



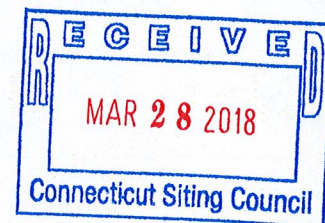
Aaron Meyers, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (774) 420-4202
ameyers@clinellc.com

DATE March 27, 2018

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

EM-CING-032-180328

**RE: Notice of Exempt Modification // Site Number: CT1106
Reilly Mtn. Rd., Coventry, CT 06238 (Site Name):
N 41.798947 // W -72.332189**



Dear Ms. Bachman:

ORIGINAL

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains nine (9) antennas at the 116-foot level of the existing 152-foot Monopole tower at Reilly Mtn. Rd., Coventry, CT 06238. The tower is owned by Crown Castle Corp.. The property is owned by James Walbeoff. 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 Joan A. Lewis, Chair of the Town Council, as well as the tower owner, Crown Castle Corp. and the ground owner, James Walbeoff.

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

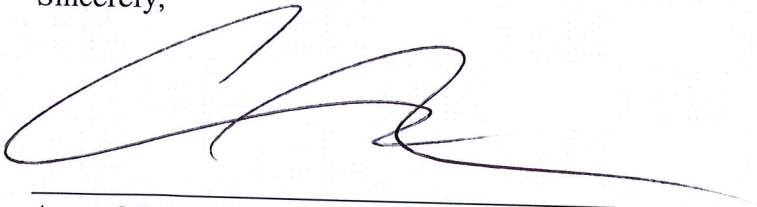
Attached to accommodate this filing are construction drawings dated March 22, 2018 by Crown Castle Corp., a structural analysis dated December 13, 2017 by Crown Castle Corp. and an Emissions Analysis Report dated February 27, 2018 by Centerline Communications, LLC.

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
95 Ryan Drive, Suite 1
Raynham, MA 02767
Mobile: (774) 420-4202
ameyers@centerlincommunications.com

Attachments

cc: Joan A. Lewis, Chair of the Town Council - as elected official
Crown Castle Corp. - as tower owner
James Walbeoff - as property owner

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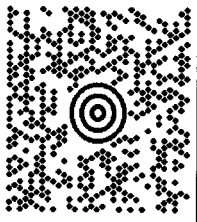
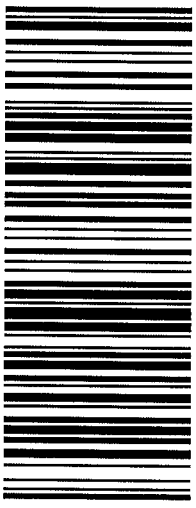
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SOUTH EASTON MA 02375-1946

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AARON MEYERS 7744204202 CENTERLINE COMMUNICATIONS LLC 95 RYAN DRIVE RAYNHAM MA 02767 SHIP TO: JAMES WALBEOFF PO BOX 8430 KANSAS CITY MO 64114	1 LBS 1 OF 1 KS 662 9-63  	UPS GROUND TRACKING #: 1Z 9Y4 503 03 0097 4864 	BILLING: P/P  XOL 18.03.09 NV45 97.0A 01/2018
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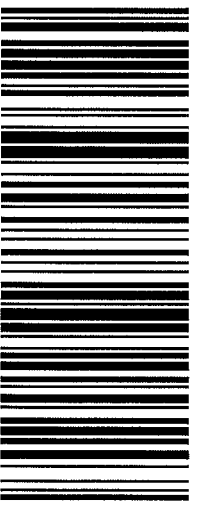
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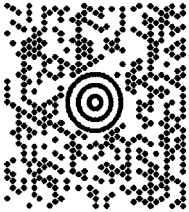
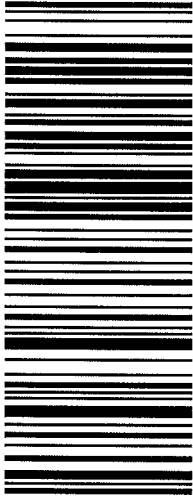
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AARON MEYERS 7744204202 CENTERLINE COMMUNICATIONS LLC 95 RYAN DRIVE RAYNHAM MA 02767 SHIP TO: LICENSING DOCUMENT EXECUTION TEAM 724-416-2000 CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG PA 15317	PA 153 0-10 	UPS GROUND TRACKING #: 1Z 9Y4 503 03 1594 9873		BILLING: P/P XOL 18 03 09 NV45 97 0A 01/2018 
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		CT 061 9-01 	
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TRACKING #: 1Z 9Y4 503 03 0592 6880			
			
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Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1106

FA#: 10035434

Coventry-Riley Mountain
400 Riley Mountain Road
Coventry, CT 6238

February 27, 2018

Centerline Communications Project Number: 950012-041

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	12.13 %



February 27, 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: **CT1106 – Coventry_Riley Mountain**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **400 Riley Mountain Road, Coventry, 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 **400 Riley Mountain Road, Coventry, 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)
UMTS	850 MHz	1	30
UMTS	1900 MHz (PCS)	1	30
LTE	700 MHz (Band 14)	4	40
LTE	2300 MHz (WCS)	4	30
LTE	700 MHz	2	40
LTE	1900 MHz (PCS)	4	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, 1900 MHz (PCS) and 2300 MHz (WCS) 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	120
A	2	Kathrein 800-10965	120
A	3	CCI HPA-65R-BUU-H6	120
B	1	Powerwave 7770	120
B	2	Kathrein 800-10965	120
B	3	CCI HPA-65R-BUU-H6	120
C	1	Powerwave 7770	120
C	2	Kathrein 800-10966	120
C	3	CCI HPA-65R-BUU-H6	120

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 / 1900 MHz (PCS)	11.4 / 13.4	2	60	1,070.44	0.38
Antenna A2	Kathrein 800-10965	700 MHz (Band 14) / 2300 MHz (WCS)	12.65 / 15.9	8	280	7,667.84	3.05
Antenna A3	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	240	6,030.01	2.06
Sector A Composite MPE%							5.50
Antenna B1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	2	60	1,070.44	0.38
Antenna B2	Kathrein 800-10965	700 MHz (Band 14) / 2300 MHz (WCS)	12.65 / 15.9	8	280	7,667.84	3.05
Antenna B3	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	240	6,030.01	2.06
Sector B Composite MPE%							5.50
Antenna C1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	2	60	1,070.44	0.38
Antenna C2	Kathrein 800-10966	700 MHz (Band 14) / 2300 MHz (WCS)	13.55 / 15.95	8	280	8,346.03	3.45
Antenna C3	CCI HPA-65R-BUU-H6	700 MHz / 1900 MHz (PCS)	11.95 / 14.75	6	240	6,030.01	2.06
Sector C Composite MPE%							5.90

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 C. *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 – Max Sector Value	5.90 %
MetroPCS	0.67 %
Sprint	0.76 %
T-Mobile	1.80 %
Verizon Wireless	3.00 %
Site Total MPE %:	12.13 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	5.50 %
AT&T Sector B Total:	5.50 %
AT&T Sector C Total:	5.90 %
Site Total:	12.13 %

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 C.

AT&T Frequency Band / Technology Max Power Values (Sector C)	# 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)	1	414.12	120	1.15	850 MHz	567	0.20%
AT&T 1900 MHz (PCS) UMTS (Antenna 1)	1	656.33	120	1.82	1900 MHz (PCS)	1000	0.18%
AT&T 700 MHz LTE – Band 14 (Antenna 2)	4	905.86	120	10.02	700 MHz	467	2.15%
AT&T 2300 MHz (WCS) LTE (Antenna 2)	4	1,180.65	120	13.06	2300 MHz (WCS)	1000	1.31%
AT&T 700 MHz LTE (Antenna 3)	2	626.70	120	3.47	700 MHz	467	0.74%
AT&T 1900 MHz (PCS) LTE (Antenna 3)	4	1,194.15	120	13.21	1900 MHz (PCS)	1000	1.32%
						Total:	5.90%

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:	5.50 %
Sector B:	5.50 %
Sector C:	5.90 %
AT&T Maximum Total (per sector):	5.90 %
Site Total:	12.13 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **12.13 %** 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 positioned above the contact information.

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

Date: **December 13, 2017**

Charles McGuirt
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277



Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: CT1106
Carrier Site Name: Coventry - Riley Mountain

Crown Castle Designation: **Crown Castle BU Number:** 876385
Crown Castle Site Name: N. COVENTRY / WALLBEOFF
Crown Castle JDE Job Number: 474269
Crown Castle Work Order Number: 1497620
Crown Castle Application Number: 418267 Rev. 1

Engineering Firm Designation: **Crown Castle Project Number:** 1497620

Site Data: **Reilly Mtn. Rd., COVENTRY, Tolland County, CT**
Latitude 41° 47' 56.21", Longitude -72° 19' 55.88"
152 Foot - Monopole Tower

Dear Charles McGuirt,

Crown Castle is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1497620, in accordance with application 418267, revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment

Sufficient Capacity

Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at Crown Castle appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects, please give us a call.

Structural analysis prepared by: Carol Ng / VDL

Respectfully submitted by:

Terry P. Styran, P.E.
Senior Project Engineer

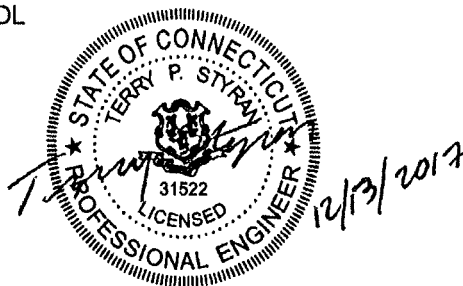


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1) INTRODUCTION

This tower is a 152 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in September of 2000. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 101 mph with no ice, 50 mph with 1 inch ice thickness and 60 mph under service loads, exposure category B.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
116.0	120.0	2	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	1 2 1	3/8 3/4 Conduit	-
		1	cci antennas	HPA-65R-BUU-H8 w/ Mount Pipe			
		3	ericsson	RRUS 32			
		3	ericsson	RRUS 32 B2			
		3	ericsson	RRUS 4478 B14			
		2	kathrein	80010965 w/ Mount Pipe			
		1	kathrein	80010966 w/ Mount Pipe			
		6	powerwave technologies	7020.00			
		1	raycap	DC6-48-60-18-8F			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
152.0	162.0	1	dbspectra	DS9A09F36D-N	2 1	1-5/8 1/2	2
	152.0	1	bird technologies group	430-94C-09168-M-110/48			
		1	tower mounts	Pipe Mount [PM 601-1]			
150.0	152.0	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz	4	1-1/4	2
		6	alcatel lucent	RRH2X50-800			
		3	alcatel lucent	TD-RRH8x20-25			
		3	kmw communications	ETCR-654L12H6 w/ Mount Pipe			
	150.0	1	tower mounts	Miscellaneous [NA 507-1]	-	-	1
		1	tower mounts	Miscellaneous [NA 509-3]			
		1	tower mounts	Platform Mount [LP 601-1]			
133.0	136.0	3	commscope	ATBT-BOTTOM-24V	12	1-5/8	1
		3	commscope	LNx-6515DS-VTM w/ Mount Pipe			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
	133.0	3	ems wireless	RR90-17-02DP w/ Mount Pipe			
		3	ericsson	KRY 112 71/2			
		3	ericsson	KRY 112 71/2			
		1	tower mounts	Platform Mount [LP 304-1]			
124.0	126.0	3	alcatel lucent	RRH2X60-PCS	2	1-5/8	2
		3	alcatel lucent	RRH2x60-700			
		3	alcatel lucent	RRH4X45-AWS4 B66			
		6	andrew	SBNHH-1D65B w/ Mount Pipe			
		2	rfs celwave	DB-T1-6Z-8AB-0Z			
		3	antel	LPA-171080-12CF-EDIN-2 w/ Mount Pipe	18	1-5/8	1
		6	antel	LPA-80080/6CF w/ Mount Pipe			
	124.0	1	tower mounts	Platform Mount [LP 304-1]			
116.0	120.0	2	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe	-	-	3
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		1	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		3	powerwave technologies	7770.00 w/ Mount Pipe	1 2 1 12	3/8 3/4 Conduit 1-1/4	1
		3	ericsson	RRUS-11			
		2	powerwave technologies	LGP21401			
		1	raycap	DC6-48-60-18-8F			
	116.0	4	powerwave technologies	LGP21401	-	-	3
		1	tower mounts	Platform Mount [LP 1201-1]			
		6	powerwave technologies	LGP21903			
107.0	107.0	3	kathrein	742 213	6	1-5/8	1
		1	tower mounts	Pipe Mount [PM 601-3]			
74.0	75.0	1	lucent	KS24019-L112A	1	1/2	1
	74.0	1	tower mounts	Side Arm Mount [SO 701-1]			

Notes:

- 1) Existing Equipment
- 2) Reserved Equipment
- 3) Equipment To Be Removed; not considered in this analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
191.5	191.5	12	dapa	48000	-	-
181.5	181.5	12	dapa	48000	-	-
171.5	171.5	12	dapa	48000	-	-
161.5	161.5	12	dapa	48000	-	-
150.0	150.0	12	dapa	48000	-	-
140.0	140.0	12	dapa	48000	-	-
130.0	130.0	12	dapa	48000	-	-
120.0	120.0	12	dapa	48000	-	-
110.0	110.0	12	dapa	48000	-	-
100.0	100.0	12	dapa	48000	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Goodkind & O'Dea, Inc.	1531969	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors, Inc.	1441268	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	1614566	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P _{allow} (K)	% Capacity	Pass / Fail
L1	152 - 137.42	Pole	TP37.31x33.03x0.313	1	-4.648	2526.220	3.1	Pass
L2	137.42 - 91.09	Pole	TP50.15x35.167x0.375	2	-26.500	3935.810	22.2	Pass
L3	91.09 - 44.79	Pole	TP62.86x47.413x0.438	3	-44.639	5613.010	31.3	Pass
L4	44.79 - 0	Pole	TP75x59.537x0.5	4	-74.281	7706.060	34.2	Pass
							Summary	
						Pole (L4)	34.2	Pass
						Rating =	34.2	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	32.5	Pass
1	Base Plate	0	43.0	Pass
1	Base Foundation (Structure)	0	39.5	Pass
1	Base Foundation (Soil Interaction)	0	30.4	Pass

Structure Rating (max from all components) =	43.0%
---	--------------

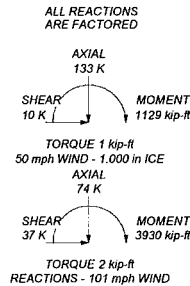
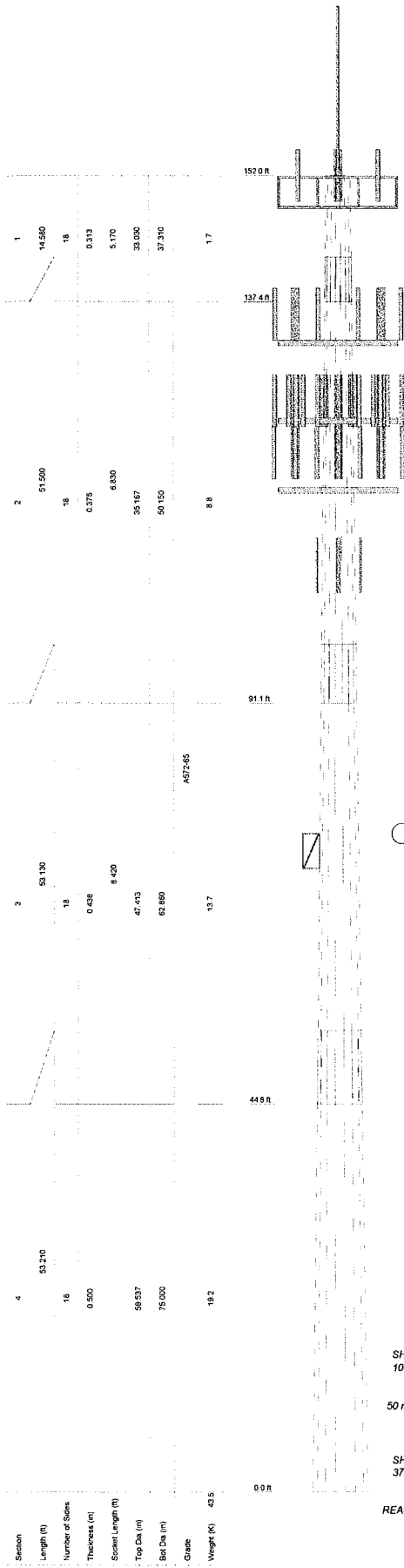
Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
OS9A03F360-N	152	RRH2x60-700	124
430 94C-0108-M-110H8	152	RRH4X45-AWS4 B56	124
Pipe Mount (PM 601-1)	152	RRH4X45-AWS4 B56	124
ETCR 654L12H6 w/ Mount Pipe	150	RRH4X45-AWS4 B56	124
ETCR 654L12H6 w/ Mount Pipe	150	RRH2X60-PCS	124
(2) RRH2X60-800	150	RRH2X60-PCS	124
(2) RRH2X60-800	150	6" x 2" Mount Pipe	124
(2) RRH2X60-800	150	6" x 2" Mount Pipe	124
TD.RRH2x20-25	150	6" x 2" Mount Pipe	124
TD.RRH2x20-25	150	Platform Mount (LP 304-1)	124
TD.RRH2x20-25	150	7770 00 w/ Mount Pipe	116
PCS 1900MHz 4x45W-65MHz	150	7770 00 w/ Mount Pipe	116
PCS 1900MHz 4x45W-65MHz	150	7770 00 w/ Mount Pipe	116
PCS 1900MHz 4x45W-65MHz	150	80010955 w/ Mount Pipe	116
8" x 2" Pipe Mount	150	80010955 w/ Mount Pipe	116
8" x 2" Pipe Mount	150	80010966 w/ Mount Pipe	116
8" x 2" Pipe Mount	150	HPA-6SR-BUL-H6 w/ Mount Pipe	116
Miscellaneous (NA 507-1)	150	HPA-6SR-BUL-H6 w/ Mount Pipe	116
Miscellaneous (NA 509-3)	150	HPA-6SR-BUL-H6 w/ Mount Pipe	116
Platform Mount (LP 601-1)	150	(2) LCP21401	116
RR90-17-020P w/ Mount Pipe	133	(2) LCP21401	116
RR90-17-020P w/ Mount Pipe	133	RRUS-11	116
RR90-17-020P w/ Mount Pipe	133	RRUS-11	116
LNK-651SDS-VTM w/ Mount Pipe	133	RRUS-11	116
LNK-651SDS-VTM w/ Mount Pipe	133	DC6-48-60-18-8F	116
LNK-651SDS-VTM w/ Mount Pipe	133	(2) 7020 00	116
KRY 112 712	133	(2) 7020 00	116
KRY 112 712	133	(2) 7020 00	116
KRY 112 712	133	RRUS 4478 B14	116
KRY 112 712	133	RRUS 4478 B14	116
KRY 112 712	133	RRUS 32	116
ATBT-BOTTOM-24V	133	RRUS 32	116
ATBT-BOTTOM-24V	133	RRUS 32	116
6" x 2" Mount Pipe	133	RRUS 32 B2	116
6" x 2" Mount Pipe	133	RRUS 32 B2	116
6" x 2" Mount Pipe	133	RRUS 32 B2	116
Platform Mount (LP 304-1)	133	DC6-48-60-18-8F	116
LPA-171080-12CF-EDIN-2 w/ Mount Pipe	124	Side Arm Mount (SO 701-3)	116
LPA-171080-12CF-EDIN-2 w/ Mount Pipe	124	Platform Mount (LP 1201-1)	116
LPA-171080-12CF-EDIN-2 w/ Mount Pipe	124	4" x 2" Pipe Mount	116
(2) LPA-80080RCP w/ Mount Pipe	124	4" x 2" Pipe Mount	116
(2) LPA-80080RCP w/ Mount Pipe	124	742 213	107
(2) LPA-80080RCP w/ Mount Pipe	124	742 213	107
(2) SBAH4-1065B w/ Mount Pipe	124	Pipe Mount (PM 601-3)	107
(2) SBAH4-1065B w/ Mount Pipe	124	KS24019-1.112A	74
(2) SBAH4-1065B w/ Mount Pipe	124	Side Arm Mount (SO 701-1)	74
(2) DB-T1-62-8AB-0Z	124		
RRH2x60-700	124		
RRH2x60-700	124		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 101 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 34.2%

CROWN CASTLE The Foundation for a Wireless World	Crown Castle 2000 Corporate Dr. Canonsburg, PA 15317 Phone: (724) 416 - 2536 FAX: (724) 416 - 4536		BU# 876385	
	Project	Client	Drawn by	App'd
	Code	Date	Scale	NTS
	Path	\\na\media\Users\WMA\Drawings\PROJECTS\805\101\TOWER\TOWER.DWG		
	Dwg No E-1			

Tower Input Data

There is a pole section.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

- 4) Tower is located in Tolland County, Connecticut.
- 5) Basic wind speed of 101 mph.
- 6) Structure Class II.
- 7) Exposure Category B.
- 8) Topographic Category 1.
- 9) Crest Height 0.000 ft.
- 10) Nominal ice thickness of 1.000 in.
- 11) Ice thickness is considered to increase with height.
- 12) Ice density of 56.000 pcf.
- 13) A wind speed of 50 mph is used in combination with ice.
- 14) Temperature drop of 50.000 °F.
- 15) Deflections calculated using a wind speed of 60 mph.
- 16) A non-linear (P-delta) analysis was used.
- 17) Pressures are calculated at each section.
- 18) Stress ratio used in pole design is 1.
- 19) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist.
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Exemption
Leg Bolts Are At Top Of Section		Use TIA-222-G Tension Splice
Secondary Horizontal Braces Leg	Add IBC .6D+W Combination	Exemption
Use Diamond Inner Bracing (4 Sided)	√ Sort Capacity Reports By Component	Poles
SR Members Have Cut Ends	Triangulate Diamond Inner Bracing	√ Include Shear-Torsion Interaction
SR Members Are Concentric	Treat Feed Line Bundles As Cylinder	Always Use Sub-Critical Flow
		Use Top Mounted Sockets

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	152.000- 137.420	14.580	5.170	18	33.030	37.310	0.313	1.250	A572-65 (65 ksi)
L2	137.420- 91.090	51.500	6.830	18	35.167	50.150	0.375	1.500	A572-65 (65 ksi)
L3	91.090-44.790	53.130	8.420	18	47.413	62.860	0.438	1.750	A572-65 (65 ksi)
L4	44.790-0.000	53.210		18	59.537	75.000	0.500	2.000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	33.540	32.452	4388.688	11.615	16.779	261.555	8783.151	16.229	5.263	16.842
	37.886	36.697	6346.168	13.134	18.953	334.829	12700.685	18.352	6.017	19.253
L2	37.237	41.412	6333.245	12.351	17.865	354.506	12674.822	20.710	5.529	14.745
	50.924	59.245	18544.257	17.670	25.476	727.905	37112.916	29.628	8.166	21.777
L3	50.161	65.231	18185.953	16.676	24.086	755.049	36395.835	32.622	7.575	17.314
	63.830	86.681	42672.286	22.160	31.933	1336.312	85400.720	43.349	10.293	23.528
L4	62.940	93.692	41255.943	20.958	30.245	1364.068	82566.172	46.855	9.599	19.197
	76.157	118.232	82905.472	26.448	38.100	2175.997	165920.03	59.127	12.320	24.64
3										

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 152.000- 137.420				1	1	1			
L2 137.420- 91.090				1	1	1			
L3 91.090- 44.790				1	1	1			
L4 44.790- 0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Section	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*** 152 ***									
FLC 12-50J(1/2)	A	Surface Ar (CaAa)	152.000 - 0.000	1	1	-0.080 -0.075	0.640		0.000
FLC 158-50J(1-5/8)	A	Surface Ar (CaAa)	152.000 - 0.000	2	2	-0.100 -0.040	2.015		0.001
*** 124 ***									
HB158-1-08U8-S8J18(1-5/8)	A	Surface Ar (CaAa)	124.000 - 0.000	2	2	-0.210 -0.190	1.980		0.001

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf
*** 150 ***							
HB114-1-0813U4- M5J(1-1/4)	A	No	Inside Pole	150.000 - 0.000	4	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.001
*** 133 ***							
AVA7-50(1-5/8)	C	No	Inside Pole	133.000 - 0.000	6	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.001
LDF7-50A(1-5/8)	C	No	Inside Pole	133.000 - 0.000	6	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.001
LDF7-50A(1-5/8)	A	No	Inside Pole	124.000 - 0.000	18	No Ice	0.000

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
*** 116 ***								
HCC 78-50J(1-1/4")	A	No	Inside Pole	116.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
FB-L98B-002-75000(3/8)	A	No	Inside Pole	116.000 - 0.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	A	No	Inside Pole	116.000 - 0.000	4	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
2" Rigid Conduit	A	No	Inside Pole	116.000 - 0.000	2	No Ice	0.000	0.003
						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.003
*** 107 ***								
AVA7-50(1-5/8)	B	No	Inside Pole	107.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
*** 74 ***								
LDF4-50A(1/2)	A	No	Inside Pole	74.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	152.000-137.420	A	0.000	0.000	6.809	0.000	0.090
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L2	137.420-91.090	A	0.000	0.000	34.668	0.000	1.246
		B	0.000	0.000	0.000	0.000	0.067
		C	0.000	0.000	0.000	0.000	0.382
L3	91.090-44.790	A	0.000	0.000	39.957	0.000	1.791
		B	0.000	0.000	0.000	0.000	0.194
		C	0.000	0.000	0.000	0.000	0.422
L4	44.790-0.000	A	0.000	0.000	38.654	0.000	1.735
		B	0.000	0.000	0.000	0.000	0.188
		C	0.000	0.000	0.000	0.000	0.408

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	152.000-137.420	A	2.318	0.000	0.000	23.489	0.000	0.449
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L2	137.420-91.090	A	2.263	0.000	0.000	110.003	0.000	2.916
		B		0.000	0.000	0.000	0.000	0.067
		C		0.000	0.000	0.000	0.000	0.382
L3	91.090-44.790	A	2.149	0.000	0.000	122.541	0.000	3.609
		B		0.000	0.000	0.000	0.000	0.194
		C		0.000	0.000	0.000	0.000	0.422
L4	44.790-0.000	A	1.919	0.000	0.000	114.967	0.000	3.367
		B		0.000	0.000	0.000	0.000	0.188
		C		0.000	0.000	0.000	0.000	0.408

Feed Line Center of Pressure

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L1	152.000-137.420	-0.584	-0.230	-1.187	-0.463
L2	137.420-91.090	-0.930	-0.258	-1.646	-0.479
L3	91.090-44.790	-1.071	-0.274	-1.948	-0.528
L4	44.790-0.000	-1.095	-0.280	-2.095	-0.567

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	2	FLC 12-50J(1/2)	137.42 - 152.00	1.0000	1.0000
L1	3	FLC 158-50J(1-5/8)	137.42 - 152.00	1.0000	1.0000
L1	10	HB158-1-08U8-S8J18(1-5/8)	137.42 - 124.00	1.0000	1.0000
L2	2	FLC 12-50J(1/2)	91.09 - 137.42	1.0000	1.0000
L2	3	FLC 158-50J(1-5/8)	91.09 - 137.42	1.0000	1.0000
L2	10	HB158-1-08U8-S8J18(1-5/8)	91.09 - 124.00	1.0000	1.0000
L3	2	FLC 12-50J(1/2)	44.79 - 91.09	1.0000	1.0000
L3	3	FLC 158-50J(1-5/8)	44.79 - 91.09	1.0000	1.0000
L3	10	HB158-1-08U8-S8J18(1-5/8)	44.79 - 91.09	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
*** 152 ***									
DS9A09F36D-N	A	From Leg	1.000 0.000 10.000	0.000	152.000	No Ice 1/2" Ice 1" Ice	5.760 7.713 9.683	5.760 7.713 9.683	0.047 0.088 0.142
430-94C-09168-M-110/48	A	From Leg	1.000 0.000 0.000	0.000	152.000	No Ice 1/2" Ice 1" Ice	1.031 1.174 1.323	1.031 1.174 1.323	0.020 0.030 0.042
Pipe Mount [PM 601-1]	A	From Leg	0.500 0.000 0.000	0.000	152.000	No Ice 1/2" Ice 1" Ice	3.000 3.740 4.480	0.900 1.120 1.340	0.065 0.079 0.093
*** 150 ***									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
ETCR-654L12H6 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	13.271 13.877 14.448	6.537 7.714 8.605	0.105 0.195 0.293
ETCR-654L12H6 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	13.271 13.877 14.448	6.537 7.714 8.605	0.105 0.195 0.293
ETCR-654L12H6 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	13.271 13.877 14.448	6.537 7.714 8.605	0.105 0.195 0.293
(2) RRH2X50-800	A	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.701 1.864 2.035	1.282 1.428 1.580	0.053 0.070 0.090
(2) RRH2X50-800	B	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.701 1.864 2.035	1.282 1.428 1.580	0.053 0.070 0.090
(2) RRH2X50-800	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.701 1.864 2.035	1.282 1.428 1.580	0.053 0.070 0.090
TD-RRH8x20-25	A	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.535 1.714 1.901	0.070 0.097 0.128
TD-RRH8x20-25	B	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.535 1.714 1.901	0.070 0.097 0.128
TD-RRH8x20-25	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.535 1.714 1.901	0.070 0.097 0.128
PCS 1900MHz 4x45W- 65MHz	A	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	2.322 2.527 2.739	2.238 2.441 2.651	0.060 0.083 0.110
PCS 1900MHz 4x45W- 65MHz	B	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	2.322 2.527 2.739	2.238 2.441 2.651	0.060 0.083 0.110
PCS 1900MHz 4x45W- 65MHz	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	2.322 2.527 2.739	2.238 2.441 2.651	0.060 0.083 0.110
8' x 2" Pipe Mount	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
8' x 2" Pipe Mount	B	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
8' x 2" Pipe Mount	C	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
Miscellaneous [NA 507-1]	C	None		0.000	150.000	No Ice 1/2" Ice 1" Ice	4.800 6.700 8.600	4.800 6.700 8.600	0.245 0.294 0.343
Miscellaneous [NA 509-3]	C	None		0.000	150.000	No Ice	11.840	11.840	0.275

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
						1/2" Ice	16.960	16.960	0.296
						1" Ice	22.080	22.080	0.317
Platform Mount [LP 601-1]	C	None		0.000	150.000	No Ice	28.470	28.470	1.122
						1/2" Ice	33.590	33.590	1.514
						1" Ice	38.710	38.710	1.905
*** 133***									
RR90-17-02DP w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	4.593	3.319	0.034
						1/2" Ice	5.018 5.436	4.089 4.784	0.072 0.115
RR90-17-02DP w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	4.593	3.319	0.034
						1/2" Ice	5.018 5.436	4.089 4.784	0.072 0.115
RR90-17-02DP w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	4.593	3.319	0.034
						1/2" Ice	5.018 5.436	4.089 4.784	0.072 0.115
LNx-6515DS-VTM w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	11.683	9.842	0.083
						1/2" Ice	12.404 13.135	11.366 12.914	0.173 0.273
LNx-6515DS-VTM w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	11.683	9.842	0.083
						1/2" Ice	12.404 13.135	11.366 12.914	0.173 0.273
LNx-6515DS-VTM w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	11.683	9.842	0.083
						1/2" Ice	12.404 13.135	11.366 12.914	0.173 0.273
KRY 112 71/2	A	From Leg	4.000 0.000 0.000	0.000	133.000	No Ice	0.583	0.398	0.013
						1/2" Ice	0.688 0.799	0.488 0.586	0.018 0.025
KRY 112 71/2	B	From Leg	4.000 0.000 0.000	0.000	133.000	No Ice	0.583	0.398	0.013
						1/2" Ice	0.688 0.799	0.488 0.586	0.018 0.025
KRY 112 71/2	C	From Leg	4.000 0.000 0.000	0.000	133.000	No Ice	0.583	0.398	0.013
						1/2" Ice	0.688 0.799	0.488 0.586	0.018 0.025
KRY 112 71/2	A	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	0.583	0.398	0.013
						1/2" Ice	0.688 0.799	0.488 0.586	0.018 0.025
KRY 112 71/2	B	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	0.583	0.398	0.013
						1/2" Ice	0.688 0.799	0.488 0.586	0.018 0.025
KRY 112 71/2	C	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	0.583	0.398	0.013
						1/2" Ice	0.688 0.799	0.488 0.586	0.018 0.025
ATBT-BOTTOM-24V	A	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	0.104	0.065	0.003
						1/2" Ice	0.148 0.199	0.102 0.147	0.004 0.006
ATBT-BOTTOM-24V	B	From Leg	4.000 0.000 3.000	0.000	133.000	No Ice	0.104	0.065	0.003
						1/2" Ice	0.148 0.199	0.102 0.147	0.004 0.006
ATBT-BOTTOM-24V	C	From Leg	4.000	0.000	133.000	No Ice	0.104	0.065	0.003

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			0.000			1/2"	0.148	0.102	0.004
			3.000			Ice	0.199	0.147	0.006
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	133.000	1" Ice			
			0.000			No Ice	1.425	1.425	0.022
			2.000			1/2"	1.925	1.925	0.033
						Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	133.000	1" Ice			
			0.000			No Ice	1.425	1.425	0.022
			2.000			1/2"	1.925	1.925	0.033
						Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	133.000	1" Ice			
			0.000			No Ice	1.425	1.425	0.022
			2.000			1/2"	1.925	1.925	0.033
						Ice	2.294	2.294	0.048
Platform Mount [LP 304-1]	C	None		0.000	133.000	1" Ice			
						No Ice	17.460	17.460	1.349
						1/2"	22.440	22.440	1.625
						Ice	27.420	27.420	1.900
						1" Ice			
*** 124***									
LPA-171080-12CF-EDIN-2 w/ Mount Pipe	A	From Leg	4.000	0.000	124.000	No Ice	3.956	7.095	0.037
			0.000			1/2"	4.508	8.302	0.086
			2.000			Ice	5.029	9.242	0.143
						1" Ice			
LPA-171080-12CF-EDIN-2 w/ Mount Pipe	B	From Leg	4.000	0.000	124.000	No Ice	3.956	7.095	0.037
			0.000			1/2"	4.508	8.302	0.086
			2.000			Ice	5.029	9.242	0.143
						1" Ice			
LPA-171080-12CF-EDIN-2 w/ Mount Pipe	C	From Leg	4.000	0.000	124.000	No Ice	3.956	7.095	0.037
			0.000			1/2"	4.508	8.302	0.086
			2.000			Ice	5.029	9.242	0.143
						1" Ice			
(2) LPA-80080/6CF w/ Mount Pipe	A	From Leg	4.000	0.000	124.000	No Ice	4.564	10.259	0.046
			0.000			1/2"	5.105	11.427	0.113
			2.000			Ice	5.612	12.312	0.187
						1" Ice			
(2) LPA-80080/6CF w/ Mount Pipe	B	From Leg	4.000	0.000	124.000	No Ice	4.564	10.259	0.046
			0.000			1/2"	5.105	11.427	0.113
			2.000			Ice	5.612	12.312	0.187
						1" Ice			
(2) LPA-80080/6CF w/ Mount Pipe	C	From Leg	4.000	0.000	124.000	No Ice	4.564	10.259	0.046
			0.000			1/2"	5.105	11.427	0.113
			2.000			Ice	5.612	12.312	0.187
						1" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.000	0.000	124.000	No Ice	8.386	7.084	0.076
			0.000			1/2"	8.950	8.275	0.146
			2.000			Ice	9.480	9.188	0.223
						1" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.000	0.000	124.000	No Ice	8.386	7.084	0.076
			0.000			1/2"	8.950	8.275	0.146
			2.000			Ice	9.480	9.188	0.223
						1" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.000	0.000	124.000	No Ice	8.386	7.084	0.076
			0.000			1/2"	8.950	8.275	0.146
			2.000			Ice	9.480	9.188	0.223
						1" Ice			
(2) DB-T1-6Z-8AB-0Z	A	From Leg	4.000	0.000	124.000	No Ice	4.800	2.000	0.044
			0.000			1/2"	5.070	2.193	0.080
			2.000			Ice	5.348	2.393	0.120
						1" Ice			
RRH2x60-700	A	From Leg	4.000	0.000	124.000	No Ice	3.500	1.816	0.060
			0.000			1/2"	3.761	2.052	0.083
			2.000			Ice	4.029	2.289	0.109
						1" Ice			
RRH2x60-700	B	From Leg	4.000	0.000	124.000	No Ice	3.500	1.816	0.060

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
			0.000			1/2"	3.761	2.052	0.083
			2.000			Ice	4.029	2.289	0.109
						1" Ice			
RRH2x60-700	C	From Leg	4.000	0.000	124.000	No Ice	3.500	1.816	0.060
			0.000			1/2"	3.761	2.052	0.083
			2.000			Ice	4.029	2.289	0.109
						1" Ice			
RRH4X45-AWS4 B66	A	From Leg	4.000	0.000	124.000	No Ice	2.660	1.586	0.064
			0.000			1/2"	2.878	1.769	0.084
			2.000			Ice	3.104	1.959	0.108
						1" Ice			
RRH4X45-AWS4 B66	B	From Leg	4.000	0.000	124.000	No Ice	2.660	1.586	0.064
			0.000			1/2"	2.878	1.769	0.084
			2.000			Ice	3.104	1.959	0.108
						1" Ice			
RRH4X45-AWS4 B66	C	From Leg	4.000	0.000	124.000	No Ice	2.660	1.586	0.064
			0.000			1/2"	2.878	1.769	0.084
			2.000			Ice	3.104	1.959	0.108
						1" Ice			
RRH2X60-PCS	A	From Leg	4.000	0.000	124.000	No Ice	2.200	1.723	0.055
			0.000			1/2"	2.393	1.901	0.075
			2.000			Ice	2.593	2.087	0.099
						1" Ice			
RRH2X60-PCS	B	From Leg	4.000	0.000	124.000	No Ice	2.200	1.723	0.055
			0.000			1/2"	2.393	1.901	0.075
			2.000			Ice	2.593	2.087	0.099
						1" Ice			
RRH2X60-PCS	C	From Leg	4.000	0.000	124.000	No Ice	2.200	1.723	0.055
			0.000			1/2"	2.393	1.901	0.075
			2.000			Ice	2.593	2.087	0.099
						1" Ice			
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	124.000	No Ice	1.425	1.425	0.022
			0.000			1/2"	1.925	1.925	0.033
			2.000			Ice	2.294	2.294	0.048
						1" Ice			
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	124.000	No Ice	1.425	1.425	0.022
			0.000			1/2"	1.925	1.925	0.033
			2.000			Ice	2.294	2.294	0.048
						1" Ice			
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	124.000	No Ice	1.425	1.425	0.022
			0.000			1/2"	1.925	1.925	0.033
			2.000			Ice	2.294	2.294	0.048
						1" Ice			
Platform Mount [LP 304-1]	C	None		0.000	124.000	No Ice	17.460	17.460	1.349
						1/2"	22.440	22.440	1.625
						Ice	27.420	27.420	1.900
						1" Ice			
*** 116***									
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	116.000	No Ice	5.746	4.254	0.055
			0.000			1/2"	6.179	5.014	0.103
			4.000			Ice	6.607	5.711	0.157
						1" Ice			
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	116.000	No Ice	5.746	4.254	0.055
			0.000			1/2"	6.179	5.014	0.103
			4.000			Ice	6.607	5.711	0.157
						1" Ice			
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	116.000	No Ice	5.746	4.254	0.055
			0.000			1/2"	6.179	5.014	0.103
			4.000			Ice	6.607	5.711	0.157
						1" Ice			
(2) LGP21401	A	From Leg	4.000	0.000	116.000	No Ice	1.104	0.207	0.014
			0.000			1/2"	1.239	0.274	0.021
			0.000			Ice	1.381	0.348	0.030
						1" Ice			
(2) LGP21401	B	From Leg	4.000	0.000	116.000	No Ice	1.104	0.207	0.014

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			0.000			1/2"	1.239	0.021
			0.000			Ice	1.381	0.030
(2) LGP21401	C	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	1.104	0.014
			4.000			1/2"	1.239	0.021
						Ice	1.381	0.030
RRUS-11	A	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	2.784	1.187
			4.000			1/2"	2.992	1.334
						Ice	3.207	1.490
RRUS-11	B	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	2.784	1.187
			4.000			1/2"	2.992	1.334
						Ice	3.207	1.490
RRUS-11	C	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	2.784	1.187
			4.000			1/2"	2.992	1.334
						Ice	3.207	1.490
DC6-48-60-18-8F	A	From Leg	2.000	0.000	116.000	1" Ice		
			0.000			No Ice	0.791	0.791
			4.000			1/2"	1.274	1.274
						Ice	1.450	1.450
80010965 w/ Mount Pipe	A	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	14.051	7.628
			4.000			1/2"	14.688	8.903
						Ice	15.303	9.963
80010965 w/ Mount Pipe	B	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	14.051	7.628
			4.000			1/2"	14.688	8.903
						Ice	15.303	9.963
80010966 w/ Mount Pipe	C	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	17.600	9.637
			4.000			1/2"	18.331	11.155
						Ice	19.071	12.696
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	9.895	8.113
			4.000			1/2"	10.470	9.304
						Ice	11.010	10.209
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	9.895	8.113
			4.000			1/2"	10.470	9.304
						Ice	11.010	10.209
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	13.213	9.582
			4.000			1/2"	13.899	11.052
						Ice	14.587	12.496
(2) 7020.00	A	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	0.102	0.175
			4.000			1/2"	0.147	0.239
						Ice	0.199	0.311
(2) 7020.00	B	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	0.102	0.175
			4.000			1/2"	0.147	0.239
						Ice	0.199	0.311
(2) 7020.00	C	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	0.102	0.175
			4.000			1/2"	0.147	0.239
						Ice	0.199	0.311
RRUS 4478 B14	A	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	1.843	1.059
			4.000			1/2"	2.012	1.197
						Ice	2.190	1.342
RRUS 4478 B14	B	From Leg	4.000	0.000	116.000	1" Ice		
			0.000			No Ice	1.843	1.059
						1/2"	2.012	1.197

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
			4.000			Ice	2.190	1.342	0.094
RRUS 4478 B14	C	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	1.843	1.059	0.060
			0.000			1/2"	2.012	1.197	0.076
			4.000			Ice	2.190	1.342	0.094
RRUS 32	A	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	2.857	1.777	0.055
			0.000			1/2"	3.083	1.968	0.077
			4.000			Ice	3.316	2.166	0.103
RRUS 32	B	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	2.857	1.777	0.055
			0.000			1/2"	3.083	1.968	0.077
			4.000			Ice	3.316	2.166	0.103
RRUS 32	C	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	2.857	1.777	0.055
			0.000			1/2"	3.083	1.968	0.077
			4.000			Ice	3.316	2.166	0.103
RRUS 32 B2	A	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	2.731	1.668	0.053
			0.000			1/2"	2.953	1.855	0.074
			4.000			Ice	3.182	2.049	0.098
RRUS 32 B2	B	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	2.731	1.668	0.053
			0.000			1/2"	2.953	1.855	0.074
			4.000			Ice	3.182	2.049	0.098
RRUS 32 B2	C	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	2.731	1.668	0.053
			0.000			1/2"	2.953	1.855	0.074
			4.000			Ice	3.182	2.049	0.098
DC6-48-60-18-8F	A	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	0.791	0.791	0.020
			0.000			1/2"	1.274	1.274	0.035
			4.000			Ice	1.450	1.450	0.053
4' x 2" Pipe Mount	A	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	0.785	0.785	0.029
			0.000			1/2"	1.028	1.028	0.035
			0.000			Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	B	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	0.785	0.785	0.029
			0.000			1/2"	1.028	1.028	0.035
			0.000			Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	C	From Leg	4.000	0.000	116.000	1" Ice			
			0.000			No Ice	0.785	0.785	0.029
			0.000			1/2"	1.028	1.028	0.035
			0.000			Ice	1.281	1.281	0.044
Side Arm Mount [SO 701-3]	C	None		0.000	116.000	1" Ice			
						No Ice	2.830	2.830	0.195
						1/2"	3.920	3.920	0.237
						Ice	5.010	5.010	0.279
Platform Mount [LP 1201-1]	C	None		0.000	116.000	1" Ice			
						No Ice	23.100	23.100	2.100
						1/2"	26.800	26.800	2.500
						Ice	30.500	30.500	2.900
*** 107***						1" Ice			
742 213	A	From Leg	1.000	0.000	107.000	No Ice	5.135	2.869	0.022
			0.000			1/2"	5.609	3.483	0.047
			0.000			Ice	6.090	3.946	0.078
742 213	B	From Leg	1.000	0.000	107.000	1" Ice			
			0.000			No Ice	5.135	2.869	0.022
			0.000			1/2"	5.609	3.483	0.047
			0.000			Ice	6.090	3.946	0.078
742 213	C	From Leg	1.000	0.000	107.000	1" Ice			
			0.000			No Ice	5.135	2.869	0.022
						1/2"	5.609	3.483	0.047

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
			0.000			Ice	6.090	3.946	0.078
Pipe Mount [PM 601-3]	C	None		0.000	107.000	1" Ice			
						No Ice	4.390	4.390	0.195
						1/2"	5.480	5.480	0.237
						Ice	6.570	6.570	0.280
						1" Ice			
*** 74***									
KS24019-L112A	C	From Leg	3.000	0.000	74.000	No Ice	0.100	0.100	0.005
			0.000			1/2"	0.180	0.180	0.006
			1.000			Ice	0.260	0.260	0.008
						1" Ice			
Side Arm Mount [SO 701-1]	C	From Leg	1.500	0.000	74.000	No Ice	0.850	1.670	0.065
			0.000			1/2"	1.140	2.340	0.079
			0.000			Ice	1.430	3.010	0.093
						1" Ice			

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	152 - 137.42	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-12.120	0.376	1.527
			Max. Mx	20	-4.653	51.564	0.327
			Max. My	2	-4.648	0.033	52.853
			Max. Vy	20	-6.163	51.564	0.327
			Max. Vx	2	-6.266	0.033	52.853
			Max. Torque	20			-0.889
L2	137.42 - 91.09	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.958	4.939	5.962
			Max. Mx	20	-26.512	821.116	-0.215
			Max. My	2	-26.500	-0.658	831.603
			Max. Vy	20	-25.756	821.116	-0.215
			Max. Vx	2	-26.009	-0.658	831.603
			Max. Torque	18			-1.740
L3	91.09 - 44.79	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-91.464	10.025	6.965
			Max. Mx	20	-44.646	2091.135	-2.372
			Max. My	2	-44.639	-1.955	2112.397
			Max. Vy	20	-30.981	2091.135	-2.372
			Max. Vx	2	-31.249	-1.955	2112.397
			Max. Torque	18			-1.740
L4	44.79 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-132.872	16.167	8.599
			Max. Mx	20	-74.281	3895.101	-4.314
			Max. My	2	-74.281	-3.264	3929.900
			Max. Vy	20	-36.721	3895.101	-4.314
			Max. Vx	2	-36.984	-3.264	3929.900
			Max. Torque	18			-1.739

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	132.872	0.000	0.000
	Max. H _x	20	74.291	36.700	-0.040
	Max. H _z	2	74.291	-0.040	36.963
	Max. M _x	2	3929.900	-0.040	36.963
	Max. M _z	8	3890.406	-36.700	0.040
	Max. Torsion	6	1.738	-31.803	18.516
	Min. Vert	11	55.718	-31.764	-18.447
	Min. H _x	8	74.291	-36.700	0.040
	Min. H _z	14	74.291	0.040	-36.963

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. M _x	14	-3927.303	0.040	-36.963
	Min. M _z	20	-3895.101	36.700	-0.040
	Min. Torsion	18	-1.739	31.803	-18.516

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	61.909	0.000	0.000	-1.052	1.919	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	74.291	0.040	-36.963	-3929.900	-3.264	-0.870
0.9 Dead+1.6 Wind 0 deg - No Ice	55.718	0.040	-36.963	-3912.313	-3.833	-0.870
1.2 Dead+1.6 Wind 30 deg - No Ice	74.291	18.384	-32.031	-3406.374	-1948.885	-1.506
0.9 Dead+1.6 Wind 30 deg - No Ice	55.718	18.384	-32.031	-3391.085	-1940.916	-1.504
1.2 Dead+1.6 Wind 60 deg - No Ice	74.291	31.803	-18.516	-1970.461	-3371.679	-1.738
0.9 Dead+1.6 Wind 60 deg - No Ice	55.718	31.803	-18.516	-1961.479	-3357.467	-1.734
1.2 Dead+1.6 Wind 90 deg - No Ice	74.291	36.700	-0.040	-6.909	-3890.406	-1.505
0.9 Dead+1.6 Wind 90 deg - No Ice	55.718	36.700	-0.040	-6.551	-3873.919	-1.501
1.2 Dead+1.6 Wind 120 deg - No Ice	74.291	31.764	18.447	1958.149	-3366.069	-0.869
0.9 Dead+1.6 Wind 120 deg - No Ice	55.718	31.764	18.447	1949.875	-3351.884	-0.866
1.2 Dead+1.6 Wind 150 deg - No Ice	74.291	18.316	31.991	3398.169	-1939.166	-0.001
0.9 Dead+1.6 Wind 150 deg - No Ice	55.718	18.316	31.991	3383.570	-1931.243	0.001
1.2 Dead+1.6 Wind 180 deg - No Ice	74.291	-0.040	36.963	3927.303	7.959	0.868
0.9 Dead+1.6 Wind 180 deg - No Ice	55.718	-0.040	36.963	3910.379	7.336	0.867
1.2 Dead+1.6 Wind 210 deg - No Ice	74.291	-18.384	32.031	3403.778	1953.578	1.505
0.9 Dead+1.6 Wind 210 deg - No Ice	55.718	-18.384	32.031	3389.152	1944.418	1.503
1.2 Dead+1.6 Wind 240 deg - No Ice	74.291	-31.803	18.516	1967.866	3376.372	1.739
0.9 Dead+1.6 Wind 240 deg - No Ice	55.718	-31.803	18.516	1959.547	3360.969	1.736
1.2 Dead+1.6 Wind 270 deg - No Ice	74.291	-36.700	0.040	4.314	3895.101	1.507
0.9 Dead+1.6 Wind 270 deg - No Ice	55.718	-36.700	0.040	4.619	3877.422	1.503
1.2 Dead+1.6 Wind 300 deg - No Ice	74.291	-31.764	-18.447	-1960.744	3370.764	0.870
0.9 Dead+1.6 Wind 300 deg - No Ice	55.718	-31.764	-18.447	-1951.808	3355.388	0.867
1.2 Dead+1.6 Wind 330 deg - No Ice	74.291	-18.316	-31.991	-3400.765	1943.861	-0.000
0.9 Dead+1.6 Wind 330 deg - No Ice	55.718	-18.316	-31.991	-3385.503	1934.747	-0.002
1.2 Dead+1.0 Ice+1.0 Temp	132.872	-0.000	-0.000	-8.599	16.167	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	132.872	-0.002	-10.434	-1124.382	16.386	-0.272
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	132.872	5.179	-9.035	-974.960	-536.433	-0.475
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	132.872	8.973	-5.215	-566.649	-941.103	-0.551

Load Combination	Vertical K	Shear _x K	Shear _y K	Overturning Moment, M _x kip-ft	Overturning Moment, M _y kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	132.872	10.363	0.002	-8.857	-1089.194	-0.480
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	132.872	8.975	5.219	548.956	-941.023	-0.279
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	132.872	5.183	9.037	957.325	-536.295	-0.004
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	132.872	0.002	10.434	1106.827	16.546	0.272
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	132.872	-5.179	9.035	957.405	569.364	0.476
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	132.872	-8.973	5.215	549.094	974.034	0.552
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	132.872	-10.363	-0.002	-8.697	1122.125	0.480
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	132.872	-8.975	-5.219	-566.511	973.954	0.280
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	132.872	-5.183	-9.037	-974.880	569.226	0.005
Dead+Wind 0 deg - Service	61.909	0.008	-7.295	-774.205	0.846	-0.172
Dead+Wind 30 deg - Service	61.909	3.628	-6.321	-671.178	-382.042	-0.297
Dead+Wind 60 deg - Service	61.909	6.276	-3.654	-388.597	-662.040	-0.343
Dead+Wind 90 deg - Service	61.909	7.243	-0.008	-2.181	-764.122	-0.297
Dead+Wind 120 deg - Service	61.909	6.269	3.641	384.530	-660.936	-0.171
Dead+Wind 150 deg - Service	61.909	3.615	6.313	667.919	-380.130	0.000
Dead+Wind 180 deg - Service	61.909	-0.008	7.295	772.050	3.054	0.172
Dead+Wind 210 deg - Service	61.909	-3.628	6.321	669.023	385.943	0.297
Dead+Wind 240 deg - Service	61.909	-6.276	3.654	386.442	665.941	0.343
Dead+Wind 270 deg - Service	61.909	-7.243	0.008	0.027	768.023	0.297
Dead+Wind 300 deg - Service	61.909	-6.269	-3.641	-386.685	664.837	0.171
Dead+Wind 330 deg - Service	61.909	-3.615	-6.313	-670.074	384.031	-0.000

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-61.909	0.000	0.000	61.909	0.000	0.000%
2	0.040	-74.291	-36.963	-0.040	74.291	36.963	0.000%
3	0.040	-55.718	-36.963	-0.040	55.718	36.963	0.000%
4	18.384	-74.291	-32.031	-18.384	74.291	32.031	0.000%
5	18.384	-55.718	-32.031	-18.384	55.718	32.031	0.000%
6	31.803	-74.291	-18.516	-31.803	74.291	18.516	0.000%
7	31.803	-55.718	-18.516	-31.803	55.718	18.516	0.000%
8	36.700	-74.291	-0.040	-36.700	74.291	0.040	0.000%
9	36.700	-55.718	-0.040	-36.700	55.718	0.040	0.000%
10	31.764	-74.291	18.447	-31.764	74.291	-18.447	0.000%
11	31.764	-55.718	18.447	-31.764	55.718	-18.447	0.000%
12	18.316	-74.291	31.991	-18.316	74.291	-31.991	0.000%
13	18.316	-55.718	31.991	-18.316	55.718	-31.991	0.000%
14	-0.040	-74.291	36.963	0.040	74.291	-36.963	0.000%
15	-0.040	-55.718	36.963	0.040	55.718	-36.963	0.000%
16	-18.384	-74.291	32.031	18.384	74.291	-32.031	0.000%
17	-18.384	-55.718	32.031	18.384	55.718	-32.031	0.000%
18	-31.803	-74.291	18.516	31.803	74.291	-18.516	0.000%
19	-31.803	-55.718	18.516	31.803	55.718	-18.516	0.000%
20	-36.700	-74.291	0.040	36.700	74.291	-0.040	0.000%
21	-36.700	-55.718	0.040	36.700	55.718	-0.040	0.000%
22	-31.764	-74.291	-18.447	31.764	74.291	18.447	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
23	-31.764	-55.718	-18.447	31.764	55.718	18.447	0.000%
24	-18.316	-74.291	-31.991	18.316	74.291	31.991	0.000%
25	-18.316	-55.718	-31.991	18.316	55.718	31.991	0.000%
26	0.000	-132.872	0.000	0.000	132.872	0.000	0.000%
27	-0.002	-132.872	-10.434	0.002	132.872	10.434	0.000%
28	5.179	-132.872	-9.035	-5.179	132.872	9.035	0.000%
29	8.973	-132.872	-5.215	-8.973	132.872	5.215	0.000%
30	10.363	-132.872	0.002	-10.363	132.872	-0.002	0.000%
31	8.975	-132.872	5.219	-8.975	132.872	-5.219	0.000%
32	5.183	-132.872	9.037	-5.183	132.872	-9.037	0.000%
33	0.002	-132.872	10.434	-0.002	132.872	-10.434	0.000%
34	-5.179	-132.872	9.035	5.179	132.872	-9.035	0.000%
35	-8.973	-132.872	5.215	8.973	132.872	-5.215	0.000%
36	-10.363	-132.872	-0.002	10.363	132.872	0.002	0.000%
37	-8.975	-132.872	-5.219	8.975	132.872	5.219	0.000%
38	-5.183	-132.872	-9.037	5.183	132.872	9.037	0.000%
39	0.008	-61.909	-7.295	-0.008	61.909	7.295	0.000%
40	3.628	-61.909	-6.321	-3.628	61.909	6.321	0.000%
41	6.276	-61.909	-3.654	-6.276	61.909	3.654	0.000%
42	7.243	-61.909	-0.008	-7.243	61.909	0.008	0.000%
43	6.269	-61.909	3.641	-6.269	61.909	-3.641	0.000%
44	3.615	-61.909	6.313	-3.615	61.909	-6.313	0.000%
45	-0.008	-61.909	7.295	0.008	61.909	-7.295	0.000%
46	-3.628	-61.909	6.321	3.628	61.909	-6.321	0.000%
47	-6.276	-61.909	3.654	6.276	61.909	-3.654	0.000%
48	-7.243	-61.909	0.008	7.243	61.909	-0.008	0.000%
49	-6.269	-61.909	-3.641	6.269	61.909	3.641	0.000%
50	-3.615	-61.909	-6.313	3.615	61.909	6.313	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00003332
3	Yes	4	0.00000001	0.00002002
4	Yes	4	0.00000001	0.00049168
5	Yes	4	0.00000001	0.00032483
6	Yes	4	0.00000001	0.00056098
7	Yes	4	0.00000001	0.00037234
8	Yes	4	0.00000001	0.00008438
9	Yes	4	0.00000001	0.00005599
10	Yes	4	0.00000001	0.00048689
11	Yes	4	0.00000001	0.00032229
12	Yes	4	0.00000001	0.00052240
13	Yes	4	0.00000001	0.00034625
14	Yes	4	0.00000001	0.00003601
15	Yes	4	0.00000001	0.00002202
16	Yes	4	0.00000001	0.00055278
17	Yes	4	0.00000001	0.00036651
18	Yes	4	0.00000001	0.00048332
19	Yes	4	0.00000001	0.00031942
20	Yes	4	0.00000001	0.00008110
21	Yes	4	0.00000001	0.00005373
22	Yes	4	0.00000001	0.00054368
23	Yes	4	0.00000001	0.00036041
24	Yes	4	0.00000001	0.00050830
25	Yes	4	0.00000001	0.00033602
26	Yes	4	0.00000001	0.00001242
27	Yes	4	0.00000001	0.00058298
28	Yes	4	0.00000001	0.00060148
29	Yes	4	0.00000001	0.00059539
30	Yes	4	0.00000001	0.00056033
31	Yes	4	0.00000001	0.00058334
32	Yes	4	0.00000001	0.00058720

33	Yes	4	0.00000001	0.00056786
34	Yes	4	0.00000001	0.00060102
35	Yes	4	0.00000001	0.00060193
36	Yes	4	0.00000001	0.00057982
37	Yes	4	0.00000001	0.00061301
38	Yes	4	0.00000001	0.00061424
39	Yes	4	0.00000001	0.00000393
40	Yes	4	0.00000001	0.00000631
41	Yes	4	0.00000001	0.00000808
42	Yes	4	0.00000001	0.00000485
43	Yes	4	0.00000001	0.00000623
44	Yes	4	0.00000001	0.00000676
45	Yes	4	0.00000001	0.00000391
46	Yes	4	0.00000001	0.00000768
47	Yes	4	0.00000001	0.00000641
48	Yes	4	0.00000001	0.00006009
49	Yes	4	0.00000001	0.00000754
50	Yes	4	0.00000001	0.00000647

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	152 - 137.42	6.242	39	0.334	0.001
L2	142.59 - 91.09	5.585	39	0.332	0.001
L3	97.92 - 44.79	2.719	39	0.261	0.000
L4	53.21 - 0	0.806	39	0.137	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.000	DS9A09F36D-N	39	6.242	0.334	0.001	215096
150.000	ETCR-654L12H6 w/ Mount Pipe	39	6.102	0.334	0.001	215096
133.000	RR90-17-02DP w/ Mount Pipe	39	4.925	0.324	0.001	62691
124.000	LPA-171080-12CF-EDIN-2 w/ Mount Pipe	39	4.321	0.313	0.000	44034
116.000	7770.00 w/ Mount Pipe	39	3.803	0.300	0.000	34823
107.000	742 213	39	3.246	0.282	0.000	28189
74.000	KS24019-L112A	39	1.541	0.196	0.000	19133

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	152 - 137.42	31.668	2	1.694	0.004
L2	142.59 - 91.09	28.338	2	1.681	0.003
L3	97.92 - 44.79	13.806	2	1.323	0.002
L4	53.21 - 0	4.092	2	0.695	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.000	DS9A09F36D-N	2	31.668	1.694	0.004	43345
150.000	ETCR-654L12H6 w/ Mount Pipe	2	30.958	1.692	0.004	43345
133.000	RR90-17-02DP w/ Mount Pipe	2	24.991	1.645	0.003	12501
124.000	LPA-171080-12CF-EDIN-2 w/ Mount Pipe	2	21.929	1.588	0.002	8747
116.000	7770.00 w/ Mount Pipe	2	19.301	1.521	0.002	6904
107.000	742 213	2	16.477	1.429	0.002	5581
74.000	KS24019-L112A	2	7.825	0.996	0.001	3774

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	152 - 137.42 (1)	TP37.31x33.03x0.313	14.580	0.000	0.0	35.192	-4.648	2526.220	0.002
L2	137.42 - 91.09 (2)	TP50.15x35.167x0.375	51.500	0.000	0.0	56.880	-26.500	3935.810	0.007
L3	91.09 - 44.79 (3)	TP62.86x47.413x0.438	53.130	0.000	0.0	83.282	-44.639	5613.010	0.008
L4	44.79 - 0 (4)	TP75x59.537x0.5	53.210	0.000	0.0	118.23 1	-74.281	7706.060	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	152 - 137.42 (1)	TP37.31x33.03x0.313	52.853	1841.350	0.029	0.000	1841.350	0.000
L2	137.42 - 91.09 (2)	TP50.15x35.167x0.375	831.602	3867.683	0.215	0.000	3867.683	0.000
L3	91.09 - 44.79 (3)	TP62.86x47.413x0.438	2112.400	6926.250	0.305	0.000	6926.250	0.000
L4	44.79 - 0 (4)	TP75x59.537x0.5	3929.900	11818.916	0.333	0.000	11818.916	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	152 - 137.42 (1)	TP37.31x33.03x0.313	6.266	1255.380	0.005	0.000	3687.208	0.000
L2	137.42 - 91.09 (2)	TP50.15x35.167x0.375	26.009	1967.910	0.013	0.635	7744.825	0.000
L3	91.09 - 44.79 (3)	TP62.86x47.413x0.438	31.249	2806.510	0.011	0.870	13869.416	0.000
L4	44.79 - 0 (4)	TP75x59.537x0.5	36.984	3853.030	0.010	0.870	23666.667	0.000

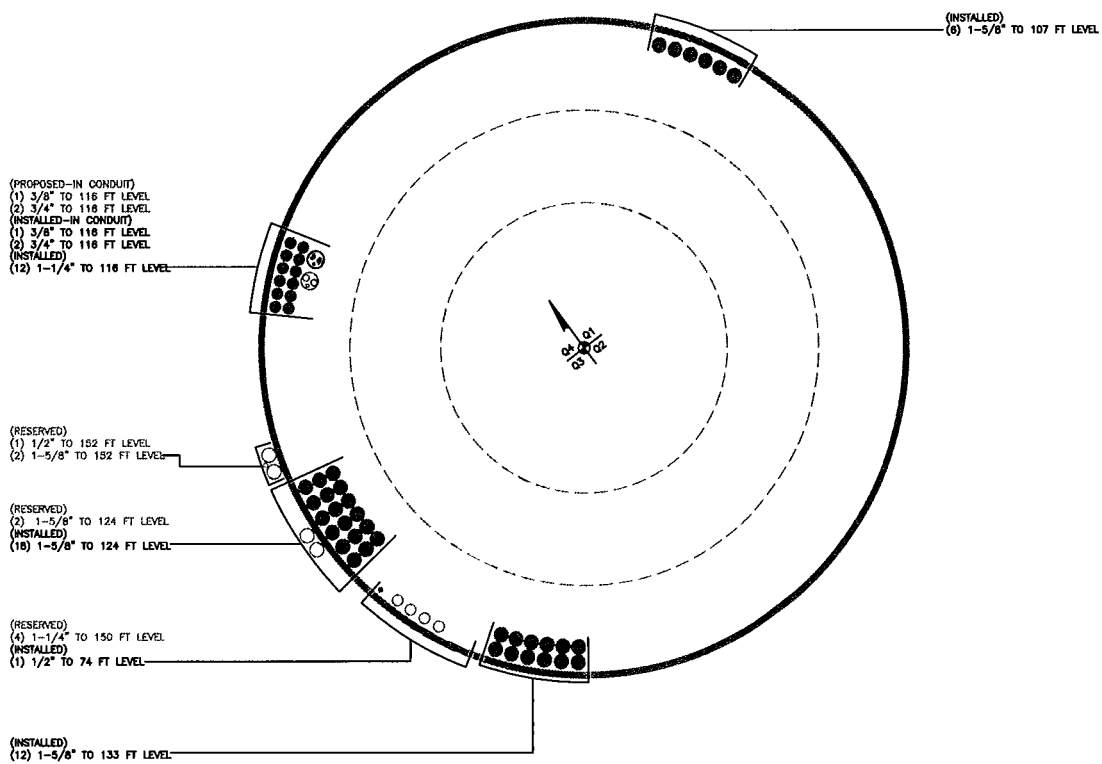
Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	152 - 137.42 (1)	0.002	0.029	0.000	0.005	0.000	0.031	1.000	4.8.2
L2	137.42 - 91.09 (2)	0.007	0.215	0.000	0.013	0.000	0.222	1.000	4.8.2
L3	91.09 - 44.79 (3)	0.008	0.305	0.000	0.011	0.000	0.313	1.000	4.8.2
L4	44.79 - 0 (4)	0.010	0.333	0.000	0.010	0.000	0.342	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	152 - 137.42	Pole	TP37.31x33.03x0.313	1	-4.648	2526.220	3.1	Pass
L2	137.42 - 91.09	Pole	TP50.15x35.167x0.375	2	-26.500	3935.810	22.2	Pass
L3	91.09 - 44.79	Pole	TP62.86x47.413x0.438	3	-44.639	5613.010	31.3	Pass
L4	44.79 - 0	Pole	TP75x59.537x0.5	4	-74.281	7706.060	34.2	Pass
							Summary	
							Pole (L4)	34.2
							RATING =	34.2
								Pass

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876365 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

TIA Rev G

Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:	876385
Site Name:	N. COVENTRY / WALLBEOFF
App #:	418267 Rev. 1
Pole Manufacturer:	Other

Anchor Rod Data

Qty:	28	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	85	in

Plate Data

Diam:	91	in
Thick:	2.25	in
Grade:	60	ksi
Single-Rod B-eff:	8.50	in

Stiffener Data (Welding at both sides)

Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	75	in
Thick:	0.5	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Reactions

Mu:	3930	ft-kips
Axial, Pu:	74	kips
Shear, Vu:	37	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria: AISC LRFD <--Only Applicable to Unstiffened Cases

Anchor Rod Results

Max Rod ($C_u + V_u/\eta$): 84.6 Kips
 Allowable Axial, $\phi^*F_u \cdot A_{net}$: 260.0 Kips
 Anchor Rod Stress Ratio: 32.5% Pass

Rigid
AISC LRFD
ϕ^*T_n

Base Plate Results

Base Plate Stress: 23.2 ksi
 Allowable Plate Stress: 54.0 ksi
 Base Plate Stress Ratio: 43.0% Pass

Flexural Check

Rigid
AISC LRFD
ϕ^*F_y
Y.L. Length: 40.00

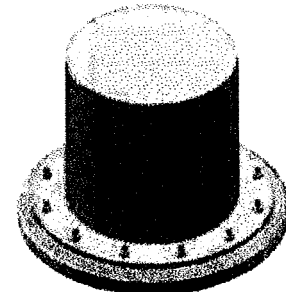
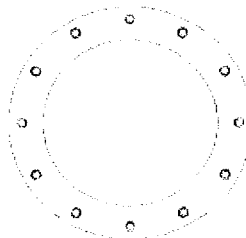
n/a

Stiffener Results

Horizontal Weld : n/a
 Vertical Weld: n/a
 Plate Flex+Shear, $f_b/F_b + (f_v/F_v)^2$: n/a
 Plate Tension+Shear, $f_t/F_t + (f_v/F_v)^2$: n/a
 Plate Comp. (AISC Bracket): n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Pier and Pad Foundation



BU #: 876385
 Site Name: N. COVENTRY / W
 App. Number: 418267 Rev. 1

TIA-222 Revision: G
 Tower Type: Monopole

Block Foundation?: ☐

Superstructure Analysis Reactions		
Compression, P_{comp} :	74	kips
Base Shear, V_{u_comp} :	37	kips
Moment, M_u :	3930	ft-kips
Tower Height, H :	152	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, d_{pier} :	9.0	ft
Ext. Above Grade, E :	1.00	ft
Pier Rebar Size, S_c :	8	
Pier Rebar Quantity, mc :	62	
Pier Tie/Spiral Size, S_t :	4	
Pier Tie/Spiral Quantity, mt :	20	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	8.0	ft
Pad Width, W :	29.0	ft
Pad Thickness, T :	3.0	ft
Pad Rebar Size, S_p :	9	
Pad Rebar Quantity, mp :	25	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60000	psi
Concrete Compressive Strength, F'_c :	4000	psi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	130	pcf
Ultimate Gross Bearing, Q_{ult} :	16.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	40	degrees
SPT Blow Count, N_{blows} :	98	
Base Friction, μ :	0.55	
Neglected Depth, N :	4.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	None	ft

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	637.01	37.00	5.8%	Pass
Bearing Pressure (ksf)	12.00	2.13	17.7%	Pass
Overturning (kip*ft)	14037.39	4272.25	30.4%	Pass
Pier Flexure (Comp.) (kip*ft)	10504.59	4152.00	39.5%	Pass
Pier Compression (kip)	51554.88	161.48	0.3%	Pass
Pad Flexure (kip*ft)	3450.84	1343.13	38.9%	Pass
Pad Shear - 1-way (kips)	1033.61	192.91	18.7%	Pass
Pad Shear - 2-way (ksi)	0.19	0.03	17.2%	Pass

Soil Rating:	30.4%
Structural Rating:	39.5%

<--Toggle between Gross and Net

CCISeismic - Design Category

Per 2012/2015 IBC

Site BU: 876385
Work Order: 1497620
Application: 418267 Rev. 1



	Degrees	Minutes	Seconds	
Site Latitude =	41	47	56.20	41.7989 degrees
Site Longitude =	-72	19	55.88	-72.3322 degrees
Ground Supported Structure =	Yes			(Table 2-1)
Structure Class =	II			
Site Class =	D - Stiff Soil			(Table 2-11)

Spectral response acceleration short periods, S_S =	0.176	USGS Seismic Tool
Spectral response acceleration 1 s period, S_1 =	0.063	

Importance Factor, I =	1.0	(Table 2-3)
Acceleration-based site coefficient, F_a =	1.6	(Table 2-12)
Velocity-based site coefficient, F_v =	2.4	(Table 2-13)

Design spectral response acceleration short period, S_{DS} =	0.188	(2.7.6)
Design spectral response acceleration 1 s period, S_{D1} =	0.101	(2.7.6)

Seismic Design Category - Short Period Response =	B	ASCE 7-05 Table 11.6-1
Seismic Design Category - 1s Period Response =	B	ASCE 7-05 Table 11.6-2

Worst Case Seismic Design Category =	B	ASCE 7-05 Tables 11.6-1 and 6-
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AT&T SITE NUMBER:
AT&T SITE NAME:
AT&T FA CODE:
AT&T PACE NUMBER:
AT&T PTN NUMBER:

CT1106
COVENTRY - RILEY MOUNTAIN
10035434

CROWN CASTLE BU #:
SITE ADDRESS:
COUNTY:
TOWER HEIGHT:
SITE TYPE:

876385
REILLY MTN. RD.
COVENTRY, CT 6238
TOLLAND
152'-0"
MONOPOLE

PROJECT: AT&T FIRSTNET/LTE 2C/ LTE 3C/ LTE 4C

SITE INFORMATION

CROWN CASTLE SITE NAME: N. COVENTRY / WALLBEOFF
SITE ADDRESS: REILLY MTN. RD.
COVENTRY, CT 6238
COUNTY: TOLLAND
MAP/PARCEL #: 2470-795
AREA OF CONSTRUCTION: EXISTING
LATITUDE: 41° 47' 56.21"
LONGITUDE: -72° 19' 55.88"
LAT/LONG TYPE: NAD83
GROUND ELEVATION: 707 FT.
CURRENT ZONING: CONNECTICUT SITING COUNCIL
JURISDICTION: TOWN OF COVENTRY
OCCUPANCY CLASSIFICATION: U
TYPE OF CONSTRUCTION: VB
A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER: J & C WALLBEOFF FAMILY TRUST
4 KNOTTY PINE LANE, C/O AMI BETH DEGRAY
DEERFIELD, VA 24432
TOWER OWNER: GLOBAL SIGNAL ACQUISITIONS II LLC
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
CARRIER/APPLICANT: AT&T MOBILITY
ONE AT&T WAY
BEDMINSTER, NJ 07921
CROWN CASTLE APPLICATION ID: 418267
ELECTRIC PROVIDER: NORTHEAST UTILITIES
(800) 286-2000
TELCO PROVIDER: AT&T
(866) 620-6900

PROJECT TEAM

CROWN CASTLE A&E FIRM: CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
CROWN.AE.APPROVAL@CROWNCastle.COM
CROWN CASTLE CONTACTS: 3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065
PAUL PEDICONE - PROJECT MANAGER
(518) 373-3530
JASON D'AMICO - CONSTRUCTION MANAGER
(860) 209-0104
DASHANNA HANLON - A&E PROJECT MANAGER
DASHANNA.HANLON@CROWNCastle.COM
(781) 970-0067

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	OVERALL SITE PLAN
C-2	TOWER ELEVATION & ANTENNA CONFIGURATIONS
C-3	EQUIPMENT DETAILS AND SCHEDULE
C-4	EQUIPMENT DETAILS
C-5	PLUMBING DIAGRAM
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

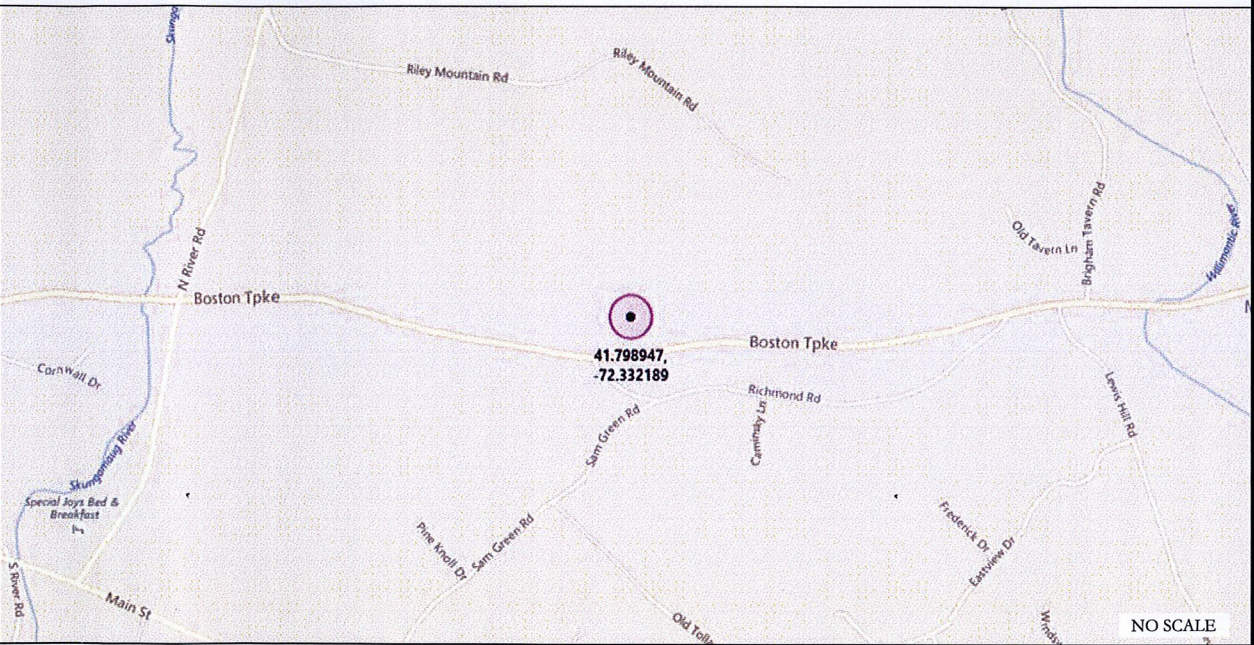
ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO PROPOSE AN ANTENNA MODIFICATION ON AN EXISTING WIRELESS SITE.

- TOWER SCOPE OF WORK
- REMOVE (3) POWERWAVE - 7770.00 ANTENNAS
 - REMOVE (2) KMW COMMUNICATIONS - AM-X-CD-16-65-00T-RET ANTENNAS
 - REMOVE (1) POWERWAVE - P65-17-XLH-RR ANTENNA
 - REMOVE (6) POWERWAVE - LCP21903 DIPLEXERS
 - RELOCATE (3) ERICSSON - RRUS 11 RRUS TO BACK TO BACK MOUNT
 - INSTALL (2) KATHREIN - 800 10965 ANTENNAS
 - INSTALL (1) KATHREIN - 800 10966 ANTENNA
 - INSTALL (2) CCI ANTENNAS - HPA-65C-BUU-H6 ANTENNAS
 - INSTALL (1) CCI ANTENNAS - HPA-65C-BUU-H8 ANTENNA
 - INSTALL (2) ROSENBERGER LEONI - WR-VG86ST-BRD (3/4") DC CABLES
 - INSTALL (1) ROSENBERGER LEONI - FB-L98B-002-75000 (3/8") FIBER CABLE
 - INSTALL (3) ERICSSON - RRUS 4478 B14 RRUS
 - INSTALL (3) ERICSSON - RRUS 32 RRUS
 - INSTALL (3) ERICSSON - RRUS 32 B2 RRUS
 - INSTALL (1) RAYCAP - DC6-48-06-18-8F SQUID
 - INSTALL (6) BACK TO BACK MOUNT KITS
 - INSTALL (1) 2-1/2" SCH 40 x 6'-0" LONG MOUNT PIPE ON PLATFORM ARM WITH ASSOCIATED HARDWARE

LOCATION MAP



APPLICABLE CODES/REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2016 CT STATE BUILDING CODE/2012 IBC W/ CT AMENDMENTS
MECHANICAL	2016 CT STATE BUILDING CODE/2012 IMC W/ CT AMENDMENTS
ELECTRICAL	2016 CT STATE BUILDING CODE/2014 NEC W/ CT AMENDMENTS

REFERENCE DOCUMENTS:
STRUCTURAL ANALYSIS: CROWN CASTLE
DATED DECEMBER 13, 2017

MOUNT ANALYSIS: BY OTHERS

DESIGN PACKAGE BASED ON THE APPLICATION
ID: 418267
REVISION: 1

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER



CALL CONNECTICUT ONE CALL
(800) 922-4455
CALL 3 WORKING DAYS
BEFORE YOU DIG!



ONE AT&T WAY
BEDMINSTER, NJ 07921



95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767
(844) 748-8878



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

AT&T FA CODE: 10035434
AT&T SITE NAME:
COVENTRY - RILEY MOUNTAIN

BU #: 876385
CROWN CASTLE SITE NAME:
N. COVENTRY / WALLBEOFF

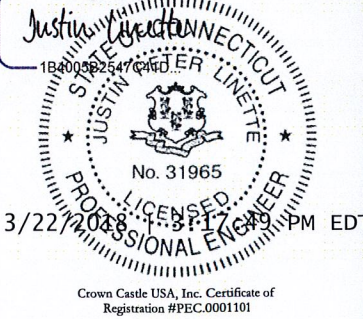
REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL

DocuSigned by:



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:

T-1

REVISION:

0

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
3. ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE TOWER SITE" AND LATEST VERSION OF TIA 1019 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
4. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
5. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
13. NOTICE TO PROCEED- NO WORK TO COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.
14. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN STANDARD CED-STD-10253 INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH THE ANSI/TIA-322 (LATEST EDITION).

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4") CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
4. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER.....2 IN.
#5 AND SMALLER & WWF.....1 1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALLS.....3/4 IN.
BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES:

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90. GRADE N. TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F'm) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYP. "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR- GENERAL CONTRACTOR (CONSTRUCTION)
SUBCONTRACTOR- AT&T
CARRIER- CROWN CASTLE
TOWER OWNER- CROWN CASTLE
OEM- ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR AND CROWN CASTLE.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

AGL ABOVE GRADE LEVEL
BTS BASE TRANSCEIVER STATION
(E) EXISTING
MIN. MINIMUM
REF REFERENCE
RF RADIO FREQUENCY
T.B.D. TO BE DETERMINED
T.B.R. TO BE RESOLVED
TYP TYPICAL
REQ REQUIRED
EGR EQUIPMENT GROUND RING
AWG AMERICAN WIRE GAUGE
MGB MASTER GROUND BAR
EG EQUIPMENT GROUND
BCW BARE COPPER WIRE
SIAD SMART INTEGRATED ACCESS DEVICE
GEN GENERATOR
IGR INTERIOR GROUND RING (HALO)
RBS RADIO BASE STATION

SYMBOLS:

 SOLID GROUND BUS BAR
 SOLID NEUTRAL BUS BAR
 SUPPLEMENTAL GROUND CONDUCTOR
 2-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
 SINGLE-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
 CHEMICAL GROUND ROD
 TEST WELL
 DISCONNECT SWITCH
 METER
 EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
 MECHANICAL CONNECTION
 GROUNDING WIRE

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC. HILTI EPOXY ANCHORS ARE REQUIRED BY CROWN CASTLE.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).
22. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE. MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL; SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "AT&T".
29. ALL CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OFF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS. NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED, WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 TINNED SOLID IN 3/4" LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

NEC INSULATOR COLOR CODE		
DESCRIPTION	PHASE/CODE LETTER	WIRE COLOR
240/120 1Ø	LEG 1	BLACK
	LEG 2	RED
AC NEUTRAL	N	WHITE
GROUND (EGC)	G	GREEN
VDC POS	+	*RED-POLARITY MARK AT TERMINATION
VDC NEG	-	*BLACK-POLARITY MARK AT TERMINATION
240V OR 208V, 3Ø	PHASE A	BLACK
	PHASE B	RED(ORG. IF HI LEG)
	PHASE C	BLUE
480V, 3Ø	PHASE A	BROWN
	PHASE B	ORANGE
	PHASE C	YELLOW

* SEE NEC 210.5(C)(1) AND (2)



ONE AT&T WAY
BEDMINSTER, NJ 07921



95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767
(844) 748-8878



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

AT&T FA CODE: 10035434

AT&T SITE NAME:
COVENTRY - RILEY MOUNTAIN

BU #: 876385
CROWN CASTLE SITE NAME:
N. COVENTRY / WALLBEOFF

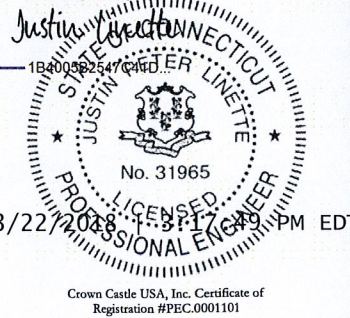
REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL

DocuSigned by:



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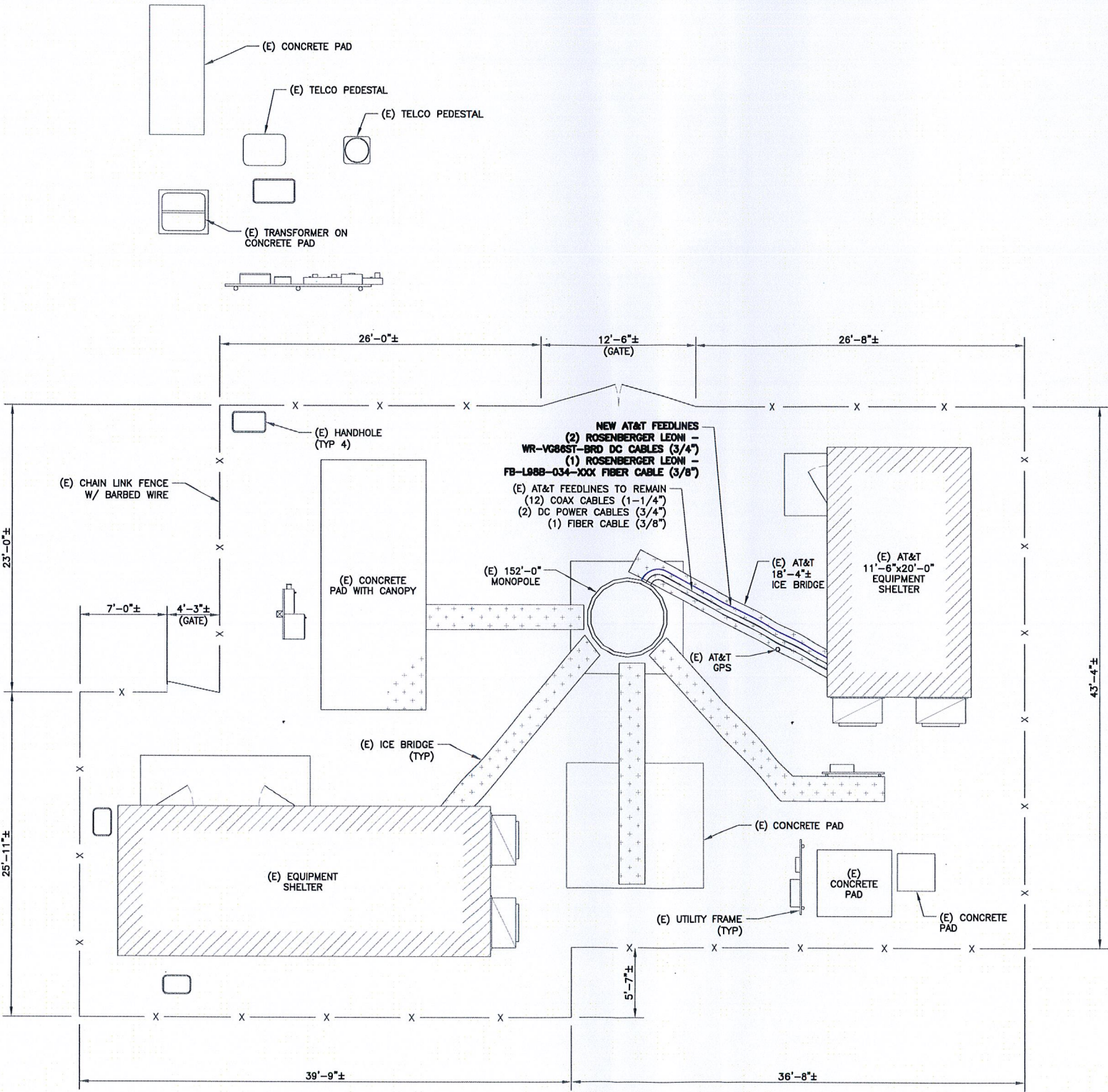
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TO ALTER THIS DOCUMENT.

SHEET NUMBER:

T-2

REVISION:

0



1 OVERALL SITE PLAN
SCALE: 3/16"=1'-0" (FULL SIZE)
3/32"=1'-0" (11x17)



AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

CENTERLINE
COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767
(844) 748-8878

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

AT&T FA CODE: 10035434
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N. COVENTRY / WALLBEOFF

REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0" MONOPOLE

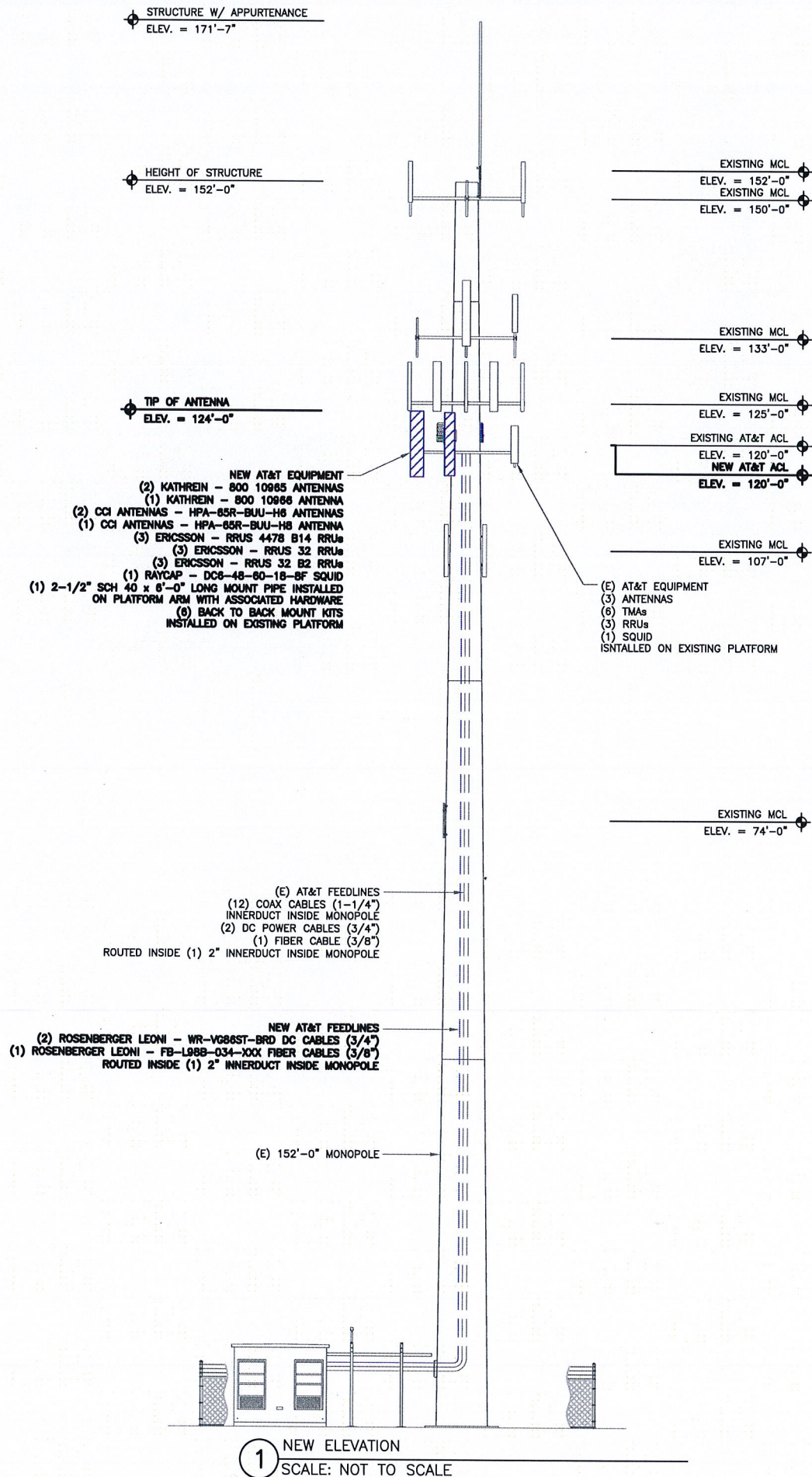
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B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL

DocuSigned by:
Justin Linette
184003823476410
JUSTIN LINETTE
No. 31965
3/22/2018 1:31:17 PM EDT
Crown Castle USA, Inc. Certificate of Registration #PEC.0001101

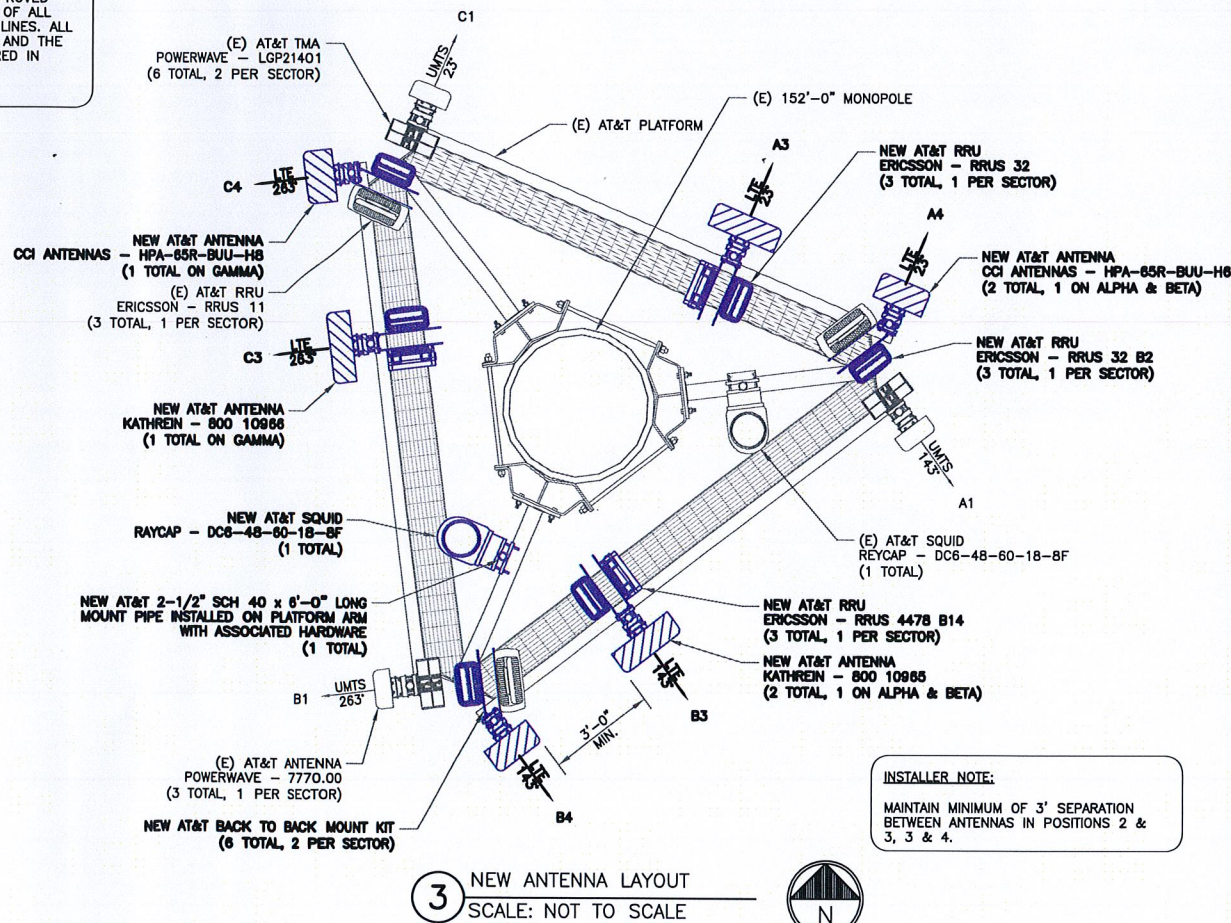
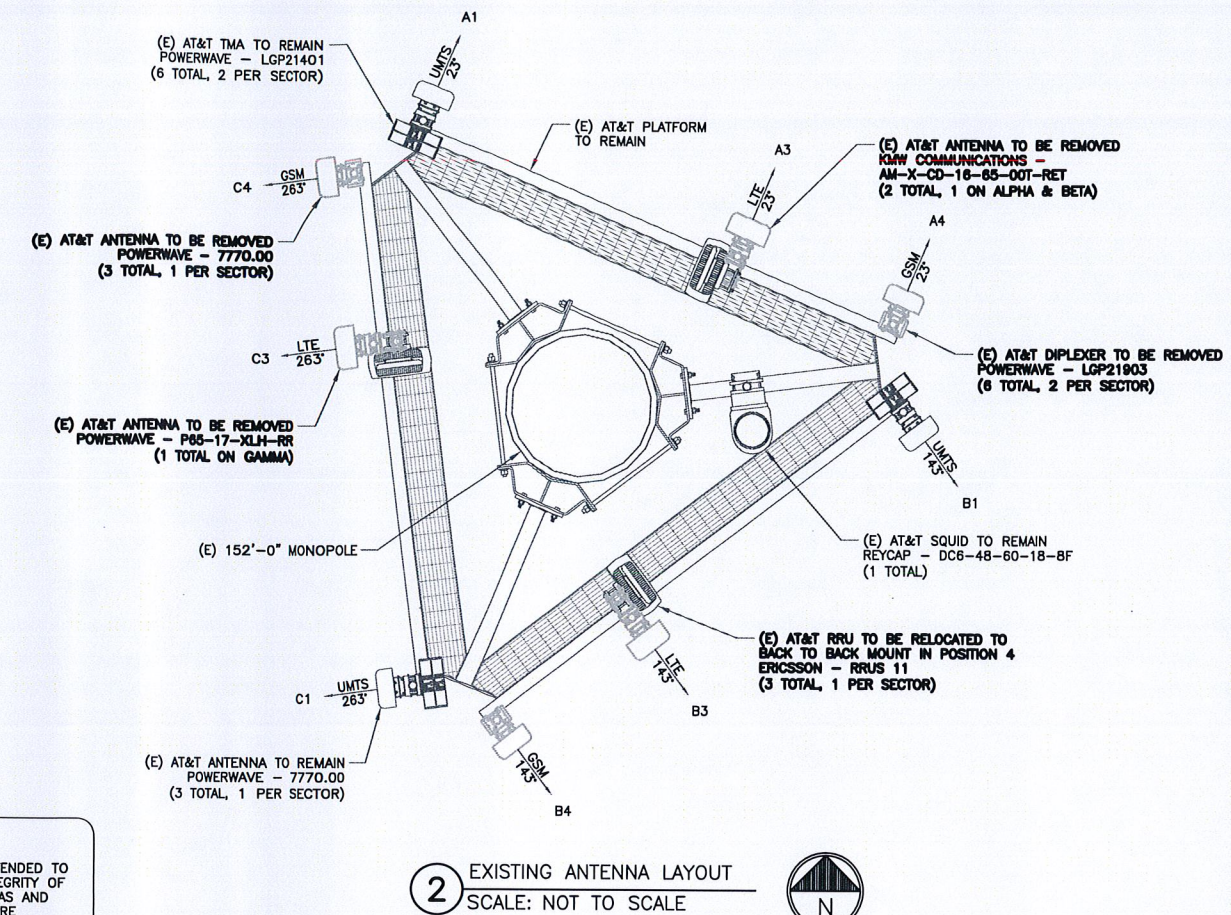
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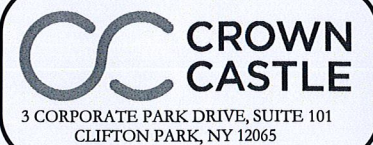
NOTE:

THESE DRAWINGS ARE NOT INTENDED TO REFLECT THE STRUCTURAL INTEGRITY OF THE TOWER. THE NEW ANTENNAS AND TRANSMISSION LINES SHOWN ARE REPRESENTATIVE IN NATURE AND DO NOT REFLECT THE ACTUAL CONFIGURATIONS REQUIRED. THE CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS OF THIS TOWER SITE FOR THE APPROVED LOCATION AND CONFIGURATION OF ALL ANTENNAS AND TRANSMISSION LINES. ALL ANTENNAS MUST BE MOUNTED AND THE TRANSMISSION LINES CONFIGURED IN STRICT ACCORDANCE WITH THE STRUCTURAL ANALYSIS.



INSTALLER NOTE:

MAINTAIN MINIMUM OF 3' SEPARATION
BETWEEN ANTENNAS IN POSITIONS 2 &
3, 3 & 4.



AT&T FA CODE: 10035434
AT&T SITE NAME:
COVENTRY - RILEY
MOUNTAIN

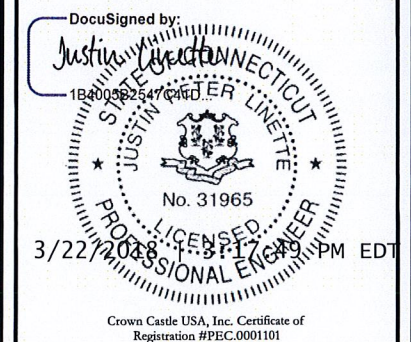
BU #: 876385
CROWN CASTLE SITE
NAME:
N. COVENTRY /
WALLBEOFF

REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:

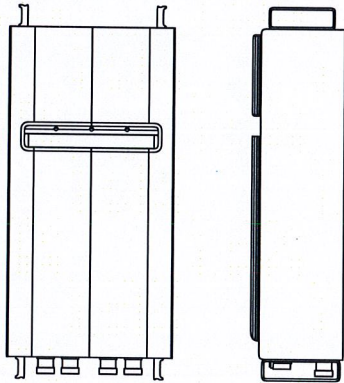
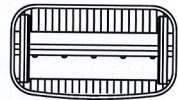
REV	DATE	DRWN	DESCRIPTION	DES./QA
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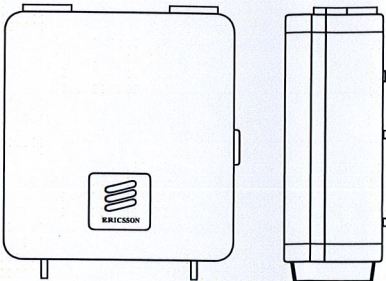
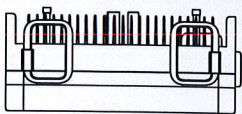
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REVISION: 0



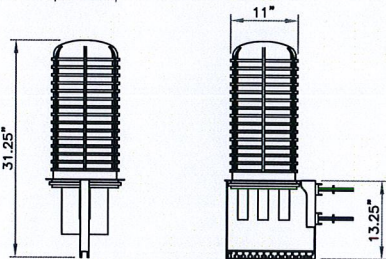
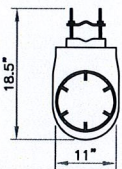
ERICSSON - RRUS 32
WEIGHT (WITHOUT MOUNTING HARDWARE): 52.9 LBS
SIZE (HxWxD): 27.20x12.05x7.00 IN.

1 ERICSSON - RRUS 32
SCALE: NOT TO SCALE



ERICSSON - RADIO 4478
WEIGHT: 60.0 LBS
SIZE (HxWxD): 15.0x13.0x8.0 IN.

2 ERICSSON - RADIO 4478
SCALE: NOT TO SCALE

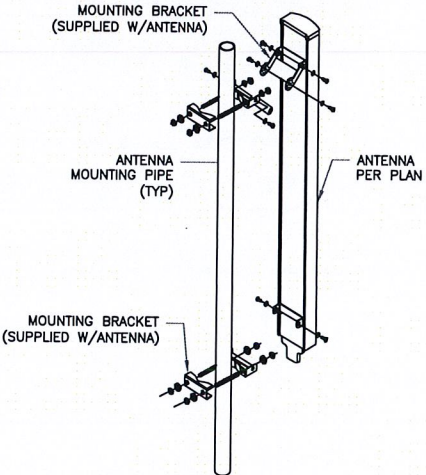


RAYCAP - DC6-48-60-0-8F
SIZE: 11x31.25 IN.
WEIGHT: 32.8 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 400 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)

CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING BOLTS DURING INSTALLATION

3 RAYCAP - DC6-48-60-0-8F
SCALE: NOT TO SCALE

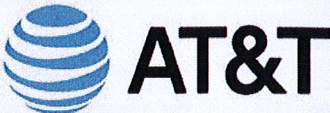
NOTE:
COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRU'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRU PACKAGES IN THE RAIN.



4 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

FINAL ANTENNA AND COAXIAL CABLE SCHEDULE										
POSITION	ANTENNA TYPE	AZIMUTH	ANTENNA QTY	ANTENNA RAD CENTER	TMA QTY/MODEL NO.	RRU QTY/MODEL NO.	COAX QTY/SIZE	SURGE PROTECTION	DC (WR-VGB6ST-BRD) FIBER CABLES (FB-L98B-002-75000)	TECH.
C1	POWERWAVE 7770.00 (E)	23	1	120'-0"	(2) LGP21401 (E)	-	(2) 1-5/8" (E)	-	-	UMTS
A3	KATHREIN 800 10965 (P)	23	1	120'-0"	-	(1) RRUS 4478 B14 (P) (1) RRUS 32 (P)	-	(1) RAYCAP DC6-48-60-18-8F (E)	(2) DC POWER 3/4" (E) (1) FIBER 3/8" (E)	LTE
A4	CCI ANTENNAS HPA-65R-BUJ-H6 (P)	23	1	120'-0"	-	(1) RRUS 11 (E) (1) RRUS 32 B2 (P)	-	(1) RAYCAP DC6-48-60-18-8F (P)	(2) DC POWER 3/4" (P) (1) FIBER 3/8" (P)	LTE
A1	POWERWAVE 7770.00 (E)	143°	1	120'-0"	(2) LGP21401 (E)	-	(2) 1-5/8" (E)	-	-	UMTS
B3	KATHREIN 800 10965 (P)	143°	1	120'-0"	-	(1) RRUS 4478 B14 (P) (1) RRUS 32 (P)	-	-	-	LTE
B4	CCI ANTENNAS HPA-65R-BUJ-H6 (P)	143°	1	120'-0"	-	(1) RRUS 11 (E) (1) RRUS 32 B2 (P)	-	-	-	LTE
B1	POWERWAVE 7770.00 (E)	263°	1	120'-0"	(2) LGP21401 (E)	-	(2) 1-5/8" (E)	-	-	UMTS
C3	KATHREIN 800 10966 (P)	263°	1	120'-0"	-	(1) RRUS 4478 B14 (P) (1) RRUS 32 (P)	-	-	-	LTE
C4	CCI ANTENNAS HPA-65R-BUJ-H6 (P)	263°	1	120'-0"	-	(1) RRUS 11 (E) (1) RRUS 32 B2 (P)	-	-	-	LTE
	TOTAL		9	N/A	(6) LGP21401 (E)	(3) RRUS 11 (E) (3) RRUS 32 (P) (3) RRUS 32 B2 (P) (3) RRUS 4478 B14 (P)	(6) 1-5/8" (E) (6) 1-5/8" (E, UNUSED)	(1) RAYCAP DC6-48-60-18-8F (E) (1) RAYCAP DC6-48-60-18-8F (P)	(2) DC POWER 3/4" (E) (1) FIBER 3/8" (E) (2) DC POWER 3/4" (P) (1) FIBER 3/8" (P)	

5 FINAL ANTENNA AND COAXIAL CABLE SCHEDULE
SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767
(844) 748-8878



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

AT&T FA CODE: 10035434
AT&T SITE NAME:
COVENTRY - RILEY MOUNTAIN

BU #: 876385
CROWN CASTLE SITE NAME:
N. COVENTRY / WALLBEOFF

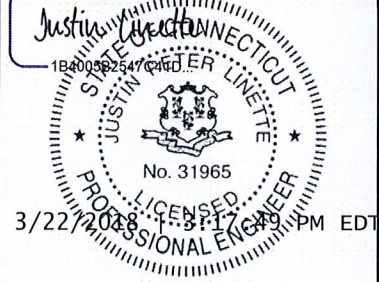
REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL

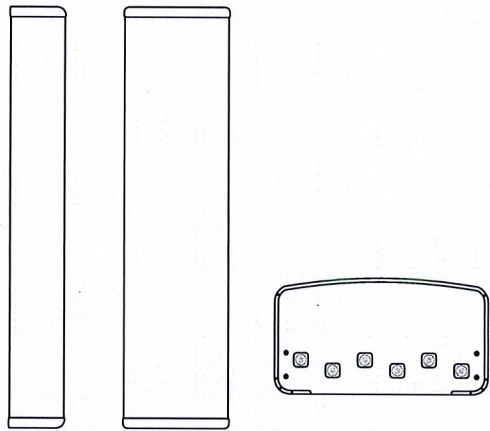
DocuSigned by:



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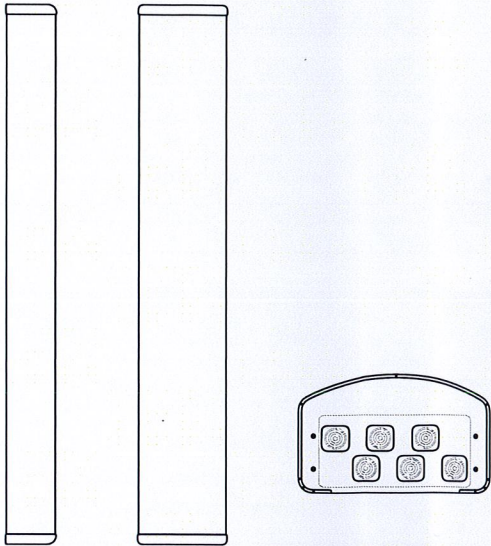
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SHEET NUMBER: C-3
REVISION: 0



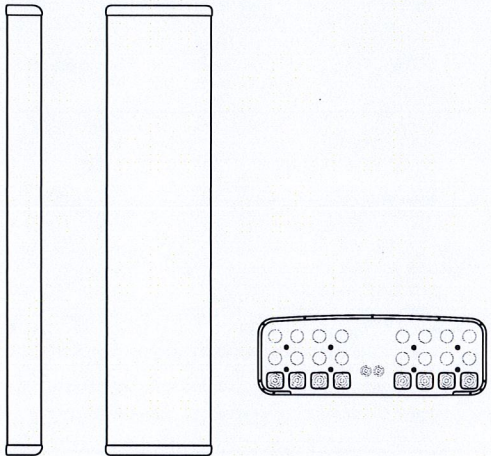
CCI ANTENNAS - HPA-65R-BUU-H6
WEIGHT (WITHOUT MOUNTING HARDWARE): 51.0 LBS
SIZE (HxWxD): 72.0x14.8x9.0 IN.
MOUNTING HARDWARE P/N: BSA-M03
RATED WIND VELOCITY: 150.0 MPH

1 CCI ANTENNAS - HPA-65R-BUU-H6
SCALE: NOT TO SCALE



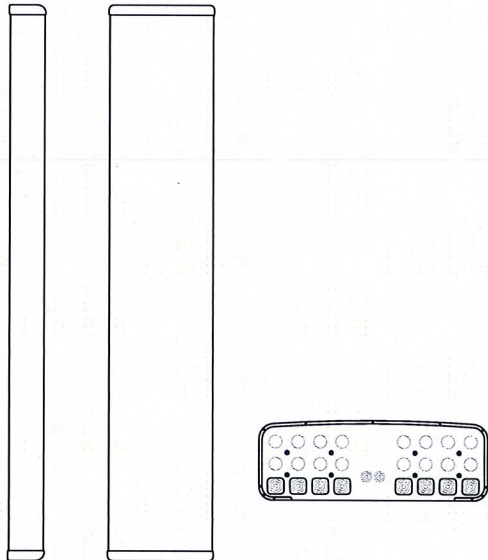
CCI ANTENNAS - HPA-65R-BUU-H8
WEIGHT (WITHOUT MOUNTING HARDWARE): 68.0 LBS
SIZE (HxWxD): 92.4x14.8x7.4 IN.
MOUNTING HARDWARE P/N: BSA-M03
RATED WIND VELOCITY: 150.0 MPH

2 CCI ANTENNAS - HPA-65R-BUU-H8
SCALE: NOT TO SCALE



KATHREIN - 800 10965
WEIGHT (WITHOUT MOUNTING HARDWARE): 97.6 LBS
SIZE (HxWxD): 78.7x20.0x6.9 IN.
RATED WIND VELOCITY: 125.0 MPH

3 KATHREIN - 800 10965
SCALE: NOT TO SCALE



KATHREIN - 800 10966
WEIGHT (WITHOUT MOUNTING HARDWARE): 114.6 LBS
SIZE (HxWxD): 96.0x20.0x6.9 IN.
RATED WIND VELOCITY: 125.0 MPH

4 KATHREIN - 800 10966
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

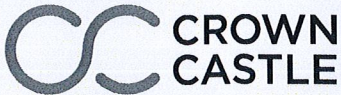
6 NOT USED
SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767
(844) 748-8878



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

AT&T FA CODE: 10035434
AT&T SITE NAME:
COVENTRY - RILEY
MOUNTAIN

BU #: 876385
CROWN CASTLE SITE
NAME:
N. COVENTRY /
WALLBEOFF

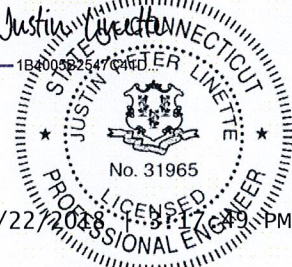
REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL

DocuSigned by:



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SHEET NUMBER:

C-4

REVISION:

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Diagram - SectorA

Diagram File Name - CT1106_A_B_C_PCS_WCS_700B14_Rev3.vsd

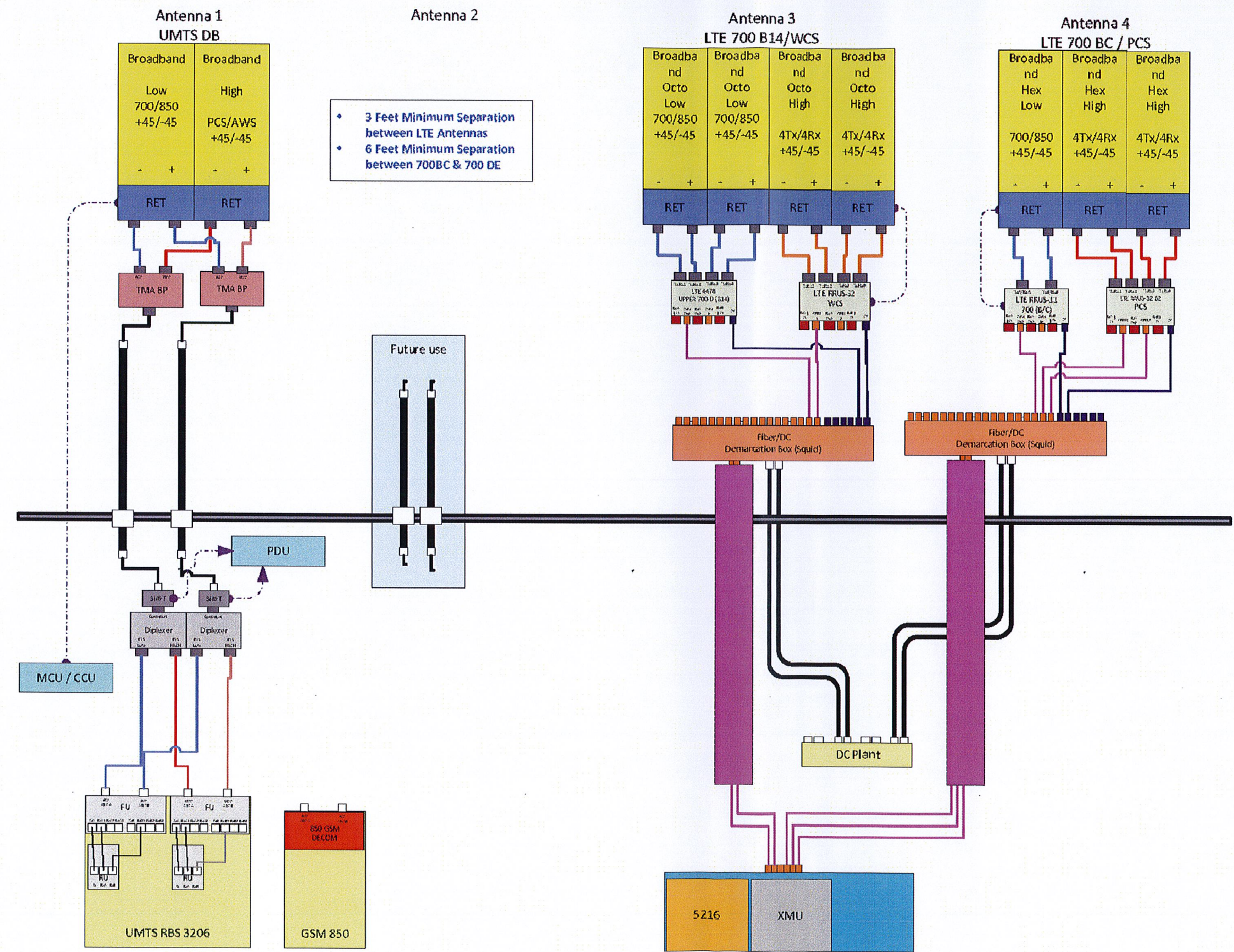
Atoll Site Name - CTV1106

Location Name - COVENTRY

Market - CONNECTICUT

Market Cluster - NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ Radio Port connections Field Notice (RF-HW-2016-265)



ONE AT&T WAY
BEDMINSTER, NJ 07921



95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767
(844) 748-8878



3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

AT&T FA CODE: 10035434
AT&T SITE NAME:
COVENTRY - RILEY
MOUNTAIN

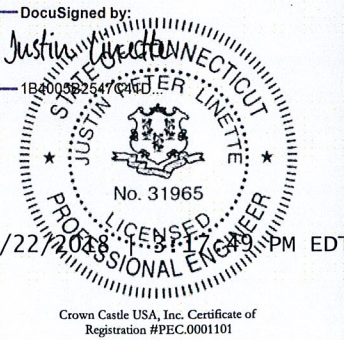
BU #: 876385
CROWN CASTLE SITE
NAME:
N. COVENTRY /
WALLBEOFF

REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES/QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL



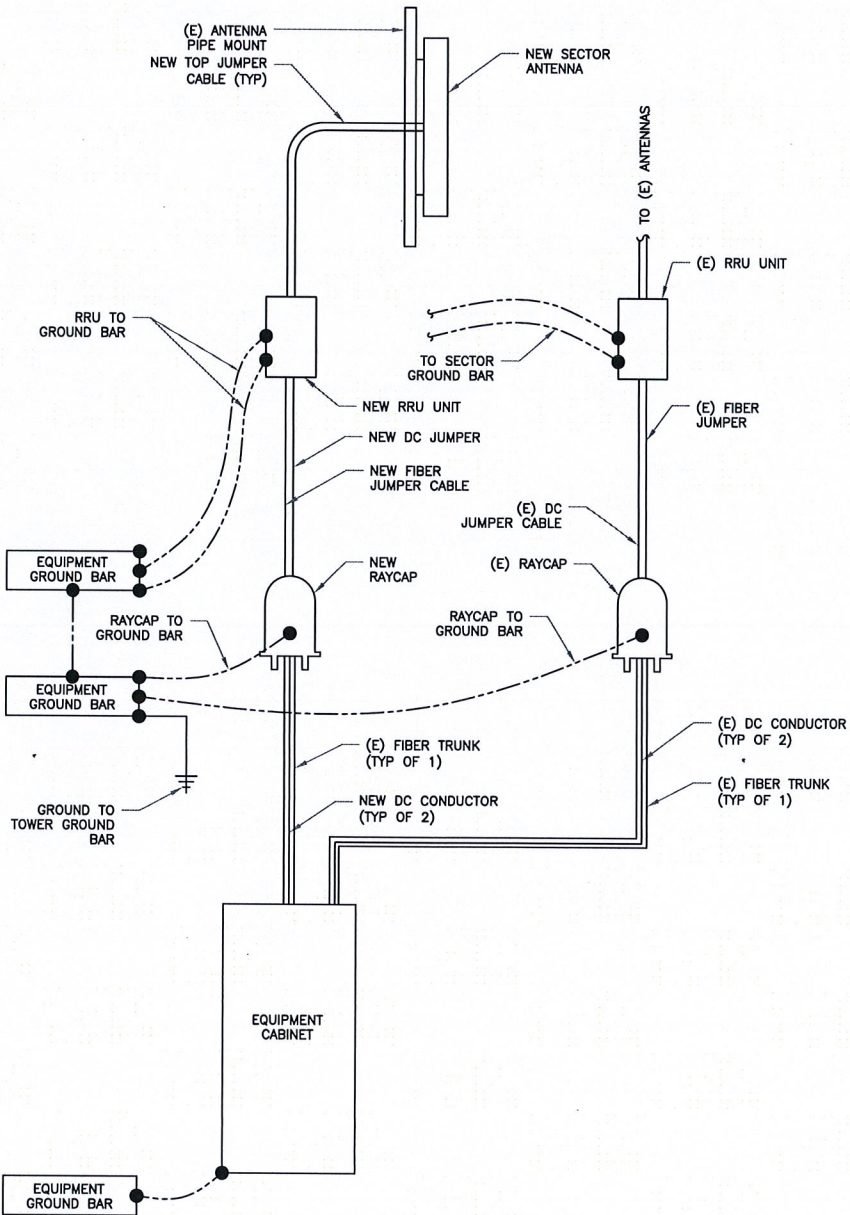
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SHEET NUMBER:

C-5

REVISION:

0



1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE



AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921



CENTERLINE
COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767
(844) 748-8878



**CROWN
CASTLE**
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

AT&T FA CODE: 10035434
AT&T SITE NAME:
**COVENTRY - RILEY
MOUNTAIN**

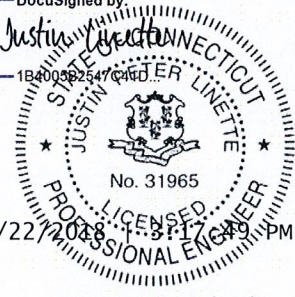
BU #: 876385
CROWN CASTLE SITE
NAME:
**N. COVENTRY /
WALLBEOFF**

REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL

DocuSigned by:
Justin Linette
184003823470460



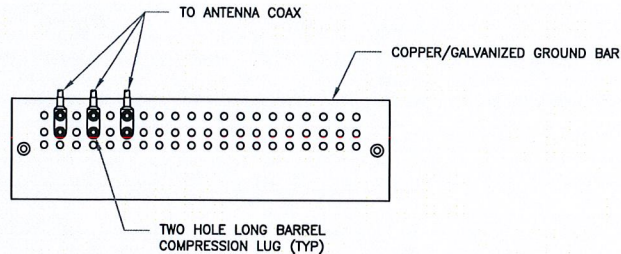
3/22/2018 1:37:17 PM EDT

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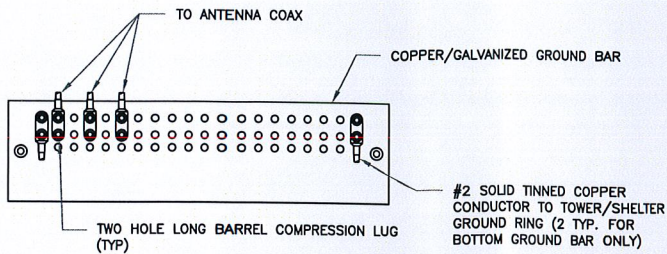
SHEET NUMBER:
G-1

REVISION:
0



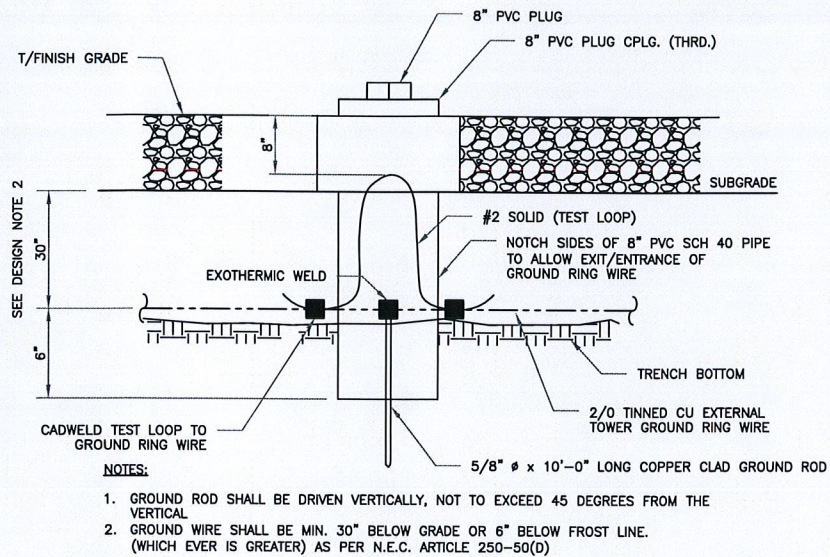
- NOTES:
1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
 2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



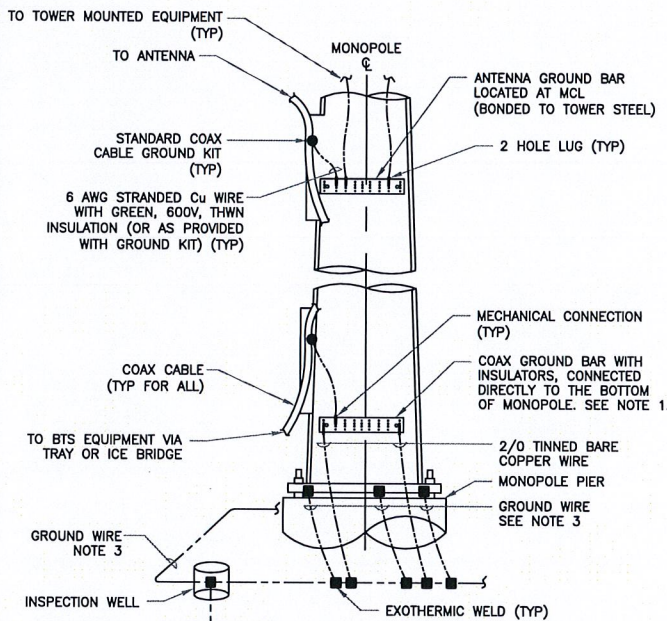
- NOTES:
1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
 3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



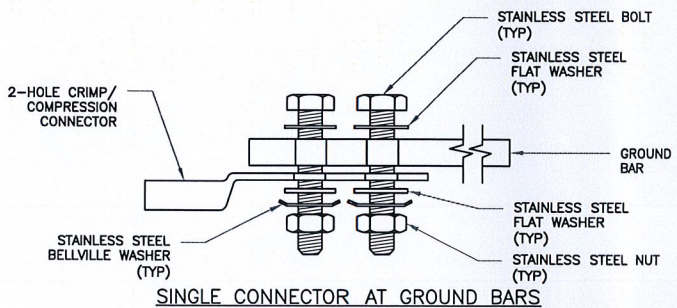
- NOTES:
1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE

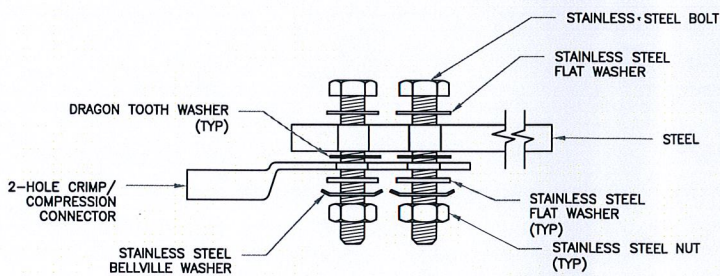


- NOTES:
1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
 2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
 3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

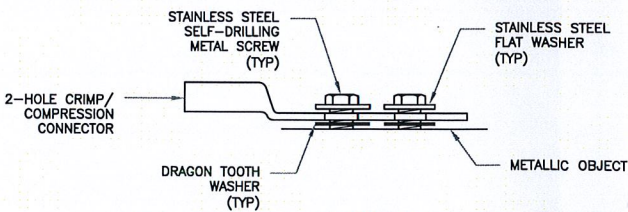
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

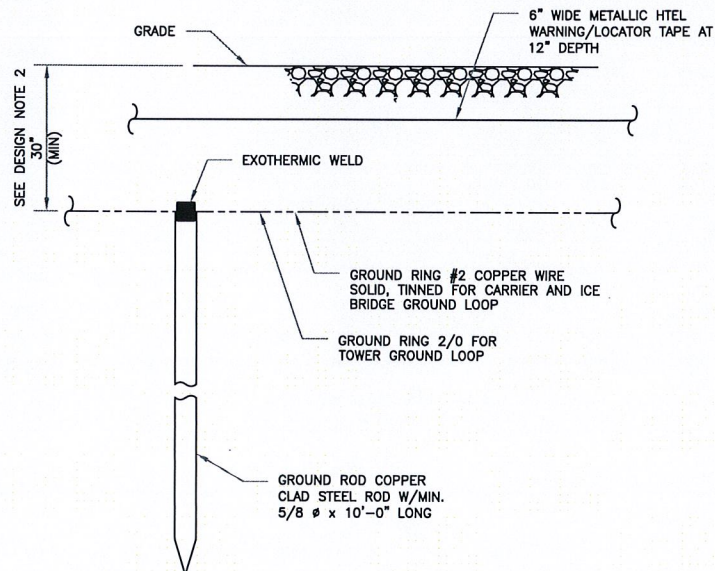


SINGLE CONNECTOR AT STEEL OBJECTS



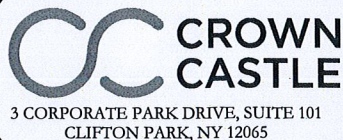
SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



- NOTES:
1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D).

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE



AT&T FA CODE: 10035434
AT&T SITE NAME:
COVENTRY - RILEY MOUNTAIN

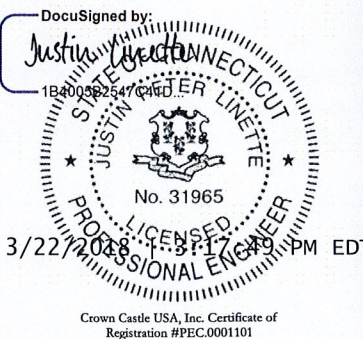
BU #: 876385
CROWN CASTLE SITE NAME:
N. COVENTRY / WALLBEOFF

REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

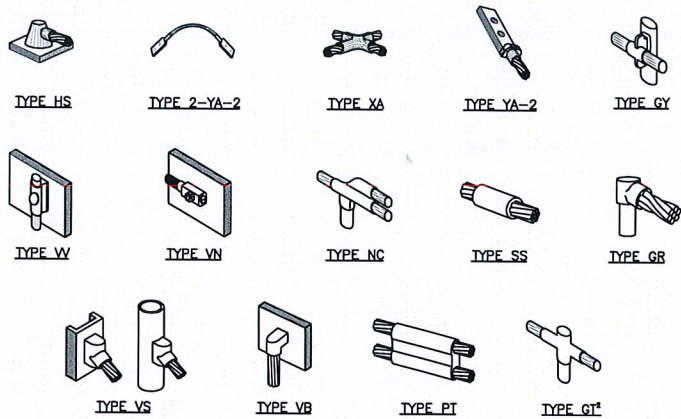
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL



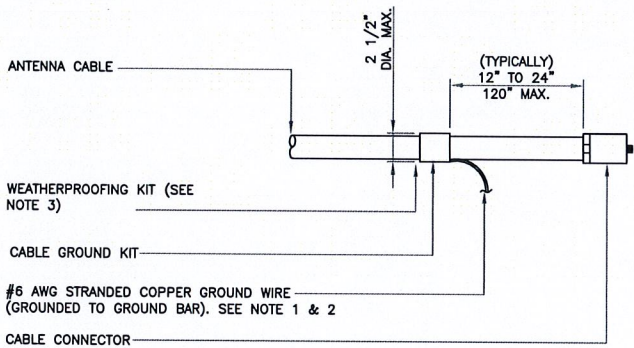
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SHEET NUMBER: **G-2** REVISION: **0**



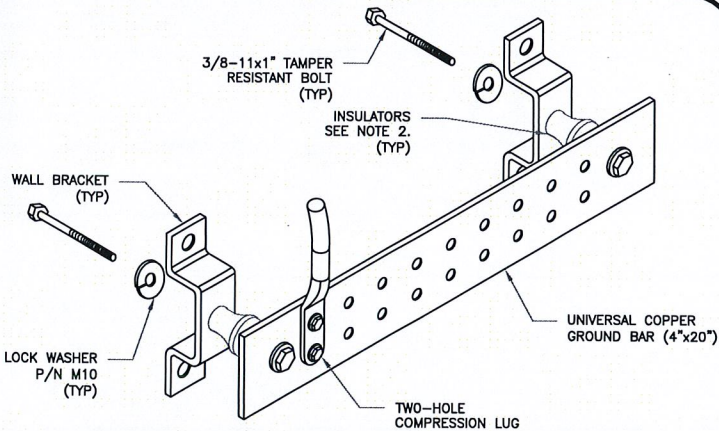
- NOTE:
1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



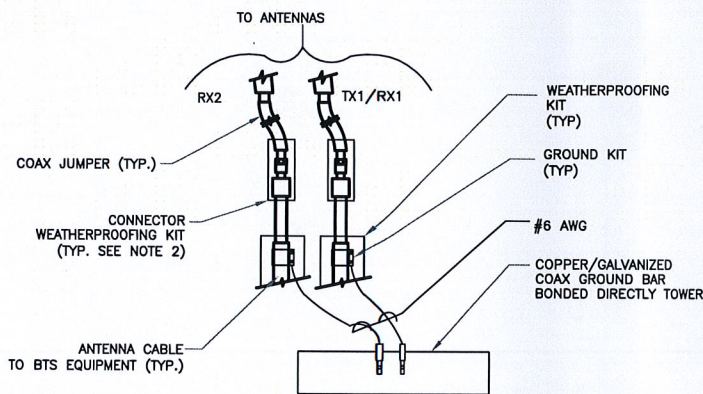
- NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



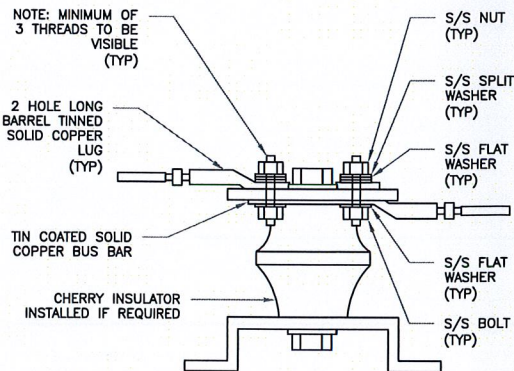
- NOTES:
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
 2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



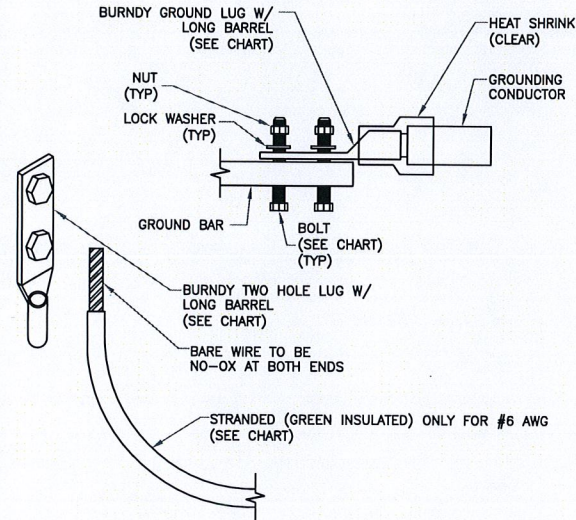
- NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



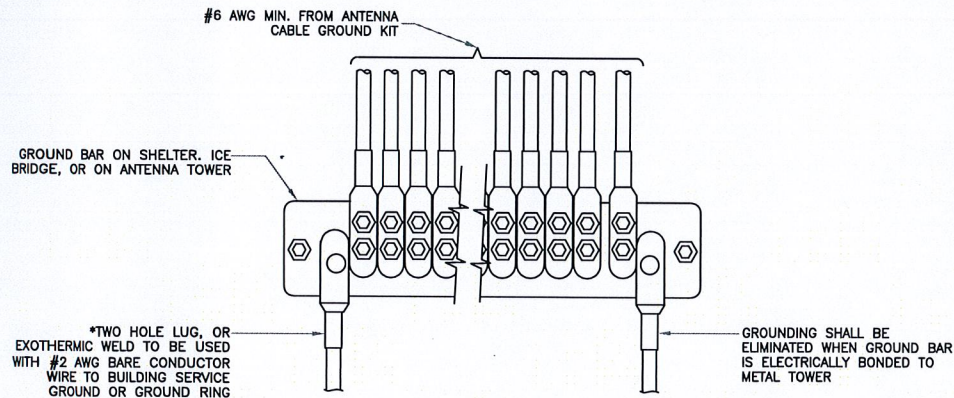
7 LUG DETAIL
SCALE: NOT TO SCALE

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/O AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/O AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT

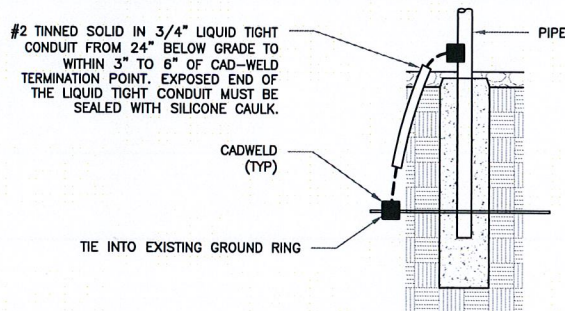


- NOTES:
1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

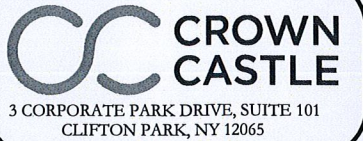
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE



AT&T FA CODE: 10035434
AT&T SITE NAME:
COVENTRY - RILEY MOUNTAIN

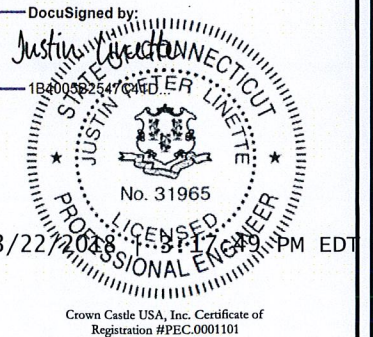
BU #: 876385
CROWN CASTLE SITE NAME:
N. COVENTRY / WALLBEOFF

REILLY MTN. RD.
COVENTRY, CT 6238

EXISTING 152'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES/QA
A	01/31/18	CWJ	PRELIMINARY	LMR
B	03/19/18	ZTK	PRELIMINARY	LMR
0	03/22/18	ZTK	CONSTRUCTION	JPL



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SHEET NUMBER: **G-3** REVISION: **0**