



April 29, 2022

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

Re: Exempt Modification Application – AT&T Site 13682693
AT&T Mobility Telecommunications Facility @ 99 Meadow St., Hartford, CT

Dear Ms. Bachman,

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility on an existing American Tower Corporation (ATC) telecommunications tower at the above referenced address. AT&T desires to modify its existing equipment as described in the attached Construction Drawings:

- Remove three (3) antennas, nine (9) RRHs, six (6) TMAs, three (3) squids, six (6) Diplexers, six (6) Triplexers, eleven (11) coax cables, ten (10) DC trunks, and two (2) fiber trunks.
- Install nine (9) antennas, three (3) RRHs, four (4) Squids, eight (8) DC trunks and four (4) fiber trunks.
- Ground work includes removal/decommission UMTS BBU; installation of one (1) 5216, one (1) XMU, one (1) Fronthall Gateway, and one (1) 6630.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of AT&T's intent to modify a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A §16-50j-73, a copy of this letter is being sent to the following individuals: American Tower Corporation as Tower Operator/Owner; Meadow Street Realty LLC as Property Owner; the Honorable Luke Bronin as Mayor of the City of Hartford and Charles Mathews, Director of Development Services for the City of Hartford.

The applicant's proposal falls squarely within those activities explicitly provided for in R.C.S.A. §16-50j-89. Specifically:

1. The proposed modifications will NOT result in an increase in the height of the existing structure.
2. The proposed modifications will NOT require an 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 modified facility will NOT increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.
5. The proposed modifications will NOT cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis enclosed herewith.

For the foregoing reasons, AT&T respectfully requests that the Council approve this Exempt Modification request for this tower located at 99 Meadow St., Hartford, CT. If you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jack Andrews', is written over a faint, circular blue stamp or watermark.

Jack Andrews
Zoning Manager, Centerline Communications
443-677-0144

Enclosures: Exhibit 1 – Letter of Authorization from tower owner
Exhibit 2 – Property Card and GIS
Exhibit 3 – Construction Drawings
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Analysis Report
Exhibit 6 – EME Study Report
Exhibit 7 – Four (4) Notice Confirmations

Cc: American Tower Corporation – Tower Operator/Owner
Meadow Street Realty LLC – Property Owner
The Honorable Luke Bronin - Mayor of the City of Hartford
Charles Mathews - Director of Hartford Development Services



LETTER OF AUTHORIZATION

SITE NO: See Site List Below

SITE NAME: See Site List Below

ADDRESS: See Site List Below

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, owner and/or operator of the tower facilities located at the addresses identified below (the "Tower Facilities"), do hereby authorize Centerline Communications, LLC ("Centerline"), its agents, successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment owned and operated by AT&T on the Tower Facilities located at the addresses identified below. This installation shall not affect adjoining lands and will occur only within the areas leased or owned by American Tower.

American Tower understands that the applications may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installations. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit Centerline to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installations of telecommunications equipment without the prior written approval of American Tower.

Site Authorized:

ATC Project #	ATC Asset #	Address
13682691	302483	286 Beckley Road, Berlin, CT 06037
13682687	302469	1069 Connecticut Ave. Bridgeport, CT 06607
13682699	383598	1000 Truumball Ave. Bridgeport, CT 06606
13682693	302468	99 Meadow St. Harftford, CT 06114
13682696	370627	605 Willard Ave. Newington, CT 06111
13682689	370629	125 Washington Ave. North Haven, CT 06473
13683386	283418	50 Devine St. North Haven, CT 06473
13683396	88018	168 Catoona Lane, Stamford, CT 06902
13682841	243036	668 Jones Hill Rd. West Haven, CT 06516
13958523	283422	171 Short Beach Rd. Brandford, CT 06405
13958547	302516	438 Bridgeport Ave. Milford, CT 06460
13683394	302479	699 West St. Rocky Hill, CT 06067
13958510	302511	20 Post Office Lane. Westport, CT 06880



AMERICAN TOWER®
CORPORATION

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (owner and/or operator of the above referenced Tower Facilities), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 22nd day of April, 2022.

NOTARY SEAL



GERARD T. HEFFRON
Notary Public
Commonwealth of Massachusetts
My Commission Expires
August 9, 2024

Notary Public

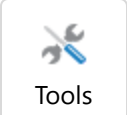
My Commission Expires: August 9th, 2024

* American Tower as used herein is defined as American Tower Corporation and any of its affiliates or subsidiaries.

99 MEADOW ST



I want to...



Description

Details

address
99 MEADOW ST

score
100



☆ 275690115

99 MEADOW ST
MEADOW STREET REALTY LLC

[Add to Results](#) | [View Additional Details](#)





Radio Frequency Exposure Analysis Report

April 22, 2022

American Tower on behalf of AT&T
Centerline Communications Project Number: 950007-208

AT&T Site Name: 1-91 And 5 Split
Site Number: CTL05127
FA#: 10070908
USID: 4540

Site Address: 99 Meadow Street, Hartford, CT 06114

Site Compliance Summary

AT&T Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	4.03868 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	0.530256%



April 22, 2022

American Tower

Attn: Dayna Priest, Site Development, East Region-American Tower

RF Exposure Analysis for Site: **1-91 And 5 Split**

Centerline Communications, LLC (“Centerline”) was contracted to analyze the proposed AT&T facility at **99 Meadow Street, Hartford, CT 06114** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{\text{MHz}}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of $1 \text{ mW}/\text{cm}^2$ ($1000 \mu\text{W}/\text{cm}^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

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, 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.



Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.



Data & Results

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the Ground.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.



Maximum Calculated Cumulative Power Density (Location: approximately of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
AT&T A 1	QUINTEL QD6616-7 V1	700	11.99	137.00	4.00	40.00	2532.21	0.01215	466.67	0.00260
AT&T A 1	QUINTEL QD6616-7 V1	1900	14.97	137.00	4.00	40.00	5022.04	0.01536	1000.00	0.00154
AT&T A 1	QUINTEL QD6616-7 V1	2100	15.62	137.00	4.00	40.00	5831.90	0.01370	1000.00	0.00137
AT&T A 2	ERICSSON SON_AIR6449	3700	23.55	139.00	1.00	108.40	24548.74	0.63569	1000.00	0.06357
AT&T A 3	ERICSSON SON_AIR6419 LTE	3400	22.85	135.00	1.00	54.20	10447.19	0.38409	1000.00	0.03841
AT&T A 3	ERICSSON SON_AIR6419 NR	3400	22.85	135.00	1.00	54.20	10447.19	0.38409	1000.00	0.03841
AT&T A 4	CCI DMP65R-BU6D	700	11.65	137.00	2.00	40.00	1169.74	0.02634	466.67	0.00565
AT&T A 4	CCI DMP65R-BU6D	850	11.35	137.00	2.00	40.00	1091.67	0.02618	566.67	0.00462
AT&T A 4	CCI DMP65R-BU6D	2300	15.25	137.00	4.00	25.00	3349.65	0.04507	1000.00	0.00451
AT&T A 5	POWERWAVE 7750 00	850	12.35	137.00	0.00	0.00	#NUM!	0.00000	566.67	0.00000
AT&T A 6	KATHREIN 80010965	850	13.45	137.00	0.00	0.00	#NUM!	0.00000	566.67	0.00000
AT&T B 7	QUINTEL QD6616-7 V1	700	11.97	137.00	4.00	40.00	2519.01	0.00003	466.67	0.00001
AT&T B 7	QUINTEL QD6616-7 V1	1900	14.97	137.00	4.00	40.00	5022.04	0.00001	1000.00	0.00000
AT&T B 7	QUINTEL QD6616-7 V1	2100	15.62	137.00	4.00	40.00	5831.90	0.00000	1000.00	0.00000
AT&T B 8	ERICSSON SON_AIR6449	3700	23.55	139.00	1.00	108.40	24548.74	0.00042	1000.00	0.00004
AT&T B 9	ERICSSON SON_AIR6419 LTE	3400	22.85	135.00	1.00	54.20	10447.19	0.00018	1000.00	0.00002
AT&T B 9	ERICSSON SON_AIR6419 NR	3400	22.85	135.00	1.00	54.20	10447.19	0.00018	1000.00	0.00002
AT&T B 10	CCI DMP65R-BU6D	700	11.75	137.00	2.00	40.00	1196.99	0.00002	466.67	0.00000
AT&T B 10	CCI DMP65R-BU6D	850	11.45	137.00	2.00	40.00	1117.09	0.00006	566.67	0.00001
AT&T B 10	CCI DMP65R-BU6D	2300	15.25	137.00	4.00	25.00	3349.65	0.00002	1000.00	0.00000
AT&T B 11	POWERWAVE 7750 00	850	12.35	137.00	0.00	0.00	#NUM!	0.00000	566.67	0.00000
AT&T B 12	KATHREIN 80010965	850	13.45	137.00	0.00	0.00	#NUM!	0.00000	566.67	0.00000
AT&T C 13	QUINTEL QD6616-7 V1	700	11.74	137.00	4.00	40.00	2389.30	0.00011	466.67	0.00002
AT&T C 13	QUINTEL QD6616-7 V1	1900	14.97	137.00	4.00	40.00	5022.04	0.00002	1000.00	0.00000
AT&T C 13	QUINTEL QD6616-7 V1	2100	15.62	137.00	4.00	40.00	5831.90	0.00004	1000.00	0.00000
AT&T C 14	ERICSSON SON_AIR6449	3700	23.55	139.00	1.00	108.40	24548.74	0.00159	1000.00	0.00016
AT&T C 15	ERICSSON SON_AIR6419 LTE	3400	22.85	135.00	1.00	54.20	10447.19	0.00141	1000.00	0.00014
AT&T C 15	ERICSSON SON_AIR6419 NR	3400	22.85	135.00	1.00	54.20	10447.19	0.00141	1000.00	0.00014
AT&T C 16	CCI DMP65R-BU6D	700	11.25	137.00	2.00	40.00	1066.82	0.00005	466.67	0.00001
AT&T C 16	CCI DMP65R-BU6D	850	11.35	137.00	2.00	40.00	1091.67	0.00000	566.67	0.00000
AT&T C 16	CCI DMP65R-BU6D	2300	15.25	137.00	4.00	25.00	3349.65	0.00002	1000.00	0.00000
AT&T C 17	POWERWAVE 7750 00	850	12.35	137.00	0.00	0.00	#NUM!	0.00000	566.67	0.00000
AT&T C 18	KATHREIN 80010965	850	13.45	137.00	0.00	0.00	#NUM!	0.00000	566.67	0.00000
Unknown A 19	GENERIC PANEL 6FT	1900	15.84	147.92	2.00	60.00	4604.49	0.06313	1000.00	0.00631



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Unknown A 20	GENERIC PANEL 6FT	600	12.33	147.92	2.00	60.00	2052.02	0.06171	400.00	0.01543
Unknown A 21	GENERIC PANEL 6FT	700	12.33	147.92	2.00	60.00	2052.02	0.06171	466.67	0.01322
Unknown A 22	GENERIC PANEL 6FT	2100	15.84	147.92	2.00	60.00	4604.49	0.06313	1000.00	0.00631
Unknown B 23	GENERIC PANEL 6FT	1900	15.84	147.92	2.00	60.00	4604.49	0.00003	1000.00	0.00000
Unknown B 24	GENERIC PANEL 6FT	600	12.33	147.92	2.00	60.00	2052.02	0.00035	400.00	0.00009
Unknown B 25	GENERIC PANEL 6FT	700	12.33	147.92	2.00	60.00	2052.02	0.00035	466.67	0.00008
Unknown B 26	GENERIC PANEL 6FT	2100	15.84	147.92	2.00	60.00	4604.49	0.00003	1000.00	0.00000
Unknown C 27	GENERIC PANEL 6FT	1900	15.84	147.92	2.00	60.00	4604.49	0.00005	1000.00	0.00001
Unknown C 28	GENERIC PANEL 6FT	600	12.33	147.92	2.00	60.00	2052.02	0.00005	400.00	0.00001
Unknown C 29	GENERIC PANEL 6FT	700	12.33	147.92	2.00	60.00	2052.02	0.00005	466.67	0.00001
Unknown C 30	GENERIC PANEL 6FT	2100	15.84	147.92	2.00	60.00	4604.49	0.00005	1000.00	0.00001
Unknown A 31	GENERIC PANEL 6FT	850	12.62	123.00	4.00	40.00	2924.96	0.12712	566.67	0.02243
Unknown A 31	GENERIC PANEL 6FT	1900	15.84	123.00	4.00	40.00	6139.32	0.12678	1000.00	0.01268
Unknown A 32	GENERIC PANEL 6FT	2100	16.39	123.00	4.00	40.00	6968.19	0.12737	1000.00	0.01274
Unknown A 33	GENERIC PANEL 6FT	700	12.33	123.00	4.00	40.00	2736.02	0.12683	466.67	0.02718
Unknown A 34	GENERIC PANEL	3700	23.34	123.00	4.00	50.00	43154.89	0.16695	1000.00	0.01670
Unknown A 35	GENERIC PANEL	3550	8.30	123.00	4.00	5.00	135.22	0.01632	1000.00	0.00163
Unknown B 36	GENERIC PANEL 6FT	850	12.62	123.00	4.00	40.00	2924.96	0.00001	566.67	0.00000
Unknown B 36	GENERIC PANEL 6FT	1900	15.84	123.00	4.00	40.00	6139.32	0.00003	1000.00	0.00000
Unknown B 37	GENERIC PANEL 6FT	2100	16.39	123.00	4.00	40.00	6968.19	0.00004	1000.00	0.00000
Unknown B 38	GENERIC PANEL 6FT	700	12.33	123.00	4.00	40.00	2736.02	0.00055	466.67	0.00012
Unknown B 39	GENERIC PANEL	3700	23.34	123.00	4.00	50.00	43154.89	0.00374	1000.00	0.00037
Unknown B 40	GENERIC PANEL	3550	8.30	123.00	4.00	5.00	135.22	0.00004	1000.00	0.00000
Unknown C 41	GENERIC PANEL 6FT	850	12.62	123.00	4.00	40.00	2924.96	0.00035	566.67	0.00006
Unknown C 41	GENERIC PANEL 6FT	1900	15.84	123.00	4.00	40.00	6139.32	0.00019	1000.00	0.00002
Unknown C 42	GENERIC PANEL 6FT	2100	16.39	123.00	4.00	40.00	6968.19	0.00012	1000.00	0.00001
Unknown C 43	GENERIC PANEL 6FT	700	12.33	123.00	4.00	40.00	2736.02	0.00028	466.67	0.00006
Unknown C 44	GENERIC PANEL	3700	23.34	123.00	4.00	50.00	43154.89	0.00401	1000.00	0.00040



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Unknown C 45	GENERIC PANEL	3550	8.30	123.00	4.00	5.00	135.22	0.00003	1000.00	0.00000
Unknown A 46	GENERIC PANEL 6FT	862	12.62	114.00	2.00	40.00	1462.48	0.08002	574.67	0.01392
Unknown A 47	GENERIC PANEL 6FT	1900	15.84	114.00	2.00	60.00	4604.49	0.12142	1000.00	0.01214
Unknown A 48	GENERIC PANEL 6FT	2500	14.49	114.00	1.00	34.70	975.73	0.03402	1000.00	0.00340
Unknown B 49	GENERIC PANEL 6FT	862	12.62	114.00	2.00	40.00	1462.48	0.00001	574.67	0.00000
Unknown B 50	GENERIC PANEL 6FT	1900	15.84	114.00	2.00	60.00	4604.49	0.00004	1000.00	0.00000
Unknown B 51	GENERIC PANEL 6FT	2500	14.49	114.00	1.00	34.70	975.73	0.00013	1000.00	0.00001
Unknown C 52	GENERIC PANEL 6FT	862	12.62	114.00	2.00	40.00	1462.48	0.00016	574.67	0.00003
Unknown C 53	GENERIC PANEL 6FT	1900	15.84	114.00	2.00	60.00	4604.49	0.00012	1000.00	0.00001
Unknown C 54	GENERIC PANEL 6FT	2500	14.49	114.00	1.00	34.70	975.73	0.00000	1000.00	0.00001
Unknown A 55	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.07409	566.67	0.01308
Unknown A 56	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.07409	566.67	0.01308
Unknown A 57	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.07409	566.67	0.01308
Unknown A 58	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.07409	566.67	0.01308
Unknown A 59	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.07409	566.67	0.01308
Unknown B 60	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 61	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 62	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 63	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 64	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown C 65	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00017	566.67	0.00003
Unknown C 66	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00017	566.67	0.00003
Unknown C 67	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00017	566.67	0.00003
Unknown C 68	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00017	566.67	0.00003
Unknown C 69	GENERIC PANEL 6FT	850	12.62	99.00	1.00	60.00	1096.86	0.00017	566.67	0.00003
Unknown A 70	GENERIC PANEL 6FT	2500	14.49	90.00	1.00	0.00	#NUM!	0.34110	1000.00	0.03411
Unknown A 71	GENERIC MICROWAVE	18000	36.95	90.00	1.00	0.10	495.45	0.00150	1000.00	0.00015
Unknown B 72	GENERIC PANEL 6FT	2500	14.49	90.00	1.00	0.00	#NUM!	0.00104	1000.00	0.00010



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Unknown B 73	GENERIC MICROWAVE	18000	36.95	90.00	1.00	0.10	495.45	0.00000	1000.00	0.00000
Unknown C 74	GENERIC PANEL 6FT	2500	14.49	90.00	1.00	0.00	#NUM!	0.00119	1000.00	0.00012
Unknown C 75	GENERIC MICROWAVE	18000	36.95	90.00	1.00	0.10	495.45	0.00000	1000.00	0.00000
Unknown A 76	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.11706	566.67	0.02066
Unknown A 77	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.11706	566.67	0.02066
Unknown A 78	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.11706	566.67	0.02066
Unknown A 79	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.11706	566.67	0.02066
Unknown A 80	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.11706	566.67	0.02066
Unknown B 81	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 82	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 83	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 84	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown B 85	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00001	566.67	0.00000
Unknown C 86	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00030	566.67	0.00005
Unknown C 87	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00030	566.67	0.00005
Unknown C 88	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00030	566.67	0.00005
Unknown C 89	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00030	566.67	0.00005
Unknown C 90	GENERIC PANEL 6FT	850	12.62	80.00	1.00	60.00	1096.86	0.00030	566.67	0.00005
							Cumulative Power Density:	4.03868 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	0.53026%



Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at Ground that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Michelle Stone

Michelle Stone
RF EME Technical Writer II
Centerline Communications, LLC

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, AT&T "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
 - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
 - B. AC/TELCO INTERFACE BOX (PPC)
 - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
 - D. TOWERS, MONOPOLES
 - E. TOWER LIGHTING
 - F. GENERATORS & LIQUID PROPANE TANK
 - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
 - H. ANTENNAS (INSTALLED BY OTHERS)
 - I. TRANSMISSION LINE
 - J. TRANSMISSION LINE JUMPERS
 - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
 - L. TRANSMISSION LINE GROUND KITS
 - M. HANGERS
 - N. HOISTING GRIPS
 - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF AT&T TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE AT&T REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE AT&T CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE AT&T REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH AT&T AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO

- DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T SPECIFICATIONS AND REQUIREMENTS.
 24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
 25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
 26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
 27. CONTRACTOR SHALL NOTIFY AT&T REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
 28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
 29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
 30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE AT&T REP. ANY WORK FOUND BY THE AT&T REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
 31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
 32. AT&T FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
 33. AT&T OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO AT&T OR THEIR ARCHITECT/ENGINEER.

**SPECIAL CONSTRUCTION
ANTENNA INSTALLATION NOTES:**

1. WORK INCLUDED:
 - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY AT&T UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
 - B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND AT&T SPECIFICATIONS.
 - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
 - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
 - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
 - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
 - G. ANTENNA AND COAXIAL CABLE GROUNDING:
 2. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
 3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	JIM	11/11/21
B	PRELIM	VL	02/15/22

ATC SITE NUMBER:
302468

ATC SITE NAME:
PETRO LOCK

AT&T SITE NAME:
1 91 AND 5 SPLIT

SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598

SEAL:

PRELIMINARY:
NOT FOR
CONSTRUCTION



DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

GENERAL NOTES

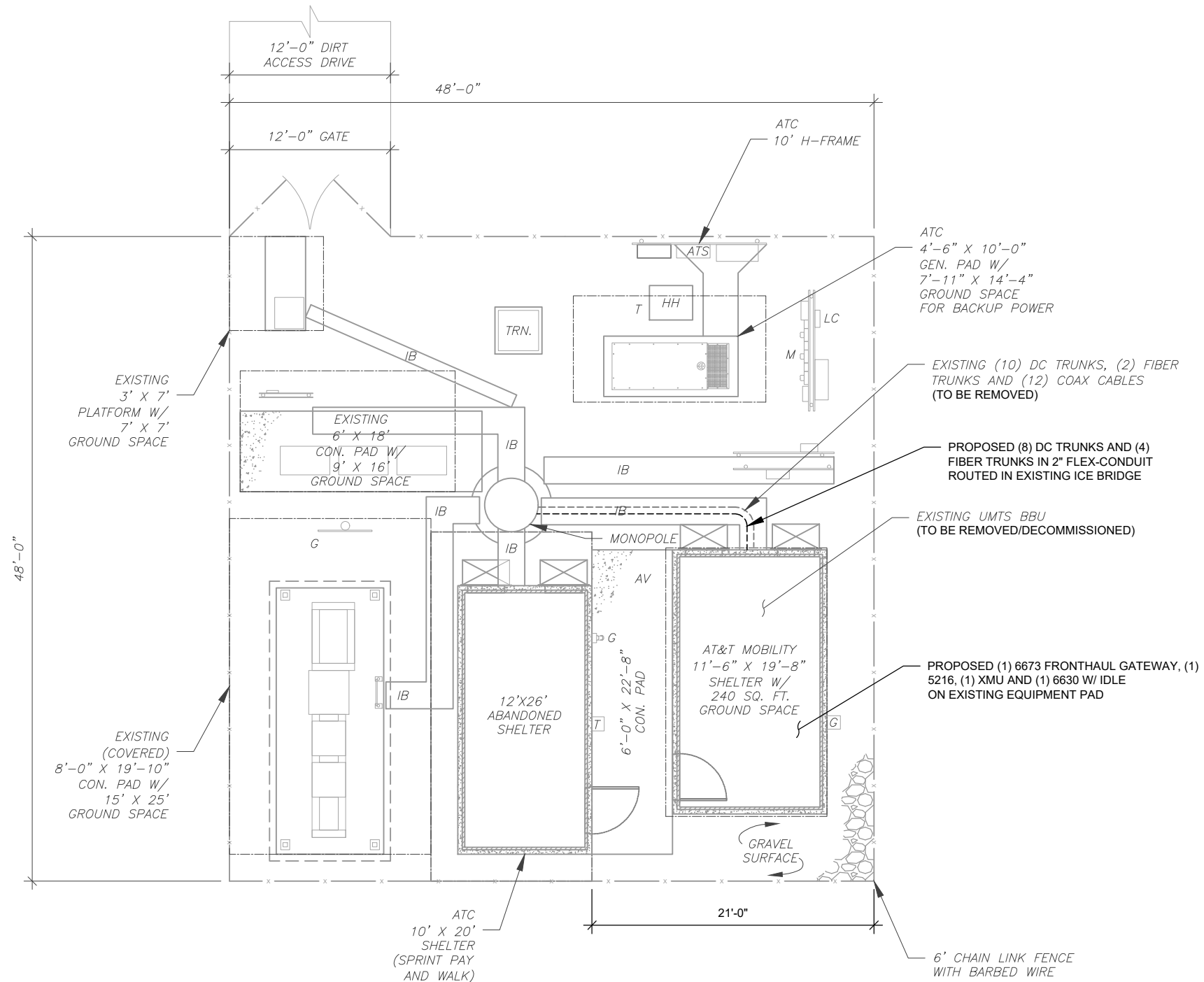
SHEET NUMBER: G-002	REVISION: B
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SITE PLAN NOTES:

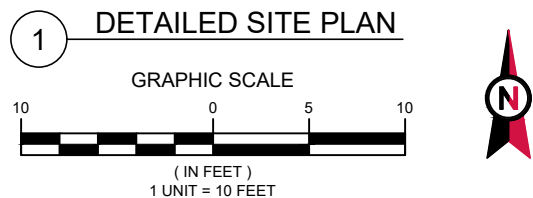
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
x	CHAINLINK FENCE



PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **180'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



AMERICAN TOWER®

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	JIM	11/11/21
B	PRELIM	VL	02/15/22

ATC SITE NUMBER:
302468

ATC SITE NAME:
PETRO LOCK

AT&T SITE NAME:
1 91 AND 5 SPLIT

SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598

SEAL:

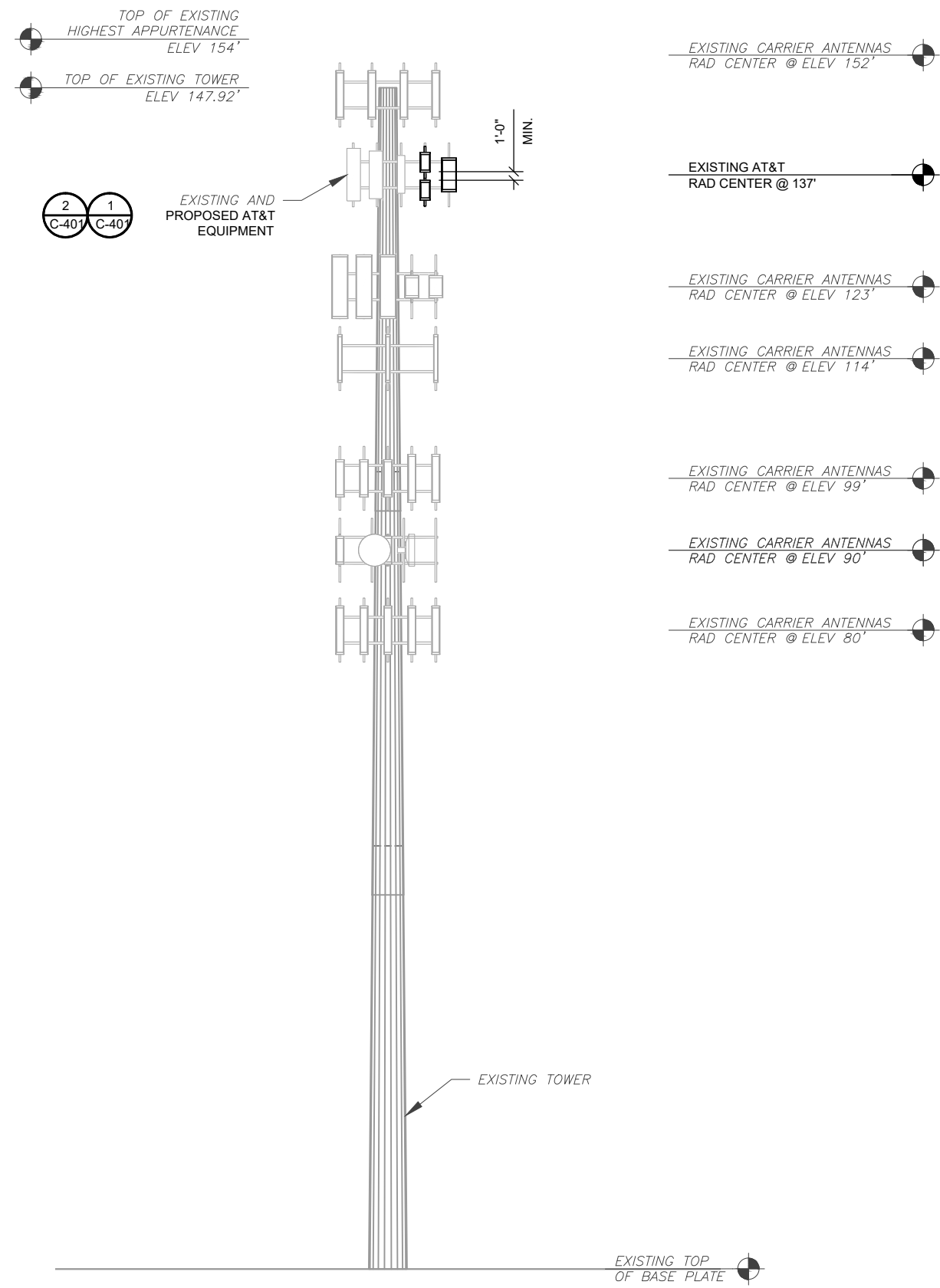
PRELIMINARY:
NOT FOR
CONSTRUCTION

DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

DETAILED SITE PLAN

SHEET NUMBER: C-101	REVISION: B
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PER MOUNT ANALYSIS COMPLETED BY POWER OF DESIGN, DATED 11/11/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
- WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
- ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
- TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
- TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.



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A	PRELIM	JIM	11/11/21
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ATC SITE NUMBER:
302468

ATC SITE NAME:
PETRO LOCK

AT&T SITE NAME:
1 91 AND 5 SPLIT

SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598

SEAL:

**PRELIMINARY:
NOT FOR
CONSTRUCTION**



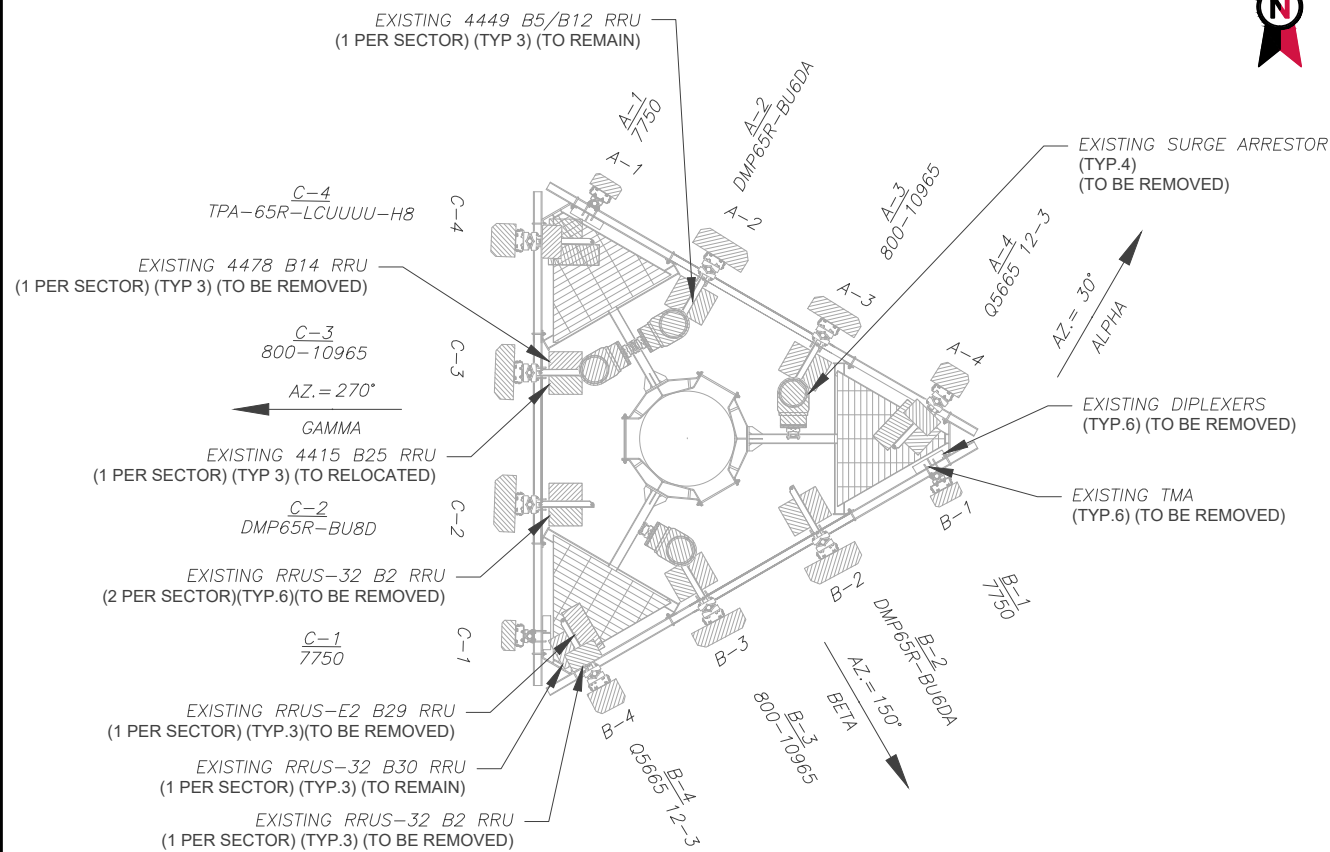
DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

TOWER ELEVATION

SHEET NUMBER: C-201	REVISION: B
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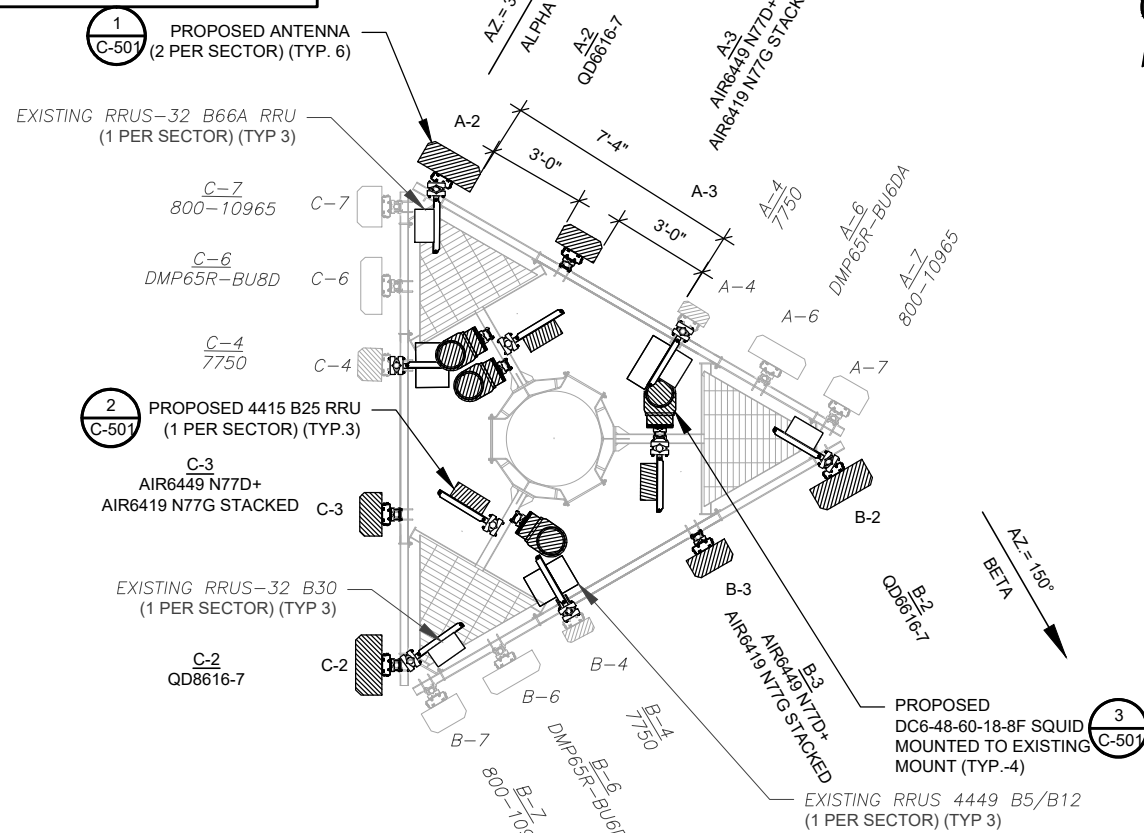
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EXISTING CONFIGURATIONS ARE BASED ON RFDS.
CONTRACTOR TO VERIFY EXISTING CONDITIONS.



1 CURRENT ANTENNA PLAN
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY POWER OF DESIGN, DATED 11/11/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



2 FINAL ANTENNA PLAN
SCALE: N.T.S.

CONTRACTOR SHALL INSTALL PIPE MAST FOR SPARE ANTENNA AS REQUIRED BY SITE CONDITIONS

PROPOSED RRUS MUST BE INSTALLED A MINIMUM OF 12" AWAY FROM ALL ANTENNAS

EXISTING ANTENNA SCHEDULE							
LOCATION			ANTENNA SUMMARY			NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	138'	30°	A1	7750	UMTS 850	REL	(2) POWERWAVE LGP21901 (2) POWERWAVE LGP21401
			A2	DMP65R-BU6DA	LTE 700, LTE 850, 5G 850, LTE 1900	REL	4449 B5/B12 RRUS-32 B2
			A3	800-10965	LTE 700, LTE AWS	REL	4478 B14 RRUS-32 B66A
			A4	QS665 12-3	LTE 700, LTE 1900, LTE WCS, LTE 1900	RMV	RRUS-E2 B29 RRUS-32 B2 RRUS-32 B30
BETA	138'	150°	B1	7750	UMTS 850	REL	(2) POWERWAVE LGP21901 (2) POWERWAVE LGP21401
			B2	DMP65R-BU6DA	LTE 700, LTE 850, 5G 850, LTE 1900	REL	4449 B5/B12 RRUS-32 B2
			B3	800-10965	LTE 700, LTE AWS	REL	4478 B14 RRUS-32 B66A
			B4	QS665 12-3	LTE 700, LTE 1900, LTE WCS, LTE 1900	RMV	RRUS-E2 B29 RRUS-32 B2 RRUS-32 B30
GAMMA	138'	270°	C1	7750	UMTS 850	REL	(2) POWERWAVE LGP21901 (2) POWERWAVE LGP21401
			C2	DMP65R-BU8D	LTE 700, LTE 850, 5G 850, LTE 1900	REL	4449 B5/B12 RRUS-32 B2
			C3	800-10965	LTE 700, LTE AWS	REL	4478 B14 RRUS-32 B66A
			C4	TPA-65R-LCUUUU-H8	LTE 700, LTE 1900, LTE WCS, LTE 1900	RMV	RRUS-E2 B29 RRUS-32 B2 RRUS-32 B30

NOTES

- CONFIRM WITH AT&T REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
- THE ANTENNA ORIENTATION PLAN IS A SCHEMATIC. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA AZIMUTHS, MOUNT CONFIGURATIONS AND TOWER ORIENTATION. SCALES SHOWN ARE FOR REFERENCE ONLY AND EXISTING DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION AND NOTIFY ATC OF ANY DISCREPANCIES.
- CONTRACTOR TO ENSURE PROPER SEPARATION IN ACCORDANCE WITH AT&T'S FIRSTNET REQUIREMENTS (SEE SHEET R-602)

STATUS ABBREVIATIONS
 RMV: TO BE REMOVED
 RMN: TO REMAIN
 REL: TO BE RELOCATED
 ADD: TO BE ADDED

EXISTING FIBER DISTRIBUTION/SQUID		EXISTING CABLING SUMMARY			
MODEL NUMBER	STATUS	COAX	DC	FIBER	STATUS
(1) DC6-48-60-18-8C	RMV	(11)	(10)	(2)	RMV
(1) DC6-48-60-18-8F	RMV	-	-	-	-
(2) DC6-48-60-18-8F	RMV	-	-	-	-

CABLE LENGTHS FOR JUMPERS
 JUNCTION BOX TO RRU: 15'
 RRU TO ANTENNA: 10'

3 EQUIPMENT SCHEDULES

FINAL ANTENNA SCHEDULE							
LOCATION			ANTENNA SUMMARY			NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	106'	30°	A2	QD6616-7	LTE700	ADD	4415 B25 4478 B14 RRUS-32 B66A
			A3	AIR6449 N77D+ AIR6419 N77G STACKED	5GCBAND, 5G DOD	ADD	-
			A4	7750	UMTS 850	REL	4449 B5/B12 RRUS-32 B30
			A6	DMP65R-BU6DA	LTE 700, LTE 850 5G 850, LTE 1900	REL	-
			A7	800-10965	LTE 700, LTE AWS	REL	-
			B2	QD6616-7	LTE700	ADD	4415 B25 4478 B14 8843 B2/B66A
			B3	AIR6449 N77D+ AIR6419 N77G STACKED	5GCBAND, 5G DOD	ADD	-
BETA	106'	150°	B4	7750	UMTS 850	REL	4449 B5/B12 RRUS-32 B30
			B6	DMP65R-BU6DA	LTE 700, LTE 850 5G 850, LTE 1900	REL	-
			B7	800-10965	TE 700, LTE AWS	REL	-
			C2	QD8616-7	LTE700	ADD	4415 B25 4478 B14 8843 B2/B66A
			C3	AIR6449 N77D+ AIR6419 N77G STACKED	5GCBAND, 5G DOD	ADD	-
			C4	7750	UMTS 850	REL	4449 B5/B12 RRUS-32 B30
			C6	DMP65R-BU8D	LTE 700, LTE 850 5G 850, LTE 1900	REL	-
GAMMA	106'	270°	C7	800-10965	TE 700, LTE AWS	REL	-

FINAL FIBER DISTRIBUTION/SQUID		FINAL CABLING SUMMARY			
MODEL NUMBER	STATUS	COAX	DC	FIBER	STATUS
(4) DC6-48-60-18-8F	ADD	-	(8)	(4)	ADD



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	JIM	11/11/21
B	PRELIM	VL	02/15/22

ATC SITE NUMBER:
302468

ATC SITE NAME:
PETRO LOCK

AT&T SITE NAME:
1 91 AND 5 SPLIT

SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598

SEAL:

**PRELIMINARY:
NOT FOR
CONSTRUCTION**

CUSTOMER ID: CTL05127	CUSTOMER #: 10070908

RF SCHEDULE AND ANTENNA INSTALLATION

SHEET NUMBER: **C-401** REVISION: **B**

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	JIM	11/11/21
B	PRELIM	VL	02/15/22

ATC SITE NUMBER:
 302468
 ATC SITE NAME:
 PETRO LOCK
 AT&T SITE NAME:
 1 91 AND 5 SPLIT
 SITE ADDRESS:
 99 MEADOW ST
 HARTFORD, CT 06114-1598

SEAL:

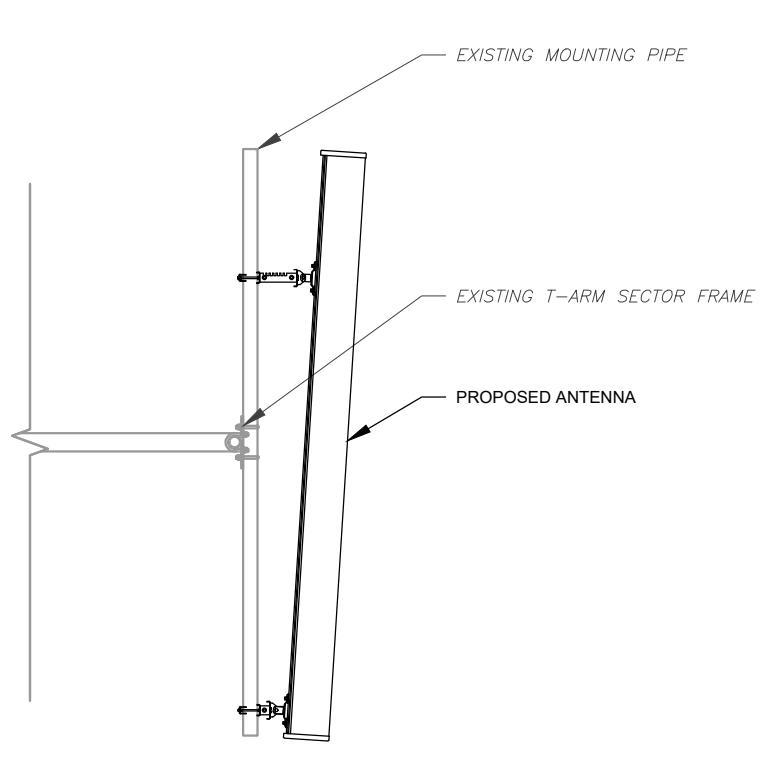
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 NOT FOR
 CONSTRUCTION**



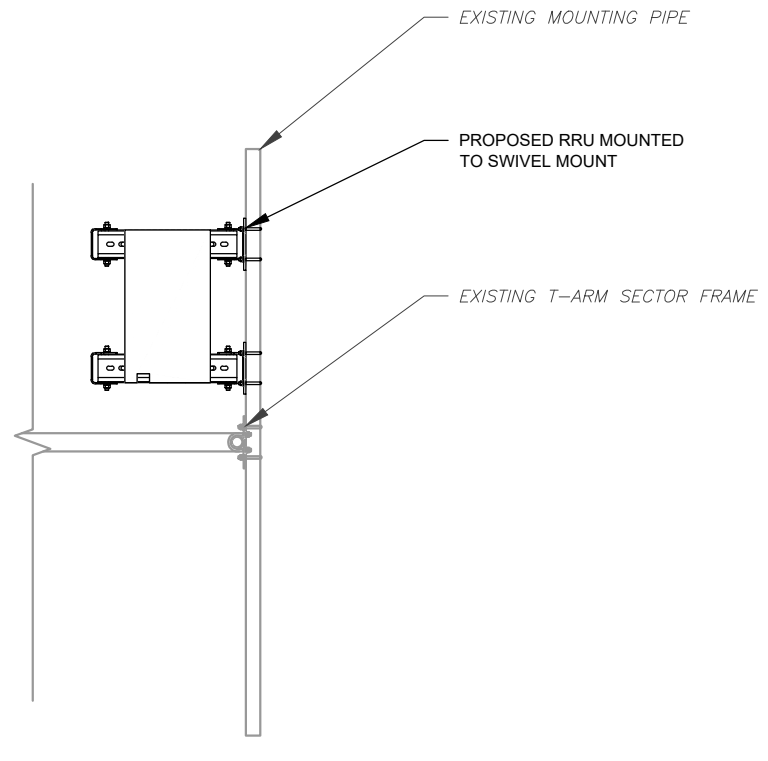
DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

**CONSTRUCTION
 DETAILS**

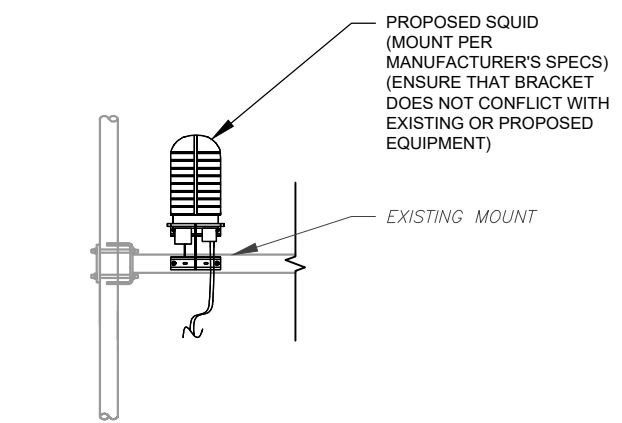
SHEET NUMBER:	REVISION:
C-501	B



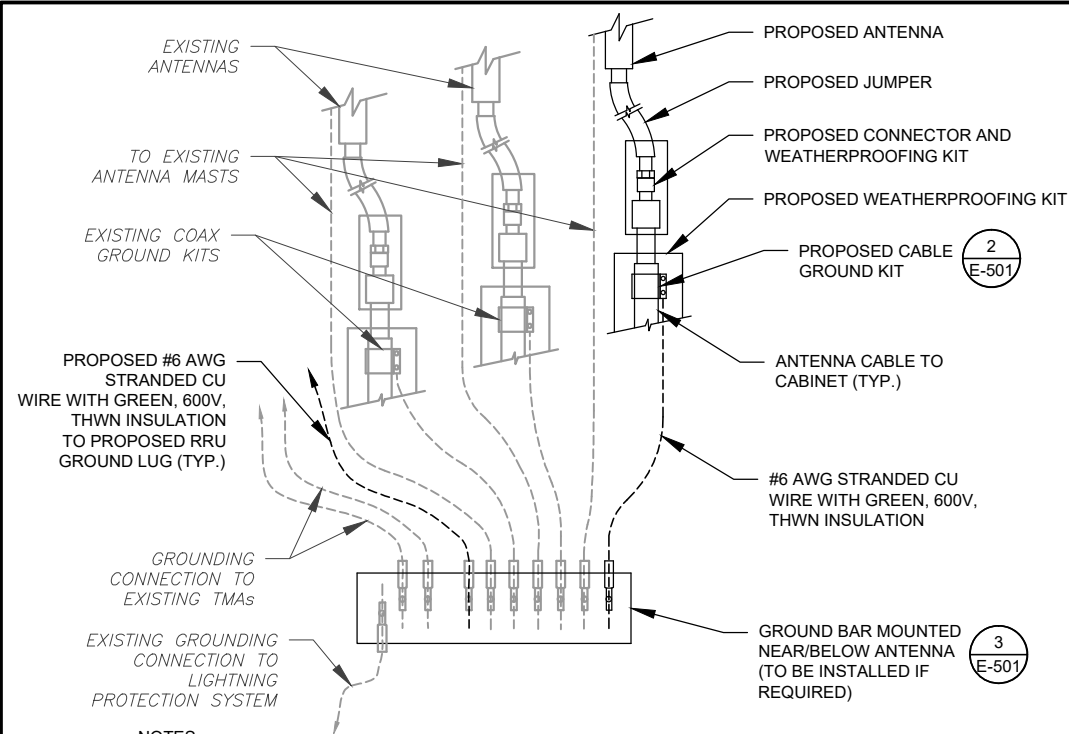
1 ANTENNA DETAIL
 SCALE: N.T.S.



2 PROPOSED RRU MOUNTING DETAIL - TYPICAL
 SCALE: N.T.S.



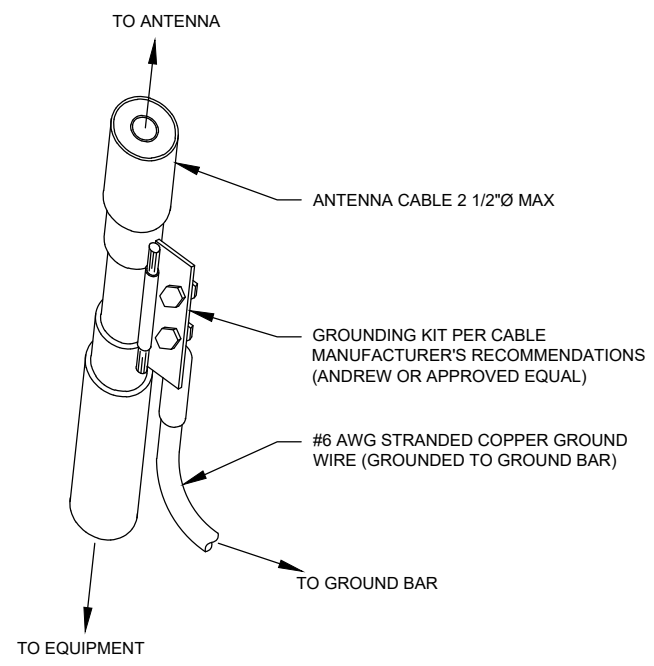
3 PROPOSED SQUID MOUNTING
 SCALE: N.T.S.



NOTES:

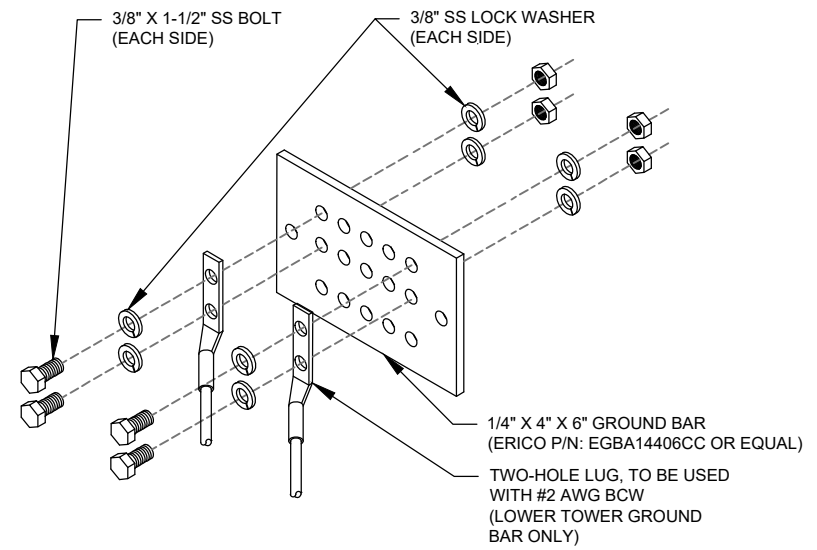
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH AT&T GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH AT&T GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



- GROUND KIT NOTES:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

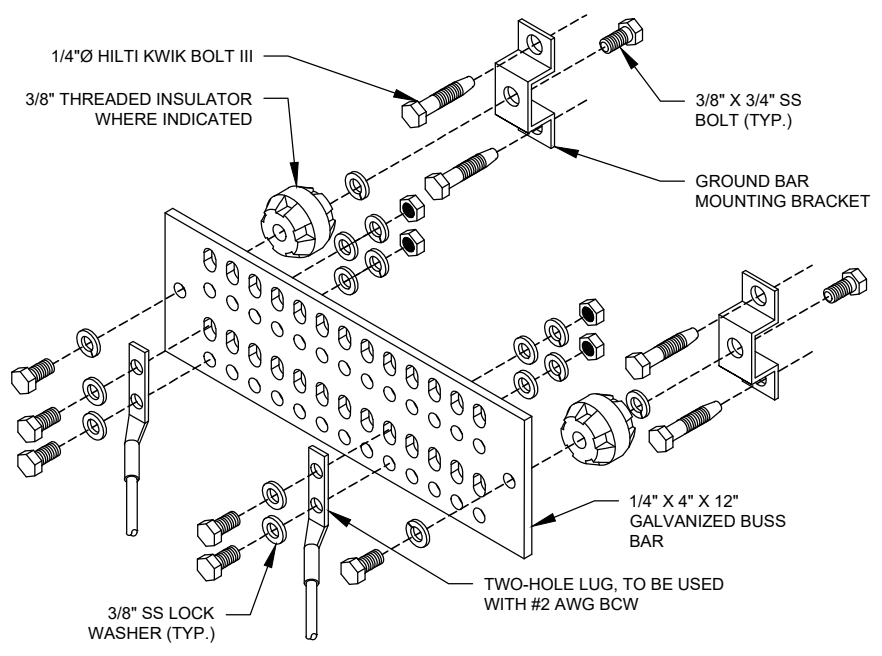
2 CABLE GROUND KIT CONNECTION DETAIL
SCALE: N.T.S.



GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

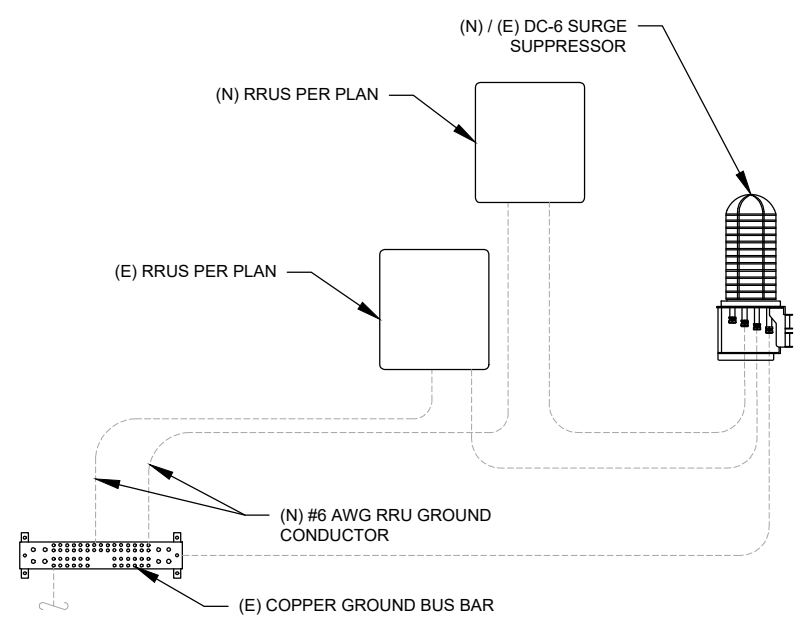
3 TOWER GROUND BAR DETAIL
SCALE: N.T.S.



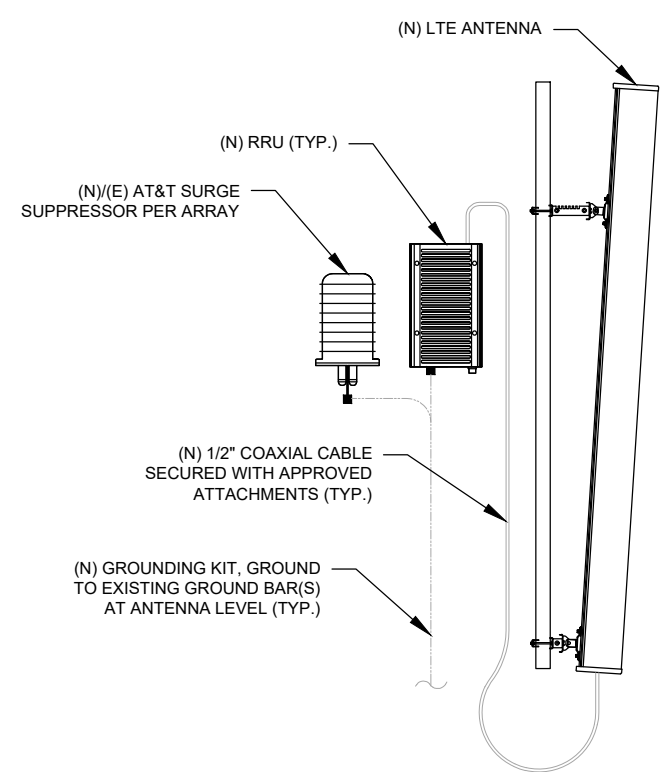
GROUND BAR NOTES

1. GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

4 MAIN GROUND BAR DETAIL
SCALE: N.T.S.



5 RRU GROUNDING
SCALE: N.T.S.



6 ANTENNA/RRU GROUNDING
SCALE: N.T.S.



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A	PRELIM	JIM	11/11/21
B	PRELIM	VL	02/15/22

ATC SITE NUMBER:
302468

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PETRO LOCK

AT&T SITE NAME:
1 91 AND 5 SPLIT

SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598

SEAL:

PRELIMINARY:
NOT FOR
CONSTRUCTION



DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

GROUNDING DETAILS

SHEET NUMBER: E-501	REVISION: B
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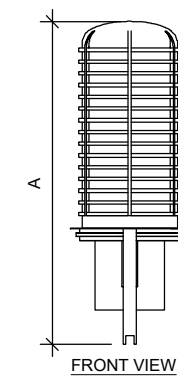
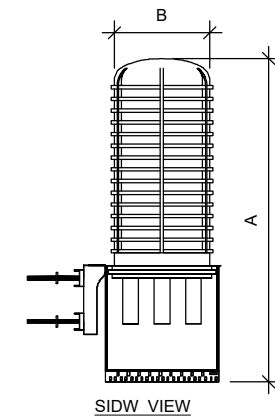
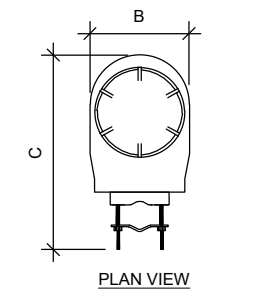
SITE ADDRESS:
 99 MEADOW ST
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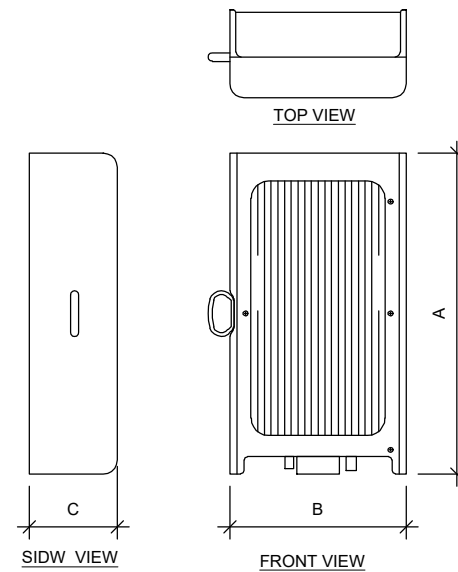
DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

SUPPLEMENTAL

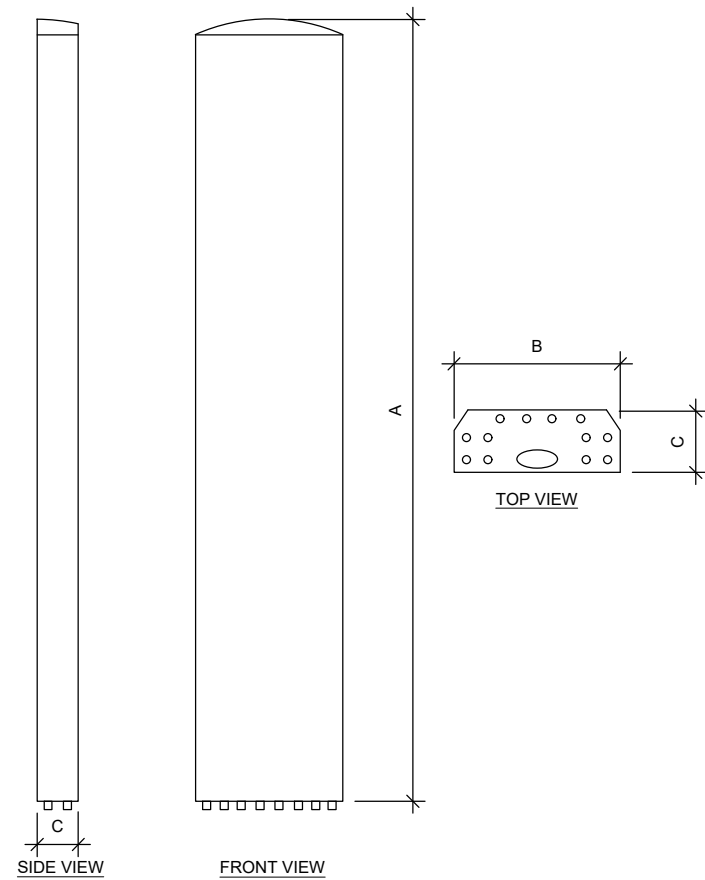
SHEET NUMBER:
R-601



RAYCAP SPECIFICATIONS				
RAYCAP MODEL	A	B	C	WEIGHT (LBS)
DC6-48-60-18-8F	23.5"	9.7"	9.7"	20.0



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
4415 B25	16.5"	13.4"	5.9"	46.0

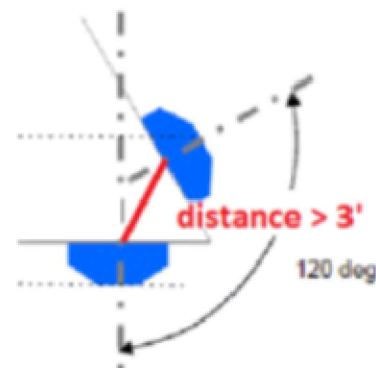


ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
QUINTEL QD6616-7	72.4"	22.0"	9.6"	130.0
QUINTEL QD8616-7	72.0"	22.0"	9.6"	130.0
ERICSSON AIR 6549 N77D	30.4"	15.9"	8.1"	81.6
ERICSSON AIR 6419 B77G	28.3"	16.1"	7.9"	66.1

1 EQUIPMENT SPECIFICATIONS
 SCALE: N.T.S.

RF REQUIREMENTS FOR 700 B14 FIRSTNET, 700 B12, 700D B29 ANTENNA SEPARATION

- Horizontal separation (side to side of antenna): $\geq 3'$
- Vertical separation (between the tips of the antennas): $> 3'$
- Inter-sector separation: $> 3'$ between the center of the antenna backplanes.



- Please note additional horizontal separation may be required if B14 antennas azimuth are different from others or antennas are severely angled with respect to the mount.
- Typical 3' horizontal separation can tolerate skew angle up to 6° .



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ATC SITE NUMBER:
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ATC SITE NAME:
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AT&T SITE NAME:
1 91 AND 5 SPLIT

SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598



DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

SUPPLEMENTAL

SHEET NUMBER:
R-602



This report was prepared for American Tower Corporation by



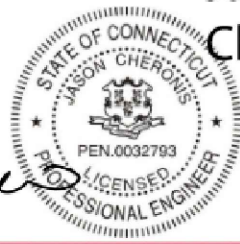
Eng. Number 13682693_C8_01
November 9, 2021
Page 1

Antenna Mount Analysis Report

ATC Site Name : Petro Lock
 ATC Site Number : 302468
 Engineering Number : 13682693_C8_01
 Mount Elevation : 137 ft
 Carrier : AT&T Mobility
 Carrier Site Name : MRCTB051271
 Carrier Site Number : MRCTB051271
 Site Location : 99 Meadow St
 Hartford, CT 06114
 41.74319722, -72.6675
 County : Hartford
 Date : November 9, 2021
 Max Usage : 54 %
 Result : Pass

Prepared By: Bryan Quijada
 Jason G. Cheronis
 Vice President of Structural Engineering

Jason G. Cheronis
 Jason Cheronis
 Digitally signed by Jason Cheronis
 Date: 2021.11.09 13:59:29 -05'00'



POD GROUP - 1033 E. Turkeyfoot Lake Road, Suite 206 - Akron, OH 44312 - 330-961-7432 - www.podgrp.com

Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for AT&T Mobility at 137 ft

Supporting Documents

Mount Mapping	Infinigy Project #1009-Z0003-H, dated August 16, 2021
Mount Analysis	Tower Engineering Professionals Project #68495.451522, dated October 20, 2020
RFDS	RFDS dated March 2, 2021
Photos	Site photos from 2021
Structural Analysis	ATC Project #13683501_C3_02, dated August 27, 2021

Analysis

This antenna mount was analyzed using RISA-3D v 17 analysis software

Basic Wind Speed:	118 mph, Vult (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50" Radial Ice (Escalating)
Codes:	TIA-222-H
Structure Class:	II
Exposure Category:	B
Topographic Factor Procedure:	Method 3
Topographic Feature:	Flat
Crest Height:	0 ft
Spectral Response:	S _s = 0.191, S _i = 0.055
Site Class:	D (assumed)
Live Loads:	L _m = 500 lbs, L _v = 250 lbs

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

If you have any questions or require additional information, please contact POD Group via email at ngilkerson@podgrp.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

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ATC SITE NUMBER:
302468
 ATC SITE NAME:
PETRO LOCK
 AT&T SITE NAME:
1 91 AND 5 SPLIT
 SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598



DATE DRAWN: 11/09/21
 ATC JOB NO: 13682693
 CUSTOMER ID: CTL05127
 CUSTOMER #: 10070908

SUPPLEMENTAL

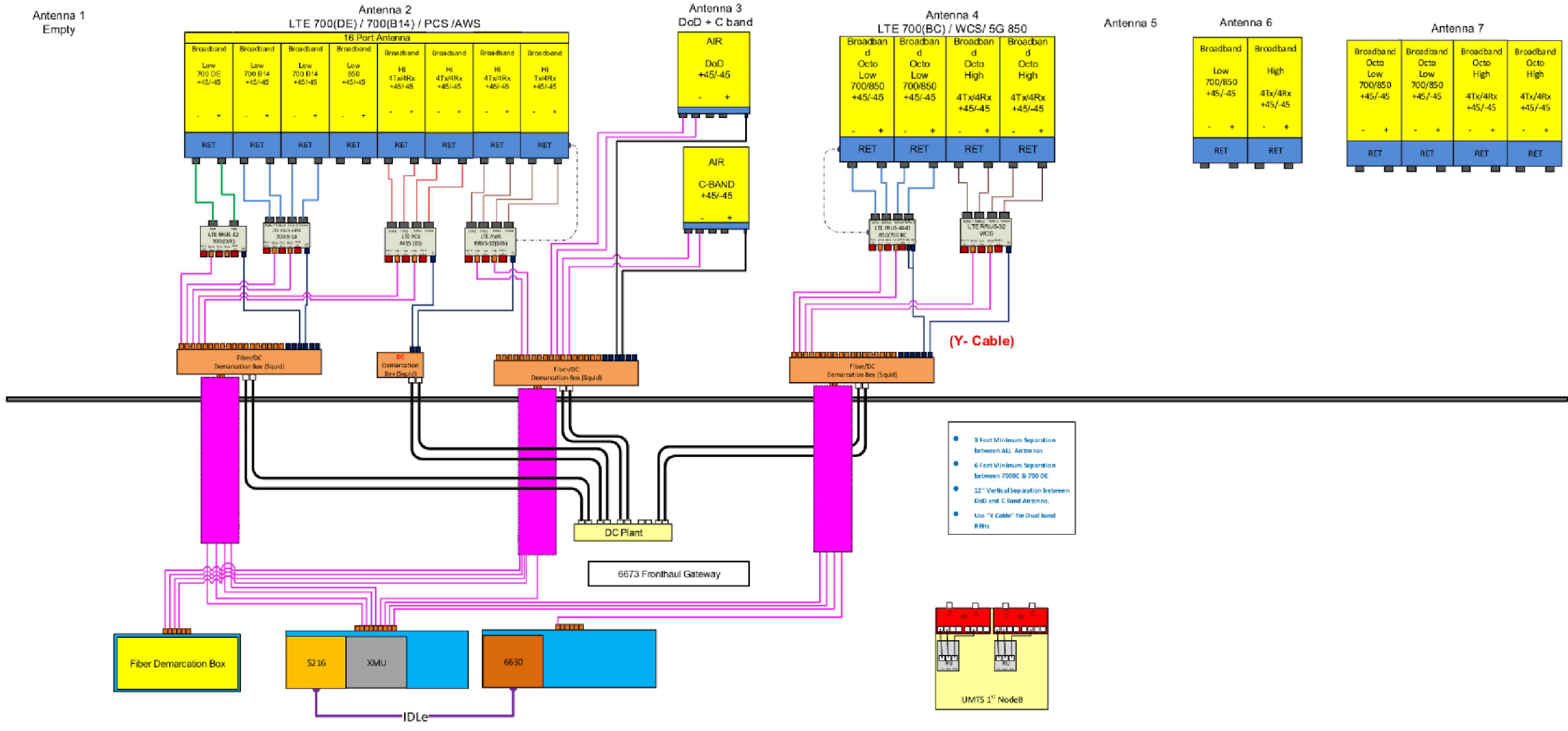
SHEET NUMBER:
R-603

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONSTRUCTION.



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Diagram - Sector: A
 Diagram File Name - CT5127_C_Band_DoD_700DE(Top)_PCS_4115_3xDCFiber_1xDCSquid_5216+1xXMU.vsd
 Atoll Site Name - CTL05127
 Location Name - 1 91 AND 5 SPLIT
 Market - CONNECTICUT
 Market Cluster - NEW ENGLAND
 Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson"



NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE AT&T CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

ATC SITE NUMBER:
302468
 ATC SITE NAME:
PETRO LOCK
 AT&T SITE NAME:
1 91 AND 5 SPLIT
 SITE ADDRESS:
99 MEADOW ST
HARTFORD, CT 06114-1598



DATE DRAWN:	11/09/21
ATC JOB NO:	13682693
CUSTOMER ID:	CTL05127
CUSTOMER #:	10070908

SUPPLEMENTAL

SHEET NUMBER:
R-604

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AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 148 ft Monopole
ATC Site Name : Petro Lock, CT
ATC Site Number : 302468
Engineering Number : 13682693_C3_06
Proposed Carrier : AT&T MOBILITY
Carrier Site Name : MRCTB051271
Carrier Site Number : MRCTB051271
Site Location : 99 Meadow St
Hartford, CT 06114-1598
41.7432, -72.6675
County : Hartford
Date : February 9, 2022
Max Usage : 69%
Result : Pass

Prepared By:

Nathan Lyle
Structural Engineer

Reviewed By:



COA : PEC.0001553



Table of Contents

Introduction.....	3
Supporting Documents	3
Analysis	3
Conclusion	3
Existing and Reserved Equipment.....	4
Equipment to be Removed	5
Proposed Equipment	5
Structure Usages.....	6
Foundations	6
Deflection and Sway*	6
Standard Conditions	7
Calculations	Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft Monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	FWT Job #21719000 Rev. 1, dated July 18, 2000 Base plate measurements from field data
Foundation Drawing	FWT Job #21719000 Rev. 1, dated July 18, 2000
Geotechnical Report	Osprey Environmental Engineering Job #98083-01, dated August 28, 1998

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	118 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.50" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	$S_s = 0.19$, $S_i = 0.06$
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
147.0	1	Commscope RDIDC-9181-PF-48	Triangular Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	JMA Wireless MX08FRO665-21			
	3	Fujitsu TA08025-B605			
137.0	2	CCI DMP65R-BU6DA	Triangular Platform with Handrails	-	AT&T MOBILITY
	3	Ericsson RRUS-32 B30 (77 lbs)			
	1	CCI DMP65R-BU8D			
	3	Ericsson RRUS E2 B29			
	3	Ericsson RRUS 32 B66A			
	3	Ericsson RRUS 4449 B5, B12			
123.0	5	Ericsson KRY 112 489/1	Triangular Platform with Handrails	(2) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	RFS APX16DWV-16DWVS-E-A20			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson KRY 112 144/1			
	3	Ericsson AIR32 B66Aa/B2a			
	3	Ericsson Radio 4449 B71 B85A			
	3	Ericsson RRUS 4415 B25			
	3	Ericsson Air6449 B41			
113.0	3	RFS APXV18-206517	Flush	(6) 1 5/8" Coax	METRO PCS INC
98.0	3	RFS APXVSP18-C-A20	Triangular Low Profile Platform	(3) 1 1/4" Hybriflex Cable (1) 1.7" (43.2mm) Hybrid	SPRINT NEXTEL
	3	Nokia 2.5G MAA - AAHC(64T64R)			
	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter			
	3	Alcatel-Lucent 4x40W RRH (88 lb)			
	3	RFS IBC1900HG-2A			
	3	RFS IBC1900BB-1			
90.0	1	DragonWave A-ANT-11G-2.5-C	Side Arm	(3) 1/2" Coax (1) 2" conduit	CLEARWIRE CORPORATION
	3	NextNet BTS-2500			
	3	Argus LLPX310R			
	3	DragonWave Horizon Compact			
	2	DragonWave A-ANT-18G-2-C			
79.0	2	RFS DB-T1-6Z-8AB-OZ	Triangular Low Profile Platform	(2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	9	Commscope SBNHH-1D65B			
	3	Samsung MT6407-77A			
	3	Samsung B2/B66A RRH-BR049			
20.0	1	Lucent KS-24019	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
137.0	6	Powerwave Allgon LGP21901	-	(2) 0.39" (10mm) Fiber Trunk (2) 0.39" (9.8mm) Cable (8) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (3) 3" conduit	AT&T MOBILITY
	6	Powerwave Allgon 7020.00 Dual Band RET			
	7	Powerwave Allgon LGP21401			
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
	1	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 4478 B14 (15")			
	1	Kathrein Scala 80010966			
	6	Ericsson RRUS 32 B2			
	1	CCI TPA-65R-LCUUUU-H8			
	3	Powerwave Allgon 7750.00			
	2	Quintel QS66512-3 (112 lbs.)			
	2	Kathrein Scala 80010965			
	1	Raycap DC6-48-60-18-8C			

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
137.0	4	Raycap DC6-48-60-18-8F	Triangular Platform with Handrails	(4) 0.41" (10.3mm) Fiber (6) 0.82" (20.8mm) 8 AWG 6 (2) 0.92" (23.4mm) Cable (4) 2" conduit	AT&T MOBILITY
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4415 B25			
	3	Ericsson AIR 6419 B77G			
	3	Ericsson AIR 6449 n77D			
	1	Quintel QD8616-7			
	2	Quintel QD6616-7			

¹ Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	58%	Pass
Shaft	67%	Pass
Base Plate	12%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3280.6	69%
Axial (Kips)	60.4	4%
Shear (Kips)	31.0	42%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
137.0	Ericsson RRUS 4415 B25	AT&T MOBILITY	1.210	0.870
	Quintel QD8616-7			
	Raycap DC6-48-60-18-8F			
	Ericsson RRUS 4478 B14			
	Quintel QD6616-7			
	Ericsson AIR 6419 B77G			
90.0	Ericsson AIR 6449 n77D	CLEARWIRE CORPORATION	0.557	0.680
	DragonWave A-ANT-11G-2.5-C			
	DragonWave A-ANT-18G-2-C			

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Asset : 302468, Petro Lock
 Client : AT&T MOBILITY
 Code : ANSI/TIA-222-H

Height : 147.92 ft
 Base Width : 56.58
 Shape : 18 Sides

SITE PARAMETERS

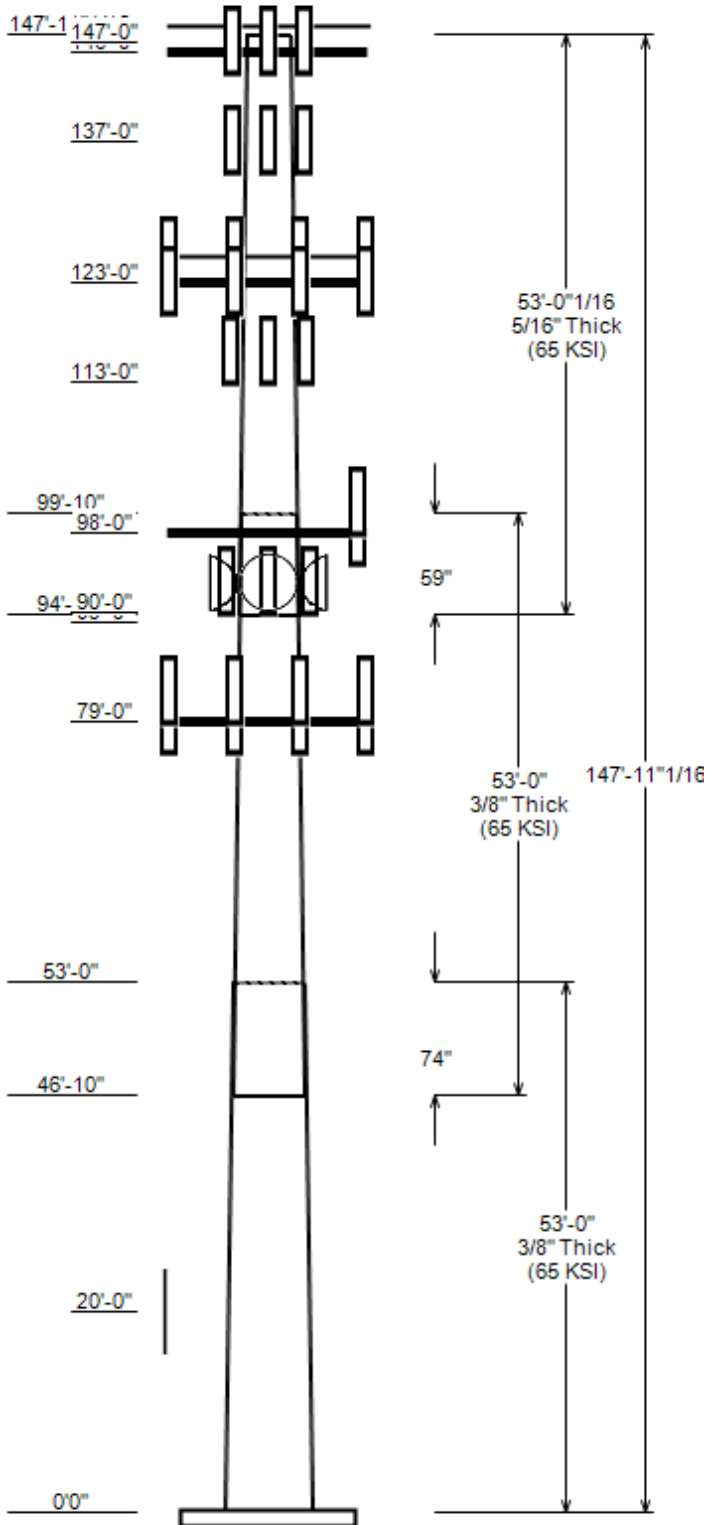
Nominal Wind: 118 mph wind with no ice **Topo Category:** 1
Ice Wind: 50 mph wind with 1.5" radi **Topo Method:** Method 1
Base Elev (ft): 0.00 **Taper :** 0.21500(ln/ft) **Topo Feature:**
Structure Class: II **Exposure :** B **S_s :** 0.191 **S₁ :** 0.055

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom			
1	53.000	45.21	56.58	0.375	0.000	65
2	53.000	35.91	47.28	0.375	74.000	65
3	53.003	26.22	37.59	0.312	59.000	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
147.0	147.0	1	Commscope RDIDC-9181-PF-48
147.0	147.0	3	Fujitsu TA08025-B605
147.0	147.0	3	Fujitsu TA08025-B604
147.0	147.0	3	JMA Wireless MX08FRO665-21
146.0	146.0	1	Generic Round Platform with Ha
137.0	137.0	4	Raycap DC6-48-60-18-8F
137.0	137.0	3	Ericsson RRUS 4415 B25
137.0	137.0	3	Ericsson RRUS 4478 B14
137.0	137.0	3	Ericsson RRUS 4449 B5, B12
137.0	137.0	3	Ericsson RRUS 32 B66A
137.0	137.0	3	Ericsson RRUS E2 B29
137.0	137.0	3	Ericsson RRUS-32 B30 (77 lbs)
137.0	137.0	3	Ericsson AIR 6419 B77G
137.0	137.0	3	Ericsson AIR 6449 n77D
137.0	137.0	2	CCI DMP65R-BU6DA
137.0	137.0	1	CCI DMP65R-BU8D
137.0	137.0	1	Quintel QD8616-7
137.0	137.0	1	Site Pro1 RMQLP-4120-H10
137.0	137.0	2	Quintel QD6616-7
123.0	123.0	3	Ericsson KRY 112 144/1
123.0	124.0	5	Ericsson KRY 112 489/1
123.0	123.0	3	Ericsson Radio 4449 B71 B85A
123.0	123.0	3	Ericsson RRUS 4415 B25
123.0	123.0	3	Ericsson Air6449 B41
123.0	123.0	3	Ericsson AIR32 B66Aa/B2a
123.0	124.0	3	RFS APX16DWV-16DWVS-E-A20
123.0	123.0	3	RFS APXVAARR24_43-U-NA20
123.0	123.0	1	Generic Flat Platform with Han
113.0	114.0	3	RFS APXV18-206517
98.0	99.0	3	RFS IBC1900BB-1
98.0	99.0	3	RFS IBC1900HG-2A
98.0	99.0	3	Alcatel-Lucent 800 MHz 2X50W R
98.0	99.0	3	Alcatel-Lucent 4x40W RRH (88 I
98.0	98.0	3	Nokia 2.5G MAA - AAHC(64T64R)
98.0	99.0	3	RFS APXVSP18-C-A20
98.0	98.0	1	Generic Round Low Profile Plat
90.0	91.0	3	DragonWave Horizon Compact
90.0	91.0	3	NextNet BTS-2500
90.0	91.0	3	Argus LLPX310R
90.0	91.0	2	DragonWave A-ANT-18G-2-C
90.0	91.0	1	DragonWave A-ANT-11G-2.5-C
89.0	89.0	1	Side Arms
79.0	79.0	3	Samsung B2/B66A RRH-BR049
79.0	79.0	3	Samsung B5/B13 RRH-BR04C



JOB INFORMATION

Asset : 302468, Petro Lock
 Client : AT&T MOBILITY
 Code : ANSI/TIA-222-H

Height : 147.92 ft
 Base Width : 56.58
 Shape : 18 Sides

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
79.0	79.0	3	Samsung MT6407-77A
79.0	80.0	2	RFS DB-T1-6Z-8AB-0Z
79.0	80.0	9	Commscope SBNHH-1D65B
79.0	79.0	1	Generic Round Low Profile Plat
20.0	20.0	1	Lucent KS-24019

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	147.0	1.60" (40.6mm) Hybrid	No
0.0	137.0	2" conduit	No
0.0	137.0	0.92" (23.4mm) Cable	No
0.0	137.0	0.82" (20.8mm) 8 AWG 6	No
0.0	137.0	0.41" (10.3mm) Fiber	No
5.0	123.0	1 5/8" (1.63"-41.3mm) Fiber	No
5.0	123.0	1 1/4" (1.25"- 31.8mm) Fiber	Yes
5.0	113.0	1 5/8" Coax	No
5.0	98.0	1.7" (43.2mm) Hybrid	No
5.0	98.0	1 1/4" Hybriflex Cable	No
5.0	90.0	2" conduit	Yes
5.0	90.0	1/2" Coax	Yes
5.0	79.0	1 5/8" Hybriflex	Yes
5.0	20.0	1/2" Coax	No

LOAD CASES

1.2D + 1.0W Normal	118 mph wind with no ice
0.9D + 1.0W Normal	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	3280.56	30.97	60.36
0.9D + 1.0W Normal	3238.27	30.95	45.26
1.2D + 1.0Di + 1.0Wi Normal	925.65	8.67	91.99
1.2D + 1.0Ev + 1.0Eh Normal	185.96	1.51	60.92
0.9D - 1.0Ev + 1.0Eh Normal	182.88	1.51	42.19
1.0D + 1.0W Service Normal	752.75	7.16	50.34

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W Service Normal	90.00	6.684	0.681
1.0D + 1.0W Service Normal	90.00	6.684	0.681

ASSET: 302468, Petro Lock
CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H
ENG NO: 13682693_C3_06

ANALYSIS PARAMETERS

Location:	Hartford County,CT	Height:	147.92 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	56.58 in
Manufacturer:	Undetermined	Top Diameter:	26.22 in
K_d (non-service):	0.95	Taper:	0.2150 in/ft
K_e:	1.00	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	118 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.50 in
Crest Height:	0 ft	HMSL:	18.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	2.46
T_L (sec):	6	P:	1
S_s:	0.191	S₁:	0.055
F_a:	1.600	F_v:	2.400
S_{ds}:	0.204	S_{dt}:	0.088
		C_s:	0.030
		C_s Max:	0.030
		C_s Min:	0.030

LOAD CASES

1.2D + 1.0W Normal	118 mph wind with no ice
0.9D + 1.0W Normal	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

ASSET: 302468, Petro Lock
 CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H
 ENG NO: 13682693_C3_06

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.00	0.3750	65		0.00	10,844	56.58	0.000	66.90	26,699.3	24.84	150.88	45.21	53.00	53.36	13,550.7	19.49	120.55	0.2146
2-18	53.00	0.3750	65	Slip	74.00	8,848	47.28	46.830	55.83	15,518.9	20.47	126.08	35.91	99.83	42.29	6,746.8	15.12	95.76	0.2146
3-18	53.00	0.3125	65	Slip	59.00	5,651	37.59	94.917	36.97	6,490.7	19.45	120.28	26.22	147.92	25.69	2,178.0	13.03	83.89	0.2146

Shaft Weight 25,343

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
147.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	122.20	2.882	0.50
147.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	78.79	2.767	1.00
147.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	137.63	2.882	0.50
147.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	321.44	15.298	0.64
146.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4118.11	51.620	1.00
137.00	Ericsson AIR 6449 n77D	3	0.75	0.000	81.60	4.028	0.65	183.98	5.390	0.65
137.00	CCI DMP65R-BU8D	1	0.75	0.000	95.70	17.871	1.00	432.96	21.528	1.00
137.00	CCI DMP65R-BU6DA	2	0.75	0.000	79.40	12.709	0.72	335.01	15.476	0.72
137.00	Ericsson RRUS-32 B30 (77 lbs)	3	0.75	0.000	77.00	3.314	0.50	173.50	4.588	0.50
137.00	Ericsson AIR 6419 B77G	3	0.75	0.000	66.10	3.797	0.65	162.38	5.104	0.65
137.00	Raycap DC6-48-60-18-8F	4	0.75	0.000	20.00	1.260	1.00	72.25	1.913	1.00
137.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	114.77	2.732	0.50
137.00	Ericsson RRUS 4415 B25	3	0.75	0.000	46.00	1.842	0.50	94.65	2.732	0.50
137.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	134.95	2.895	0.50
137.00	Ericsson RRUS 32 B66A	3	0.75	0.000	50.70	2.720	0.50	123.42	3.874	0.50
137.00	Ericsson RRUS E2 B29	3	0.75	0.000	60.00	3.145	0.50	140.26	4.295	0.50
137.00	Quintel QD6616-7	2	0.75	0.000	130.00	51.400	0.73	420.27	62.060	0.73
137.00	Site Pro1 RMQLP-4120-H10	1	1.00	0.000	3249.50	27.200	1.00	5495.81	46.003	1.00
137.00	Quintel QD8616-7	1	0.75	0.000	150.00	18.815	1.00	527.85	22.483	1.00
123.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	4243.00	62.977	1.00
123.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	513.09	23.882	0.63
123.00	RFS APX16DWV-16DWVS-E-A20	3	0.75	1.000	40.70	6.586	0.60	155.32	8.711	0.60
123.00	Ericsson AIR32 B66Aa/B2a	3	0.75	0.000	132.20	6.510	0.71	288.80	8.659	0.71
123.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	237.71	7.239	0.63
123.00	Ericsson RRUS 4415 B25	3	0.75	0.000	46.00	1.842	0.50	94.11	2.722	0.50
123.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	134.01	2.483	0.50
123.00	Ericsson KRY 112 489/1	5	0.75	1.000	15.40	0.559	0.50	32.65	1.074	0.50
123.00	Ericsson KRY 112 144/1	3	0.75	0.000	11.00	0.351	0.50	21.56	0.749	0.50
113.00	RFS APXV18-206517	3	1.00	1.000	26.40	5.050	0.68	115.30	7.350	0.68
98.00	RFS APXVSP18-C-A20	3	0.80	1.000	57.00	8.024	0.69	222.39	10.699	0.69
98.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.80	0.000	103.60	4.203	0.64	211.69	5.489	0.64
98.00	Alcatel-Lucent 4x40W RRH (88 l	3	0.80	1.000	88.00	3.258	1.00	192.45	4.398	1.00
98.00	Alcatel-Lucent 800 MHz 2X50W R	3	0.80	1.000	64.00	2.058	1.00	137.87	2.976	1.00
98.00	RFS IBC1900HG-2A	3	0.80	1.000	22.00	0.966	0.50	47.88	1.600	0.50
98.00	RFS IBC1900BB-1	3	0.80	1.000	22.00	0.966	0.50	47.88	1.600	0.50
98.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2651.51	40.108	1.00
90.00	NextNet BTS-2500	3	0.80	1.000	35.00	1.817	0.50	79.13	2.689	0.50
90.00	DragonWave A-ANT-11G-2.5-C	1	1.00	1.000	47.60	8.670	1.00	216.21	10.314	1.00
90.00	DragonWave A-ANT-18G-2-C	2	1.00	1.000	27.10	4.688	1.00	119.97	5.900	1.00
90.00	Argus LLPX310R	3	0.80	1.000	28.60	4.292	0.63	114.36	5.866	0.63
90.00	DragonWave Horizon Compact	3	0.80	1.000	10.60	0.721	0.50	32.00	1.263	0.50
89.00	Side Arms	1	1.00	0.000	560.00	8.500	1.00	930.20	14.119	1.00
79.00	Commscope SBNHH-1D65B	9	0.80	1.000	50.70	8.173	0.69	215.22	10.826	0.69
79.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	1.000	44.00	4.800	0.72	161.98	6.132	0.72
79.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	144.20	2.721	0.50
79.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	123.92	2.721	0.50
79.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2634.17	39.698	1.00
79.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	177.15	6.133	0.61
20.00	Lucent KS-24019	1	1.00	0.000	4.00	0.910	1.00	24.34	1.721	1.00

Totals Num Loadings: 49 130 19,991.00 40,216.64

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : 90.00

Elev From	Elev To	Qty	Description	Coax Dia	Coax Wt	Max Flat	Dist Between	Dist Between	Azimuth (deg)	Dist From	Dist To	Exposed Wind Carrier
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ASSET: 302468, Petro Lock
 CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H
 ENG NO: 13682693_C3_06

(ft)	(ft)		(in)	(lb/ft)		Row	Rows(in)	Cols(in)		Face (in)			
0.00	147.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS
0.00	137.00	6	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	137.00	4	0.41" (10.3mm) Fiber	0.41	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	137.00	4	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	137.00	2	0.92" (23.4mm) Cable	0.92	0.89	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	123.00	2	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	2	1	1	0	1	Y	T-MOBILE
5.00	123.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0	0	0	0	N	T-MOBILE
5.00	113.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	METRO PCS INC
5.00	98.00	3	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
5.00	98.00	1	1.7" (43.2mm) Hybrid	1.7	1.78	N	0	0	0	0	0	N	SPRINT NEXTEL
5.00	90.00	3	1/2" Coax	0.63	0.15	N	3	1	0	318	1	Y	CLEARWIRE COR
5.00	90.00	1	2" conduit	2.38	3.65	N	1	1	1	270	1	Y	CLEARWIRE COR
5.00	79.00	2	1 5/8" Hybriflex	1.98	1.3	N	2	1	1	180	1	Y	VERIZON WIREL
5.00	20.00	1	1/2" Coax	0.63	0.15	N	1	0	0	0	1	N	SPRINT NEXTEL

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3750	56.580	66.896	26,699.30	24.84	150.88	72.2	929.4	0.0	0.0
5.00		0.3750	55.507	65.619	25,199.40	24.34	148.02	72.8	894.2	0.0	1,127.3
10.00		0.3750	54.434	64.342	23,756.70	23.83	145.16	73.4	859.6	0.0	1,105.6
15.00		0.3750	53.365	63.065	22,370.20	23.33	142.30	74	825.7	0.0	1,083.8
20.00		0.3750	52.289	61.788	21,038.70	22.82	139.44	74.6	792.5	0.0	1,062.1
25.00		0.3750	51.216	60.511	19,761.10	22.32	136.58	75.1	760.0	0.0	1,040.4
30.00		0.3750	50.143	59.234	18,536.30	21.81	133.71	75.7	728.1	0.0	1,018.7
35.00		0.3750	49.070	57.957	17,363.20	21.31	130.85	76.3	696.9	0.0	996.9
40.00		0.3750	47.997	56.680	16,240.70	20.81	127.99	76.9	666.5	0.0	975.2
45.00		0.3750	46.924	55.403	15,167.60	20.30	125.13	77.5	636.6	0.0	953.5
46.83	Bot - Section 2	0.3750	46.531	54.935	14,786.30	20.12	124.08	77.7	625.9	0.0	344.2
50.00		0.3750	45.852	54.126	14,142.80	19.80	122.27	78.1	607.5	0.0	1,184.8
53.00	Top - Section 1	0.3750	45.958	54.253	14,242.20	19.85	122.55	78.1	610.4	0.0	1,106.4
55.00		0.3750	45.529	53.742	13,843.80	19.64	121.41	78.3	598.9	0.0	367.5
60.00		0.3750	44.456	52.465	12,880.20	19.14	118.55	78.9	570.7	0.0	903.5
65.00		0.3750	43.383	51.188	11,962.50	18.64	115.69	79.5	543.1	0.0	881.8
70.00		0.3750	42.310	49.911	11,089.40	18.13	112.83	80.1	516.2	0.0	860.1
75.00		0.3750	41.237	48.635	10,259.90	17.63	109.97	80.7	490.0	0.0	838.3
79.00		0.3750	40.379	47.613	9,626.90	17.22	107.68	81.1	469.6	0.0	655.0
80.00		0.3750	40.164	47.358	9,472.80	17.12	107.11	81.3	464.5	0.0	161.6
85.00		0.3750	39.092	46.081	8,727.00	16.62	104.24	81.9	439.7	0.0	794.9
89.00		0.3750	38.233	45.059	8,159.40	16.21	101.96	82.3	420.3	0.0	620.3
90.00		0.3750	38.019	44.804	8,021.40	16.11	101.38	82.4	415.6	0.0	152.9
94.92	Bot - Section 3	0.3750	36.964	43.548	7,365.80	15.62	98.57	82.6	392.5	0.0	739.1
95.00		0.3750	36.946	43.527	7,355.00	15.61	98.52	82.6	392.1	0.0	22.8
98.00		0.3750	36.302	42.761	6,973.40	15.31	96.81	82.6	378.3	0.0	814.4
99.83	Top - Section 2	0.3125	36.534	35.926	5,955.00	18.85	116.91	79.2	321.0	0.0	490.6
100.00		0.3125	36.498	35.890	5,937.40	18.83	116.79	79.3	320.4	0.0	20.4
105.00		0.3125	35.425	34.826	5,424.80	18.23	113.36	80	301.6	0.0	601.6
110.00		0.3125	34.352	33.762	4,942.60	17.62	109.93	80.7	283.4	0.0	583.5
113.00		0.3125	33.709	33.124	4,667.50	17.26	107.87	81.1	272.7	0.0	341.4
115.00		0.3125	33.279	32.698	4,489.80	17.01	106.49	81.4	265.7	0.0	224.0
120.00		0.3125	32.207	31.634	4,065.60	16.41	103.06	82.1	248.6	0.0	547.3
123.00		0.3125	31.563	30.995	3,824.40	16.05	101.00	82.5	238.7	0.0	319.7
125.00		0.3125	31.134	30.570	3,669.00	15.80	99.63	82.6	232.1	0.0	209.5
130.00		0.3125	30.061	29.506	3,299.00	15.20	96.19	82.6	216.2	0.0	511.1
135.00		0.3125	28.988	28.442	2,954.80	14.59	92.76	82.6	200.8	0.0	493.0
137.00		0.3125	28.559	28.016	2,824.10	14.35	91.39	82.6	194.8	0.0	192.1
140.00		0.3125	27.915	27.377	2,635.40	13.99	89.33	82.6	185.9	0.0	282.7
145.00		0.3125	26.842	26.313	2,339.90	13.38	85.90	82.6	171.7	0.0	456.7
146.00		0.3125	26.628	26.101	2,283.60	13.26	85.21	82.6	168.9	0.0	89.2
147.00		0.3125	26.413	25.888	2,228.20	13.14	84.52	82.6	166.2	0.0	88.5
147.92		0.3125	26.216	25.692	2,178.00	13.03	83.89	82.6	163.6	0.0	80.7

Totals: 25,343.1

Load Case: 1.2D + 1.0W Normal	118 mph wind with no ice	24 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.20		
Wind Load Factor: 1.00		

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-60.36	-30.97	0.00	-3,280.6	0.00	3,280.56	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.667
5.00	-58.78	-30.70	0.00	-3,125.7	0.00	3,125.70	4,297.96	1,151.61	5,734.45	4,880.64	0.09	-0.17	0.655
10.00	-57.10	-30.43	0.00	-2,972.2	0.00	2,972.20	4,248.68	1,129.20	5,513.47	4,730.16	0.36	-0.34	0.643
15.00	-55.46	-30.16	0.00	-2,820.1	0.00	2,820.07	4,198.04	1,106.79	5,296.82	4,580.38	0.82	-0.52	0.630
20.00	-53.83	-29.86	0.00	-2,669.3	0.00	2,669.30	4,146.03	1,084.38	5,084.52	4,431.40	1.45	-0.69	0.616
25.00	-52.24	-29.59	0.00	-2,520.0	0.00	2,520.01	4,092.66	1,061.97	4,876.56	4,283.31	2.27	-0.87	0.602
30.00	-50.68	-29.31	0.00	-2,372.1	0.00	2,372.08	4,037.93	1,039.56	4,672.94	4,136.20	3.27	-1.04	0.587
35.00	-49.14	-29.02	0.00	-2,225.5	0.00	2,225.53	3,981.83	1,017.15	4,473.67	3,990.15	4.46	-1.22	0.571
40.00	-47.64	-28.71	0.00	-2,080.4	0.00	2,080.44	3,924.37	994.74	4,278.73	3,845.26	5.83	-1.4	0.554
45.00	-46.18	-28.49	0.00	-1,936.9	0.00	1,936.87	3,865.54	972.33	4,088.14	3,701.63	7.39	-1.57	0.536
46.83	-45.64	-28.33	0.00	-1,884.6	0.00	1,884.65	3,843.63	964.11	4,019.35	3,649.30	8	-1.64	0.529
50.00	-44.01	-28.10	0.00	-1,794.9	0.00	1,794.94	3,805.36	949.92	3,901.89	3,559.34	9.13	-1.75	0.517
53.00	-42.49	-27.90	0.00	-1,710.7	0.00	1,710.66	3,811.38	952.14	3,920.15	3,573.37	10.26	-1.85	0.491
55.00	-41.90	-27.66	0.00	-1,654.9	0.00	1,654.86	3,786.98	943.18	3,846.69	3,516.79	11.05	-1.93	0.482
60.00	-40.50	-27.29	0.00	-1,516.6	0.00	1,516.56	3,725.01	920.77	3,666.09	3,376.38	13.16	-2.09	0.461
65.00	-39.13	-26.91	0.00	-1,380.1	0.00	1,380.10	3,661.69	898.36	3,489.84	3,237.52	15.43	-2.25	0.438
70.00	-37.79	-26.53	0.00	-1,245.5	0.00	1,245.53	3,597.00	875.95	3,317.92	3,100.31	17.87	-2.4	0.413
75.00	-36.48	-26.17	0.00	-1,112.9	0.00	1,112.88	3,530.94	853.54	3,150.34	2,964.82	20.47	-2.56	0.387
79.00	-31.84	-23.05	0.00	-1,006.6	0.00	1,006.60	3,477.12	835.61	3,019.41	2,857.75	22.66	-2.67	0.362
80.00	-31.58	-22.83	0.00	-983.6	0.00	983.55	3,463.53	831.13	2,987.11	2,831.17	23.22	-2.7	0.357
85.00	-30.36	-22.46	0.00	-869.4	0.00	869.38	3,394.74	808.72	2,828.22	2,699.42	26.13	-2.84	0.332
89.00	-28.75	-21.90	0.00	-779.5	0.00	779.54	3,338.74	790.79	2,704.24	2,595.47	28.55	-2.95	0.310
90.00	-28.16	-20.67	0.00	-756.7	0.00	756.66	3,324.60	786.31	2,673.67	2,569.69	29.18	-2.98	0.304
94.92	-27.05	-20.43	0.00	-655.0	0.00	655.02	3,235.41	764.27	2,525.94	2,429.97	32.31	-3.1	0.279
95.00	-27.02	-20.32	0.00	-653.3	0.00	653.32	3,233.83	763.90	2,523.47	2,427.59	32.36	-3.1	0.278
98.00	-22.49	-17.82	0.00	-591.3	0.00	591.32	3,176.91	750.45	2,435.43	2,342.45	34.33	-3.17	0.260
99.83	-21.83	-17.71	0.00	-558.6	0.00	558.65	2,561.71	630.50	2,062.78	1,907.73	35.56	-3.22	0.302
100.00	-21.79	-17.52	0.00	-555.7	0.00	555.69	2,559.95	629.87	2,058.71	1,904.52	35.67	-3.22	0.301
105.00	-20.87	-17.10	0.00	-468.1	0.00	468.09	2,506.36	611.20	1,938.46	1,808.89	39.11	-3.34	0.268
110.00	-19.98	-16.76	0.00	-382.6	0.00	382.57	2,451.42	592.52	1,821.82	1,714.70	42.67	-3.45	0.232
113.00	-19.38	-16.15	0.00	-331.9	0.00	331.90	2,417.80	581.32	1,753.58	1,658.91	44.86	-3.52	0.209
115.00	-19.05	-15.87	0.00	-299.6	0.00	299.61	2,395.11	573.85	1,708.81	1,622.03	46.34	-3.55	0.193
120.00	-18.24	-15.53	0.00	-220.2	0.00	220.23	2,337.43	555.17	1,599.41	1,530.98	50.11	-3.64	0.152
123.00	-13.01	-10.96	0.00	-173.2	0.00	173.24	2,302.17	543.97	1,535.51	1,477.15	52.41	-3.68	0.123
125.00	-12.72	-10.68	0.00	-151.3	0.00	151.33	2,271.18	536.50	1,493.64	1,437.06	53.95	-3.7	0.111
130.00	-11.99	-10.27	0.00	-97.9	0.00	97.92	2,192.12	517.82	1,391.48	1,338.27	57.86	-3.75	0.079
135.00	-11.27	-9.98	0.00	-46.6	0.00	46.55	2,113.06	499.15	1,292.94	1,243.00	61.8	-3.78	0.043
137.00	-4.79	-3.05	0.00	-26.6	0.00	26.60	2,081.44	491.68	1,254.54	1,205.88	63.39	-3.79	0.024
140.00	-4.46	-2.75	0.00	-17.4	0.00	17.44	2,034.01	480.47	1,198.02	1,151.25	65.77	-3.8	0.017
145.00	-3.92	-2.51	0.00	-3.7	0.00	3.67	1,954.95	461.80	1,106.72	1,063.01	69.74	-3.8	0.005
146.00	-0.89	-1.13	0.00	-1.2	0.00	1.16	1,939.14	458.06	1,088.89	1,045.79	70.54	-3.8	0.002
147.00	-0.09	-0.03	0.00	-0.0	0.00	0.03	1,923.33	454.33	1,071.21	1,028.70	71.33	-3.8	0.000
147.92	0.00	-0.03	0.00	0.0	0.00	0.00	1,908.78	450.89	1,055.07	1,013.11	72.07	-3.8	0.000

ASSET: 302468, Petro Lock
 CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H
 ENG NO: 13682693_C3_06

Load Case: 0.9D + 1.0W Normal	118 mph wind with no ice	23 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 0.90		
Wind Load Factor: 1.00		

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.26	-30.95	0.00	-3,238.3	0.00	3,238.27	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.655
5.00	-44.05	-30.63	0.00	-3,083.5	0.00	3,083.53	4,297.96	1,151.61	5,734.45	4,880.64	0.09	-0.17	0.643
10.00	-42.77	-30.31	0.00	-2,930.4	0.00	2,930.38	4,248.68	1,129.20	5,513.47	4,730.16	0.36	-0.34	0.630
15.00	-41.52	-30.00	0.00	-2,778.8	0.00	2,778.82	4,198.04	1,106.79	5,296.82	4,580.38	0.81	-0.51	0.617
20.00	-40.28	-29.67	0.00	-2,628.8	0.00	2,628.82	4,146.03	1,084.38	5,084.52	4,431.40	1.43	-0.68	0.604
25.00	-39.07	-29.36	0.00	-2,480.5	0.00	2,480.50	4,092.66	1,061.97	4,876.56	4,283.31	2.24	-0.85	0.589
30.00	-37.88	-29.04	0.00	-2,333.7	0.00	2,333.72	4,037.93	1,039.56	4,672.94	4,136.20	3.23	-1.03	0.574
35.00	-36.71	-28.72	0.00	-2,188.5	0.00	2,188.50	3,981.83	1,017.15	4,473.67	3,990.15	4.39	-1.2	0.558
40.00	-35.56	-28.39	0.00	-2,044.9	0.00	2,044.90	3,924.37	994.74	4,278.73	3,845.26	5.75	-1.37	0.542
45.00	-34.46	-28.14	0.00	-1,903.0	0.00	1,902.97	3,865.54	972.33	4,088.14	3,701.63	7.28	-1.55	0.524
46.83	-34.04	-27.97	0.00	-1,851.4	0.00	1,851.38	3,843.63	964.11	4,019.35	3,649.30	7.88	-1.61	0.517
50.00	-32.81	-27.73	0.00	-1,762.8	0.00	1,762.82	3,805.36	949.92	3,901.89	3,559.34	8.99	-1.72	0.505
53.00	-31.67	-27.52	0.00	-1,679.6	0.00	1,679.64	3,811.38	952.14	3,920.15	3,573.37	10.11	-1.83	0.479
55.00	-31.21	-27.27	0.00	-1,624.6	0.00	1,624.60	3,786.98	943.18	3,846.69	3,516.79	10.89	-1.89	0.471
60.00	-30.15	-26.88	0.00	-1,488.3	0.00	1,488.27	3,725.01	920.77	3,666.09	3,376.38	12.96	-2.05	0.450
65.00	-29.11	-26.49	0.00	-1,353.9	0.00	1,353.88	3,661.69	898.36	3,489.84	3,237.52	15.19	-2.21	0.427
70.00	-28.09	-26.09	0.00	-1,221.4	0.00	1,221.45	3,597.00	875.95	3,317.92	3,100.31	17.59	-2.36	0.403
75.00	-27.10	-25.72	0.00	-1,091.0	0.00	1,091.01	3,530.94	853.54	3,150.34	2,964.82	20.15	-2.51	0.377
79.00	-23.65	-22.65	0.00	-986.5	0.00	986.53	3,477.12	835.61	3,019.41	2,857.75	22.31	-2.63	0.353
80.00	-23.45	-22.42	0.00	-963.9	0.00	963.89	3,463.53	831.13	2,987.11	2,831.17	22.86	-2.66	0.348
85.00	-22.52	-22.04	0.00	-851.8	0.00	851.79	3,394.74	808.72	2,828.22	2,699.42	25.72	-2.79	0.323
89.00	-21.32	-21.49	0.00	-763.6	0.00	763.63	3,338.74	790.79	2,704.24	2,595.47	28.1	-2.9	0.301
90.00	-20.89	-20.26	0.00	-741.2	0.00	741.15	3,324.60	786.31	2,673.67	2,569.69	28.71	-2.93	0.295
94.92	-20.05	-20.03	0.00	-641.5	0.00	641.52	3,235.41	764.27	2,525.94	2,429.97	31.79	-3.05	0.271
95.00	-20.02	-19.92	0.00	-639.8	0.00	639.85	3,233.83	763.90	2,523.47	2,427.59	31.84	-3.05	0.270
98.00	-16.65	-17.48	0.00	-579.1	0.00	579.06	3,176.91	750.45	2,435.43	2,342.45	33.78	-3.12	0.253
99.83	-16.16	-17.37	0.00	-547.0	0.00	547.01	2,561.71	630.50	2,062.78	1,907.73	34.98	-3.16	0.294
100.00	-16.13	-17.18	0.00	-544.1	0.00	544.12	2,559.95	629.87	2,058.71	1,904.52	35.09	-3.16	0.293
105.00	-15.44	-16.76	0.00	-458.2	0.00	458.23	2,506.36	611.20	1,938.46	1,808.89	38.47	-3.28	0.260
110.00	-14.77	-16.42	0.00	-374.4	0.00	374.42	2,451.42	592.52	1,821.82	1,714.70	41.97	-3.39	0.225
113.00	-14.32	-15.82	0.00	-324.8	0.00	324.75	2,417.80	581.32	1,753.58	1,658.91	44.12	-3.45	0.202
115.00	-14.08	-15.54	0.00	-293.1	0.00	293.12	2,395.11	573.85	1,708.81	1,622.03	45.58	-3.49	0.187
120.00	-13.47	-15.21	0.00	-215.4	0.00	215.40	2,337.43	555.17	1,599.41	1,530.98	49.28	-3.57	0.147
123.00	-9.61	-10.72	0.00	-169.4	0.00	169.37	2,302.17	543.97	1,535.51	1,477.15	51.54	-3.61	0.119
125.00	-9.39	-10.45	0.00	-147.9	0.00	147.93	2,271.18	536.50	1,493.64	1,437.06	53.05	-3.64	0.107
130.00	-8.85	-10.06	0.00	-95.7	0.00	95.66	2,192.12	517.82	1,391.48	1,338.27	56.89	-3.68	0.076
135.00	-8.31	-9.77	0.00	-45.4	0.00	45.38	2,113.06	499.15	1,292.94	1,243.00	60.76	-3.71	0.041
137.00	-3.55	-2.97	0.00	-25.8	0.00	25.84	2,081.44	491.68	1,254.54	1,205.88	62.32	-3.72	0.023
140.00	-3.31	-2.67	0.00	-16.9	0.00	16.94	2,034.01	480.47	1,198.02	1,151.25	64.66	-3.73	0.016
145.00	-2.90	-2.44	0.00	-3.6	0.00	3.58	1,954.95	461.80	1,106.72	1,063.01	68.56	-3.73	0.005
146.00	-0.65	-1.11	0.00	-1.1	0.00	1.14	1,939.14	458.06	1,088.89	1,045.79	69.34	-3.73	0.001
147.00	-0.07	-0.03	0.00	-0.0	0.00	0.03	1,923.33	454.33	1,071.21	1,028.70	70.12	-3.73	0.000
147.92	0.00	-0.03	0.00	0.0	0.00	0.00	1,908.78	450.89	1,055.07	1,013.11	70.84	-3.73	0.000

ASSET: 302468, Petro Lock
 CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H
 ENG NO: 13682693_C3_06

Load Case: 1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1.5" radial ice		23 Iterations
Gust Response Factor: 1.10	Ice Dead Load Factor	1.00	
Dead load Factor: 1.20			Ice Importance Factor 1.00
Wind Load Factor: 1.00			

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-91.99	-8.67	0.00	-925.6	0.00	925.65	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.205
5.00	-90.08	-8.61	0.00	-882.3	0.00	882.31	4,297.96	1,151.61	5,734.45	4,880.64	0.03	-0.05	0.202
10.00	-87.95	-8.54	0.00	-839.3	0.00	839.28	4,248.68	1,129.20	5,513.47	4,730.16	0.1	-0.1	0.198
15.00	-85.82	-8.48	0.00	-796.6	0.00	796.57	4,198.04	1,106.79	5,296.82	4,580.38	0.23	-0.15	0.194
20.00	-83.69	-8.41	0.00	-754.2	0.00	754.17	4,146.03	1,084.38	5,084.52	4,431.40	0.41	-0.2	0.190
25.00	-81.60	-8.34	0.00	-712.1	0.00	712.14	4,092.66	1,061.97	4,876.56	4,283.31	0.64	-0.24	0.186
30.00	-79.54	-8.27	0.00	-670.4	0.00	670.44	4,037.93	1,039.56	4,672.94	4,136.20	0.92	-0.29	0.182
35.00	-77.50	-8.20	0.00	-629.1	0.00	629.08	3,981.83	1,017.15	4,473.67	3,990.15	1.26	-0.34	0.177
40.00	-75.49	-8.12	0.00	-588.1	0.00	588.09	3,924.37	994.74	4,278.73	3,845.26	1.65	-0.39	0.172
45.00	-73.51	-8.06	0.00	-547.5	0.00	547.49	3,865.54	972.33	4,088.14	3,701.63	2.09	-0.44	0.167
46.83	-72.78	-8.02	0.00	-532.7	0.00	532.72	3,843.63	964.11	4,019.35	3,649.30	2.26	-0.46	0.165
50.00	-70.83	-7.95	0.00	-507.3	0.00	507.33	3,805.36	949.92	3,901.89	3,559.34	2.58	-0.49	0.161
53.00	-69.00	-7.90	0.00	-483.5	0.00	483.47	3,811.38	952.14	3,920.15	3,573.37	2.9	-0.52	0.153
55.00	-68.22	-7.84	0.00	-467.7	0.00	467.67	3,786.98	943.18	3,846.69	3,516.79	3.12	-0.54	0.151
60.00	-66.30	-7.73	0.00	-428.5	0.00	428.49	3,725.01	920.77	3,666.09	3,376.38	3.72	-0.59	0.145
65.00	-64.42	-7.62	0.00	-389.8	0.00	389.83	3,661.69	898.36	3,489.84	3,237.52	4.36	-0.64	0.138
70.00	-62.57	-7.51	0.00	-351.7	0.00	351.71	3,597.00	875.95	3,317.92	3,100.31	5.05	-0.68	0.131
75.00	-60.75	-7.41	0.00	-314.2	0.00	314.15	3,530.94	853.54	3,150.34	2,964.82	5.78	-0.72	0.123
79.00	-52.95	-6.54	0.00	-284.2	0.00	284.15	3,477.12	835.61	3,019.41	2,857.75	6.4	-0.76	0.115
80.00	-52.61	-6.47	0.00	-277.6	0.00	277.61	3,463.53	831.13	2,987.11	2,831.17	6.56	-0.76	0.113
85.00	-50.92	-6.36	0.00	-245.2	0.00	245.24	3,394.74	808.72	2,828.22	2,699.42	7.38	-0.8	0.106
89.00	-48.61	-6.19	0.00	-219.8	0.00	219.80	3,338.74	790.79	2,704.24	2,595.47	8.07	-0.83	0.099
90.00	-47.21	-5.87	0.00	-213.4	0.00	213.38	3,324.60	786.31	2,673.67	2,569.69	8.24	-0.84	0.097
94.92	-45.68	-5.80	0.00	-184.5	0.00	184.50	3,235.41	764.27	2,525.94	2,429.97	9.13	-0.88	0.090
95.00	-45.64	-5.76	0.00	-184.0	0.00	184.02	3,233.83	763.90	2,523.47	2,427.59	9.14	-0.88	0.090
98.00	-38.80	-5.03	0.00	-166.5	0.00	166.47	3,176.91	750.45	2,435.43	2,342.45	9.7	-0.9	0.083
99.83	-37.98	-4.99	0.00	-157.2	0.00	157.25	2,561.71	630.50	2,062.78	1,907.73	10.05	-0.91	0.097
100.00	-37.94	-4.93	0.00	-156.4	0.00	156.42	2,559.95	629.87	2,058.71	1,904.52	10.08	-0.91	0.097
105.00	-36.60	-4.80	0.00	-131.8	0.00	131.75	2,506.36	611.20	1,938.46	1,808.89	11.05	-0.94	0.087
110.00	-35.30	-4.69	0.00	-107.7	0.00	107.74	2,451.42	592.52	1,821.82	1,714.70	12.06	-0.98	0.077
113.00	-34.21	-4.51	0.00	-93.6	0.00	93.56	2,417.80	581.32	1,753.58	1,658.91	12.68	-0.99	0.071
115.00	-33.71	-4.43	0.00	-84.5	0.00	84.53	2,395.11	573.85	1,708.81	1,622.03	13.09	-1	0.066
120.00	-32.50	-4.31	0.00	-62.4	0.00	62.40	2,337.43	555.17	1,599.41	1,530.98	14.16	-1.03	0.055
123.00	-22.90	-3.09	0.00	-49.4	0.00	49.37	2,302.17	543.97	1,535.51	1,477.15	14.81	-1.04	0.043
125.00	-22.45	-3.00	0.00	-43.2	0.00	43.18	2,271.18	536.50	1,493.64	1,437.06	15.24	-1.05	0.040
130.00	-21.36	-2.86	0.00	-28.2	0.00	28.18	2,192.12	517.82	1,391.48	1,338.27	16.35	-1.06	0.031
135.00	-20.30	-2.76	0.00	-13.9	0.00	13.86	2,113.06	499.15	1,292.94	1,243.00	17.46	-1.07	0.021
137.00	-8.06	-0.97	0.00	-8.3	0.00	8.33	2,081.44	491.68	1,254.54	1,205.88	17.91	-1.07	0.011
140.00	-7.52	-0.87	0.00	-5.4	0.00	5.42	2,034.01	480.47	1,198.02	1,151.25	18.58	-1.07	0.008
145.00	-6.65	-0.78	0.00	-1.1	0.00	1.09	1,954.95	461.80	1,106.72	1,063.01	19.71	-1.07	0.004
146.00	-2.10	-0.29	0.00	-0.3	0.00	0.31	1,939.14	458.06	1,088.89	1,045.79	19.93	-1.07	0.001
147.00	-0.15	-0.01	0.00	-0.0	0.00	0.01	1,923.33	454.33	1,071.21	1,028.70	20.16	-1.07	0.000
147.92	0.00	-0.01	0.00	0.0	0.00	0.00	1,908.78	450.89	1,055.07	1,013.11	20.36	-1.07	0.000

ASSET: 302468, Petro Lock
 CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H
 ENG NO: 13682693_C3_06

Load Case: 1.0D + 1.0W Service Normal	60 mph Wind with No Ice	22 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.00		
Wind Load Factor: 1.00		

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.34	-7.16	0.00	-752.8	0.00	752.75	4,345.88	1,174.02	5,959.78	5,031.73	0	0	0.161
5.00	-49.09	-7.09	0.00	-717.0	0.00	716.95	4,297.96	1,151.61	5,734.45	4,880.64	0.02	-0.04	0.158
10.00	-47.76	-7.02	0.00	-681.5	0.00	681.50	4,248.68	1,129.20	5,513.47	4,730.16	0.08	-0.08	0.155
15.00	-46.46	-6.95	0.00	-646.4	0.00	646.40	4,198.04	1,106.79	5,296.82	4,580.38	0.19	-0.12	0.152
20.00	-45.17	-6.88	0.00	-611.6	0.00	611.64	4,146.03	1,084.38	5,084.52	4,431.40	0.33	-0.16	0.149
25.00	-43.91	-6.81	0.00	-577.3	0.00	577.26	4,092.66	1,061.97	4,876.56	4,283.31	0.52	-0.2	0.146
30.00	-42.68	-6.74	0.00	-543.2	0.00	543.22	4,037.93	1,039.56	4,672.94	4,136.20	0.75	-0.24	0.142
35.00	-41.46	-6.67	0.00	-509.5	0.00	509.52	3,981.83	1,017.15	4,473.67	3,990.15	1.02	-0.28	0.138
40.00	-40.27	-6.59	0.00	-476.2	0.00	476.18	3,924.37	994.74	4,278.73	3,845.26	1.34	-0.32	0.134
45.00	-39.10	-6.54	0.00	-443.2	0.00	443.22	3,865.54	972.33	4,088.14	3,701.63	1.69	-0.36	0.130
46.83	-38.67	-6.50	0.00	-431.2	0.00	431.24	3,843.63	964.11	4,019.35	3,649.30	1.83	-0.37	0.128
50.00	-37.35	-6.44	0.00	-410.7	0.00	410.66	3,805.36	949.92	3,901.89	3,559.34	2.09	-0.4	0.125
53.00	-36.11	-6.40	0.00	-391.3	0.00	391.32	3,811.38	952.14	3,920.15	3,573.37	2.35	-0.42	0.119
55.00	-35.66	-6.34	0.00	-378.5	0.00	378.53	3,786.98	943.18	3,846.69	3,516.79	2.53	-0.44	0.117
60.00	-34.53	-6.25	0.00	-346.8	0.00	346.83	3,725.01	920.77	3,666.09	3,376.38	3.02	-0.48	0.112
65.00	-33.44	-6.16	0.00	-315.6	0.00	315.56	3,661.69	898.36	3,489.84	3,237.52	3.54	-0.51	0.107
70.00	-32.36	-6.07	0.00	-284.8	0.00	284.75	3,597.00	875.95	3,317.92	3,100.31	4.09	-0.55	0.101
75.00	-31.30	-5.99	0.00	-254.4	0.00	254.38	3,530.94	853.54	3,150.34	2,964.82	4.69	-0.59	0.095
79.00	-27.35	-5.27	0.00	-230.1	0.00	230.06	3,477.12	835.61	3,019.41	2,857.75	5.19	-0.61	0.088
80.00	-27.15	-5.22	0.00	-224.8	0.00	224.78	3,463.53	831.13	2,987.11	2,831.17	5.32	-0.62	0.087
85.00	-26.15	-5.14	0.00	-198.7	0.00	198.67	3,394.74	808.72	2,828.22	2,699.42	5.99	-0.65	0.081
89.00	-24.81	-5.01	0.00	-178.1	0.00	178.12	3,338.74	790.79	2,704.24	2,595.47	6.54	-0.68	0.076
90.00	-24.30	-4.72	0.00	-172.9	0.00	172.89	3,324.60	786.31	2,673.67	2,569.69	6.68	-0.68	0.075
94.92	-23.38	-4.67	0.00	-149.7	0.00	149.66	3,235.41	764.27	2,525.94	2,429.97	7.4	-0.71	0.069
95.00	-23.35	-4.64	0.00	-149.3	0.00	149.27	3,233.83	763.90	2,523.47	2,427.59	7.41	-0.71	0.069
98.00	-19.49	-4.07	0.00	-135.1	0.00	135.10	3,176.91	750.45	2,435.43	2,342.45	7.86	-0.73	0.064
99.83	-18.94	-4.05	0.00	-127.6	0.00	127.63	2,561.71	630.50	2,062.78	1,907.73	8.15	-0.74	0.074
100.00	-18.92	-4.01	0.00	-127.0	0.00	126.96	2,559.95	629.87	2,058.71	1,904.52	8.17	-0.74	0.074
105.00	-18.16	-3.91	0.00	-106.9	0.00	106.93	2,506.36	611.20	1,938.46	1,808.89	8.96	-0.77	0.066
110.00	-17.42	-3.83	0.00	-87.4	0.00	87.38	2,451.42	592.52	1,821.82	1,714.70	9.77	-0.79	0.058
113.00	-16.90	-3.69	0.00	-75.8	0.00	75.80	2,417.80	581.32	1,753.58	1,658.91	10.28	-0.8	0.053
115.00	-16.63	-3.63	0.00	-68.4	0.00	68.42	2,395.11	573.85	1,708.81	1,622.03	10.61	-0.81	0.049
120.00	-15.95	-3.55	0.00	-50.3	0.00	50.28	2,337.43	555.17	1,599.41	1,530.98	11.48	-0.83	0.040
123.00	-11.37	-2.50	0.00	-39.6	0.00	39.55	2,302.17	543.97	1,535.51	1,477.15	12	-0.84	0.032
125.00	-11.12	-2.44	0.00	-34.5	0.00	34.54	2,271.18	536.50	1,493.64	1,437.06	12.36	-0.85	0.029
130.00	-10.49	-2.35	0.00	-22.3	0.00	22.34	2,192.12	517.82	1,391.48	1,338.27	13.25	-0.86	0.022
135.00	-9.89	-2.28	0.00	-10.6	0.00	10.61	2,113.06	499.15	1,292.94	1,243.00	14.15	-0.87	0.013
137.00	-4.14	-0.69	0.00	-6.0	0.00	6.05	2,081.44	491.68	1,254.54	1,205.88	14.52	-0.87	0.007
140.00	-3.85	-0.63	0.00	-4.0	0.00	3.96	2,034.01	480.47	1,198.02	1,151.25	15.06	-0.87	0.005
145.00	-3.39	-0.57	0.00	-0.8	0.00	0.84	1,954.95	461.80	1,106.72	1,063.01	15.97	-0.87	0.003
146.00	-0.80	-0.26	0.00	-0.3	0.00	0.26	1,939.14	458.06	1,088.89	1,045.79	16.15	-0.87	0.001
147.00	-0.08	-0.01	0.00	-0.0	0.00	0.01	1,923.33	454.33	1,071.21	1,028.70	16.34	-0.87	0.000
147.92	0.00	-0.01	0.00	0.0	0.00	0.00	1,908.78	450.89	1,055.07	1,013.11	16.5	-0.87	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.191
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a :	1.600
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.204
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S :	0.030
Lower Limit C_S :	0.030
Period based on Rayleigh Method (sec):	2.460
Redundancy Factor (ρ):	1.000
Seismic Force Distribution Exponent (k):	1.980
Total Unfactored Dead Load:	50.340 k
Seismic Base Shear (E):	1.510 k

1.2D + 1.0Ev + 1.0Eh Normal Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	147.46	81	1,602	0.004	6	100
41	146.5	91	1,778	0.004	6	113
40	145.5	92	1,768	0.004	6	114
39	142.5	468	8,686	0.021	31	581
38	138.5	290	5,078	0.012	18	360
37	136	238	4,018	0.010	14	295
36	132.5	607	9,743	0.023	35	753
35	127.5	625	9,297	0.022	33	776
34	124	255	3,591	0.009	13	317
33	121.5	399	5,397	0.013	19	495
32	117.5	680	8,601	0.020	31	843
31	114	277	3,301	0.008	12	344
30	111.5	436	4,968	0.012	18	541
29	107.5	741	7,856	0.019	28	919
28	102.5	759	7,323	0.017	26	941
27	99.9167	26	235	0.001	1	32
26	98.9167	548	4,931	0.012	18	680
25	96.5	923	7,905	0.019	28	1,145
24	94.9583	26	214	0.000	1	32
23	92.4583	917	7,216	0.017	26	1,138
22	89.5	193	1,425	0.003	5	240
21	87	781	5,450	0.013	20	970
20	82.5	996	6,255	0.015	23	1,236
19	79.5	202	1,178	0.003	4	250
18	77	827	4,526	0.011	16	1,026
17	72.5	1,053	5,116	0.012	18	1,306
16	67.5	1,075	4,532	0.011	16	1,333
15	62.5	1,096	3,970	0.010	14	1,360
14	57.5	1,118	3,432	0.008	12	1,387
13	54	453	1,229	0.003	4	562
12	51.5	1,235	3,048	0.007	11	1,532
11	48.4167	1,321	2,883	0.007	10	1,639
10	45.9167	423	831	0.002	3	525
9	42.5	1,168	1,970	0.005	7	1,449

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vz}	Horizontal Force (lb)	Vertical Force (lb)
8	37.5	1,190	1,566	0.004	6	1,476
7	32.5	1,211	1,201	0.003	4	1,503
6	27.5	1,233	878	0.002	3	1,530
5	22.5	1,255	600	0.001	2	1,557
4	17.5	1,277	371	0.001	1	1,585
3	12.5	1,299	194	0.000	1	1,612
2	7.5	1,321	72	0.000	0	1,639
1	2.5	1,241	8	0.000	0	1,540
Commscope RDIDC-9181-PF-48	147	22	432	0.001	2	27
Fujitsu TA08025-B604	147	192	3,780	0.009	14	238
Fujitsu TA08025-B605	147	225	4,437	0.011	16	279
JMA Wireless MX08FRO665-21	147	194	3,816	0.009	14	240
Generic Round Platform with Handrails	146	2,500	48,639	0.116	175	3,102
Raycap DC6-48-60-18-8F	137	80	1,372	0.003	5	99
Ericsson RRUS 4478 B14	137	180	3,082	0.007	11	223
Ericsson RRUS 4415 B25	137	138	2,367	0.006	9	171
Ericsson RRUS 4415 B25	123	138	1,912	0.005	7	171
Ericsson RRUS 4449 B5, B12	137	213	3,653	0.009	13	264
Ericsson RRUS 32 B66A	137	152	2,609	0.006	9	189
Ericsson RRUS E2 B29	137	180	3,087	0.007	11	223
Ericsson RRUS-32 B30 (77 lbs)	137	231	3,962	0.009	14	287
Ericsson AIR 6419 B77G	137	198	3,401	0.008	12	246
Ericsson AIR 6449 n77D	137	245	4,198	0.010	15	304
CCI DMP65R-BU6DA	137	159	2,724	0.006	10	197
CCI DMP65R-BU8D	137	96	1,641	0.004	6	119
Quintel QD8616-7	137	150	2,573	0.006	9	186
Site Pro1 RMQLP-4120-H10	137	3,250	55,731	0.133	201	4,032
Quintel QD6616-7	137	260	4,459	0.011	16	323
Ericsson KRY 112 144/1	123	33	457	0.001	2	41
Ericsson KRY 112 489/1	123	77	1,067	0.002	4	96
Ericsson Radio 4449 B71 B85A	123	225	3,117	0.007	11	279
Ericsson Air6449 B41	123	312	4,322	0.010	16	387
Ericsson AIR32 B66Aa/B2a	123	397	5,494	0.013	20	492
RFS APX16DWV-16DWVS-E-A20	123	122	1,691	0.004	6	151
RFS APXVAARR24_43-U-NA20	123	384	5,315	0.013	19	476
Generic Flat Platform with Handrails	123	2,500	34,630	0.082	125	3,102
RFS APXV18-206517	113	79	927	0.002	3	98
RFS IBC1900BB-1	98	66	583	0.001	2	82
RFS IBC1900HG-2A	98	66	583	0.001	2	82
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	98	192	1,695	0.004	6	238
Alcatel-Lucent 4x40W RRH (88 lb)	98	264	2,331	0.006	8	328
Nokia 2.5G MAA - AAHC(64T64R)	98	311	2,744	0.006	10	386
RFS APXVSPP18-C-A20	98	171	1,510	0.004	5	212
Generic Round Low Profile Platform	98	1,875	16,556	0.040	60	2,326
Generic Round Low Profile Platform	79	1,875	10,801	0.026	39	2,326
DragonWave Horizon Compact	90	32	237	0.001	1	39
NextNet BTS-2500	90	105	783	0.002	3	130
Argus LLPX310R	90	86	640	0.002	2	106
DragonWave A-ANT-18G-2-C	90	54	404	0.001	1	67
DragonWave A-ANT-11G-2.5-C	90	48	355	0.001	1	59
Side Arms	89	560	4,085	0.010	15	695
Samsung B2/B66A RRH-BR049	79	253	1,459	0.004	5	314
Samsung B5/B13 RRH-BR04C	79	211	1,215	0.003	4	262
Samsung MT6407-77A	79	245	1,410	0.003	5	304
RFS DB-T1-6Z-8AB-0Z	79	88	507	0.001	2	109
Commscope SBNHH-1D65B	79	456	2,629	0.006	9	566
Lucent KS-24019	20	4	2	0.000	0	5
		50,338	419,666	1.000	1,510	62,456

0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	147.46	81	1,602	0.004	6	69
41	146.5	91	1,778	0.004	6	78
40	145.5	92	1,768	0.004	6	79
39	142.5	468	8,686	0.021	31	403
38	138.5	290	5,078	0.012	18	249
37	136	238	4,018	0.010	14	204
36	132.5	607	9,743	0.023	35	522
35	127.5	625	9,297	0.022	33	537
34	124	255	3,591	0.009	13	219
33	121.5	399	5,397	0.013	19	343
32	117.5	680	8,601	0.020	31	584
31	114	277	3,301	0.008	12	238
30	111.5	436	4,968	0.012	18	374
29	107.5	741	7,856	0.019	28	636
28	102.5	759	7,323	0.017	26	652
27	99.9167	26	235	0.001	1	22
26	98.9167	548	4,931	0.012	18	471
25	96.5	923	7,905	0.019	28	793
24	94.9583	26	214	0.000	1	22
23	92.4583	917	7,216	0.017	26	788
22	89.5	193	1,425	0.003	5	166
21	87	781	5,450	0.013	20	672
20	82.5	996	6,255	0.015	23	856
19	79.5	202	1,178	0.003	4	173
18	77	827	4,526	0.011	16	710
17	72.5	1,053	5,116	0.012	18	905
16	67.5	1,075	4,532	0.011	16	923
15	62.5	1,096	3,970	0.010	14	942
14	57.5	1,118	3,432	0.008	12	961
13	54	453	1,229	0.003	4	390
12	51.5	1,235	3,048	0.007	11	1,061
11	48.4167	1,321	2,883	0.007	10	1,135
10	45.9167	423	831	0.002	3	363
9	42.5	1,168	1,970	0.005	7	1,004
8	37.5	1,190	1,566	0.004	6	1,022
7	32.5	1,211	1,201	0.003	4	1,041
6	27.5	1,233	878	0.002	3	1,060
5	22.5	1,255	600	0.001	2	1,078
4	17.5	1,277	371	0.001	1	1,098
3	12.5	1,299	194	0.000	1	1,116
2	7.5	1,321	72	0.000	0	1,135
1	2.5	1,241	8	0.000	0	1,067
Commscope RDIDC-9181-PF-48	147	22	432	0.001	2	19
Fujitsu TA08025-B604	147	192	3,780	0.009	14	165
Fujitsu TA08025-B605	147	225	4,437	0.011	16	193
JMA Wireless MX08FRO665-21	147	194	3,816	0.009	14	166
Generic Round Platform with Handrails	146	2,500	48,639	0.116	175	2,148
Raycap DC6-48-60-18-8F	137	80	1,372	0.003	5	69
Ericsson RRUS 4478 B14	137	180	3,082	0.007	11	154
Ericsson RRUS 4415 B25	137	138	2,367	0.006	9	119
Ericsson RRUS 4415 B25	123	138	1,912	0.005	7	119
Ericsson RRUS 4449 B5, B12	137	213	3,653	0.009	13	183
Ericsson RRUS 32 B66A	137	152	2,609	0.006	9	131
Ericsson RRUS E2 B29	137	180	3,087	0.007	11	155
Ericsson RRUS-32 B30 (77 lbs)	137	231	3,962	0.009	14	198
Ericsson AIR 6419 B77G	137	198	3,401	0.008	12	170
Ericsson AIR 6449 n77D	137	245	4,198	0.010	15	210
CCI DMP65R-BU6DA	137	159	2,724	0.006	10	136
CCI DMP65R-BU8D	137	96	1,641	0.004	6	82
Quintel QD8616-7	137	150	2,573	0.006	9	129
Site Pro1 RMQLP-4120-H10	137	3,250	55,731	0.133	201	2,792
Quintel QD6616-7	137	260	4,459	0.011	16	223
Ericsson KRY 112 144/1	123	33	457	0.001	2	28
Ericsson KRY 112 489/1	123	77	1,067	0.002	4	66
Ericsson Radio 4449 B71 B85A	123	225	3,117	0.007	11	193
Ericsson Air6449 B41	123	312	4,322	0.010	16	268
Ericsson AIR32 B66Aa/B2a	123	397	5,494	0.013	20	341
RFS APX16DWV-16DWVS-E-A20	123	122	1,691	0.004	6	105
RFS APXVAARR24_43-U-NA20	123	384	5,315	0.013	19	330
Generic Flat Platform with Handrails	123	2,500	34,630	0.082	125	2,148

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
RFS APXV18-206517	113	79	927	0.002	3	68
RFS IBC1900BB-1	98	66	583	0.001	2	57
RFS IBC1900HG-2A	98	66	583	0.001	2	57
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	98	192	1,695	0.004	6	165
Alcatel-Lucent 4x40W RRH (88 lb)	98	264	2,331	0.006	8	227
Nokia 2.5G MAA - AAHC(64T64R)	98	311	2,744	0.006	10	267
RFS APXVSP18-C-A20	98	171	1,510	0.004	5	147
Generic Round Low Profile Platform	98	1,875	16,556	0.040	60	1,611
Generic Round Low Profile Platform	79	1,875	10,801	0.026	39	1,611
DragonWave Horizon Compact	90	32	237	0.001	1	27
NextNet BTS-2500	90	105	783	0.002	3	90
Argus LLPX310R	90	86	640	0.002	2	74
DragonWave A-ANT-18G-2-C	90	54	404	0.001	1	47
DragonWave A-ANT-11G-2.5-C	90	48	355	0.001	1	41
Side Arms	89	560	4,085	0.010	15	481
Samsung B2/B66A RRH-BR049	79	253	1,459	0.004	5	218
Samsung B5/B13 RRH-BR04C	79	211	1,215	0.003	4	181
Samsung MT6407-77A	79	245	1,410	0.003	5	210
RFS DB-T1-6Z-8AB-0Z	79	88	507	0.001	2	76
Commscope SBNHH-1D65B	79	456	2,629	0.006	9	392
Lucent KS-24019	20	4	2	0.000	0	3
		50,338	419,666	1.000	1,510	43,253

1.2D + 1.0Ev + 1.0Eh Normal Seismic

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-60.92	-1.51	0.00	-185.96	0.00	185.96	4,345.88	1,174.02	5,960	5,031.73	0.00	0.00	0.05
5.00	-59.28	-1.52	0.00	-178.39	0.00	178.39	4,297.96	1,151.61	5,734	4,880.64	0.01	-0.01	0.05
10.00	-57.66	-1.53	0.00	-170.77	0.00	170.77	4,248.68	1,129.20	5,513	4,730.16	0.02	-0.02	0.05
15.00	-56.08	-1.54	0.00	-163.11	0.00	163.11	4,198.04	1,106.79	5,297	4,580.38	0.05	-0.03	0.05
20.00	-54.52	-1.55	0.00	-155.40	0.00	155.40	4,146.03	1,084.38	5,085	4,431.40	0.08	-0.04	0.05
25.00	-52.99	-1.55	0.00	-147.67	0.00	147.67	4,092.66	1,061.97	4,877	4,283.31	0.13	-0.05	0.05
30.00	-51.48	-1.56	0.00	-139.90	0.00	139.90	4,037.93	1,039.56	4,673	4,136.20	0.19	-0.06	0.05
35.00	-50.01	-1.56	0.00	-132.13	0.00	132.13	3,981.83	1,017.15	4,474	3,990.15	0.26	-0.07	0.05
40.00	-48.56	-1.56	0.00	-124.34	0.00	124.34	3,924.37	994.74	4,279	3,845.26	0.34	-0.08	0.05
45.00	-48.03	-1.56	0.00	-116.55	0.00	116.55	3,865.54	972.33	4,088	3,701.63	0.43	-0.09	0.04
46.83	-46.39	-1.55	0.00	-113.69	0.00	113.69	3,843.63	964.11	4,019	3,649.30	0.46	-0.10	0.04
50.00	-44.86	-1.54	0.00	-108.78	0.00	108.78	3,805.36	949.92	3,902	3,559.34	0.53	-0.10	0.04
53.00	-44.30	-1.54	0.00	-104.15	0.00	104.15	3,811.38	952.14	3,920	3,573.37	0.60	-0.11	0.04
55.00	-42.91	-1.53	0.00	-101.06	0.00	101.06	3,786.98	943.18	3,847	3,516.79	0.64	-0.11	0.04
60.00	-41.55	-1.52	0.00	-93.40	0.00	93.40	3,725.01	920.77	3,666	3,376.38	0.77	-0.12	0.04
65.00	-40.22	-1.51	0.00	-85.80	0.00	85.80	3,661.69	898.36	3,490	3,237.52	0.90	-0.13	0.04
70.00	-38.91	-1.49	0.00	-78.25	0.00	78.25	3,597.00	875.95	3,318	3,100.31	1.05	-0.14	0.04
75.00	-37.88	-1.48	0.00	-70.77	0.00	70.77	3,530.94	853.54	3,150	2,964.82	1.20	-0.15	0.04
79.00	-33.75	-1.40	0.00	-64.85	0.00	64.85	3,477.12	835.61	3,019	2,857.75	1.33	-0.16	0.03
80.00	-32.52	-1.38	0.00	-63.44	0.00	63.44	3,463.53	831.13	2,987	2,831.17	1.36	-0.16	0.03
85.00	-31.55	-1.36	0.00	-56.54	0.00	56.54	3,394.74	808.72	2,828	2,699.42	1.54	-0.17	0.03
89.00	-30.61	-1.34	0.00	-51.09	0.00	51.09	3,338.74	790.79	2,704	2,595.47	1.69	-0.18	0.03
90.00	-29.07	-1.31	0.00	-49.75	0.00	49.75	3,324.60	786.31	2,674	2,569.69	1.72	-0.18	0.03
94.92	-29.04	-1.31	0.00	-43.33	0.00	43.33	3,235.41	764.27	2,526	2,429.97	1.91	-0.19	0.03
95.00	-27.89	-1.28	0.00	-43.22	0.00	43.22	3,233.83	763.90	2,523	2,427.59	1.92	-0.19	0.03
98.00	-23.56	-1.15	0.00	-39.39	0.00	39.39	3,176.91	750.45	2,435	2,342.45	2.04	-0.19	0.02
99.83	-23.53	-1.15	0.00	-37.28	0.00	37.28	2,561.71	630.50	2,063	1,907.73	2.11	-0.20	0.03
100.00	-22.59	-1.12	0.00	-37.09	0.00	37.09	2,559.95	629.87	2,059	1,904.52	2.12	-0.20	0.03
105.00	-21.67	-1.10	0.00	-31.47	0.00	31.47	2,506.36	611.20	1,938	1,808.89	2.33	-0.20	0.03
110.00	-21.13	-1.08	0.00	-25.99	0.00	25.99	2,451.42	592.52	1,822	1,714.70	2.54	-0.21	0.02
113.00	-20.69	-1.06	0.00	-22.76	0.00	22.76	2,417.80	581.32	1,754	1,658.91	2.68	-0.22	0.02
115.00	-19.84	-1.03	0.00	-20.63	0.00	20.63	2,395.11	573.85	1,709	1,622.03	2.77	-0.22	0.02
120.00	-19.35	-1.01	0.00	-15.49	0.00	15.49	2,337.43	555.17	1,599	1,530.98	3.00	-0.22	0.02
123.00	-13.84	-0.77	0.00	-12.46	0.00	12.46	2,302.17	543.97	1,536	1,477.15	3.14	-0.23	0.01
125.00	-13.06	-0.73	0.00	-10.93	0.00	10.93	2,271.18	536.50	1,494	1,437.06	3.24	-0.23	0.01
130.00	-12.31	-0.69	0.00	-7.27	0.00	7.27	2,192.12	517.82	1,391	1,338.27	3.48	-0.23	0.01

ASSET: 302468, Petro Lock
 CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H
 ENG NO: 13682693_C3_06

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
135.00	-12.01	-0.68	0.00	-3.80	0.00	3.80	2,113.06	499.15	1,293	1,243.00	3.73	-0.23	0.01
137.00	-4.79	-0.29	0.00	-2.45	0.00	2.45	2,081.44	491.68	1,255	1,205.88	3.82	-0.24	0.00
140.00	-4.21	-0.26	0.00	-1.58	0.00	1.58	2,034.01	480.47	1,198	1,151.25	3.97	-0.24	0.00
145.00	-4.10	-0.25	0.00	-0.30	0.00	0.30	1,954.95	461.80	1,107	1,063.01	4.22	-0.24	0.00
146.00	-0.88	-0.05	0.00	-0.05	0.00	0.05	1,939.14	458.06	1,089	1,045.79	4.27	-0.24	0.00
147.00	0.00	0.00	0.00	0.00	0.00	0.00	1,923.33	454.33	1,071	1,028.70	4.32	-0.24	0.00
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.78	450.89	1,055	1,013.11	4.36	-0.24	0.00

0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.19	-1.51	0.00	-182.88	0.00	182.88	4,345.88	1,174.02	5,960	5,031.73	0.00	0.00	0.05
5.00	-41.05	-1.52	0.00	-175.32	0.00	175.32	4,297.96	1,151.61	5,734	4,880.64	0.01	-0.01	0.05
10.00	-39.93	-1.53	0.00	-167.72	0.00	167.72	4,248.68	1,129.20	5,513	4,730.16	0.02	-0.02	0.05
15.00	-38.84	-1.53	0.00	-160.10	0.00	160.10	4,198.04	1,106.79	5,297	4,580.38	0.05	-0.03	0.04
20.00	-37.75	-1.53	0.00	-152.45	0.00	152.45	4,146.03	1,084.38	5,085	4,431.40	0.08	-0.04	0.04
25.00	-36.69	-1.54	0.00	-144.78	0.00	144.78	4,092.66	1,061.97	4,877	4,283.31	0.13	-0.05	0.04
30.00	-35.65	-1.54	0.00	-137.10	0.00	137.10	4,037.93	1,039.56	4,673	4,136.20	0.18	-0.06	0.04
35.00	-34.63	-1.54	0.00	-129.41	0.00	129.41	3,981.83	1,017.15	4,474	3,990.15	0.25	-0.07	0.04
40.00	-33.63	-1.53	0.00	-121.73	0.00	121.73	3,924.37	994.74	4,279	3,845.26	0.33	-0.08	0.04
45.00	-33.26	-1.53	0.00	-114.06	0.00	114.06	3,865.54	972.33	4,088	3,701.63	0.42	-0.09	0.04
46.83	-32.13	-1.53	0.00	-111.25	0.00	111.25	3,843.63	964.11	4,019	3,649.30	0.45	-0.09	0.04
50.00	-31.07	-1.52	0.00	-106.41	0.00	106.41	3,805.36	949.92	3,902	3,559.34	0.52	-0.10	0.04
53.00	-30.68	-1.51	0.00	-101.87	0.00	101.87	3,811.38	952.14	3,920	3,573.37	0.58	-0.11	0.04
55.00	-29.72	-1.50	0.00	-98.84	0.00	98.84	3,786.98	943.18	3,847	3,516.79	0.63	-0.11	0.04
60.00	-28.77	-1.49	0.00	-91.32	0.00	91.32	3,725.01	920.77	3,666	3,376.38	0.75	-0.12	0.04
65.00	-27.85	-1.48	0.00	-83.86	0.00	83.86	3,661.69	898.36	3,490	3,237.52	0.88	-0.13	0.03
70.00	-26.95	-1.46	0.00	-76.47	0.00	76.47	3,597.00	875.95	3,318	3,100.31	1.03	-0.14	0.03
75.00	-26.24	-1.45	0.00	-69.15	0.00	69.15	3,530.94	853.54	3,150	2,964.82	1.18	-0.15	0.03
79.00	-23.37	-1.37	0.00	-63.36	0.00	63.36	3,477.12	835.61	3,019	2,857.75	1.31	-0.16	0.03
80.00	-22.52	-1.35	0.00	-61.99	0.00	61.99	3,463.53	831.13	2,987	2,831.17	1.34	-0.16	0.03
85.00	-21.85	-1.33	0.00	-55.23	0.00	55.23	3,394.74	808.72	2,828	2,699.42	1.51	-0.17	0.03
89.00	-21.20	-1.31	0.00	-49.91	0.00	49.91	3,338.74	790.79	2,704	2,595.47	1.65	-0.17	0.03
90.00	-20.13	-1.28	0.00	-48.59	0.00	48.59	3,324.60	786.31	2,674	2,569.69	1.69	-0.18	0.03
94.92	-20.11	-1.28	0.00	-42.32	0.00	42.32	3,235.41	764.27	2,526	2,429.97	1.87	-0.18	0.02
95.00	-19.32	-1.25	0.00	-42.22	0.00	42.22	3,233.83	763.90	2,523	2,427.59	1.88	-0.18	0.02
98.00	-16.32	-1.13	0.00	-38.48	0.00	38.48	3,176.91	750.45	2,435	2,342.45	1.99	-0.19	0.02
99.83	-16.29	-1.13	0.00	-36.41	0.00	36.41	2,561.71	630.50	2,063	1,907.73	2.07	-0.19	0.03
100.00	-15.64	-1.10	0.00	-36.22	0.00	36.22	2,559.95	629.87	2,059	1,904.52	2.07	-0.19	0.03
105.00	-15.01	-1.07	0.00	-30.73	0.00	30.73	2,506.36	611.20	1,938	1,808.89	2.28	-0.20	0.02
110.00	-14.63	-1.05	0.00	-25.38	0.00	25.38	2,451.42	592.52	1,822	1,714.70	2.49	-0.21	0.02
113.00	-14.32	-1.04	0.00	-22.23	0.00	22.23	2,417.80	581.32	1,754	1,658.91	2.62	-0.21	0.02
115.00	-13.74	-1.00	0.00	-20.15	0.00	20.15	2,395.11	573.85	1,709	1,622.03	2.71	-0.21	0.02
120.00	-13.40	-0.99	0.00	-15.13	0.00	15.13	2,337.43	555.17	1,599	1,530.98	2.94	-0.22	0.02
123.00	-9.58	-0.75	0.00	-12.17	0.00	12.17	2,302.17	543.97	1,536	1,477.15	3.08	-0.22	0.01
125.00	-9.04	-0.71	0.00	-10.68	0.00	10.68	2,271.18	536.50	1,494	1,437.06	3.17	-0.22	0.01
130.00	-8.52	-0.68	0.00	-7.11	0.00	7.11	2,192.12	517.82	1,391	1,338.27	3.41	-0.23	0.01
135.00	-8.32	-0.66	0.00	-3.72	0.00	3.72	2,113.06	499.15	1,293	1,243.00	3.65	-0.23	0.01
137.00	-3.32	-0.28	0.00	-2.39	0.00	2.39	2,081.44	491.68	1,255	1,205.88	3.75	-0.23	0.00
140.00	-2.92	-0.25	0.00	-1.55	0.00	1.55	2,034.01	480.47	1,198	1,151.25	3.89	-0.23	0.00
145.00	-2.84	-0.24	0.00	-0.30	0.00	0.30	1,954.95	461.80	1,107	1,063.01	4.13	-0.23	0.00
146.00	-0.61	-0.05	0.00	-0.05	0.00	0.05	1,939.14	458.06	1,089	1,045.79	4.18	-0.23	0.00
147.00	0.00	0.00	0.00	0.00	0.00	0.00	1,923.33	454.33	1,071	1,028.70	4.23	-0.23	0.00
147.92	0.00	0.00	0.00	0.00	0.00	0.00	1,908.78	450.89	1,055	1,013.11	4.27	-0.23	0.00

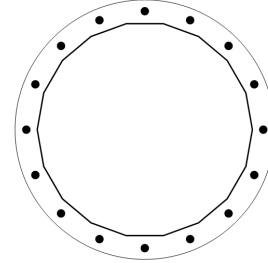
ANALYSIS SUMMARY

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	30.97	0.00	60.36	0.00	0.00	3280.56	0.00	0.67
0.9D + 1.0W Normal	30.95	0.00	45.26	0.00	0.00	3238.27	0.00	0.65
1.2D + 1.0Di + 1.0Wi Normal	8.67	0.00	91.99	0.00	0.00	925.65	0.00	0.21
1.2D + 1.0Ev + 1.0Eh Normal	1.56	0.00	60.92	0.00	0.00	185.96	0.00	0.05
0.9D - 1.0Ev + 1.0Eh Normal	1.54	0.00	42.19	0.00	0.00	182.88	0.00	0.05
1.0D + 1.0W Service Normal	7.16	0.00	50.34	0.00	0.00	752.75	0.00	0.16

BASE PLATE ANALYSIS @ 0 FT

PLATE PARAMETERS (ID# 4790)

Diameter:	69	in
Shape:	Round	
Thickness:	2.75	in
Grade:	A633 Gr. E	
Yield Strength:	60	ksi
Tensile Strength:	80	ksi
Rod Detail Type:	d	
Clear Distance	3.25	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	236	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 3218]	Radial	16	2.25	63	A615-75	75	100	-	-

ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (16) 2.25"Ø [ID 3218]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in ⁴)	Axial Load (k)	Shear Load (k)
1	0.393	29.10	12.06	16.662	902.427	134.75	2.52
2	0.785	22.27	22.27	5.760	108.592	134.75	2.96
3	1.178	12.06	29.10	-6.018	118.475	-119.66	2.96
4	1.571	0.00	31.50	-16.881	926.288	-119.66	2.50
5	1.963	-12.06	29.10	-25.173	2058.823	-119.66	1.67
6	2.356	-22.27	22.27	-29.633	2852.658	-119.66	0.58
7	2.749	-29.10	12.06	-29.581	2842.775	-119.66	0.60
8	3.142	-31.50	0.00	-25.027	2034.962	-119.66	1.69
9	3.534	-29.10	-12.06	-16.662	902.427	-119.66	2.52
10	3.927	-22.27	-22.27	-5.760	108.592	-119.66	2.96
11	4.320	-12.06	-29.10	6.018	118.475	134.75	2.96
12	4.712	0.00	-31.50	16.881	926.288	134.75	2.50
13	5.105	12.06	-29.10	25.173	2058.823	134.75	1.67
14	5.498	22.27	-22.27	29.633	2852.658	134.75	0.58
15	5.890	29.10	-12.06	29.581	2842.775	134.75	0.60
16	6.283	31.50	0.00	25.027	2034.962	134.75	1.69

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	56.58"Ø x 0.375" (18 Sides)	3280.6	60.36	30.97	1.000
Bolt Group	Original (16) 2.25"Ø	3280.6	-	30.97	1.000
TOTALS		3280.56	60.36	30.97	

ASSET: 302468, Petro Lock
 CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H
 ENG NO: 13683501

COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	56.58"ø x 0.375" (18 Sides)	65.8793	-	-	26017.20	-
Bolt Group	Original (16) 2.25"ø	3.9761	3.2477	0.8393	23690.00	4.5

EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter: 56.70 in
 Point-to-Point Diameter: 57.58 in
 Flat Width: 9.999 in
 Flat Radians: 0.349 rad

PLATE PROPERTIES

Neutral Axis: 236 °
 Bend Line Lower Limit: 5.219 rad
 Bend Line Upper Limit: 6.169 rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in ³)	Applied Moment Mu (k-in)	Moment Capacity φMn (k-in)	Ratio
Flat	34.528	0.00	65.279	410.4	3525.1	0.116
Corner	33.048	0.00	62.482	267.4	3374.0	0.079
Circumferential	41.091	0.00	77.687	457.2	4195.1	0.109

PLASTIC ANCHOR ROD ANALYSIS

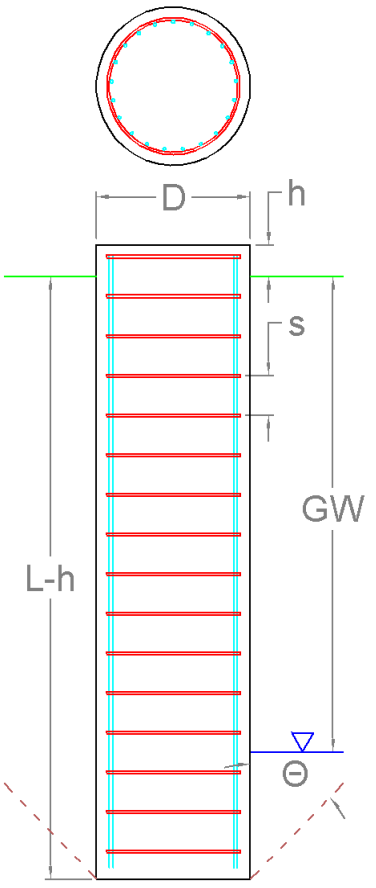
Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity φPn (k)	Ratio
Original	16	2.25	134.7	3.0	243.6	0.578

Pier Foundation Analysis (ANSI/TIA-222-H)

Foundation Analysis Parameters			
Pier Diameter	D	7.00	ft
Pier Embedment	$L-h$	33.5	ft
Pier Height above Ground	H	0.50	ft
Water Table Depth [BGL]	GW	11	ft
Pullout Angle	Θ	30	°
Unit Weight of Concrete		150	pcf
Uplift Skin Friction Factor		0.810	

Reactions		
Moment, M_u	3,280.6	k-ft
Shear, V_u	31.0	k
Axial, P_u	60.4	k
Uplift, T_u	0.0	k

Soil Properties						
Layer Depth (ft)		Unit Weight	Cohesion	Friction Angle	Ultimate Skin Friction	Ultimate Bearing Pressure
TOP	BTM	pcf	psf	°	psf	psf
0.0	1.0	105	0	0	0	0
1.0	2.0	117	0	31	0	0
2.0	4.0	125	0	33	0	0
4.0	7.0	111	1,026	0	512	0
7.0	10.0	100	303	0	162	0
10.0	11.0	102	439	0	232	0
11.0	15.0	109	1,033	0	515	0
15.0	17.0	111	1,033	0	515	0
17.0	25.0	111	0	30	922	0
25.0	30.0	122	0	34	1,662	0
30.0	35.0	131	0	40	1,757	89,948



Soil Strength Capacities		
Volume of Concrete	1,308.5	ft ³
Weight of Concrete [Buoyancy Considered]	142.2	k
Average Soil Unit Weight	72.2	pcf
Skin Friction Resistance	597.7	k
Compressive Bearing Resistance	3,461.6	k
Pullout Weight [Minus Concrete Weight]	1,461.2	k
Compressive Force, P_u	115.9	k
Nominal Compressive Capacity, $\phi_s P_n$	3,044.5	k
$P_u / \phi_s P_n$	3.8%	
Total Lateral Resistance	2,941.7	k
Inflection Point [BGL]	24.3	ft
Moment at Inflection Point, M_D	4,050.1	k-ft
Nominal Moment Capacity, $\phi_s M_n$	16,093.9	k-ft
$M_D / \phi_s M_n$	25.2%	



Pier Strength Capacities

Concrete Compressive Strength, f'_c	3,000	psi
Rebar Size #	11	
Rebar Area (Single)	1.56	in ²
Rebar Quantity	21	
Rebar Yield Strength, F_y	60	ksi
Vertical Rebar Clear Cover	4	in
Tie Rebar Size #	5	
Tie Rebar Area (Single)	0.31	in ²
Tie Rebar Spacing	18.0	in
Tie Rebar Yield Strength, F_y	40	ksi
Rebar Cage Diameter	73.34	in
Strength Bending/Tension Reduction Factor, ϕ_B	0.90	
Strength Shear Reduction Factor, ϕ_V	0.75	
Strength Compression Reduction Factor, ϕ_C	0.65	
Steel Elastic Modulus	29,000	ksi
Design Moment, M_u	3,298.3	k-ft
Moment Capacity, $\phi_B M_n$	4,789.7	k-ft
$M_u / \phi_B M_n$	68.9%	
Design Shear, V_u	220.0	k
Shear Capacity, $\phi_V V_n$	527.2	k
$V_u / \phi_V V_n$	41.7%	
Design Compression, P_u	115.9	k
Compression Capacity, $\phi_P P_n$	8,327.1	k
$P_u / \phi_P P_n$	1.4%	
Bending Reinforcement Ratio	0.006	



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Woburn, MA

American Tower Corporation – Tower Operator/Owner

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