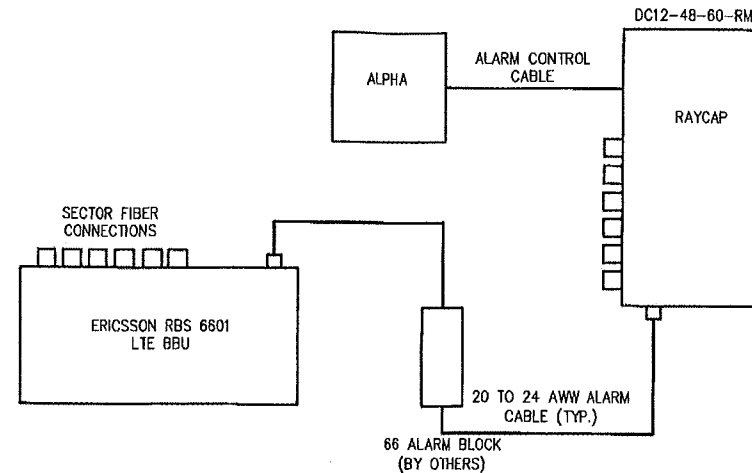
Drawing Title:
EQUIPMENT DETAILS

Drawing Number:
C7

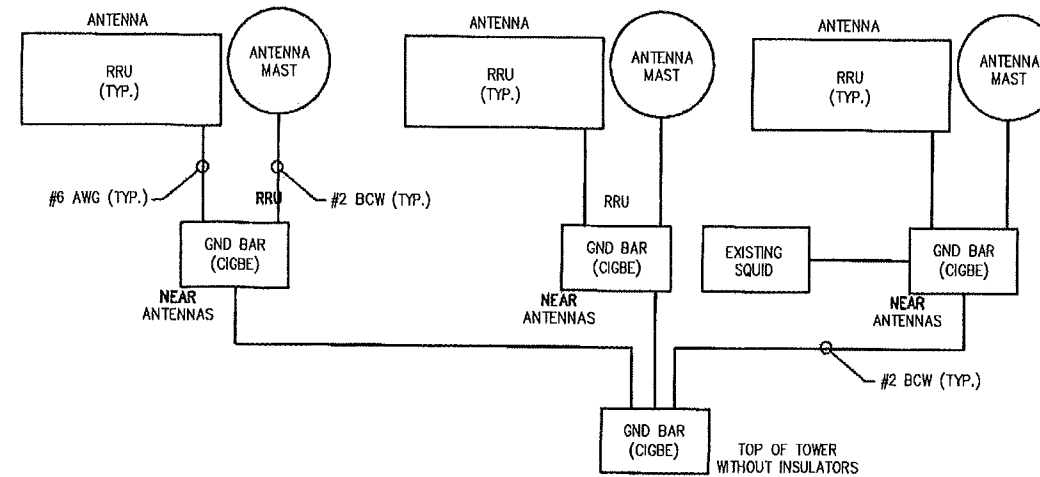
CABLE MARKING LOCATIONS TABLE	
NO.	LOCATIONS
①	EACH TOP JUMPER SHALL BE COLOR CODED WITH ONE (1) SET OF 3" WIDE BANDS
②	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP OF THE JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING
③	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER
④	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER
⑤	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER



1 CABLE MARKING LOCATIONS DIAGRAM
SCALE: NOT TO SCALE



2 ALARM BLOCK CONNECTIONS
SCALE: NOT TO SCALE



3 SCHEMATIC DIAGRAM GROUNDING SYSTEM
SCALE: NOT TO SCALE

COAX COLOR CODING & IDENTIFICATION NOTES:

1. SECTOR ORIENTATION/ AZIMUTH WILL VARY FROM REGION AND IS SITE SPECIFIC. REFER TO RF REPORT FOR EACH SITE TO DETERMINE THE ANTENNA LOCATION AND FUNCTION OF EACH TOWER SECTOR FACE.
2. THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE EXCEPT IN LOCATIONS WHERE ENVIRONMENTAL CONDITIONS CAUSE PHYSICAL DAMAGE, THEN PHYSICAL TAGS ARE PREFERRED.
3. THE STANDARD IS BASED ON EIGHT COLORED TAPES- RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE AND VIOLET. THESE TAPES MUST BE 3/4" WIDE AND UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR SUBCONTRACTOR ON SITE.
4. USING COLOR BANDS ON THE CABLES MARK ALL RF CABLE BY SECTOR AND NUMBER AS SHOWN ON "CABLE MARKING COLOR CONVENTION TABLE".
5. WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN GSM/3G TDMA IS ENCOUNTERED, THE SUBCONTRACTOR SHALL REMOVE THE COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING AND TAGGING STANDARD AS OUTLINED IN THE CURRENT VERSION OF THE STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
6. ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID ANY UNRAVELING.
7. ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM IF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE IN BETWEEN EACH COLOR.
8. ALL COLOR CODES SHALL BE INSTALLED AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE TO SIDE.
9. IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE GSM TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

CABLE MARKING TAGS:

WHEN USING THE ALTERNATIVE LABELING METHOD, EACH RF CABLE SHALL BE IDENTIFIED WITH A METAL ID TAG MADE OF STAINLESS STEEL OR BRASS. THE TAG SHALL BE 1' 1-1/2" IN DIAMETER WITH 1/4" STAMPED LETTERS AND NUMBERS INDICATING THE SECTOR, ANTENNA POSITION, AND CABLE NUMBER. THE ID MARKING LOCATIONS SHOULD BE AS PER "CABLE MARKING LOCATIONS TABLE". THE TAG SHOULD BE ATTACHED WITH CORROSION PROOF WIRE AROUND THE CABLE AT THE SAME LOCATIONS AS DEFINED ABOVE. THE TAG SHOULD BE LABELED AS SHOWN ON THE "GSM AND UMTS LINE TAG" DETAIL.

INFINIGY
1033 Watertown Shaker Rd
Morris, CT 06763
Office: 860-686-0789
Fax: 860-686-0789

atat
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER

ISSUED FOR PERMIT: BAW 03/20/18
Submitted / Revision: Appl. Date

Drawn: BAW Date: 01/25/18
Designed: ASW Date: 01/25/18
Checked: ASW Date: 01/25/18

Project Number: 555-022

Project Title: FA# 10107954
CT1174
MORRIS CT
310 WATERTOWN ROAD
MORRIS, CT 06763

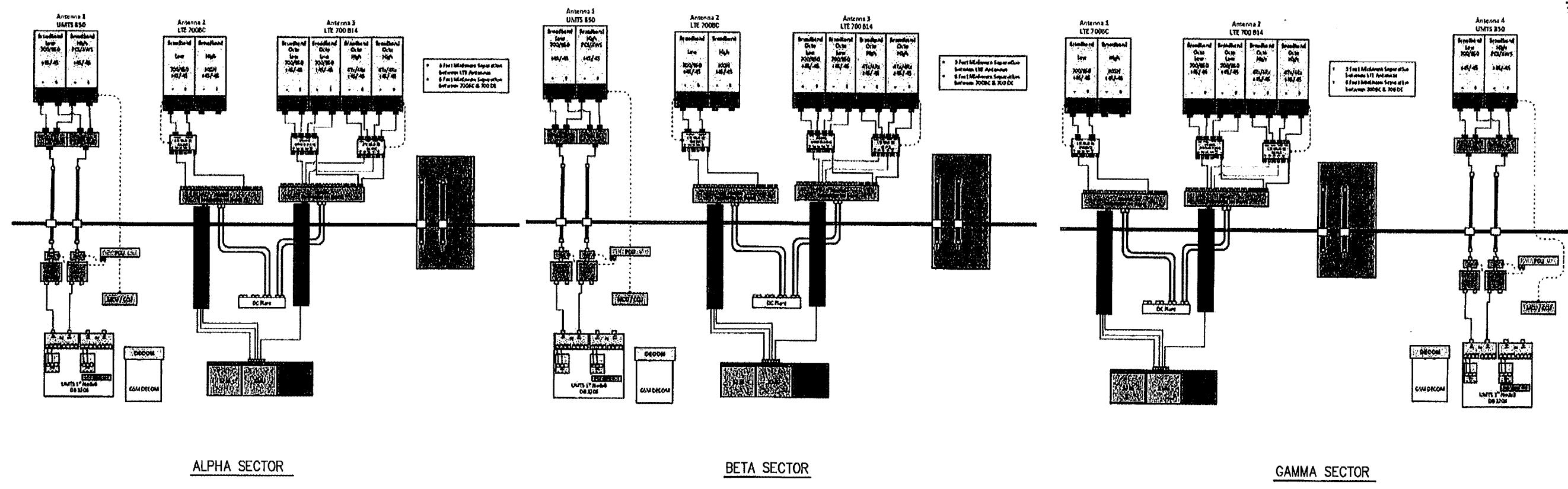
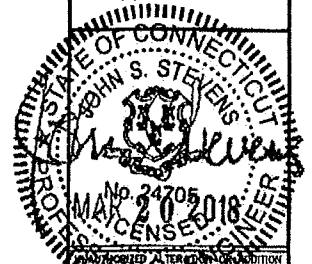
Prepared For: CENTERLINE

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Drawing Scale: AS NOTED
Date: 03/20/18

Drawing Title: SCHEMATICS, DIAGRAMS & NOTES

Drawing Number: C8



PROPOSED ALTERATION OR ADDITION TO EXISTING LICENSED PROFESSIONAL ENGINEER LOCAL LAWS

ISSUED FOR PERMIT	BY: JAS/JSW
DATE	03/20/18
DESIGNED BY	ASW
DATE	01/25/18
CHECKED BY	ASW
DATE	01/25/18
PROJECT NUMBER	555-022

Project Title:
 FA# 10107954
 CT1174
 MORRIS CT
 310 WATERTOWN ROAD
 MORRIS, CT 06763

Prepared For:
CENTERLINE COMMUNICATIONS
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 Date:
 03/20/18

Drawing Title:
PLUMBING DIAGRAM

Drawing Number:
C9

CONTRACTOR TO REFER TO LATEST RFDS PROVIDED BY AT&T FOR FINAL CONFIGURATION.



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1174

FA#: 10107954

Morris CT
310 Watertown Road
Morris, CT 06763

May 10, 2018

Centerline Communications Project Number: 950012-098

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	5.23 %



May 10, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT1174 – Morris CT**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **310 Watertown Road, Morris, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where 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.

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **310 Watertown Road, Morris, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
Technology	850 MHz	2	30
Technology	700 MHz (Band 14)	4	40
Technology	1900 MHz (PCS)	4	40
Technology	700 MHz	2	40

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	165
A	2	Kathrein 800-10965	165
A	3	KMW AM-X-CD-16-65-00T-RET	165
B	1	Powerwave 7770	165
B	2	Kathrein 800-10964	165
B	3	Kathrein 800-10764	165
C	1	Powerwave 7770	165
C	2	Kathrein 800-10964	165
C	3	Kathrein 800-10764	165

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.



RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.21
Antenna A2	Kathrein 800-10965	700 MHz (Band 14) / 1900 MHz (PCS)	12.65 / 15.65	8	320	8,821.75	1.73
Antenna A3	KMW AM-X-CD-16-65-00T-RET	700 MHz	13.35	2	80	1,730.17	0.53
Sector A Composite MPE%							2.47
Antenna B1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.21
Antenna B2	Kathrein 800-10964	700 MHz (Band 14) / 1900 MHz (PCS)	11.45 / 15.15	8	320	7,471.64	1.43
Antenna B3	Kathrein 800-10764	700 MHz	12.15	2	80	1,312.47	0.40
Sector B Composite MPE%							2.03
Antenna C1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.21
Antenna C2	Kathrein 800-10964	700 MHz (Band 14) / 1900 MHz (PCS)	11.45 / 15.15	8	320	7,471.64	1.43
Antenna C3	Kathrein 800-10764	700 MHz	12.15	2	80	1,312.47	0.40
Sector C Composite MPE%							2.03

Table 3: AT&T Emissions Levels



The Following table (table 4) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, the sector with the largest calculated MPE% is Sector A. Table 5 below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
AT&T – Sector A (Max Value)	2.47 %
Nextel	0.18 %
Sprint	0.23 %
Verizon Wireless	0.98 %
T-Mobile	1.37 %
Site Total MPE %:	5.23 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	2.47 %
AT&T Sector B Total:	2.03 %
AT&T Sector C Total:	2.03 %
Site Total:	5.23 %

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, the sector with the largest calculated MPE% is Sector A.

AT&T _ Frequency Band / Technology Max Power Values (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS – Antenna 1	2	414.12	165	1.18	850 MHz	567	0.21%
AT&T 700 MHz LTE (Band 14) – Antenna 2	4	736.31	165	4.19	700 MHz	467	0.90%
AT&T 1900 MHz (PCS) LTE – Antenna 2	4	1,469.13	165	8.36	1900 MHz (PCS)	1000	0.84%
AT&T 700 MHz LTE – Antenna 3	2	865.09	165	2.46	700 MHz	467	0.53%
Total:							2.47%

Table 6: AT&T Maximum Sector MPE Power Values



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	2.47 %
Sector B:	2.03 %
Sector C:	2.03 %
AT&T Maximum Total (per sector):	2.47 %
Site Total:	5.23 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **5.23 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is written over a light blue horizontal line.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

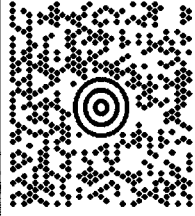
1 OF 1

1 LBS

GEOFFREY REGAN
(401) 500-3217
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379

SHIP TO:

CARLA SHORTER
SBA COMMUNICATIONS CORPORATION
8051 CONGRESS AVENUE
BOCA RATON FL 33487-1307



FL 332 6-07



UPS GROUND

TRACKING #: 1Z 9Y4 503 03 0308 7255



BILLING: P/P



XOL 18.03.09 NV45 99.0A.04/2018

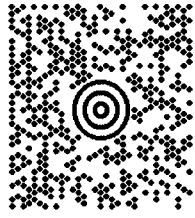
1 OF 1

1 LBS

GEOFFREY REGAN
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3 EAST STREET
MORRIS CT 06763

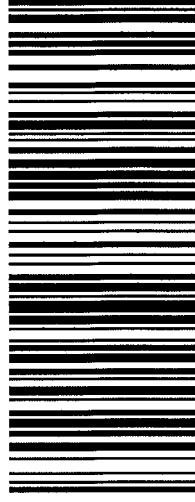


CT 067 9-02



UPS GROUND

TRACKING #: 1Z 9Y4 503 03 2329 4565



BILLING: P/P



TM

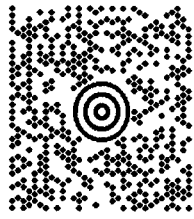
XOL 1.8.03.09 NY45 99.0A 04/2018

1 OF 1

1 LBS

GEOFFREY REGAN
(401) 500-3217
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379

SHIP TO:
SUGAR MOUNTAIN FARM
310 WATERTOWN RD.
MORRIS CT 06763

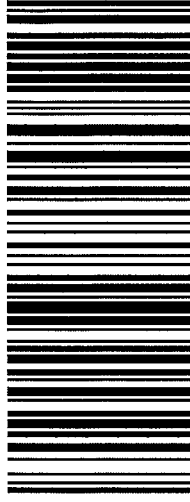


CT 067 9-02



UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1583 6244



BILLING: P/P



XOL18.03.09 NY45 99.0A C4/2018