



**Cellco Partnership d/b/a
Verizon Wireless**
Cullen Morgan
Site Acquisition Consultant
750 W Center Street
Suite 301
West Bridgewater, MA 02379
(941)549-7263
cmorgan@clinellc.com

August 27, 2024

Members of the Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

**RE: NOTICE OF EXEMPT MODIFICATION
230 Clover Mill Road, Storrs Mansfield, CT 06268
Latitude: 41.7758
Longitude: -72.2225
Site: MANSFIELD CENTER 1 CT (ATC #376046)**

Dear Members of the Siting Council:

Cellco Partnership d/b/a Verizon Wireless ("Verizon") currently maintains twelve (12) antennas at the 178-foot level of the existing 178.8-foot tower at 230 Clover Mill Road, Storrs Mansfield, CT 06268. The 178.8-foot tower is owned by American Tower Corporation, and the underlying property is currently owned by the Town of Mansfield. Verizon now intends to replace (9) Antennas, (6) RRUs, and (1) OVP, remove (1) OVP, (6) 1-5/8" Coax Cables, and (1) Hybrid Cable, and install (3) Side-by-Side Mounts and (1) 1-5/8" Hybrid Cable. All tower-mounted equipment modifications will take place at the 178-foot level of the tower.

Planned Modifications:

Remove Existing:

- (3) LNX-6514DS-A1M Antennas
- (6) HBXX-6517DS-A2M Antennas
- (3) UHBC B13 TRDU 2X40 RRUs
- (3) UHIC B4 RRH 2X60-4R RRUs
- (2) OVPs
- (6) 1-5/8" Coax Cables
- (1) 1-5/8" Hybrid Cable

Install New:

- (3) MT6413-77A Antennas
- (3) NHH-65B-R2B Antennas

750 W Center St, Suite 301
West Bridgewater, MA 02379
781-713-4725

Install New (continued):

- (3) RF4461D-13A RRUs
- (3) RF4439D-25A RRUs
- (1) OVP
- (3) Side-by-Side Mounts
- (2) 1-5/8" 6x12 Hybrids

Existing to Remain:

- (3) LNX-8513DS-A1M
- (6) 1-5/8" Coax Cables

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, or construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mayor Antonia Moran, chief elected official for the Town of Mansfield, Michael Nintean, Building and Housing Director for the Town of Mansfield, the Town of Mansfield, the property owner, and American Tower Corporation, the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Respectfully Submitted,
Cullen Morgan
Site Acquisition Consultant
Centerline Communications, LLC (Agent to Verizon)
Mobile: (941) 549-7263
cmorgan@clinellc.com

cc: Mayor Antonia Moran, chief elected official – Town of Mansfield
Michael Nintean, Building and Housing Director – Town of Mansfield
Town of Mansfield – Property Owner
American Tower Corporation – Tower Owner

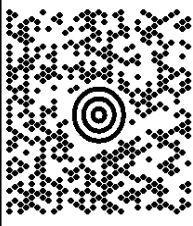
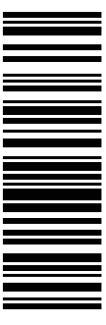
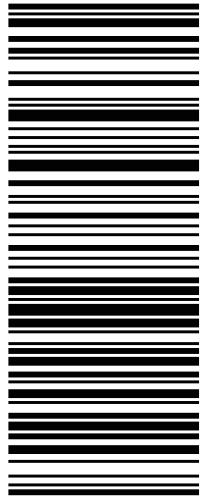

C/O CULLEN MORGAN 9415497263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		1 LBS	1 OF 1
SHIP TO: CONNECTICUT SITING COUNCIL 10 FRANKLIN SQUARE NEW BRITAIN CT 06051-2655			
	CT 067 9-06 		
UPS GROUND			
TRACKING #: 1Z 9Y4 503 03 3387 8264			
			
BILLING: P/P			
Reference # 1: 13669396 MANSFIELD CENTER 1 CT			
CS 24.8.00. MACNV50 36.0A 09/2024*			
 ™			

EXHIBIT A

Original Decision and Order



TOWN OF MA

Planning and Zoning

Audrey P. Beck
Four South Eagle
Storrs, Connecticut 06268
Telephone (203) 429-3330

Wendell

Davis

Exhibit A

Memo to: Town Council
From: Planning and Zoning Commission
A. H. Barberet, Chairman *AHB/jmk*
Date: 9/17/03
Re: PZC approval of proposed telecommunication tower and related facilities adjacent to Town Garage.
PZC file 1209

At a meeting held on September 15, 2003, the Mansfield Planning and Zoning Commission unanimously adopted the following motion:

"to approve with conditions the special permit application (file 1209) of the Town of Mansfield and TCP Communications, Inc. for a 180-foot telecommunication tower and related facilities and site work to be located at 230 Clover Mill Road, in an RAR-90 zone, as submitted to the Commission and shown on plans revised through 6/5/03 and as presented at a Public Hearing on 8/4/03. This approval is granted because the application as hereby approved is considered to be in compliance with Article V, Section B, Article X, Section R, and other provisions of the Mansfield Zoning Regulations, and is granted with the following conditions:

1. This approval is based on submitted plans and project descriptions. Any change in plans or the proposed use of the site shall require further review and approval as per Mansfield's Zoning Regulations. The applicant shall be responsible for meeting Building Permit requirements and complying with all applicable State and Federal regulations pertaining to the subject telecommunication use.
2. Prior to any use of the telecommunication facilities and the issuance of a Certificate of Compliance, all site work shall be satisfactorily completed. Based on the provisions of Article V, Section B.7.c, a variation of this condition may be authorized by the Commission, provided that public health and safety components of the project have been satisfactorily completed.
3. To help ensure effective long-term screening of the equipment compound area and compliance with regulatory provisions, the plans shall be revised to incorporate a staggered row of evergreen trees of mixed species between the Town Garage/Bicentennial Pond access road and the compound area. The size, type and location of this required evergreen screen shall be approved by the PZC officers, with staff assistance. With this revision, the proposed eight (8) foot high wooden fence around the compound, and the retention of existing wooded areas around the compound, the proposal will be acceptably screened. The compound and tower are not expected to be readily visible from Clover Mill Road or nearby residences along Clover Mill Road.
4. Whereas abandonment/tower removal issues are addressed by Town ownership and the Town's contract with TCP Communications, Inc., a separate bond pursuant to Article X, Section R.6 of the Zoning Regulations shall not be required.
5. This permit shall not become valid until the applicant obtains the permit form from the Planning Office and files it on the Land Records."

If there are any questions regarding this action, the Planning Office may be contacted.

EXHIBIT B

Property Card

CURRENT OWNER				TOPO		UTILITIES		STRT / ROAD		LOCATION		CURRENT ASSESSMENT						<div>6078</div> <div>MANSFIELD, CT</div> <div>VISION</div>															
MANSFIELD TOWN OF OPEN SPACE CLOVER MILL ROAD 4 SO EAGLEVILLE RD STORRS CT 06268				1 Level		1 Well		1 Paved				Description		Code		Appraised				Assessed													
						2 Septic						Ex R Land		11		68,000				47,600													
				SUPPLEMENTAL DATA																													
				Alt Prcl ID Census 8811 Devel. Lot GIS ID 23.60.7-1 Assoc Pid#																													
												Total		68,000		47,600																	
RECORD OF OWNERSHIP				BK-VOL/PAGE		SALE DATE		Q/U		V/I		SALE PRICE		VC		PREVIOUS ASSESSMENTS (HISTORY)																	
MANSFIELD TOWN OF				0 0				U		I		0				Year		Code		Assessed		Year		Code		Assessed V		Year		Code		Assessed	
														2019		11		47,600		2019		11		47,600		2018		11		47,600			
																Total		47600		Total		47600		Total		47600							
EXEMPTIONS						OTHER ASSESSMENTS						This signature acknowledges a visit by a Data Collector or Assessor																					
Year		Code		Description		Amount		Code		Description												Number		Amount		Comm Int							
						Total		0.00																									
ASSESSING NEIGHBORHOOD																																	
Nbhd		Nbhd Name		B		Tracing		Batch																									
0001																																	
NOTES																																	
BMAR - FLDDC: FIELD DATA COLLECTION BARROWS PARCEL 2 TAX EXEMPT SURVEY VOL 11 PG 75																																	
<div> <div>Appraised Bldg. Value (Card)</div> <div>0</div> </div> <div> <div>Appraised Xf (B) Value (Bldg)</div> <div>0</div> </div> <div> <div>Appraised Ob (B) Value (Bldg)</div> <div>0</div> </div> <div> <div>Appraised Land Value (Bldg)</div> <div>68,000</div> </div> <div> <div>Special Land Value</div> <div>0</div> </div> <div> <div>Total Appraised Parcel Value</div> <div>68,000</div> </div> <div> <div>Valuation Method</div> <div>C</div> </div> <div> <div>Total Appraised Parcel Value</div> <div>68,000</div> </div>																																	
BUILDING PERMIT RECORD																																	
VISIT / CHANGE HISTORY																																	
Permit Id		Issue Date		Type		Description		Amount		Insp Date		% Comp		Date Comp		Comments		Date		Id		Type		Is		Cd		Purpost/Result					
																		05-28-2019		WG						35		Field Review					
																		01-04-2010		AP						16		Appraiser Date					
																		10-20-2000		BM						15		Collector Date					
																		10-01-2000		BM						15		Collector Date					
LAND LINE VALUATION SECTION																																	
B		Use Code		Description		Zone		Land Type		Land Units		Unit Price		Size Adj		Site Index		Cond.		Nbhd.		Nbhd. Adj		Notes		Location Adjustment		Adj Unit P		Land Value			
1		901V		Town Vacant		RAR				11.800 AC		6,000.00		1.00000		0		1.00				1.000				A1		1.0000		5,760.00		68,000	
										Total Card Land Units		11.8000 AC												Total Land Value		68,000							

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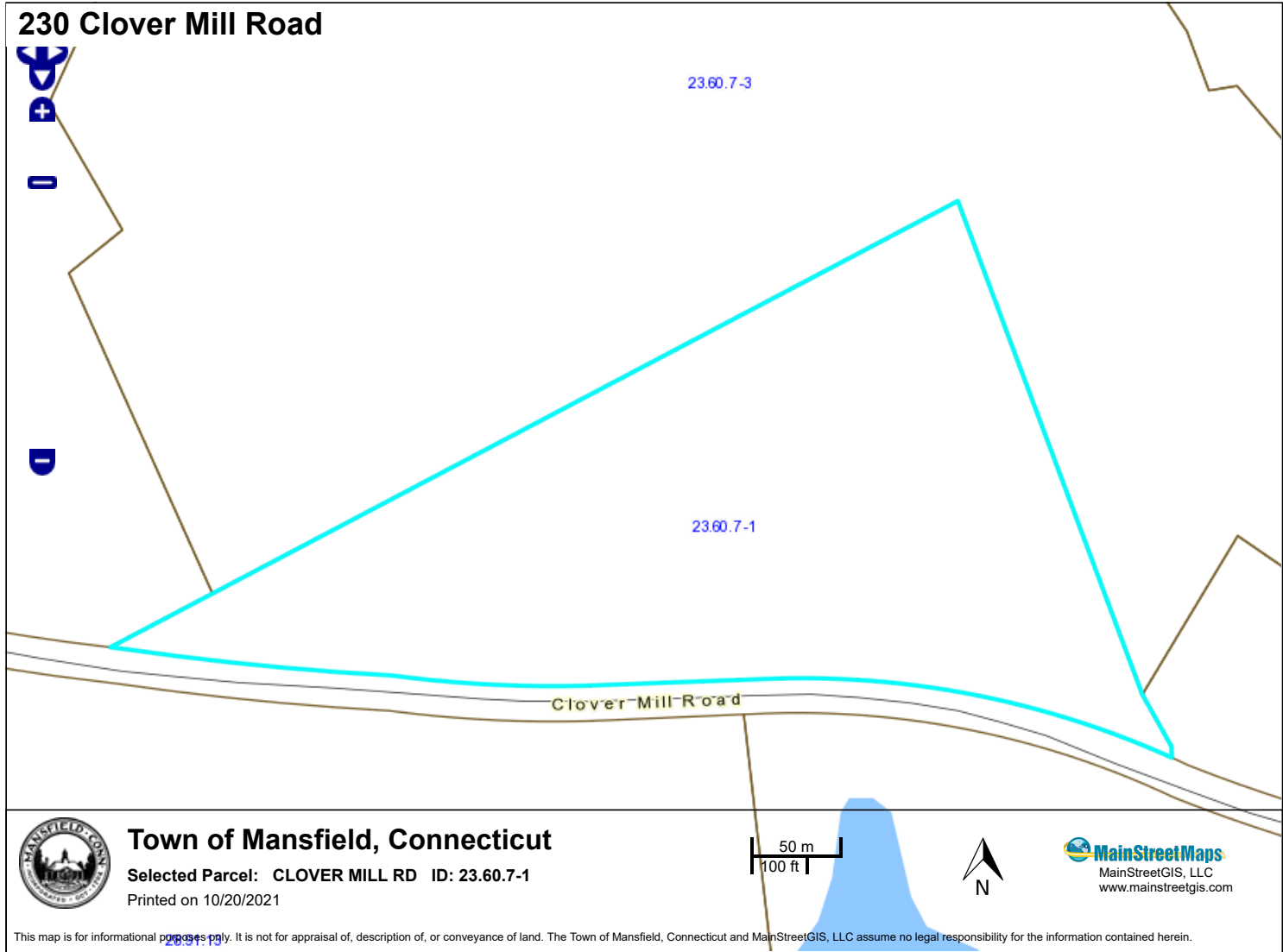


EXHIBIT C

Structural Analysis Report



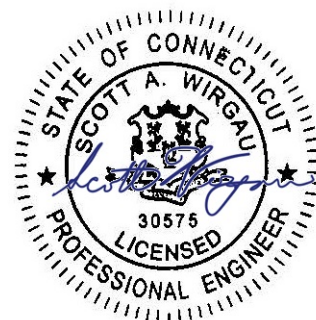
Structural Analysis Report

Structure : 178 ft Monopole
ATC Asset Name : MANSFIELD CENTER 1 CT
ATC Asset Number : 376046
Engineering Number : 13669396_C3_03
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : MANSFIELD CENTER CT
Carrier Site Number : 467947
Site Location : 230 Clover Mill Road
STORRS MANSFIELD, CT 06268-2826
41.7758° N, 72.2225° W
County : Tolland
Date : December 21, 2023
Max Usage : 75%
Analysis Result : Pass

Created By:

Pedro Morales Mendoza
Structural Engineer I

A handwritten signature in black ink, appearing to read 'pedro morales'.



COA: PEC.0001553

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Conclusion	3
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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 178 ft Monopole tower to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower:	PennSummit, PJF Job #29203-0151 Rev. No. 1, dated December 23, 2003
Foundation:	PennSummit, PJF Job #29203-0151 Rev. No. 1, dated December 23, 2003
Geotechnical:	JGI Project #01133G, dated May 14, 2001

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:	120 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Hill
Crest Height (H):	195 ft
Crest Length (L):	534 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 reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact Engineering@americantower.com. Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Control	Result
Pole Shaft	74.9%	1.2D + 1.0W	Pass
Serviceability Usage	39.7%	1.0D + 1.0W	Pass
Base Plate @ 0.0 ft	60.8%	Rods	Pass
Mat & Pier	62.4%	Moment [Soil]	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	5,912.0	79.8	47.0

**Reactions shown reflect the results from the Load Case with maximum Moment*

Structure base reactions were analyzed using available geotechnical and foundation information.

VERIZON WIRELESS Final Loading

Elev (ft)	Qty	Equipment	Lines
178.0	1	Platform with Handrails	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex
	1	Raycap RCMD-6627-PF-48	
	3	Commscope LNX-8513DS-VTM (39.2 lb)	
	3	Samsung B2/B66A RRH ORAN (RF 4439d-25A)	
	3	Samsung MT6413-77A	
	3	Samsung RF4461d-13A	
	6	Commscope NHH-65B-R2B	
	6	Mount Reinforcement	

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines	Carrier
192.0	1	20' Omni	(1) 7/8" Coax	OTHER
191.0	2	18' Dipole	(2) 7/8" Coax	OTHER
186.0	1	8' Yagi	(1) 7/8" Coax	OTHER
180.0	1	2' x 4' Rectangular Grid Dish	(1) 7/8" Coax	OTHER
168.0	1	Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (3) 3" conduit (1) 3/8" Coax	AT&T MOBILITY
	3	CCI DMP65R-BU6DA		
	3	Commscope NNH4-65B-R6		
	3	Ericsson RRUS 4449 B5, B12		
	3	Ericsson RRUS 4478 B14		
	3	Ericsson RRUS 8843 B2, B66A		
	3	Powerwave Allgon 7770.00		
	3	Raycap DC6-48-60-18-8F		
158.0	6	Powerwave Allgon LGP21401	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	1	Low Profile Platform		
	3	Alcatel-Lucent 1900MHz RRH (65MHz)		
	3	Alcatel-Lucent 2X50W RRH w/o Filter		
	3	Alcatel-Lucent 800 MHz RRH w/ Notch Filter		
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield		
	3	Commscope DT465B-2XR		
	3	RFS APXVSP18-C-A20		
148.0	3	Commscope VV-65B-R1B	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson AIR 6419 B41		
	3	Ericsson Radio 4449 B71 B85A		
	3	Ericsson Radio 4460 B25+B66		
	3	RFS APXVAARR24_43-U-NA20		
146.0	1	Platform with Handrails	-	T-MOBILE
137.0	1	Platform with Handrails	(1) 1.41" (35.8mm) Hybrid	DISH WIRELESS L.L.C.
	1	Raycap RDIDC-9181-PF-48		
	3	Fujitsu TA08025-B604		
	3	Fujitsu TA08025-B605		
	3	JMA Wireless MX08FRO665-21		
120.0	2	18' Dipole	(2) 7/8" Coax	OTHER
116.0	1	8' Yagi	(1) 7/8" Coax	OTHER
113.0	1	8' Yagi	(2) 7/8" Coax	OTHER
	1	9' Omni		
111.0	1	2' x 4' Rectangular Grid Dish	(2) 7/8" Coax	OTHER
	1	22' Dipole		



Elev (ft)	Qty	Equipment	Lines	Carrier
110.0	3	T-Arm	-	TOWN OF MANSFIELD
76.0	1	GPS	(1) 1/2" Coax	SPRINT NEXTEL

(If table breaks across pages, please see previous page for data in merged cells)



Standard Conditions

All engineering services performed by A.T. Engineering Services LLC 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 Services LLC

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

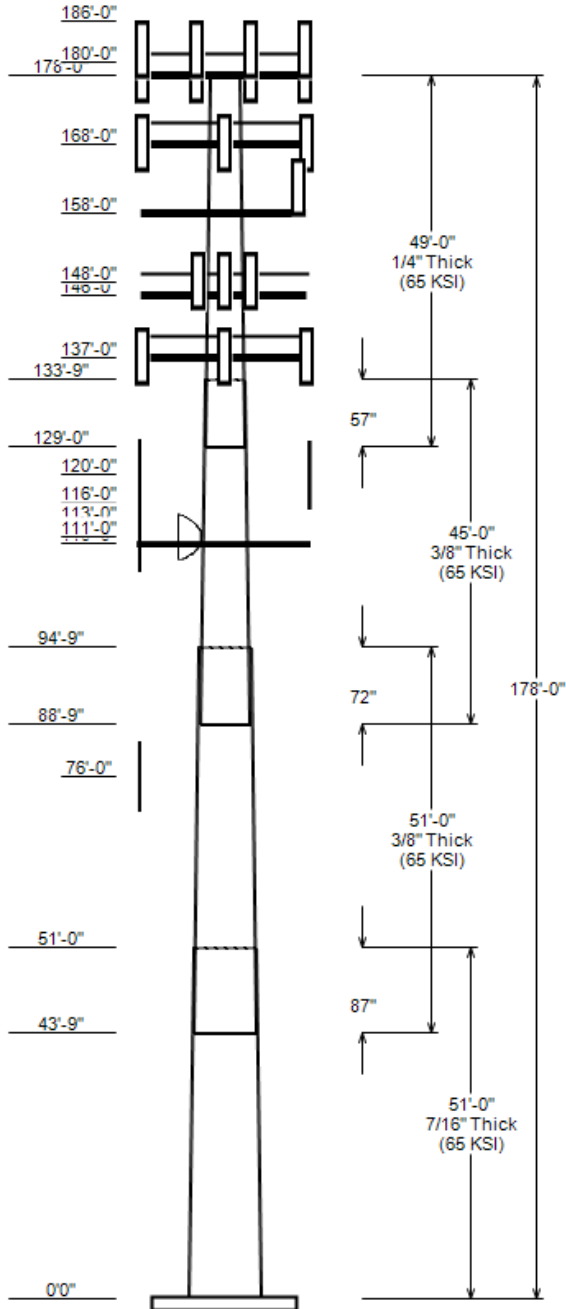
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and A.T. Engineering Services LLC, 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 Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS

Nominal Wind:	120 mph	Ice Wind:	50 mph w/ 1" ice	Service Wind:	60 mph
Risk Category:	II	Exposure:	B	S _w :	0.187
Topo Category:	0	Topo Factor:	Method 2	S _t :	0.055
Structure Height:	178 ft	Base Elevation:	0.00 ft	Topo Feature:	Hill
Base Diameter:	68.36 in	Base Rotation:	0°	Structure Type:	Taper
				Taper:	0.2520 (in/ft)



GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	5912.02	79.78	46.99
0.9D + 1.0W	5831.21	59.82	46.96
1.2D + 1.0Di + 1.0Wi	1744.29	105.63	13.72
1.2D + 1.0Ev + 1.0Eh	302.34	80.19	2.00
0.9D - 1.0Ev + 1.0Eh	297.02	55.62	2.00
1.0D + 1.0W	1311.91	66.53	10.51

POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in)		Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
		Top	Bottom					
1	51.000	55.51	68.36	0.438		0.000	18 Sides	65
2	51.000	45.23	58.08	0.375	Slip Joint	87.000	18 Sides	65
3	45.000	36.15	47.49	0.375	Slip Joint	72.000	18 Sides	65
4	49.000	25.50	37.85	0.250	Slip Joint	57.000	18 Sides	65

DISCRETE APPURTENANCE

Elev (ft)	Description
192.0	(1) Generic 20' Omni
191.0	(2) Generic 18' Dipole
186.0	(1) Generic 8' Yagi
180.0	(1) Generic 2' x 4' Rectangular Gr
178.0	(3) Samsung RF4461d-13A
178.0	(3) Samsung B2/B66A RRH ORAN (RF 4
178.0	(3) Samsung MT6413-77A
178.0	(1) Raycap RCMDC-6627-PF-48
178.0	(6) Generic Mount Reinforcement
178.0	(6) Commscope NHH-65B-R2B
178.0	(3) Commscope LNX-8513DS-VTM (39.2
178.0	(1) Generic Flat Platform with Han
168.0	(6) Powerwave Allgon LGP21401
168.0	(3) Raycap DC6-48-60-18-8F
168.0	(3) Ericsson RRUS 8843 B2, B66A
168.0	(3) Ericsson RRUS 4478 B14
168.0	(3) Ericsson RRUS 4449 B5, B12
168.0	(3) Powerwave Allgon 7770.00
168.0	(1) Generic Mount Reinforcement
168.0	(3) Commscope NNH4-65B-R6
168.0	(3) CCI DMP65R-BU6DA
168.0	(1) Generic Round Platform with Ha
158.0	(3) Alcatel-Lucent 2X50W RRH w/o F
158.0	(3) Alcatel-Lucent 1900MHz RRH (65
158.0	(3) Alcatel-Lucent 800 MHz RRH w/
158.0	(3) Alcatel-Lucent TD-RRH8x20-25 w
158.0	(3) RFS APXVSP18-C-A20
158.0	(3) Commscope DT465B-2XR
158.0	(1) Generic Round Low Profile Plat
148.0	(3) Ericsson Radio 4449 B71 B85A
148.0	(3) Ericsson Radio 4460 B25+B66
148.0	(3) Ericsson AIR 6419 B41
148.0	(3) Commscope VV-65B-R1B
148.0	(3) RFS APXVAARR24_43-U-NA20
146.0	(1) Generic Round Platform with Ha
137.0	(1) Raycap RDIDC-9181-PF-48
137.0	(3) Fujitsu TA08025-B605
137.0	(3) Fujitsu TA08025-B604
137.0	(3) JMA Wireless MX08FRO665-21
137.0	(1) Generic Flat Platform with Han
120.0	(2) Generic 18' Dipole
116.0	(1) Generic 8' Yagi
113.0	(1) Generic 9' Omni
113.0	(1) Generic 8' Yagi
111.0	(1) Generic 2' x 4' Rectangular Gr
111.0	(1) Generic 22' Dipole
110.0	(3) Generic Flat T-Arm
76.0	(1) Generic GPS

LINEAR APPURTENANCE

Elev To (ft)	Description
192.0	(1) 7/8" Coax
191.0	(2) 7/8" Coax
186.0	(1) 7/8" Coax
180.0	(1) 7/8" Coax
178.0	(2) 1 5/8" Hybriflex
178.0	(6) 1 5/8" Coax
168.0	(1) 3/8" Coax
168.0	(3) 3" conduit
168.0	(6) 1 5/8" Coax
168.0	(6) 0.78" (19.7mm) 8 AWG 6
168.0	(2) 0.39" (10mm) Fiber Trunk
158.0	(4) 1 1/4" Hybriflex Cable
148.0	(3) 1.99" (50.7mm) Hybrid
137.0	(1) 1.41" (35.8mm) Hybrid
120.0	(2) 7/8" Coax
116.0	(1) 7/8" Coax
113.0	(2) 7/8" Coax
111.0	(2) 7/8" Coax
76.0	(1) 1/2" Coax

DISH SERVICEABILITY

Load Case	Elevation (ft)	Deflection (in)	Rotation (°)
1.0D + 1.0W	111.00	9.726	0.880
1.0D + 1.0W	178.00	25.468	1.287

ANALYSIS PARAMETERS			
Location:	Tolland County,CT	Height:	178 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	68.36 in
Manufacturer:	PennSummit	Top Diameter:	25.50 in
K _d (non-service):	0.95	Taper:	0.2520 in/ft
K _e :	0.98	Rotation:	0.000°

ICE & WIND PARAMETERS			
Risk Category:	II	Design Wind Speed:	120 mph
Exposure Category:	B	Design Wind Speed w/ Ice:	50 mph
Topo Factor Procedure:	Method 2	Design Ice Thickness:	1.00 in
		Service Wind Speed:	60 mph
		HMSL:	515.00 ft
Crest Height(H):	195 ft	Distance from Apex (x):	233 ft
Crest Length(L):	534 ft	Upwind/Downwind:	Upwind
Feature:	Hill		

SEISMIC PARAMETERS					
Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):		2.81	
T _L (sec):	6	P:	1	C _s :	0.030
S _s :	0.187	S ₁ :	0.055	C _s Max:	0.030
F _a :	1.600	F _v :	2.400	C _s Min:	0.030
S _{ds} :	0.199	S _{d1} :	0.088		

LOAD CASES	
1.2D + 1.0W	120 mph Wind with No Ice
0.9D + 1.0W	120 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph Wind with 1" Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

ASSET: 376046, MANSFIELD CENTER 1 CT
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 13669396_C3_03

SHAFT SECTION PROPERTIES

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						Taper (in/ft)
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	
1-18	51.00	0.4375	65		0.00	14,819	68.36	0.000	94.32	54,974.8	25.79	156.25	55.51	51.00	76.47	29,299.	20.61	126.87	0.2520
2-18	51.00	0.3750	65	Slip	87.00	10,592	58.08	43.750	68.69	28,900.7	25.55	154.89	45.23	94.75	53.39	13,571.	19.50	120.62	0.2520
3-18	45.00	0.3750	65	Slip	72.00	7,554	47.49	88.750	56.08	15,730.5	20.57	126.65	36.15	133.75	42.58	6,886.5	15.24	96.41	0.2520
4-18	49.00	0.2500	65	Slip	57.00	4,158	37.85	129.000	29.83	5,328.8	24.93	151.40	25.50	178.00	20.04	1,614.0	16.22	102.00	0.2520
Total Shaft Weight						37,123													

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
192.00	Generic 20' Omni	1	1.00	0.000	55.00	6.000	1.00	160.44	10.966	1.00
191.00	Generic 18' Dipole	2	1.00	0.000	55.00	6.770	1.00	194.78	14.265	1.00
186.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	267.51	35.422	1.00
180.00	Generic 2' x 4' Rectangular Gr	1	1.00	0.000	40.00	7.460	1.00	197.57	42.460	1.00
178.00	Raycap RCMDC-6627-PF-48	1	0.75	0.000	32.00	4.056	1.00	121.13	5.013	1.00
178.00	Samsung MT6413-77A	3	0.75	0.000	57.30	3.805	0.61	116.84	4.736	0.61
178.00	Generic Mount Reinforcement	6	0.75	0.000	200.00	4.980	0.67	335.72	8.467	0.67
178.00	Commscope NHH-65B-R2B	6	0.75	0.000	43.70	8.079	0.69	165.97	10.033	0.69
178.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3745.83	57.108	1.00
178.00	Commscope LNX-8513DS-VTM (39.2	3	0.75	1.000	39.20	8.173	0.69	162.17	10.158	0.69
178.00	Samsung B2/B66A RRH ORAN (RF 4	3	0.75	0.000	74.70	1.875	0.50	119.52	2.506	0.50
178.00	Samsung RF4461d-13A	3	0.75	0.000	79.10	1.875	0.50	124.31	2.508	0.50
168.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3633.15	44.301	1.00
168.00	CCI DMP65R-BU6DA	3	0.75	0.000	79.40	12.709	0.63	259.62	14.660	0.63
168.00	Commscope NNH4-65B-R6	3	0.75	0.000	89.70	12.271	0.64	265.49	14.233	0.64
168.00	Generic Mount Reinforcement	1	0.75	0.000	200.00	7.500	0.67	335.39	12.738	0.67
168.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	98.58	2.470	0.50
168.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	116.09	2.622	0.50
168.00	Powerwave Allgon LGP21401	6	0.75	0.000	14.10	1.104	0.50	31.55	1.603	0.50
168.00	Raycap DC6-48-60-18-8F	3	0.75	0.000	20.00	1.260	1.00	56.84	1.721	1.00
168.00	Ericsson RRUS 8843 B2, B66A	3	0.75	0.000	72.00	1.639	0.50	114.88	2.230	0.50
168.00	Powerwave Allgon 7770.00	3	0.75	0.000	35.00	5.508	0.65	114.53	6.995	0.65
158.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2440.19	35.099	1.00
158.00	RFS APXVSPP18-C-A20	3	0.80	1.000	57.00	8.024	0.69	177.38	9.971	0.69
158.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.80	0.000	70.00	4.046	0.50	135.96	4.973	0.50
158.00	Alcatel-Lucent 800 MHz RRH w/	3	0.80	0.000	61.80	2.495	0.50	124.90	3.222	0.50
158.00	Alcatel-Lucent 1900MHz RRH (65	3	0.80	0.000	60.00	2.375	0.50	118.11	3.132	0.50
158.00	Alcatel-Lucent 2X50W RRH w/o F	3	0.80	0.000	53.00	2.058	0.50	97.42	2.726	0.50
158.00	Commscope DT465B-2XR	3	0.80	1.000	58.00	9.098	0.69	198.99	11.031	0.69
148.00	Ericsson AIR 6419 B41	3	0.75	0.000	68.50	5.600	0.63	152.63	6.703	0.63
148.00	Commscope VV-65B-R1B	3	0.75	0.000	29.50	7.904	0.64	132.47	9.798	0.64
148.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	401.24	22.825	0.63
148.00	Ericsson Radio 4460 B25+B66	3	0.75	0.000	109.00	2.564	0.67	170.54	3.298	0.67
148.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	116.87	2.241	0.50
146.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3627.32	44.213	1.00
137.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	104.39	2.601	0.50
137.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	242.96	14.440	0.64
137.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3733.45	56.962	1.00
137.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	118.50	2.601	0.50
137.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	61.33	2.492	1.00
120.00	Generic 18' Dipole	2	1.00	0.000	55.00	6.770	1.00	192.73	14.155	1.00
116.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	263.87	35.062	1.00
113.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	263.63	35.039	1.00
113.00	Generic 9' Omni	1	1.00	0.000	25.00	2.700	1.00	72.22	4.942	1.00
111.00	Generic 22' Dipole	1	1.00	0.000	66.00	8.270	1.00	233.75	17.256	1.00
111.00	Generic 2' x 4' Rectangular Gr	1	1.00	0.000	40.00	7.460	1.00	194.93	41.873	1.00
110.00	Generic Flat T-Arm	3	0.75	0.000	450.00	12.900	0.67	881.95	18.534	0.67
76.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	29.92	1.335	1.00
Totals		Row Count: 48	117		20,522.90			37,525.63		

ASSET: 376046, MANSFIELD CENTER 1 CT
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 13669396_C3_03

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	192.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	191.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	186.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	180.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	178.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	178.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	168.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	3	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	1	3/8" Coax	0.44	0.08	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	158.00	4	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	148.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	137.00	1	1.41" (35.8mm) Hybrid	1.41	1.66	N	0	0	0	0	0	N	DISH WIRELESS L.L.C.
0.00	120.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	116.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	113.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	111.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	76.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	SPRINT NEXTEL

SEGMENT PROPERTIES

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		0.4375	68.360	94.315	54,974.80	25.79	156.25	71.1	1584.0	0.0	0.0
5.00		0.4375	67.100	92.566	51,971.50	25.28	153.37	71.7	1525.5	0.0	1,589.8
10.00		0.4375	65.840	90.816	49,079.70	24.77	150.49	72.3	1468.2	0.0	1,560.0
15.00		0.4375	64.580	89.066	46,297.10	24.26	147.61	72.9	1412.0	0.0	1,530.2
20.00		0.4375	63.320	87.317	43,621.80	23.76	144.73	73.5	1356.9	0.0	1,500.5
25.00		0.4375	62.060	85.567	41,051.60	23.25	141.85	74.1	1302.9	0.0	1,470.7
30.00		0.4375	60.799	83.817	38,584.30	22.74	138.97	74.7	1250.0	0.0	1,440.9
35.00		0.4375	59.539	82.067	36,218.00	22.23	136.09	75.3	1198.1	0.0	1,411.2
40.00		0.4375	58.279	80.318	33,950.50	21.73	133.21	75.8	1147.4	0.0	1,381.4
43.75	Bot - Section 2	0.4375	57.334	79.005	32,313.30	21.34	131.05	76.3	1110.1	0.0	1,016.5
45.00		0.4375	57.019	78.568	31,779.60	21.22	130.33	76.4	1097.8	0.0	626.5
50.00		0.4375	55.759	76.818	29,703.30	20.71	127.45	77	1049.2	0.0	2,471.3
51.00	Top - Section 1	0.3750	56.257	66.511	26,241.60	24.69	150.02	72.4	918.7	0.0	487.6
55.00		0.3750	55.249	65.311	24,847.00	24.22	147.33	72.9	885.8	0.0	897.1
60.00		0.3750	53.989	63.812	23,174.20	23.62	143.97	73.6	845.4	0.0	1,098.4
65.00		0.3750	52.729	62.312	21,578.30	23.03	140.61	74.3	806.0	0.0	1,072.9
70.00		0.3750	51.469	60.812	20,057.40	22.44	137.25	75	767.6	0.0	1,047.4
75.00		0.3750	50.209	59.312	18,609.70	21.85	133.89	75.7	730.0	0.0	1,021.9
76.00		0.3750	49.956	59.012	18,328.80	21.73	133.22	75.8	722.6	0.0	201.3
80.00		0.3750	48.948	57.812	17,233.40	21.25	130.53	76.4	693.4	0.0	795.1
85.00		0.3750	47.688	56.313	15,926.70	20.66	127.17	77.1	657.8	0.0	970.9
88.75	Bot - Section 3	0.3750	46.743	55.188	14,991.20	20.22	124.65	77.6	631.7	0.0	711.4
90.00		0.3750	46.428	54.813	14,687.70	20.07	123.81	77.8	623.1	0.0	471.7
94.75	Top - Section 2	0.3750	45.981	54.281	14,264.10	19.86	122.62	78	611.0	0.0	1,763.3
95.00		0.3750	45.918	54.206	14,205.10	19.83	122.45	78.1	609.3	0.0	46.1
100.00		0.3750	44.658	52.706	13,058.30	19.24	119.09	78.8	575.9	0.0	909.5
105.00		0.3750	43.398	51.206	11,975.00	18.64	115.73	79.5	543.5	0.0	884.0
110.00		0.3750	42.138	49.706	10,953.30	18.05	112.37	80.2	512.0	0.0	858.5
111.00		0.3750	41.886	49.406	10,756.20	17.93	111.70	80.3	505.8	0.0	168.6
113.00		0.3750	41.382	48.807	10,369.10	17.69	110.35	80.6	493.5	0.0	334.2
115.00		0.3750	40.878	48.207	9,991.40	17.46	109.01	80.9	481.4	0.0	330.1
116.00		0.3750	40.626	47.907	9,806.10	17.34	108.34	81	475.4	0.0	163.5
120.00		0.3750	39.618	46.707	9,087.60	16.87	105.65	81.6	451.8	0.0	643.9
125.00		0.3750	38.358	45.207	8,240.00	16.27	102.29	82.3	423.1	0.0	781.9

ASSET: 376046, MANSFIELD CENTER 1 CT
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 13669396_C3_03

SEGMENT PROPERTIES												
Seg Top Elev (ft)	Description	(Max Length: 5 ft)	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)
129.00	Bot - Section 4		0.3750	37.349	44.007	7,601.20	15.80	99.60	82.6	400.8	0.0	607.2
130.00			0.3750	37.097	43.707	7,446.80	15.68	98.93	82.6	395.4	0.0	250.4
133.75	Top - Section 3		0.2500	36.652	28.884	4,835.80	24.09	146.61	73.1	259.9	0.0	923.9
135.00			0.2500	36.337	28.634	4,711.40	23.87	145.35	73.3	255.4	0.0	122.3
137.00			0.2500	35.833	28.234	4,516.70	23.51	143.33	73.7	248.3	0.0	193.5
140.00			0.2500	35.077	27.634	4,234.90	22.98	140.31	74.4	237.8	0.0	285.2
145.00			0.2500	33.817	26.635	3,791.60	22.09	135.27	75.4	220.8	0.0	461.7
146.00			0.2500	33.565	26.435	3,706.90	21.91	134.26	75.6	217.5	0.0	90.3
148.00			0.2500	33.061	26.035	3,541.20	21.55	132.24	76	211.0	0.0	178.5
150.00			0.2500	32.557	25.635	3,380.40	21.20	130.23	76.5	204.5	0.0	175.8
155.00			0.2500	31.297	24.635	3,000.10	20.31	125.19	77.5	188.8	0.0	427.6
158.00			0.2500	30.541	24.035	2,786.20	19.78	122.16	78.1	179.7	0.0	248.4
160.00			0.2500	30.037	23.635	2,649.50	19.42	120.15	78.6	173.7	0.0	162.2
165.00			0.2500	28.777	22.635	2,327.20	18.53	115.11	79.6	159.3	0.0	393.6
168.00			0.2500	28.021	22.035	2,147.00	18.00	112.08	80.2	150.9	0.0	228.0
170.00			0.2500	27.517	21.635	2,032.30	17.64	110.07	80.6	145.5	0.0	148.6
175.00			0.2500	26.257	20.635	1,763.30	16.76	105.03	81.7	132.3	0.0	359.6
178.00			0.2500	25.500	20.036	1,614.00	16.22	102.00	82.3	124.7	0.0	207.6
Total:												37,122.7

CALCULATED FORCES														
Load Case: 1.2D + 1.0W			120 mph Wind with No Ice										25 Iterations	
Gust Response Factor:		1.10												
Dead load Factor:		1.20												
Wind Load Factor:		1.00												
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio	
0.00	-79.78	-46.99	0.00	-5,912.0	0.00	5,912.02	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.714	
5.00	-77.42	-46.30	0.00	-5,677.1	0.00	5,677.07	5,970.50	1,624.53	9,781.10	8,199.81	0.08	-0.15	0.706	
10.00	-75.10	-45.64	0.00	-5,445.6	0.00	5,445.57	5,906.46	1,593.82	9,414.85	7,957.53	0.32	-0.3	0.698	
15.00	-72.83	-45.00	0.00	-5,217.4	0.00	5,217.39	5,840.54	1,563.11	9,055.59	7,716.10	0.72	-0.46	0.689	
20.00	-70.58	-44.38	0.00	-4,992.4	0.00	4,992.40	5,772.74	1,532.40	8,703.32	7,475.69	1.28	-0.61	0.681	
25.00	-68.38	-43.79	0.00	-4,770.5	0.00	4,770.48	5,703.06	1,501.70	8,358.04	7,236.44	2.01	-0.77	0.672	
30.00	-66.21	-43.21	0.00	-4,551.5	0.00	4,551.53	5,631.50	1,470.99	8,019.75	6,998.48	2.91	-0.93	0.663	
35.00	-64.08	-42.62	0.00	-4,335.5	0.00	4,335.49	5,558.06	1,440.28	7,688.44	6,761.98	3.98	-1.1	0.654	
40.00	-62.01	-42.10	0.00	-4,122.4	0.00	4,122.38	5,482.73	1,409.57	7,364.12	6,527.08	5.21	-1.26	0.644	
43.75	-60.49	-41.79	0.00	-3,964.5	0.00	3,964.52	5,425.00	1,386.54	7,125.47	6,352.04	6.26	-1.39	0.636	
45.00	-59.59	-41.42	0.00	-3,912.3	0.00	3,912.28	5,405.53	1,378.86	7,046.80	6,293.92	6.63	-1.43	0.634	
50.00	-56.24	-40.99	0.00	-3,705.2	0.00	3,705.21	5,326.44	1,348.16	6,736.46	6,062.66	8.22	-1.61	0.623	
51.00	-55.54	-40.69	0.00	-3,664.2	0.00	3,664.23	4,331.59	1,167.27	5,891.48	4,986.18	8.56	-1.64	0.749	
55.00	-54.10	-40.15	0.00	-3,501.5	0.00	3,501.49	4,286.22	1,146.21	5,680.86	4,844.36	10	-1.78	0.737	
60.00	-52.35	-39.56	0.00	-3,300.8	0.00	3,300.75	4,227.82	1,119.89	5,422.98	4,667.87	11.97	-1.97	0.721	
65.00	-50.63	-38.96	0.00	-3,103.0	0.00	3,102.98	4,167.53	1,093.57	5,171.09	4,492.41	14.14	-2.17	0.704	
70.00	-48.94	-38.37	0.00	-2,908.2	0.00	2,908.17	4,105.36	1,067.25	4,925.18	4,318.13	16.52	-2.37	0.687	
75.00	-47.33	-37.99	0.00	-2,716.3	0.00	2,716.31	4,041.31	1,040.93	4,685.27	4,145.16	19.11	-2.57	0.668	
76.00	-46.96	-37.68	0.00	-2,678.3	0.00	2,678.32	4,028.28	1,035.66	4,638.00	4,110.74	19.65	-2.61	0.665	
80.00	-45.66	-37.16	0.00	-2,527.6	0.00	2,527.61	3,975.38	1,014.61	4,451.35	3,973.66	21.91	-2.77	0.649	
85.00	-44.08	-36.65	0.00	-2,341.8	0.00	2,341.79	3,907.57	988.29	4,223.41	3,803.78	24.92	-2.97	0.628	
88.75	-42.94	-36.34	0.00	-2,204.4	0.00	2,204.37	3,855.48	968.55	4,056.39	3,677.51	27.31	-3.12	0.612	
90.00	-42.24	-36.00	0.00	-2,159.0	0.00	2,158.95	3,837.88	961.97	4,001.47	3,635.65	28.14	-3.18	0.606	
94.75	-39.77	-35.61	0.00	-1,988.0	0.00	1,987.95	3,812.70	952.63	3,924.16	3,576.45	31.39	-3.37	0.568	
95.00	-39.66	-35.34	0.00	-1,979.0	0.00	1,979.05	3,809.13	951.31	3,913.33	3,568.13	31.57	-3.38	0.566	
100.00	-38.17	-34.75	0.00	-1,802.4	0.00	1,802.35	3,736.80	924.99	3,699.80	3,402.73	35.21	-3.57	0.541	
105.00	-36.72	-34.17	0.00	-1,628.6	0.00	1,628.59	3,662.58	898.67	3,492.26	3,239.45	39.04	-3.75	0.514	
110.00	-33.77	-32.78	0.00	-1,457.7	0.00	1,457.73	3,586.48	872.35	3,290.71	3,078.43	43.07	-3.94	0.484	
111.00	-33.41	-31.89	0.00	-1,425.0	0.00	1,424.95	3,571.04	867.08	3,251.12	3,046.51	43.9	-3.97	0.478	
113.00	-32.84	-30.98	0.00	-1,361.2	0.00	1,361.17	3,539.92	856.55	3,172.66	2,982.97	45.58	-4.05	0.467	
115.00	-32.30	-30.80	0.00	-1,299.2	0.00	1,299.20	3,508.50	846.03	3,095.16	2,919.82	47.29	-4.12	0.455	
116.00	-32.02	-29.99	0.00	-1,268.4	0.00	1,268.40	3,492.68	840.76	3,056.76	2,888.40	48.16	-4.16	0.450	
120.00	-30.87	-28.86	0.00	-1,148.4	0.00	1,148.44	3,428.64	819.70	2,905.59	2,763.77	51.7	-4.3	0.426	
125.00	-29.59	-28.34	0.00	-1,004.2	0.00	1,004.16	3,346.90	793.38	2,722.01	2,610.43	56.29	-4.47	0.395	

ASSET: 376046, MANSFIELD CENTER 1 CT
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 13669396_C3_03

CALCULATED FORCES

129.00	-28.59	-28.04	0.00	-890.8	0.00	890.79	3,269.52	772.33	2,579.46	2,481.74	60.08	-4.6	0.369
130.00	-28.22	-27.79	0.00	-862.8	0.00	862.75	3,247.23	767.06	2,544.42	2,447.85	61.05	-4.63	0.362
133.75	-26.86	-27.45	0.00	-758.5	0.00	758.54	1,899.49	506.92	1,666.67	1,424.12	64.73	-4.75	0.550
135.00	-26.62	-27.29	0.00	-724.2	0.00	724.23	1,889.78	502.53	1,637.95	1,404.50	65.98	-4.78	0.533
137.00	-22.76	-23.63	0.00	-669.7	0.00	669.66	1,874.01	495.51	1,592.52	1,373.19	68	-4.87	0.502
140.00	-22.22	-23.25	0.00	-598.8	0.00	598.76	1,849.79	484.98	1,525.57	1,326.44	71.09	-4.99	0.466
145.00	-21.35	-22.91	0.00	-482.5	0.00	482.53	1,807.92	467.44	1,417.19	1,249.18	76.41	-5.17	0.400
146.00	-18.30	-21.22	0.00	-459.6	0.00	459.62	1,799.32	463.93	1,395.99	1,233.83	77.5	-5.21	0.385
148.00	-16.73	-18.35	0.00	-417.2	0.00	417.19	1,781.90	456.91	1,354.07	1,203.26	79.69	-5.27	0.358
150.00	-16.41	-18.02	0.00	-380.5	0.00	380.50	1,764.17	449.89	1,312.79	1,172.85	81.91	-5.34	0.335
155.00	-15.63	-17.61	0.00	-290.4	0.00	290.39	1,718.54	432.34	1,212.39	1,097.61	87.57	-5.48	0.275
158.00	-11.95	-14.02	0.00	-236.2	0.00	236.21	1,690.25	421.81	1,154.07	1,053.05	91.03	-5.55	0.232
160.00	-11.67	-13.70	0.00	-208.2	0.00	208.18	1,671.02	414.79	1,115.99	1,023.60	93.37	-5.6	0.211
165.00	-10.97	-13.30	0.00	-139.7	0.00	139.69	1,621.63	397.25	1,023.58	950.97	99.27	-5.69	0.155
168.00	-6.13	-8.46	0.00	-99.8	0.00	99.80	1,591.09	386.72	970.04	908.11	102.86	-5.74	0.114
170.00	-5.95	-8.16	0.00	-82.9	0.00	82.88	1,570.35	379.70	935.16	879.87	105.26	-5.76	0.098
175.00	-5.50	-7.80	0.00	-42.1	0.00	42.06	1,517.19	362.15	850.73	810.44	111.31	-5.8	0.056
178.00	0.00	-7.21	0.00	-18.7	0.00	18.66	1,484.39	351.62	801.99	769.65	114.96	-5.82	0.025

CALCULATED FORCES

Load Case: 0.9D + 1.0W

120 mph Wind with No Ice (Reduced DL)

24 Iterations

Gust Response Factor: 1.10
 Dead load Factor: 0.90
 Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-59.82	-46.96	0.00	-5,831.2	0.00	5,831.21	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.701
5.00	-58.02	-46.22	0.00	-5,596.4	0.00	5,596.41	5,970.50	1,624.53	9,781.10	8,199.81	0.08	-0.15	0.693
10.00	-56.26	-45.51	0.00	-5,365.3	0.00	5,365.31	5,906.46	1,593.82	9,414.85	7,957.53	0.32	-0.3	0.685
15.00	-54.52	-44.82	0.00	-5,137.8	0.00	5,137.79	5,840.54	1,563.11	9,055.59	7,716.10	0.71	-0.45	0.676
20.00	-52.81	-44.16	0.00	-4,913.7	0.00	4,913.70	5,772.74	1,532.40	8,703.32	7,475.69	1.27	-0.6	0.667
25.00	-51.13	-43.52	0.00	-4,692.9	0.00	4,692.91	5,703.06	1,501.70	8,358.04	7,236.44	1.98	-0.76	0.658
30.00	-49.48	-42.90	0.00	-4,475.3	0.00	4,475.31	5,631.50	1,470.99	8,019.75	6,998.48	2.87	-0.92	0.649
35.00	-47.86	-42.27	0.00	-4,260.8	0.00	4,260.83	5,558.06	1,440.28	7,688.44	6,761.98	3.92	-1.08	0.640
40.00	-46.28	-41.71	0.00	-4,049.5	0.00	4,049.47	5,482.73	1,409.57	7,364.12	6,527.08	5.14	-1.24	0.630
43.75	-45.13	-41.39	0.00	-3,893.0	0.00	3,893.05	5,425.00	1,386.54	7,125.47	6,352.04	6.16	-1.37	0.622
45.00	-44.45	-40.99	0.00	-3,841.3	0.00	3,841.31	5,405.53	1,378.86	7,046.80	6,293.92	6.53	-1.41	0.619
50.00	-41.92	-40.56	0.00	-3,636.4	0.00	3,636.36	5,326.44	1,348.16	6,736.46	6,062.66	8.1	-1.58	0.609
51.00	-41.38	-40.24	0.00	-3,595.8	0.00	3,595.80	4,331.59	1,167.27	5,891.48	4,986.18	8.43	-1.61	0.732
55.00	-40.28	-39.67	0.00	-3,434.8	0.00	3,434.84	4,286.22	1,146.21	5,680.86	4,844.36	9.84	-1.75	0.720
60.00	-38.94	-39.04	0.00	-3,236.5	0.00	3,236.48	4,227.82	1,119.89	5,422.98	4,667.87	11.78	-1.94	0.704
65.00	-37.63	-38.42	0.00	-3,041.3	0.00	3,041.27	4,167.53	1,093.57	5,171.09	4,492.41	13.92	-2.13	0.687
70.00	-36.34	-37.80	0.00	-2,849.2	0.00	2,849.17	4,105.36	1,067.25	4,925.18	4,318.13	16.25	-2.33	0.670
75.00	-35.12	-37.41	0.00	-2,660.2	0.00	2,660.18	4,041.31	1,040.93	4,685.27	4,145.16	18.8	-2.52	0.652
76.00	-34.83	-37.08	0.00	-2,622.8	0.00	2,622.77	4,028.28	1,035.66	4,638.00	4,110.74	19.33	-2.56	0.648
80.00	-33.84	-36.54	0.00	-2,474.5	0.00	2,474.46	3,975.38	1,014.61	4,451.35	3,973.66	21.55	-2.72	0.633
85.00	-32.64	-36.00	0.00	-2,291.8	0.00	2,291.78	3,907.57	988.29	4,223.41	3,803.78	24.5	-2.92	0.612
88.75	-31.77	-35.69	0.00	-2,156.8	0.00	2,156.77	3,855.48	968.55	4,056.39	3,677.51	26.86	-3.07	0.596
90.00	-31.24	-35.34	0.00	-2,112.2	0.00	2,112.17	3,837.88	961.97	4,001.47	3,635.65	27.67	-3.12	0.590
94.75	-29.38	-34.96	0.00	-1,944.3	0.00	1,944.32	3,812.70	952.63	3,924.16	3,576.45	30.86	-3.3	0.553
95.00	-29.29	-34.67	0.00	-1,935.6	0.00	1,935.58	3,809.13	951.31	3,913.33	3,568.13	31.04	-3.32	0.551
100.00	-28.15	-34.08	0.00	-1,762.2	0.00	1,762.22	3,736.80	924.99	3,699.80	3,402.73	34.61	-3.5	0.527
105.00	-27.05	-33.48	0.00	-1,591.8	0.00	1,591.84	3,662.58	898.67	3,492.26	3,239.45	38.37	-3.68	0.500
110.00	-24.84	-32.13	0.00	-1,424.4	0.00	1,424.43	3,586.48	872.35	3,290.71	3,078.43	42.32	-3.86	0.471
111.00	-24.58	-31.24	0.00	-1,392.3	0.00	1,392.30	3,571.04	867.08	3,251.12	3,046.51	43.13	-3.9	0.465
113.00	-24.16	-30.33	0.00	-1,329.8	0.00	1,329.83	3,539.92	856.55	3,172.66	2,982.97	44.78	-3.97	0.454
115.00	-23.75	-30.15	0.00	-1,269.2	0.00	1,269.18	3,508.50	846.03	3,095.16	2,919.82	46.46	-4.04	0.443
116.00	-23.55	-29.33	0.00	-1,239.0	0.00	1,239.03	3,492.68	840.76	3,056.76	2,888.40	47.31	-4.08	0.437
120.00	-22.69	-28.19	0.00	-1,121.7	0.00	1,121.73	3,428.64	819.70	2,905.59	2,763.77	50.78	-4.21	0.414
125.00	-21.72	-27.68	0.00	-980.8	0.00	980.77	3,346.90	793.38	2,722.01	2,610.43	55.28	-4.38	0.383
129.00	-20.97	-27.38	0.00	-870.0	0.00	870.04	3,269.52	772.33	2,579.46	2,481.74	59	-4.51	0.358
130.00	-20.69	-27.13	0.00	-842.7	0.00	842.66	3,247.23	767.06	2,544.42	2,447.85	59.95	-4.54	0.352
133.75	-19.67	-26.81	0.00	-740.9	0.00	740.91	1,899.49	506.92	1,666.67	1,424.12	63.56	-4.65	0.533
135.00	-19.49	-26.65	0.00	-707.4	0.00	707.39	1,889.78	502.53	1,637.95	1,404.50	64.78	-4.69	0.517
137.00	-16.65	-23.07	0.00	-654.1	0.00	654.10	1,874.01	495.51	1,592.52	1,373.19	66.76	-4.77	0.487
140.00	-16.23	-22.68	0.00	-584.9	0.00	584.88	1,849.79	484.98	1,525.57	1,326.44	69.8	-4.89	0.452
145.00	-15.58	-22.35	0.00	-471.5	0.00	471.48	1,807.92	467.44	1,417.19	1,249.18	75.01	-5.07	0.388
146.00	-13.32	-20.73	0.00	-449.1	0.00	449.13	1,799.32	463.93	1,395.99	1,233.83	76.07	-5.1	0.373
148.00	-12.19	-17.90	0.00	-407.7	0.00	407.66	1,781.90	456.91	1,354.07	1,203.26	78.22	-5.17	0.347
150.00	-11.95	-17.57	0.00	-371.9	0.00	371.86	1,764.17	449.89	1,312.79	1,172.85	80.4	-5.23	0.325
155.00	-11.37	-17.17	0.00	-284.0	0.00	284.00	1,718.54	432.34	1,212.39	1,097.61	85.95	-5.37	0.267
158.00	-8.68	-13.68	0.00	-231.1	0.00	231.13	1,690.25	421.81	1,154.07	1,053.05	89.34	-5.44	0.226
160.00	-8.47	-13.36	0.00	-203.8	0.00	203.78	1,671.02	414.79	1,115.99	1,023.60	91.62	-5.49	0.205
165.00	-7.95	-12.98	0.00	-137.0	0.00	136.97	1,621.63	397.25	1,023.58	950.97	97.41	-5.58	0.150
168.00	-4.42	-8.28	0.00	-98.0	0.00	98.04	1,591.09	386.72	970.04	908.11	100.93	-5.62	0.111
170.00	-4.29	-7.98	0.00	-81.5	0.00	81.48	1,570.35	379.70	935.16	879.87	103.28	-5.64	0.096
175.00	-3.96	-7.64	0.00	-41.6	0.00	41.56	1,517.19	362.15	850.73	810.44	109.21	-5.69	0.054
178.00	0.00	-7.21	0.00	-18.7	0.00	18.66	1,484.39	351.62	801.99	769.65	112.78	-5.7	0.025

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi													24 Iterations
50 mph Wind with 1" Radial Ice													
Ice Dead Load Factor 1.00													
Ice Importance Factor 1.00													
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-105.63	-13.72	0.00	-1,744.3	0.00	1,744.29	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.224
5.00	-103.00	-13.53	0.00	-1,675.7	0.00	1,675.71	5,970.50	1,624.53	9,781.10	8,199.81	0.02	-0.04	0.222
10.00	-100.36	-13.36	0.00	-1,608.0	0.00	1,608.04	5,906.46	1,593.82	9,414.85	7,957.53	0.09	-0.09	0.219
15.00	-97.75	-13.19	0.00	-1,541.2	0.00	1,541.25	5,840.54	1,563.11	9,055.59	7,716.10	0.21	-0.13	0.217
20.00	-95.18	-13.03	0.00	-1,475.3	0.00	1,475.30	5,772.74	1,532.40	8,703.32	7,475.69	0.38	-0.18	0.214
25.00	-92.63	-12.87	0.00	-1,410.2	0.00	1,410.17	5,703.06	1,501.70	8,358.04	7,236.44	0.59	-0.23	0.211
30.00	-90.13	-12.72	0.00	-1,345.8	0.00	1,345.82	5,631.50	1,470.99	8,019.75	6,998.48	0.86	-0.28	0.208
35.00	-87.67	-12.56	0.00	-1,282.2	0.00	1,282.24	5,558.06	1,440.28	7,688.44	6,761.98	1.17	-0.32	0.205
40.00	-85.25	-12.42	0.00	-1,219.4	0.00	1,219.44	5,482.73	1,409.57	7,364.12	6,527.08	1.54	-0.37	0.202
43.75	-83.46	-12.33	0.00	-1,172.9	0.00	1,172.87	5,425.00	1,386.54	7,125.47	6,352.04	1.85	-0.41	0.200
45.00	-82.52	-12.24	0.00	-1,157.4	0.00	1,157.45	5,405.53	1,378.86	7,046.80	6,293.92	1.96	-0.42	0.199
50.00	-78.80	-12.12	0.00	-1,096.3	0.00	1,096.27	5,326.44	1,348.16	6,736.46	6,062.66	2.43	-0.47	0.196
51.00	-78.06	-12.04	0.00	-1,084.2	0.00	1,084.16	4,331.59	1,167.27	5,891.48	4,986.18	2.53	-0.48	0.236
55.00	-76.38	-11.89	0.00	-1,036.0	0.00	1,036.01	4,286.22	1,146.21	5,680.86	4,844.36	2.95	-0.53	0.232
60.00	-74.33	-11.74	0.00	-976.5	0.00	976.54	4,227.82	1,119.89	5,422.98	4,667.87	3.54	-0.58	0.227
65.00	-72.30	-11.58	0.00	-917.9	0.00	917.86	4,167.53	1,093.57	5,171.09	4,492.41	4.18	-0.64	0.222
70.00	-70.32	-11.42	0.00	-860.0	0.00	859.98	4,105.36	1,067.25	4,925.18	4,318.13	4.88	-0.7	0.216
75.00	-68.38	-11.31	0.00	-802.9	0.00	802.90	4,041.31	1,040.93	4,685.27	4,145.16	5.65	-0.76	0.211
76.00	-67.97	-11.23	0.00	-791.6	0.00	791.59	4,028.28	1,035.66	4,638.00	4,110.74	5.81	-0.77	0.210
80.00	-66.45	-11.09	0.00	-746.7	0.00	746.67	3,975.38	1,014.61	4,451.35	3,973.66	6.48	-0.82	0.205
85.00	-64.59	-10.95	0.00	-691.2	0.00	691.23	3,907.57	988.29	4,223.41	3,803.78	7.37	-0.88	0.198
88.75	-63.22	-10.86	0.00	-650.2	0.00	650.18	3,855.48	968.55	4,056.39	3,677.51	8.07	-0.92	0.193
90.00	-62.47	-10.77	0.00	-636.6	0.00	636.60	3,837.88	961.97	4,001.47	3,635.65	8.32	-0.94	0.192
94.75	-59.71	-10.66	0.00	-585.4	0.00	585.44	3,812.70	952.63	3,924.16	3,576.45	9.28	-1	0.179
95.00	-59.62	-10.59	0.00	-582.8	0.00	582.78	3,809.13	951.31	3,913.33	3,568.13	9.33	-1	0.179
100.00	-57.85	-10.42	0.00	-529.8	0.00	529.84	3,736.80	924.99	3,699.80	3,402.73	10.41	-1.05	0.171
105.00	-56.12	-10.26	0.00	-477.7	0.00	477.73	3,662.58	898.67	3,492.26	3,239.45	11.54	-1.11	0.163
110.00	-51.80	-9.87	0.00	-426.4	0.00	426.44	3,586.48	872.35	3,290.71	3,078.43	12.73	-1.16	0.153
111.00	-51.09	-9.35	0.00	-416.6	0.00	416.57	3,571.04	867.08	3,251.12	3,046.51	12.98	-1.17	0.151
113.00	-50.15	-8.95	0.00	-397.9	0.00	397.88	3,539.92	856.55	3,172.66	2,982.97	13.47	-1.19	0.148
115.00	-49.50	-8.90	0.00	-380.0	0.00	379.97	3,508.50	846.03	3,095.16	2,919.82	13.98	-1.22	0.144
116.00	-48.96	-8.54	0.00	-371.1	0.00	371.07	3,492.68	840.76	3,056.76	2,888.40	14.24	-1.23	0.143
120.00	-47.34	-8.17	0.00	-336.9	0.00	336.90	3,428.64	819.70	2,905.59	2,763.77	15.28	-1.27	0.136
125.00	-45.79	-8.02	0.00	-296.1	0.00	296.07	3,346.90	793.38	2,722.01	2,610.43	16.64	-1.32	0.127
129.00	-44.58	-7.92	0.00	-264.0	0.00	264.01	3,269.52	772.33	2,579.46	2,481.74	17.76	-1.36	0.120
130.00	-44.16	-7.85	0.00	-256.1	0.00	256.09	3,247.23	767.06	2,544.42	2,447.85	18.04	-1.37	0.118
133.75	-42.60	-7.75	0.00	-226.6	0.00	226.64	1,899.49	506.92	1,666.67	1,424.12	19.13	-1.4	0.182
135.00	-42.30	-7.71	0.00	-217.0	0.00	216.95	1,889.78	502.53	1,637.95	1,404.50	19.5	-1.41	0.177
137.00	-36.46	-6.81	0.00	-201.5	0.00	201.54	1,874.01	495.51	1,592.52	1,373.19	20.09	-1.44	0.166
140.00	-35.77	-6.69	0.00	-181.1	0.00	181.13	1,849.79	484.98	1,525.57	1,326.44	21.01	-1.47	0.156
145.00	-34.64	-6.59	0.00	-147.7	0.00	147.66	1,807.92	467.44	1,417.19	1,249.18	22.58	-1.53	0.138
146.00	-30.54	-6.08	0.00	-141.1	0.00	141.07	1,799.32	463.93	1,395.99	1,233.83	22.9	-1.54	0.131
148.00	-27.30	-5.43	0.00	-128.9	0.00	128.90	1,781.90	456.91	1,354.07	1,203.26	23.55	-1.56	0.123
150.00	-26.87	-5.33	0.00	-118.0	0.00	118.05	1,764.17	449.89	1,312.79	1,172.85	24.21	-1.58	0.116
155.00	-25.85	-5.20	0.00	-91.4	0.00	91.41	1,718.54	432.34	1,212.39	1,097.61	25.89	-1.62	0.098
158.00	-20.10	-4.26	0.00	-75.5	0.00	75.52	1,690.25	421.81	1,154.07	1,053.05	26.92	-1.65	0.084
160.00	-19.71	-4.16	0.00	-67.0	0.00	67.00	1,671.02	414.79	1,115.99	1,023.60	27.61	-1.66	0.077
165.00	-18.77	-4.03	0.00	-46.2	0.00	46.21	1,621.63	397.25	1,023.58	950.97	29.37	-1.69	0.060
168.00	-10.85	-2.75	0.00	-34.1	0.00	34.11	1,591.09	386.72	970.04	908.11	30.44	-1.71	0.044
170.00	-10.57	-2.66	0.00	-28.6	0.00	28.60	1,570.35	379.70	935.16	879.87	31.16	-1.72	0.039
175.00	-9.87	-2.54	0.00	-15.3	0.00	15.30	1,517.19	362.15	850.73	810.44	32.96	-1.73	0.025
178.00	0.00	-2.24	0.00	-7.7	0.00	7.67	1,484.39	351.62	801.99	769.65	34.05	-1.74	0.010

CALCULATED FORCES

Load Case: 1.0D + 1.0W

60 mph Wind with No Ice

23 Iterations

Gust Response Factor: 1.10
 Dead load Factor: 1.00
 Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-66.53	-10.51	0.00	-1,311.9	0.00	1,311.91	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.166
5.00	-64.66	-10.34	0.00	-1,259.4	0.00	1,259.38	5,970.50	1,624.53	9,781.10	8,199.81	0.02	-0.03	0.164
10.00	-62.82	-10.19	0.00	-1,207.7	0.00	1,207.67	5,906.46	1,593.82	9,414.85	7,957.53	0.07	-0.07	0.162
15.00	-61.02	-10.04	0.00	-1,156.7	0.00	1,156.73	5,840.54	1,563.11	9,055.59	7,716.10	0.16	-0.1	0.160
20.00	-59.24	-9.89	0.00	-1,106.5	0.00	1,106.53	5,772.74	1,532.40	8,703.32	7,475.69	0.28	-0.14	0.158
25.00	-57.49	-9.76	0.00	-1,057.1	0.00	1,057.06	5,703.06	1,501.70	8,358.04	7,236.44	0.45	-0.17	0.156
30.00	-55.77	-9.62	0.00	-1,008.3	0.00	1,008.29	5,631.50	1,470.99	8,019.75	6,998.48	0.65	-0.21	0.154
35.00	-54.08	-9.48	0.00	-960.2	0.00	960.19	5,558.06	1,440.28	7,688.44	6,761.98	0.88	-0.24	0.152
40.00	-52.43	-9.36	0.00	-912.8	0.00	912.78	5,482.73	1,409.57	7,364.12	6,527.08	1.16	-0.28	0.149
43.75	-51.20	-9.29	0.00	-877.7	0.00	877.68	5,425.00	1,386.54	7,125.47	6,352.04	1.39	-0.31	0.148
45.00	-50.50	-9.20	0.00	-866.1	0.00	866.06	5,405.53	1,378.86	7,046.80	6,293.92	1.47	-0.32	0.147
50.00	-47.76	-9.11	0.00	-820.0	0.00	820.05	5,326.44	1,348.16	6,736.46	6,062.66	1.82	-0.36	0.144
51.00	-47.21	-9.04	0.00	-810.9	0.00	810.94	4,331.59	1,167.27	5,891.48	4,986.18	1.9	-0.36	0.174
55.00	-46.09	-8.91	0.00	-774.8	0.00	774.79	4,286.22	1,146.21	5,680.86	4,844.36	2.22	-0.39	0.171
60.00	-44.72	-8.78	0.00	-730.2	0.00	730.23	4,227.82	1,119.89	5,422.98	4,667.87	2.65	-0.44	0.167
65.00	-43.37	-8.64	0.00	-686.4	0.00	686.35	4,167.53	1,093.57	5,171.09	4,492.41	3.13	-0.48	0.163
70.00	-42.04	-8.50	0.00	-643.2	0.00	643.15	4,105.36	1,067.25	4,925.18	4,318.13	3.66	-0.52	0.159
75.00	-40.75	-8.42	0.00	-600.6	0.00	600.63	4,041.31	1,040.93	4,685.27	4,145.16	4.23	-0.57	0.155
76.00	-40.48	-8.35	0.00	-592.2	0.00	592.21	4,028.28	1,035.66	4,638.00	4,110.74	4.36	-0.58	0.154
80.00	-39.46	-8.23	0.00	-558.8	0.00	558.83	3,975.38	1,014.61	4,451.35	3,973.66	4.85	-0.61	0.151
85.00	-38.22	-8.11	0.00	-517.7	0.00	517.68	3,907.57	988.29	4,223.41	3,803.78	5.52	-0.66	0.146
88.75	-37.30	-8.04	0.00	-487.3	0.00	487.27	3,855.48	968.55	4,056.39	3,677.51	6.05	-0.69	0.142
90.00	-36.76	-7.96	0.00	-477.2	0.00	477.22	3,837.88	961.97	4,001.47	3,635.65	6.23	-0.7	0.141
94.75	-34.73	-7.88	0.00	-439.4	0.00	439.38	3,812.70	952.63	3,924.16	3,576.45	6.96	-0.75	0.132
95.00	-34.67	-7.82	0.00	-437.4	0.00	437.41	3,809.13	951.31	3,913.33	3,568.13	7	-0.75	0.132
100.00	-33.49	-7.69	0.00	-398.3	0.00	398.32	3,736.80	924.99	3,699.80	3,402.73	7.8	-0.79	0.126
105.00	-32.33	-7.56	0.00	-359.9	0.00	359.89	3,662.58	898.67	3,492.26	3,239.45	8.65	-0.83	0.120
110.00	-29.85	-7.25	0.00	-322.1	0.00	322.12	3,586.48	872.35	3,290.71	3,078.43	9.54	-0.87	0.113
111.00	-29.52	-7.05	0.00	-314.9	0.00	314.86	3,571.04	867.08	3,251.12	3,046.51	9.73	-0.88	0.112
113.00	-29.03	-6.85	0.00	-300.8	0.00	300.76	3,539.92	856.55	3,172.66	2,982.97	10.1	-0.9	0.109
115.00	-28.59	-6.81	0.00	-287.1	0.00	287.07	3,508.50	846.03	3,095.16	2,919.82	10.48	-0.91	0.107
116.00	-28.35	-6.63	0.00	-280.3	0.00	280.26	3,492.68	840.76	3,056.76	2,888.40	10.67	-0.92	0.105
120.00	-27.38	-6.37	0.00	-253.8	0.00	253.76	3,428.64	819.70	2,905.59	2,763.77	11.45	-0.95	0.100
125.00	-26.34	-6.26	0.00	-221.9	0.00	221.90	3,346.90	793.38	2,722.01	2,610.43	12.47	-0.99	0.093
129.00	-25.52	-6.19	0.00	-196.9	0.00	196.87	3,269.52	772.33	2,579.46	2,481.74	13.31	-1.02	0.087
130.00	-25.22	-6.14	0.00	-190.7	0.00	190.68	3,247.23	767.06	2,544.42	2,447.85	13.52	-1.02	0.086
133.75	-24.10	-6.06	0.00	-167.7	0.00	167.67	1,899.49	506.92	1,666.67	1,424.12	14.34	-1.05	0.131
135.00	-23.91	-6.03	0.00	-160.1	0.00	160.09	1,889.78	502.53	1,637.95	1,404.50	14.62	-1.06	0.127
137.00	-20.50	-5.22	0.00	-148.0	0.00	148.03	1,874.01	495.51	1,592.52	1,373.19	15.06	-1.08	0.119
140.00	-20.06	-5.13	0.00	-132.4	0.00	132.37	1,849.79	484.98	1,525.57	1,326.44	15.75	-1.1	0.111
145.00	-19.35	-5.06	0.00	-106.7	0.00	106.71	1,807.92	467.44	1,417.19	1,249.18	16.93	-1.14	0.096
146.00	-16.71	-4.69	0.00	-101.6	0.00	101.65	1,799.32	463.93	1,395.99	1,233.83	17.17	-1.15	0.092
148.00	-15.21	-4.05	0.00	-92.3	0.00	92.27	1,781.90	456.91	1,354.07	1,203.26	17.65	-1.17	0.085
150.00	-14.95	-3.98	0.00	-84.2	0.00	84.16	1,764.17	449.89	1,312.79	1,172.85	18.14	-1.18	0.080
155.00	-14.30	-3.89	0.00	-64.3	0.00	64.26	1,718.54	432.34	1,212.39	1,097.61	19.4	-1.21	0.067
158.00	-10.98	-3.10	0.00	-52.3	0.00	52.29	1,690.25	421.81	1,154.07	1,053.05	20.17	-1.23	0.056
160.00	-10.74	-3.03	0.00	-46.1	0.00	46.10	1,671.02	414.79	1,115.99	1,023.60	20.68	-1.24	0.052
165.00	-10.14	-2.94	0.00	-31.0	0.00	30.96	1,621.63	397.25	1,023.58	950.97	21.99	-1.26	0.039
168.00	-5.75	-1.87	0.00	-22.1	0.00	22.14	1,591.09	386.72	970.04	908.11	22.79	-1.27	0.028
170.00	-5.58	-1.81	0.00	-18.4	0.00	18.40	1,570.35	379.70	935.16	879.87	23.32	-1.27	0.024
175.00	-5.18	-1.73	0.00	-9.4	0.00	9.36	1,517.19	362.15	850.73	810.44	24.66	-1.28	0.015
178.00	0.00	-1.61	0.00	-4.2	0.00	4.17	1,484.39	351.62	801.99	769.65	25.47	-1.29	0.005

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.187
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}):	0.199
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):	2.810
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	66.530 k
Seismic Base Shear (E):	2.000 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
51	176.5	235	7,324	0.009	17	292
50	172.5	405	12,065	0.014	29	503
49	169	167	4,768	0.006	11	207
48	166.5	350	9,695	0.012	23	434
47	162.5	596	15,750	0.019	37	740
46	159	243	6,152	0.007	15	302
45	156.5	382	9,359	0.011	22	474
44	152.5	650	15,128	0.018	36	807
43	149	265	5,882	0.007	14	329
42	147	279	6,031	0.007	14	346
41	145.5	141	2,976	0.004	7	174
40	142.5	713	14,479	0.017	34	884
39	138.5	436	8,363	0.010	20	541
38	136	297	5,500	0.006	13	369
37	134.375	187	3,381	0.004	8	232
36	131.875	1,119	19,454	0.023	46	1,387
35	129.5	302	5,070	0.006	12	375
34	127	815	13,143	0.016	31	1,010
33	122.5	1,042	15,630	0.019	37	1,291
32	118	854	11,895	0.014	28	1,059
31	115.5	216	2,887	0.003	7	268
30	114	436	5,666	0.007	13	541
29	112	441	5,536	0.007	13	547
28	110.5	223	2,721	0.003	6	276
27	107.5	1,130	13,055	0.016	31	1,401
26	102.5	1,155	12,137	0.014	29	1,432
25	97.5	1,181	11,224	0.013	27	1,464
24	94.875	60	537	0.001	1	74
23	92.375	2,021	17,245	0.020	41	2,506
22	89.375	539	4,309	0.005	10	669
21	86.875	915	6,904	0.008	16	1,134
20	82.5	1,242	8,454	0.010	20	1,540
19	78	1,012	6,157	0.007	15	1,255
18	75.5	256	1,458	0.002	3	317
17	72.5	1,294	6,801	0.008	16	1,604
16	67.5	1,319	6,011	0.007	14	1,636
15	62.5	1,345	5,253	0.006	12	1,667
14	57.5	1,370	4,531	0.005	11	1,699

ASSET: 376046, MANSFIELD CENTER 1 CT
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 13669396_C3_03

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh	Seismic	Height Above Base	Weight	W _z		Horizontal Force	Vertical Force
Segment		(ft)	(lb)	(lb-ft)	C _{vx}	(lb)	(lb)
13		53	1,115	3,131	0.004	7	1,382
12		50.5	542	1,382	0.002	3	672
11		47.5	2,743	6,190	0.007	15	3,401
10		44.375	694	1,367	0.002	3	861
9		41.875	1,220	2,140	0.002	5	1,513
8		37.5	1,653	2,325	0.003	6	2,050
7		32.5	1,683	1,778	0.002	4	2,087
6		27.5	1,713	1,295	0.002	3	2,124
5		22.5	1,743	882	0.001	2	2,161
4		17.5	1,772	543	0.001	1	2,198
3		12.5	1,802	282	0.000	1	2,235
2		7.5	1,832	103	0.000	0	2,271
1		2.5	1,862	12	0.000	0	2,308
Generic 20' Omni		178	55	1,743	0.002	4	68
Generic 18' Dipole		178	110	3,485	0.004	8	136
Generic 18' Dipole		120	110	1,584	0.002	4	136
Generic 8' Yagi		178	30	951	0.001	2	37
Generic 8' Yagi		116	30	404	0.000	1	37
Generic 8' Yagi		113	30	383	0.000	1	37
Generic 2' x 4' Rectangular Grid Dish		178	40	1,267	0.002	3	50
Generic 2' x 4' Rectangular Grid Dish		111	40	493	0.001	1	50
Samsung RF4461d-13A		178	237	7,519	0.009	18	294
Samsung B2/B66A RRH ORAN (RF 4439d-25A)		178	224	7,100	0.008	17	278
Samsung MT6413-77A		178	172	5,446	0.006	13	213
Raycap RCMDC-6627-PF-48		178	32	1,014	0.001	2	40
Generic Mount Reinforcement		178	1,200	38,021	0.045	90	1,488
Generic Mount Reinforcement		168	200	5,645	0.007	13	248
Commscope NHH-65B-R2B		178	262	8,308	0.010	20	325
Commscope LNX-8513DS-VTM (39.2 lb)		178	118	3,726	0.004	9	146
Generic Flat Platform with Handrails		178	2,500	79,210	0.094	188	3,100
Generic Flat Platform with Handrails		137	2,500	46,922	0.056	111	3,100
Powerwave Allgon LGP21401		168	85	2,388	0.003	6	105
Raycap DC6-48-60-18-8F		168	60	1,693	0.002	4	74
Ericsson RRUS 8843 B2, B66A		168	216	6,096	0.007	14	268
Ericsson RRUS 4478 B14		168	180	5,072	0.006	12	223
Ericsson RRUS 4449 B5, B12		168	213	6,012	0.007	14	264
Powerwave Allgon 7770.00		168	105	2,964	0.004	7	130
Commscope NNH4-65B-R6		168	269	7,595	0.009	18	334
CCI DMP65R-BU6DA		168	238	6,723	0.008	16	295
Generic Round Platform with Handrails		168	2,500	70,560	0.084	168	3,100
Generic Round Platform with Handrails		146	2,500	53,290	0.063	127	3,100
Alcatel-Lucent 2X50W RRH w/o Filter		158	159	3,969	0.005	9	197
Alcatel-Lucent 1900MHz RRH (65MHz)		158	180	4,494	0.005	11	223
Alcatel-Lucent 800 MHz RRH w/ Notch Filter		158	185	4,628	0.006	11	230
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield		158	210	5,242	0.006	12	260
RFS APXVSPP18-C-A20		158	171	4,269	0.005	10	212
Commscope DT465B-2XR		158	174	4,344	0.005	10	216
Generic Round Low Profile Platform		158	1,875	46,808	0.056	111	2,325
Ericsson Radio 4449 B71 B85A		148	225	4,928	0.006	12	279
Ericsson Radio 4460 B25+B66		148	327	7,163	0.008	17	405
Ericsson AIR 6419 B41		148	206	4,501	0.005	11	255
Commscope VV-65B-R1B		148	88	1,939	0.002	5	110
RFS APXVAARR24_43-U-NA20		148	384	8,405	0.010	20	476
Raycap RDIDC-9181-PF-48		137	22	411	0.000	1	27
Fujitsu TA08025-B605		137	225	4,223	0.005	10	279
Fujitsu TA08025-B604		137	192	3,598	0.004	9	238
JMA Wireless MX08FRO665-21		137	194	3,632	0.004	9	240
Generic 9' Omni		113	25	319	0.000	1	31
Generic 22' Dipole		111	66	813	0.001	2	82
Generic Flat T-Arm		110	1,350	16,335	0.019	39	1,674
Generic GPS		76	10	58	0.000	0	12

ASSET: 376046, MANSFIELD CENTER 1 CT
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 13669396_C3_03

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
Totals:		66,533	840,053	0.999	1,996	82,494

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
51	176.5	235	7,324	0.009	17	202
50	172.5	405	12,065	0.014	29	349
49	169	167	4,768	0.006	11	144
48	166.5	350	9,695	0.012	23	301
47	162.5	596	15,750	0.019	37	513
46	159	243	6,152	0.007	15	209
45	156.5	382	9,359	0.011	22	329
44	152.5	650	15,128	0.018	36	559
43	149	265	5,882	0.007	14	228
42	147	279	6,031	0.007	14	240
41	145.5	141	2,976	0.004	7	121
40	142.5	713	14,479	0.017	34	613
39	138.5	436	8,363	0.010	20	375
38	136	297	5,500	0.006	13	256
37	134.375	187	3,381	0.004	8	161
36	131.875	1,119	19,454	0.023	46	962
35	129.5	302	5,070	0.006	12	260
34	127	815	13,143	0.016	31	701
33	122.5	1,042	15,630	0.019	37	896
32	118	854	11,895	0.014	28	735
31	115.5	216	2,887	0.003	7	186
30	114	436	5,666	0.007	13	375
29	112	441	5,536	0.007	13	380
28	110.5	223	2,721	0.003	6	192
27	107.5	1,130	13,055	0.016	31	972
26	102.5	1,155	12,137	0.014	29	994
25	97.5	1,181	11,224	0.013	27	1,016
24	94.875	60	537	0.001	1	51
23	92.375	2,021	17,245	0.020	41	1,738
22	89.375	539	4,309	0.005	10	464
21	86.875	915	6,904	0.008	16	787
20	82.5	1,242	8,454	0.010	20	1,068
19	78	1,012	6,157	0.007	15	870
18	75.5	256	1,458	0.002	3	220
17	72.5	1,294	6,801	0.008	16	1,113
16	67.5	1,319	6,011	0.007	14	1,135
15	62.5	1,345	5,253	0.006	12	1,157
14	57.5	1,370	4,531	0.005	11	1,179
13	53	1,115	3,131	0.004	7	959
12	50.5	542	1,382	0.002	3	466
11	47.5	2,743	6,190	0.007	15	2,360
10	44.375	694	1,367	0.002	3	597
9	41.875	1,220	2,140	0.002	5	1,050
8	37.5	1,653	2,325	0.003	6	1,422
7	32.5	1,683	1,778	0.002	4	1,448
6	27.5	1,713	1,295	0.002	3	1,473
5	22.5	1,743	882	0.001	2	1,499
4	17.5	1,772	543	0.001	1	1,524
3	12.5	1,802	282	0.000	1	1,550
2	7.5	1,832	103	0.000	0	1,576
1	2.5	1,862	12	0.000	0	1,601
Generic 20' Omni	178	55	1,743	0.002	4	47
Generic 18' Dipole	178	110	3,485	0.004	8	95
Generic 18' Dipole	120	110	1,584	0.002	4	95
Generic 8' Yagi	178	30	951	0.001	2	26

ASSET: 376046, MANSFIELD CENTER 1 CT
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 13669396_C3_03

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
Generic 8' Yagi	116	30	404	0.000	1	26
Generic 8' Yagi	113	30	383	0.000	1	26
Generic 2' x 4' Rectangular Grid Dish	178	40	1,267	0.002	3	34
Generic 2' x 4' Rectangular Grid Dish	111	40	493	0.001	1	34
Samsung RF4461d-13A	178	237	7,519	0.009	18	204
Samsung B2/B66A RRH ORAN (RF 4439d-25A)	178	224	7,100	0.008	17	193
Samsung MT6413-77A	178	172	5,446	0.006	13	148
Raycap RCMDC-6627-PF-48	178	32	1,014	0.001	2	28
Generic Mount Reinforcement	178	1,200	38,021	0.045	90	1,032
Generic Mount Reinforcement	168	200	5,645	0.007	13	172
Commscope NHH-65B-R2B	178	262	8,308	0.010	20	226
Commscope LNX-8513DS-VTM (39.2 lb)	178	118	3,726	0.004	9	101
Generic Flat Platform with Handrails	178	2,500	79,210	0.094	188	2,150
Generic Flat Platform with Handrails	137	2,500	46,922	0.056	111	2,150
Powerwave Allgon LGP21401	168	85	2,388	0.003	6	73
Raycap DC6-48-60-18-8F	168	60	1,693	0.002	4	52
Ericsson RRUS 8843 B2, B66A	168	216	6,096	0.007	14	186
Ericsson RRUS 4478 B14	168	180	5,072	0.006	12	155
Ericsson RRUS 4449 B5, B12	168	213	6,012	0.007	14	183
Powerwave Allgon 7770.00	168	105	2,964	0.004	7	90
Commscope NNH4-65B-R6	168	269	7,595	0.009	18	231
CCI DMP65R-BU6DA	168	238	6,723	0.008	16	205
Generic Round Platform with Handrails	168	2,500	70,560	0.084	168	2,150
Generic Round Platform with Handrails	146	2,500	53,290	0.063	127	2,150
Alcatel-Lucent 2X50W RRH w/o Filter	158	159	3,969	0.005	9	137
Alcatel-Lucent 1900MHz RRH (65MHz)	158	180	4,494	0.005	11	155
Alcatel-Lucent 800 MHz RRH w/ Notch Filter	158	185	4,628	0.006	11	159
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	158	210	5,242	0.006	12	181
RFS APXVSP18-C-A20	158	171	4,269	0.005	10	147
Commscope DT465B-2XR	158	174	4,344	0.005	10	150
Generic Round Low Profile Platform	158	1,875	46,808	0.056	111	1,613
Ericsson Radio 4449 B71 B85A	148	225	4,928	0.006	12	194
Ericsson Radio 4460 B25+B66	148	327	7,163	0.008	17	281
Ericsson AIR 6419 B41	148	206	4,501	0.005	11	177
Commscope VV-65B-R1B	148	88	1,939	0.002	5	76
RFS APXVAARR24_43-U-NA20	148	384	8,405	0.010	20	330
Raycap RDIDC-9181-PF-48	137	22	411	0.000	1	19
Fujitsu TA08025-B605	137	225	4,223	0.005	10	194
Fujitsu TA08025-B604	137	192	3,598	0.004	9	165
JMA Wireless MX08FRO665-21	137	194	3,632	0.004	9	166
Generic 9' Omni	113	25	319	0.000	1	22
Generic 22' Dipole	111	66	813	0.001	2	57
Generic Flat T-Arm	110	1,350	16,335	0.019	39	1,161
Generic GPS	76	10	58	0.000	0	9
Totals:		66,533	840,053	0.999	1,996	57,225

1.2D + 1.0Ev + 1.0Eh

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	-80.19	-2.00	0.00	-302.34	0.00	302.34	6,032.65	1,655.24	10,154	8,442.81	0.00	0.00	0.05
5.00	-77.91	-2.01	0.00	-292.34	0.00	292.34	5,970.50	1,624.53	9,781	8,199.81	0.00	-0.01	0.05
10.00	-75.68	-2.02	0.00	-282.28	0.00	282.28	5,906.46	1,593.82	9,415	7,957.53	0.02	-0.02	0.05
15.00	-73.48	-2.03	0.00	-272.18	0.00	272.18	5,840.54	1,563.11	9,056	7,716.10	0.04	-0.02	0.05
20.00	-71.32	-2.04	0.00	-262.04	0.00	262.04	5,772.74	1,532.40	8,703	7,475.69	0.07	-0.03	0.05
25.00	-69.20	-2.04	0.00	-251.86	0.00	251.86	5,703.06	1,501.70	8,358	7,236.44	0.10	-0.04	0.05
30.00	-67.11	-2.05	0.00	-241.65	0.00	241.65	5,631.50	1,470.99	8,020	6,998.48	0.15	-0.05	0.05
35.00	-65.06	-2.05	0.00	-231.43	0.00	231.43	5,558.06	1,440.28	7,688	6,761.98	0.21	-0.06	0.05
40.00	-63.54	-2.05	0.00	-221.18	0.00	221.18	5,482.73	1,409.57	7,364	6,527.08	0.27	-0.07	0.05

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
43.75	-62.68	-2.05	0.00	-213.50	0.00	213.50	5,425.00	1,386.54	7,125	6,352.04	0.33	-0.07	0.05
45.00	-59.28	-2.04	0.00	-210.93	0.00	210.93	5,405.53	1,378.86	7,047	6,293.92	0.35	-0.08	0.04
50.00	-58.61	-2.04	0.00	-200.74	0.00	200.74	5,326.44	1,348.16	6,736	6,062.66	0.43	-0.08	0.04
51.00	-57.23	-2.03	0.00	-198.70	0.00	198.70	4,331.59	1,167.27	5,891	4,986.18	0.45	-0.09	0.05
55.00	-55.53	-2.03	0.00	-190.56	0.00	190.56	4,286.22	1,146.21	5,681	4,844.36	0.52	-0.09	0.05
60.00	-53.86	-2.02	0.00	-180.41	0.00	180.41	4,227.82	1,119.89	5,423	4,667.87	0.63	-0.10	0.05
65.00	-52.22	-2.02	0.00	-170.29	0.00	170.29	4,167.53	1,093.57	5,171	4,492.41	0.74	-0.12	0.05
70.00	-50.62	-2.01	0.00	-160.21	0.00	160.21	4,105.36	1,067.25	4,925	4,318.13	0.87	-0.13	0.05
75.00	-50.30	-2.01	0.00	-150.17	0.00	150.17	4,041.31	1,040.93	4,685	4,145.16	1.01	-0.14	0.05
76.00	-49.03	-2.00	0.00	-148.16	0.00	148.16	4,028.28	1,035.66	4,638	4,110.74	1.04	-0.14	0.05
80.00	-47.49	-1.98	0.00	-140.18	0.00	140.18	3,975.38	1,014.61	4,451	3,973.66	1.16	-0.15	0.05
85.00	-46.36	-1.97	0.00	-130.28	0.00	130.28	3,907.57	988.29	4,223	3,803.78	1.32	-0.16	0.05
88.75	-45.69	-1.96	0.00	-122.89	0.00	122.89	3,855.48	968.55	4,056	3,677.51	1.45	-0.17	0.05
90.00	-43.19	-1.92	0.00	-120.44	0.00	120.44	3,837.88	961.97	4,001	3,635.65	1.49	-0.17	0.04
94.75	-43.11	-1.92	0.00	-111.33	0.00	111.33	3,812.70	952.63	3,924	3,576.45	1.67	-0.18	0.04
95.00	-41.65	-1.89	0.00	-110.85	0.00	110.85	3,809.13	951.31	3,913	3,568.13	1.68	-0.18	0.04
100.00	-40.21	-1.87	0.00	-101.38	0.00	101.38	3,736.80	924.99	3,700	3,402.73	1.88	-0.19	0.04
105.00	-38.81	-1.84	0.00	-92.05	0.00	92.05	3,662.58	898.67	3,492	3,239.45	2.08	-0.20	0.04
110.00	-36.86	-1.79	0.00	-82.85	0.00	82.85	3,586.48	872.35	3,291	3,078.43	2.30	-0.21	0.04
111.00	-36.18	-1.77	0.00	-81.06	0.00	81.06	3,571.04	867.08	3,251	3,046.51	2.35	-0.22	0.04
113.00	-35.58	-1.76	0.00	-77.52	0.00	77.52	3,539.92	856.55	3,173	2,982.97	2.44	-0.22	0.04
115.00	-35.31	-1.75	0.00	-74.00	0.00	74.00	3,508.50	846.03	3,095	2,919.82	2.53	-0.22	0.04
116.00	-34.21	-1.72	0.00	-72.25	0.00	72.25	3,492.68	840.76	3,057	2,888.40	2.58	-0.23	0.04
120.00	-32.78	-1.68	0.00	-65.36	0.00	65.36	3,428.64	819.70	2,906	2,763.77	2.77	-0.23	0.03
125.00	-31.77	-1.65	0.00	-56.96	0.00	56.96	3,346.90	793.38	2,722	2,610.43	3.02	-0.24	0.03
129.00	-31.40	-1.64	0.00	-50.36	0.00	50.36	3,269.52	772.33	2,579	2,481.74	3.23	-0.25	0.03
130.00	-30.01	-1.59	0.00	-48.72	0.00	48.72	3,247.23	767.06	2,544	2,447.85	3.29	-0.25	0.03
133.75	-29.78	-1.58	0.00	-42.76	0.00	42.76	1,899.49	506.92	1,667	1,424.12	3.49	-0.26	0.05
135.00	-29.41	-1.57	0.00	-40.79	0.00	40.79	1,889.78	502.53	1,638	1,404.50	3.56	-0.26	0.05
137.00	-24.99	-1.39	0.00	-37.65	0.00	37.65	1,874.01	495.51	1,593	1,373.19	3.67	-0.27	0.04
140.00	-24.10	-1.36	0.00	-33.48	0.00	33.48	1,849.79	484.98	1,526	1,326.44	3.84	-0.27	0.04
145.00	-23.93	-1.35	0.00	-26.69	0.00	26.69	1,807.92	467.44	1,417	1,249.18	4.13	-0.28	0.04
146.00	-20.48	-1.19	0.00	-25.34	0.00	25.34	1,799.32	463.93	1,396	1,233.83	4.19	-0.29	0.03
148.00	-18.63	-1.11	0.00	-22.95	0.00	22.95	1,781.90	456.91	1,354	1,203.26	4.31	-0.29	0.03
150.00	-17.82	-1.07	0.00	-20.74	0.00	20.74	1,764.17	449.89	1,313	1,172.85	4.43	-0.29	0.03
155.00	-17.35	-1.05	0.00	-15.39	0.00	15.39	1,718.54	432.34	1,212	1,097.61	4.74	-0.30	0.02
158.00	-13.39	-0.84	0.00	-12.25	0.00	12.25	1,690.25	421.81	1,154	1,053.05	4.93	-0.30	0.02
160.00	-12.65	-0.80	0.00	-10.58	0.00	10.58	1,671.02	414.79	1,116	1,023.60	5.06	-0.31	0.02
165.00	-12.21	-0.77	0.00	-6.60	0.00	6.60	1,621.63	397.25	1,024	950.97	5.38	-0.31	0.01
168.00	-6.97	-0.46	0.00	-4.28	0.00	4.28	1,591.09	386.72	970	908.11	5.58	-0.31	0.01
170.00	-6.46	-0.43	0.00	-3.37	0.00	3.37	1,570.35	379.70	935	879.87	5.71	-0.31	0.01
175.00	-6.17	-0.41	0.00	-1.23	0.00	1.23	1,517.19	362.15	851	810.44	6.04	-0.32	0.01
178.00	0.00	-0.37	0.00	0.00	0.00	0.00	1,484.39	351.62	802	769.65	6.24	-0.32	0.00

0.9D - 1.0Ev + 1.0Eh 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	-55.62	-2.00	0.00	-297.02	0.00	297.02	6,032.65	1,655.24	10,154	8,442.81	0.00	0.00	0.04
5.00	-54.05	-2.01	0.00	-287.02	0.00	287.02	5,970.50	1,624.53	9,781	8,199.81	0.00	-0.01	0.04
10.00	-52.50	-2.01	0.00	-277.00	0.00	277.00	5,906.46	1,593.82	9,415	7,957.53	0.02	-0.02	0.04
15.00	-50.97	-2.02	0.00	-266.94	0.00	266.94	5,840.54	1,563.11	9,056	7,716.10	0.04	-0.02	0.04
20.00	-49.47	-2.02	0.00	-256.85	0.00	256.85	5,772.74	1,532.40	8,703	7,475.69	0.06	-0.03	0.04
25.00	-48.00	-2.02	0.00	-246.74	0.00	246.74	5,703.06	1,501.70	8,358	7,236.44	0.10	-0.04	0.04
30.00	-46.55	-2.03	0.00	-236.62	0.00	236.62	5,631.50	1,470.99	8,020	6,998.48	0.15	-0.05	0.04
35.00	-45.13	-2.03	0.00	-226.49	0.00	226.49	5,558.06	1,440.28	7,688	6,761.98	0.20	-0.06	0.04
40.00	-44.08	-2.03	0.00	-216.36	0.00	216.36	5,482.73	1,409.57	7,364	6,527.08	0.27	-0.07	0.04
43.75	-43.48	-2.03	0.00	-208.76	0.00	208.76	5,425.00	1,386.54	7,125	6,352.04	0.32	-0.07	0.04
45.00	-41.12	-2.01	0.00	-206.23	0.00	206.23	5,405.53	1,378.86	7,047	6,293.92	0.34	-0.07	0.04

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 (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
50.00	-40.66	-2.01	0.00	-196.18	0.00	196.18	5,326.44	1,348.16	6,736	6,062.66	0.42	-0.08	0.04
51.00	-39.70	-2.01	0.00	-194.16	0.00	194.16	4,331.59	1,167.27	5,891	4,986.18	0.44	-0.08	0.05
55.00	-38.52	-2.00	0.00	-186.14	0.00	186.14	4,286.22	1,146.21	5,681	4,844.36	0.51	-0.09	0.05
60.00	-37.36	-1.99	0.00	-176.15	0.00	176.15	4,227.82	1,119.89	5,423	4,667.87	0.62	-0.10	0.05
65.00	-36.23	-1.98	0.00	-166.19	0.00	166.19	4,167.53	1,093.57	5,171	4,492.41	0.73	-0.11	0.05
70.00	-35.11	-1.97	0.00	-156.28	0.00	156.28	4,105.36	1,067.25	4,925	4,318.13	0.85	-0.12	0.05
75.00	-34.89	-1.97	0.00	-146.43	0.00	146.43	4,041.31	1,040.93	4,685	4,145.16	0.99	-0.13	0.04
76.00	-34.01	-1.96	0.00	-144.46	0.00	144.46	4,028.28	1,035.66	4,638	4,110.74	1.02	-0.14	0.04
80.00	-32.95	-1.94	0.00	-136.64	0.00	136.64	3,975.38	1,014.61	4,451	3,973.66	1.14	-0.15	0.04
85.00	-32.16	-1.93	0.00	-126.94	0.00	126.94	3,907.57	988.29	4,223	3,803.78	1.29	-0.16	0.04
88.75	-31.69	-1.92	0.00	-119.72	0.00	119.72	3,855.48	968.55	4,056	3,677.51	1.42	-0.16	0.04
90.00	-29.96	-1.88	0.00	-117.32	0.00	117.32	3,837.88	961.97	4,001	3,635.65	1.46	-0.17	0.04
94.75	-29.90	-1.88	0.00	-108.41	0.00	108.41	3,812.70	952.63	3,924	3,576.45	1.63	-0.18	0.04
95.00	-28.89	-1.85	0.00	-107.94	0.00	107.94	3,809.13	951.31	3,913	3,568.13	1.64	-0.18	0.04
100.00	-27.89	-1.82	0.00	-98.70	0.00	98.70	3,736.80	924.99	3,700	3,402.73	1.84	-0.19	0.04
105.00	-26.92	-1.79	0.00	-89.58	0.00	89.58	3,662.58	898.67	3,492	3,239.45	2.04	-0.20	0.04
110.00	-25.57	-1.75	0.00	-80.62	0.00	80.62	3,586.48	872.35	3,291	3,078.43	2.25	-0.21	0.03
111.00	-25.10	-1.73	0.00	-78.87	0.00	78.87	3,571.04	867.08	3,251	3,046.51	2.30	-0.21	0.03
113.00	-24.68	-1.71	0.00	-75.42	0.00	75.42	3,539.92	856.55	3,173	2,982.97	2.39	-0.22	0.03
115.00	-24.49	-1.71	0.00	-71.99	0.00	71.99	3,508.50	846.03	3,095	2,919.82	2.48	-0.22	0.03
116.00	-23.73	-1.68	0.00	-70.28	0.00	70.28	3,492.68	840.76	3,057	2,888.40	2.52	-0.22	0.03
120.00	-22.74	-1.64	0.00	-63.57	0.00	63.57	3,428.64	819.70	2,906	2,763.77	2.71	-0.23	0.03
125.00	-22.04	-1.61	0.00	-55.39	0.00	55.39	3,346.90	793.38	2,722	2,610.43	2.96	-0.24	0.03
129.00	-21.78	-1.59	0.00	-48.97	0.00	48.97	3,269.52	772.33	2,579	2,481.74	3.16	-0.25	0.03
130.00	-20.82	-1.55	0.00	-47.37	0.00	47.37	3,247.23	767.06	2,544	2,447.85	3.21	-0.25	0.03
133.75	-20.66	-1.54	0.00	-41.58	0.00	41.58	1,899.49	506.92	1,667	1,424.12	3.41	-0.25	0.04
135.00	-20.40	-1.53	0.00	-39.66	0.00	39.66	1,889.78	502.53	1,638	1,404.50	3.48	-0.26	0.04
137.00	-17.33	-1.35	0.00	-36.61	0.00	36.61	1,874.01	495.51	1,593	1,373.19	3.58	-0.26	0.04
140.00	-16.72	-1.32	0.00	-32.55	0.00	32.55	1,849.79	484.98	1,526	1,326.44	3.75	-0.27	0.03
145.00	-16.60	-1.31	0.00	-25.95	0.00	25.95	1,807.92	467.44	1,417	1,249.18	4.04	-0.28	0.03
146.00	-14.21	-1.16	0.00	-24.64	0.00	24.64	1,799.32	463.93	1,396	1,233.83	4.09	-0.28	0.03
148.00	-12.92	-1.08	0.00	-22.32	0.00	22.32	1,781.90	456.91	1,354	1,203.26	4.21	-0.28	0.03
150.00	-12.36	-1.04	0.00	-20.17	0.00	20.17	1,764.17	449.89	1,313	1,172.85	4.33	-0.29	0.02
155.00	-12.03	-1.02	0.00	-14.97	0.00	14.97	1,718.54	432.34	1,212	1,097.61	4.63	-0.29	0.02
158.00	-9.28	-0.81	0.00	-11.92	0.00	11.92	1,690.25	421.81	1,154	1,053.05	4.82	-0.30	0.02
160.00	-8.77	-0.77	0.00	-10.29	0.00	10.29	1,671.02	414.79	1,116	1,023.60	4.94	-0.30	0.02
165.00	-8.47	-0.75	0.00	-6.42	0.00	6.42	1,621.63	397.25	1,024	950.97	5.26	-0.30	0.01
168.00	-4.83	-0.45	0.00	-4.17	0.00	4.17	1,591.09	386.72	970	908.11	5.45	-0.31	0.01
170.00	-4.48	-0.42	0.00	-3.28	0.00	3.28	1,570.35	379.70	935	879.87	5.58	-0.31	0.01
175.00	-4.28	-0.40	0.00	-1.19	0.00	1.19	1,517.19	362.15	851	810.44	5.90	-0.31	0.00
178.00	0.00	-0.37	0.00	0.00	0.00	0.00	1,484.39	351.62	802	769.65	6.10	-0.31	0.00

ANALYSIS SUMMARY

Load Case	Base 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	46.99	0.00	79.78	0.00	0.00	5912.02	51.00	0.75
0.9D + 1.0W	46.96	0.00	59.82	0.00	0.00	5831.21	51.00	0.73
1.2D + 1.0Di + 1.0Wi	13.72	0.00	105.63	0.00	0.00	1744.29	51.00	0.24
1.2D + 1.0Ev + 1.0Eh	2.05	0.00	80.19	0.00	0.00	302.34	51.00	0.05
0.9D - 1.0Ev + 1.0Eh	2.03	0.00	55.62	0.00	0.00	297.02	51.00	0.05
1.0D + 1.0W	10.51	0.00	66.53	0.00	0.00	1311.91	51.00	0.17

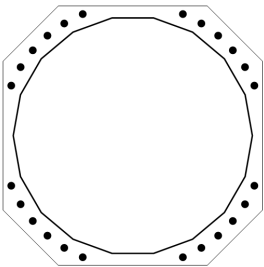
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
5912.02	79.78	46.99

PLATE PARAMETERS (ID# 27604)

Width:	75	in
Shape:	Square	
Thickness:	3	in
Grade:	A572-55	
Yield Strength:	55	ksi
Tensile Strength:	70	ksi
Clip Length:	16	in
Rod Detail Type:	d	
Clear Distance	3.75	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	220	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F _y (ksi)	F _u (ksi)	Spacing (in)	Offset (°)
Original [ID#28322]	Cluster	24	2.25	76	A615-75	75	100	6	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	68.36"ø x 0.4375" (18 Sides)	92.8826	-	-	53569.80	-
Bolt Group	Original (24) 2.25"ø	3.9761	3.2477	0.8393	52475.76	4.5

REACTION DISTRIBUTION

Component	ID	Moment M _u (k-ft)	Axial Load P _u (k)	Shear V _u (k)	Moment Factor
Pole	68.36"ø x 0.4375" (18 Sides)	5912.0	79.78	46.99	1.000
Bolt Group	Original (24) 2.25"ø	5912.0	-	46.99	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES					PLATE PROPERTIES		
Flat-to-Flat Diameter:	68.48	in	Flat Width:	12.076	in	Neutral Axis:	220 °
Point-to-Point Diameter:	69.54	in	Flat Radians:	0.349	rad		
Orientation Offset:	-	°					
Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in ³)	Applied Moment M _u (k-in)	Moment Capacity ΦM _n (k-in)	Flexure Result M _u /ΦM _n	
Flats	37.581	0.00	84.557	1244.3	4185.6	29.7%	✓
Corners	36.525	0.00	82.180	820.7	4067.9	20.2%	✓

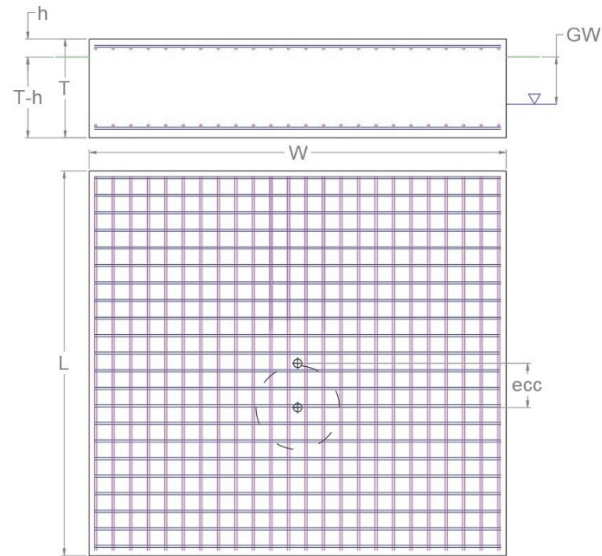
PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P _u (k)	Applied Shear Load V _u (k)	Compressive Capacity ΦP _n (k)	Interaction Result
Original	24	2.25	141.5	3.3	243.6	60.8% ✓



APPLIED GLOBAL REACTIONS		
Moment (k-ft)	Axial (k)	Shear (k)
5,912.02	79.78	46.99

FOUNDATION PARAMETERS			
Mat Length:	L	30.5	ft
Mat Width:	W	30.5	ft
Mat Thickness:	T	4.5	ft
Base Depth:	L+T-h	4	ft
Concrete Compressive Strength:		3,000	psi
Mat Top Rebar:		(31) #10 bars [60 ksi]	
Mat Bottom Rebar:		(31) #10 bars [60 ksi]	
Rebar Clear Cover:		3.0	in
Tower Eccentricity:	ecc	0	ft
Tower Leg Count		1	



SOIL PARAMETERS			
Water Table Depth [BGL]:	GW		ft
Soil Unit Weight:		120	pcf
Ultimate Skin Friction:		0	psf
Ultimate Bearing Pressure:		20,000	psf
Bearing Pressure Type:		Gross	
Coefficient of Shear Friction:		0.5	

SOIL STRENGTH ANALYSIS			
Soil Strength Reduction Factor, Φ_s	Uplift Strength Reduction Factor, Φ_s	Asset Dead Load Factor	Dead Load Factor
0.75	0.75	0.9	1.2

SOIL OVERTURNING ANALYSIS		
Design Moment, $M_{u,Design}$ (k-ft)	Nominal Overturning Capacity, $\Phi_m M_n$ (k-ft)	Soil Overturning Usage, $M_{u,Design} / \Phi_m M_n$
6,123.48	9,809.44	62.4%

SOIL BEARING ANALYSIS			
Net Bearing Pressure, $P_{u,Net}$ (psf)	Nominal Bearing Capacity, $\Phi_b P_n$ (k-ft)	Bearing Pressure Controlling Load Direction	Soil Bearing Usage, $P_{u,net} / \Phi_b P_n$
1,889.00	15,000.00	Diagonal to Pad Edge	12.6%

SOIL SLIDING SHEAR ANALYSIS					
Applied Shear Force, V_u (k)	Friction Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Nominal Shear Capacity, $\Phi_s V_n$ (k)	Soil Sliding Shear Usage, $V_u / \Phi_s V_n$
46.99	0.00	210.0	28.82	282.02	17.0%

MAT REINFORCING STEEL STRENGTH ANALYSIS			
Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
29,000	0.9	0.75	0.65

MAT REINFORCING ONE WAY SHEAR ANALYSIS

One Way Design Shear, V_u (k)	Nominal One Way Shear Capacity, $\Phi_c V_n$ (k)	One Way Shear Controlling Load Direction	Mat One Way Shear Usage, $V_u / \Phi_c V_n$	
275.75	1,402.39	Diagonal to Pad Edge	19.7%	✓

MAT REINFORCING PUNCHING SHEAR ANALYSIS

Punching Shear Design Stress, v_u (psi)	Nominal Punching Shear Capacity, $\Phi_c V_n$ (psi)	Mat Punching Shear Usage, $v_u / \Phi_c V_n$	
30.0	164.3	18.2%	✓

MAT REINFORCING MOMENT TRANSFER ANALYSIS

Moment Transfer Effective Flexural Width, w_f (in)	Neutral Axis Depth (in)	Pier Moment at Joint, M_{ut} (k-in)	Nominal Moment Transfer Capacity, $\Phi M_{sc,f}$ (k-in)	Mat Moment Transfer Usage, $0.6 M_{ut} / \Phi M_{sc,f}$	
19.75	2.62	0.00	69,325.6	0.0%	✓

MAT REINFORCING FLEXURE ANALYSIS – UPPER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Upper Rebar Flexure Usage, $M_u / \Phi M_n$	
1,513.34	8,623.39	Parallel to Pad Edge	17.5%	✓

MAT REINFORCING FLEXURE ANALYSIS – LOWER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Lower Rebar Flexure Usage, $M_u / \Phi M_n$	
2,527.90	8,623.39	Parallel to Pad Edge	29.3%	✓



CENTERLINE

EXHIBIT D

Construction Drawings





ATC SITE NAME: MANSFIELD CENTER 1 CT
ATC SITE NUMBER: 376046
VERIZON SITE NAME: MANSFIELD CENTER CT
VERIZON SITE NUMBER: 467947
VERIZON FUZE PID: 16244628
SITE ADDRESS: 230 CLOVER MILL ROAD
STORRS MANSFIELD,CT 06268



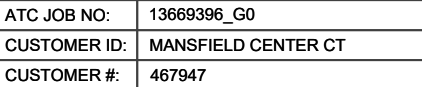
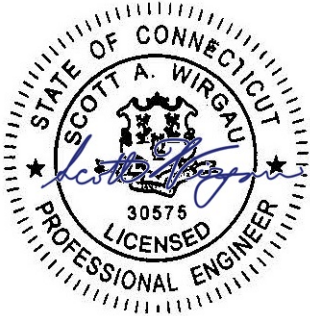
THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LLR	02/16/24

ATC SITE NUMBER:
376046
ATC SITE NAME:
MANSFIELD CENTER 1 CT
VERIZON SITE NAME:
MANSFIELD CENTER CT


SITE ADDRESS:
230 CLOVER MILL ROAD
STORRS MANSFIELD, CT 06268

SEAL:



TITLE SHEET

SHEET NUMBER: G-001	REVISION: 0
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COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
<p>ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.</p> <p>1. 2020 NFPA 70, NATIONAL ELECTRIC CODE (NEC) 2. 2022 CONNECTICUT STATE BUILDING CODE 3. 2021 INTERNATIONAL BUILDING CODE (IBC)</p> <p><u>DESIGN CRITERIA FROM TOWER STRUCTUAL ANALYSIS:</u> BASIC WIND SPEED: 120 MPH BASIC WIND SPEED W/ ICE: 50 MPH (3-SECOND GUST) W/ 1.00" RADIAL ICE CONCURRENT CODE(S): ANSI/TIA-222-H / 2021 IBC / 2022 CONNECTICUT STATE BUILDING CODE</p> <p>EXPOSURE CATEGORY: B RISK CATEGORY: II TOPO FACTOR PROCEDURE: METHOD 2 TOPO CATEGORY: 0 FEATURE: HILL SPECTRAL RESPONSE: S_B=0.19, S_r=0.06 SITE CLASS: D - STIFF SOIL - DEFAULT</p> <p>INFORMATION TAKEN FROM STRUCTURAL ANALYSIS COMPLETED BY ATC, DATED 12/29/23.</p>	<p><u>SITE ADDRESS:</u> 230 CLOVER MILL ROAD STORRS MANSFIELD,CT 06268 COUNTY: TOLLAND</p> <p><u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41° 46' 32.800" N LONGITUDE: 72° 13' 21.000" W GROUND ELEVATION: 515' AMSL</p>	<p>THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:</p> <p>REMOVE (9) ANTENNA(s), (6) RRH(s), (2) OVP(s), (6) 1-5/8" COAX AND (1) HYBRID CABLE(s)</p> <p>INSTALL MOUNT MODIFICATIONS, (9) ANTENNA(s), (6) RRH(s), (3) SIDE BY SIDE MOUNT(s), (1) OVP(s), AND (2) 6X12 HYBRID CABLE(s)</p> <p>EXISTING (3) ANTENNA(s) AND (6) 1-5/8" COAX CABLE(s) TO REMAIN</p>	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
			G-001	TITLE SHEET	0	02/16/24	LLR
			G-002	GENERAL NOTES	0	02/16/24	LLR
			C-101	DETAILED SITE PLAN	0	02/16/24	LLR
			C-201	TOWER ELEVATION	0	02/16/24	LLR
			C-401	ANTENNA INFORMATION & SCHEDULE	0	02/16/24	LLR
			C-501	CONSTRUCTION DETAILS	0	02/16/24	LLR
			E-501	GROUNDING DETAILS	0	02/16/24	LLR
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
CONTRACTOR PMI REQUIREMENTS							
PMI ACCESSED AT:				HTTPS://PMI.VZWSMART.COM			
SMART TOOL VENDOR PROJECT NUMBER:				10216461			
VZW LOCATION CODE (PSLC):				467947			
***PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT							
MOUNT MODIFICATION REQUIRED:				YES			
VZW APPROVED SMART KIT VENDORS:				REFER TO MOUNT MODIFICATION DRAWINGS PAGES FOR VZW SMART KIT APPROVED VENDORS			
	<p><u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBBURN, MA 01801</p> <p><u>ENGINEER:</u> A.T. ENGINEERING SERVICES LLC 1 FENTON MAIN, STE 300 CARY, NC 27511</p> <p><u>PROPERTY OWNER:</u> TOWN OF MANSFIELD CT 230 CLOVER MILL ROAD STORRS MANSFIELD,CT 06268</p>	<p><u>APPLICANT:</u> VERIZON WIRELESS</p>					
UTILITY COMPANIES		PROJECT TEAM					
<p>POWER COMPANY: EVERSOURCE PHONE: (877) 659-6326</p> <p>TELEPHONE COMPANY: FRONTIER COMMUNICATIONS PHONE: (800) 376-6843</p>							
							

GENERAL CONSTRUCTION NOTES:

1.

OWNER FURNISHED MATERIALS, VERIZON "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 VERIZON 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 VERIZON REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON REP PRIOR TO PROCEEDING.
13.

EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON 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 VERIZON 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 VERIZON 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 VERIZON 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 VERIZON 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 VERIZON REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23.

CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON SPECIFICATIONS AND REQUIREMENTS.
24.

CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25.

ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON 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 VERIZON 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.

WHEN THE PROJECT SCOPE REQUIRES THE USE OF THE SAFETY CLIMB, THE GENERAL CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS FREE OF OBSTRUCTIONS, NOT RUBBING ON OR TRAPPED BY ANY INSTALLED CUSTOMER EQUIPMENT, IS VISUALLY TAUT, MEETS MANUFACTURER INSTALLATION SPECIFICATIONS, AND IS FIRMLY SECURED AT ALL CABLE GUIDE LOCATIONS UPON PROJECT COMPLETION.
29.

COMPLETION OF PROJECT SHALL NOT OBSTRUCT, TRAP, LOOSEN, OR OTHERWISE CAUSE FAILURE TO MEET MANUFACTURER INSTALLATION REQUIREMENTS FOR THE SAFETY CLIMB.
30.

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 CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
31.

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.
32.

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 VERIZON REP. ANY WORK FOUND BY THE VERIZON REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
33.

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.
34.

VERIZON FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE VERIZON 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.
35.

VERIZON 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 VERIZON OR THEIR ARCHITECT/ENGINEER.

- B.

ALL COAXIAL/HYBRID CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL/HYBRID CABLE (NOT WITHIN BENDS)

SPECIAL CONSTRUCTION

ANTENNA INSTALLATION NOTES:

1.

WORK INCLUDED:

A.

ANTENNA AND COAXIAL/HYBRID CABLES ARE FURNISHED BY VERIZON 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 VERIZON SPECIFICATIONS.

C.

INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D.

INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.

E.

INSTALL COAXIAL/HYBRID 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/HYBRID CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
2.

ANTENNA AND COAXIAL/HYBRID CABLE GROUNDING:

A.

ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

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.



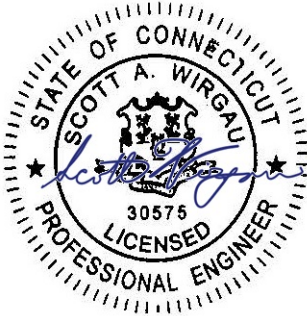
AMERICAN TOWER®
A.T. ENGINEERING SERVICES LLC
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SUITE 300
CARY, NC 27511
PHONE: (919) 468-0112
PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LLR	02/16/24

ATC SITE NUMBER:
376046
ATC SITE NAME:
MANSFIELD CENTER 1 CT
VERIZON SITE NAME:
MANSFIELD CENTER CT
SITE ADDRESS:
230 CLOVER MILL ROAD
STORRS MANSFIELD, CT 06268

SEAL:



Digitally Signed: 2024-02-16



ATC JOB NO:	13669396_G0
CUSTOMER ID:	MANSFIELD CENTER CT
CUSTOMER #:	467947

GENERAL NOTES

SHEET NUMBER: G-002	REVISION: 0
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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. NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.



- | | |
|-------|---------------------------|
| ⊗ | GROUNDING TEST WELL |
| ATS | AUTOMATIC TRANSFER SWITCH |
| B | BOLLARD |
| CSC | CELL SITE CABINET |
| D | DISCONNECT |
| E | ELECTRICAL |
| F | FIBER |
| GEN | GENERATOR |
| G | GENERATOR RECEPTACLE |
| 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 |
| | CHAINLINK FENCE |

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **251'**. 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.

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LLR	02/16/24

SEAL:

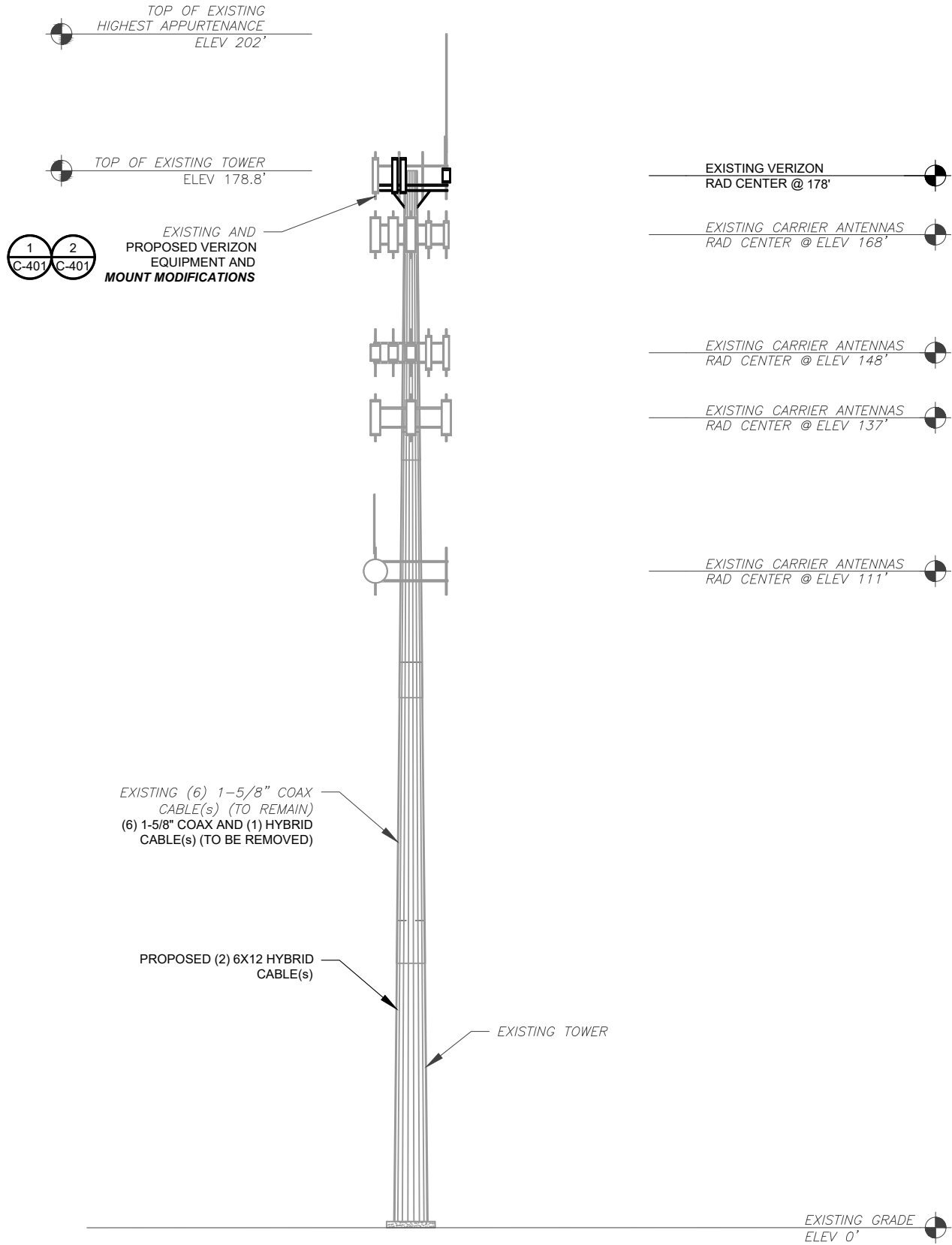


The seal is circular with a double-lined border. The outer ring contains the text "STATE OF CONNECTICUT" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the name "SCOTT A. WIRGAU" at the top, a central crest featuring a shield with three stars and a plow, and the license number "30575" at the bottom. A blue ink signature is written across the center of the seal.




ATC JOB NO:	13669396_G0
CUSTOMER ID:	MANFIELD CENTER CT
CUSTOMER #:	467947

SHEET NUMBER: C-101	REVISION: 0
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1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, DATED 12/21/23, THE EXISTING MOUNT **MUST BE MODIFIED** TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION DETAILED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

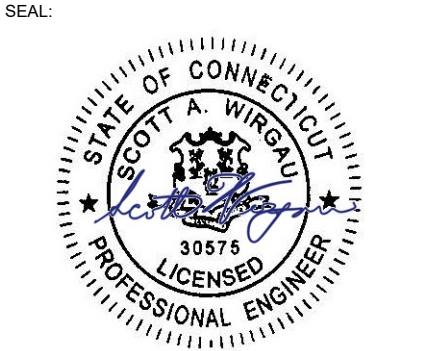


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STORRS MANSFIELD,CT 06268



Digitally Signed: 2024-02-16



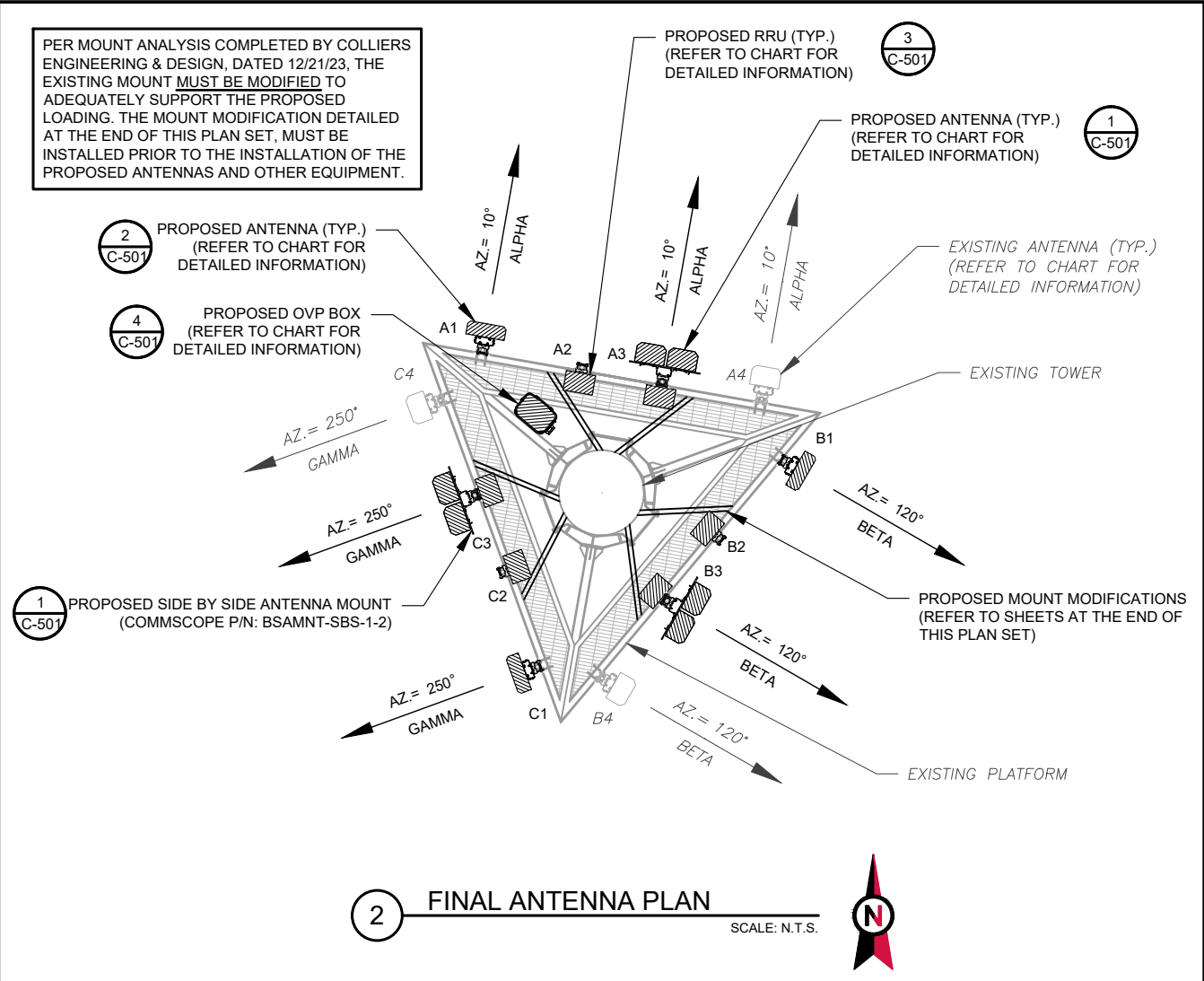
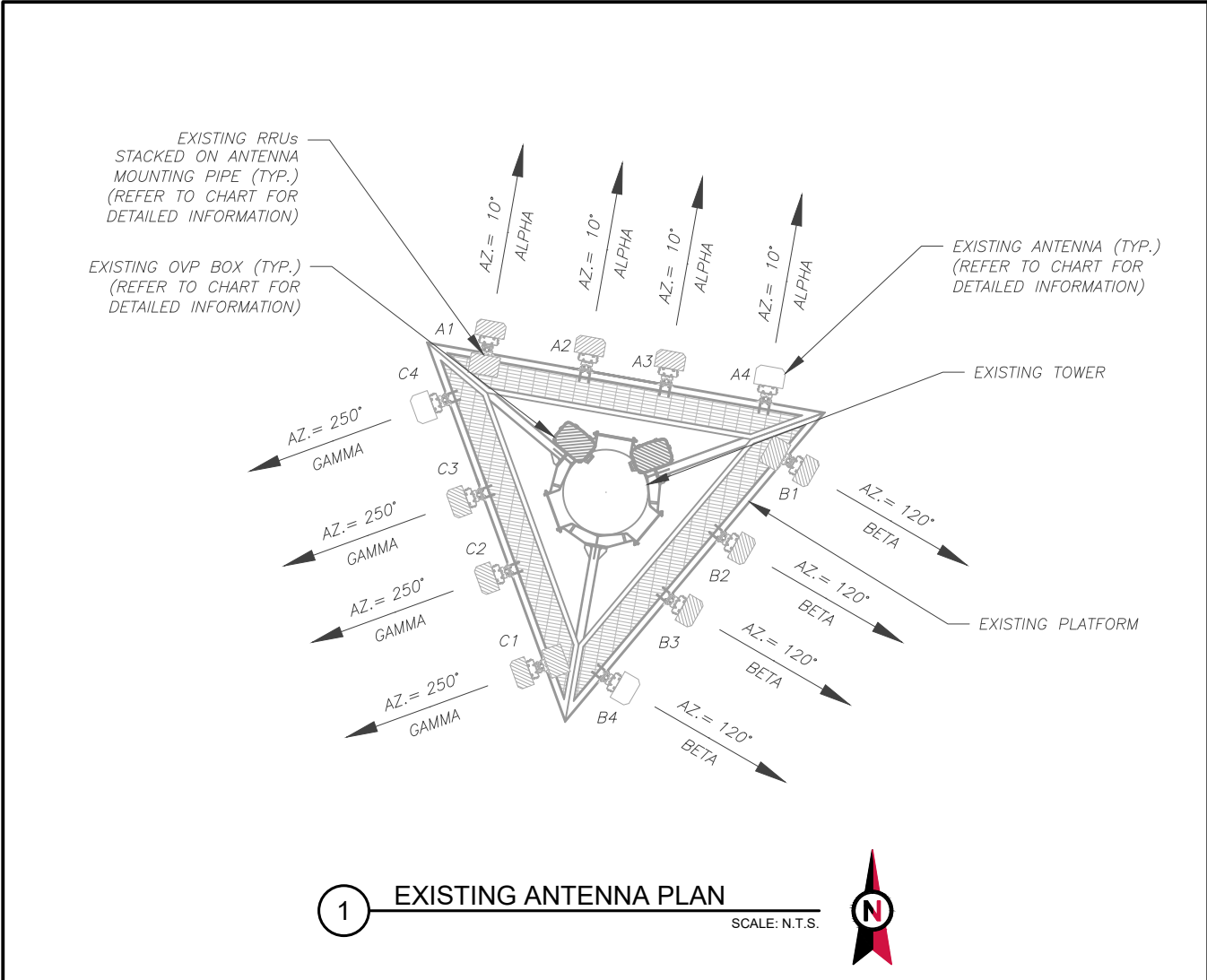
ATC JOB NO:	13669396_G0
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CUSTOMER #:	467947

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	0

ALL ELEVATIONS REFLECT ABOVE GROUND LEVEL (A.G.L.)

- 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 ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRATYCLAL ANALYSIS FOR FULL TOWER LOADING.



EXISTING ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	178°	10°	A1	LNK-6514DS-A1M	700 LTE	RMV	UHBC B13 TRDU 2X40 UHIC B4 RRH 2X60-4R	RMV RMV
			A2	HBXX-6517DS-A2M	AWS LTE	RMV	-	-
			A3	HBXX-6517DS-A2M	AWS LTE	RMV	-	-
			A4	LNK-8513DS-A1M	-	RMN	-	-
BETA	178°	120°	B1	LNK-6514DS-A1M	700 LTE	RMV	UHBC B13 TRDU 2X40 UHIC B4 RRH 2X60-4R	RMV RMV
			B2	HBXX-6517DS-A2M	AWS LTE	RMV	-	-
			B3	HBXX-6517DS-A2M	AWS LTE	RMV	-	-
			B4	LNK-8513DS-A1M	-	RMN	-	-
GAMMA	178°	250°	C1	LNK-6514DS-A1M	700 LTE	RMV	UHBC B13 TRDU 2X40 UHIC B4 RRH 2X60-4R	RMV RMV
			C2	HBXX-6517DS-A2M	AWS LTE	RMV	-	-
			C3	HBXX-6517DS-A2M	AWS LTE	RMV	-	-
			C4	LNK-8513DS-A1M	-	RMN	-	-


NOTES
1. GC TO VERIFY THE FINAL RFDS MATCHES THE FINAL CONSTRUCTION DRAWINGS. GC TO NOTIFY ATC PM OF ANY DISCREPANCY PRIOR TO INSTALLING THE EQUIPMENT.
2. GC TO CAP ALL UNUSED PORTS.
3. GC TO CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
STATUS ABBREVIATIONS
RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED
CABLE LENGTHS FOR JUMPERS
JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	178°	10°	A1	MT6413-77A	L-SUB6 5G	ADD	-	-
			A2	-	-	-	RF4439D-25A	ADD
			A3	(2) NHH-65B-R2B	700/850/1900/AWS LTE & 850 5G	ADD	RF4461D-13A	ADD
			A4	LNK-8513DS-A1M	-	RMN	-	-
BETA	178°	120°	B1	MT6413-77A	L-SUB6 5G	ADD	-	-
			B2	-	-	-	RF4439D-25A	ADD
			B3	(2) NHH-65B-R2B	700/850/1900/AWS LTE & 850 5G	ADD	RF4461D-13A	ADD
			B4	LNK-8513DS-A1M	-	RMN	-	-
GAMMA	178°	250°	C1	MT6413-77A	L-SUB6 5G	ADD	-	-
			C2	-	-	-	RF4439D-25A	ADD
			C3	(2) NHH-65B-R2B	700/850/1900/AWS LTE & 850 5G	ADD	RF4461D-13A	ADD
			C4	LNK-8513DS-A1M	-	RMN	-	-

EXISTING FIBER DISTRIBUTION / OVP BOX		EXISTING CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
-	RMN	(6) 1-5/8" COAX	RMN
(2) 6 OVP	RMV	(6) 1-5/8" COAX AND (1) HYBRID	RMV

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
-	RMN	(6) 1-5/8" COAX	RMN
(1) 12 OVP	ADD	(2) 6X12 HYBRID	ADD



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LLR	02/16/24


ATC SITE NUMBER:
376046

ATC SITE NAME:
MANSFIELD CENTER 1 CT


VERIZON SITE NAME:
MANSFIELD CENTER CT

SITE ADDRESS:
230 CLOVER MILL ROAD
STORRS MANSFIELD, CT 06268

SEAL:



Digitally Signed: 2024-02-16

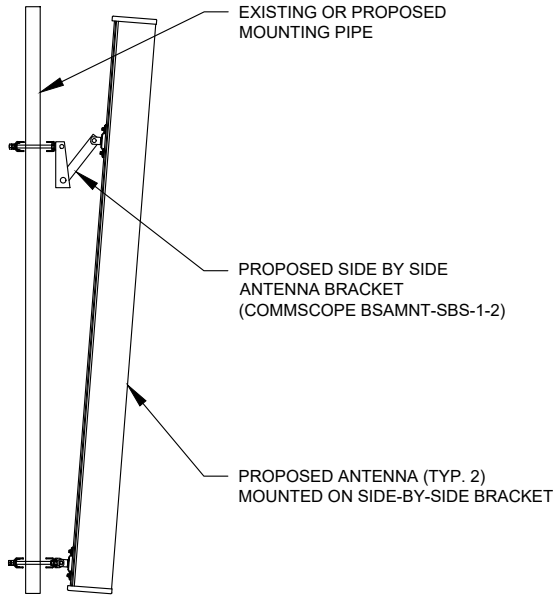


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CUSTOMER ID:	MANSFIELD CENTER CT
CUSTOMER #:	467947

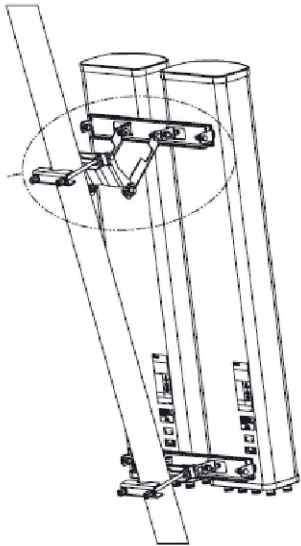
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER: C-401	REVISION: 0
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EXISTING/PROPOSED MOUNTS AND/OR MOUNT MODIFICATIONS NOT SHOWN FOR CLARITY. REFER TO ANTENNA PLANS, MOUNT ANALYSES AND/OR MOUNT MODIFICATION DOCUMENTS FOR ADDITIONAL DETAIL.

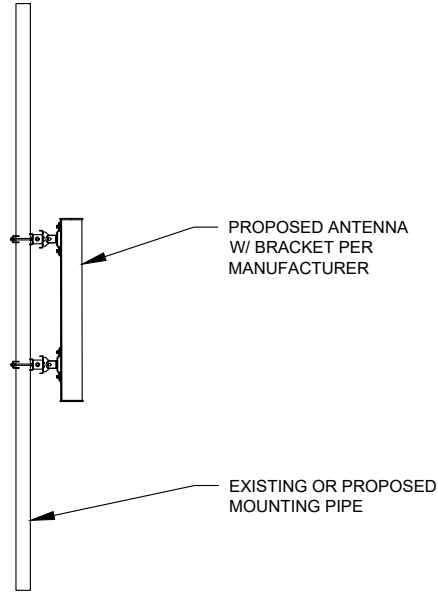


PROFILE VIEW

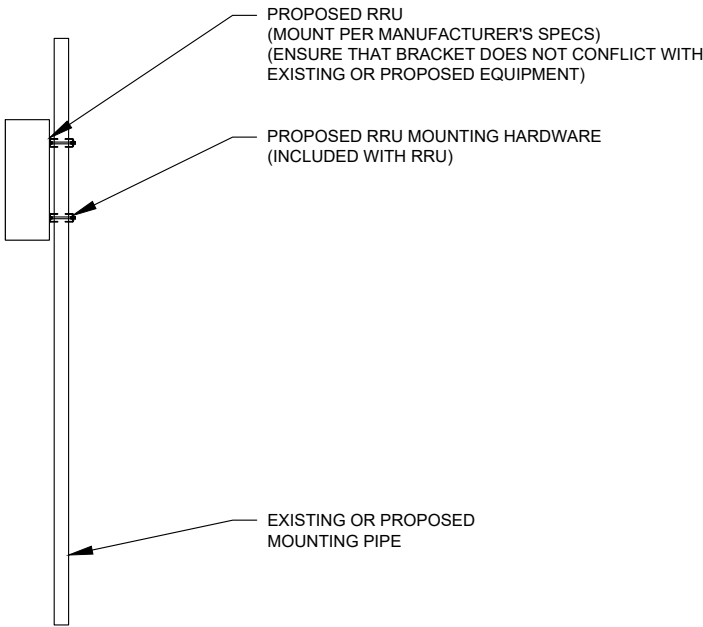


ISOMETRIC VIEW (BY MANUFACTURER)

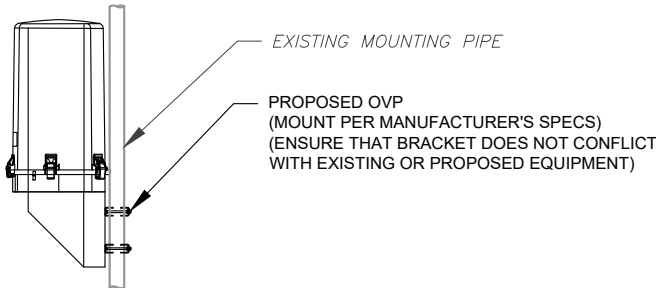
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



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



4 PROPOSED OVP MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



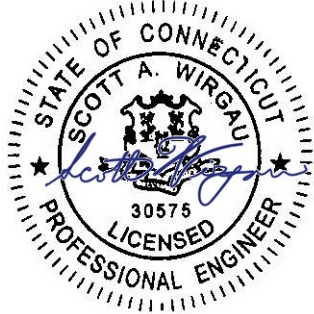
AMERICAN TOWER®
A.T. ENGINEERING SERVICES LLC
1 FENTON MAIN
SUITE 300
CARY, NC 27511
PHONE: (919) 468-0112
PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LLR	02/16/24

ATC SITE NUMBER:
376046
ATC SITE NAME:
MANSFIELD CENTER 1 CT
VERIZON SITE NAME:
MANSFIELD CENTER CT
SITE ADDRESS:
230 CLOVER MILL ROAD
STORRS MANSFIELD, CT 06268

SEAL:



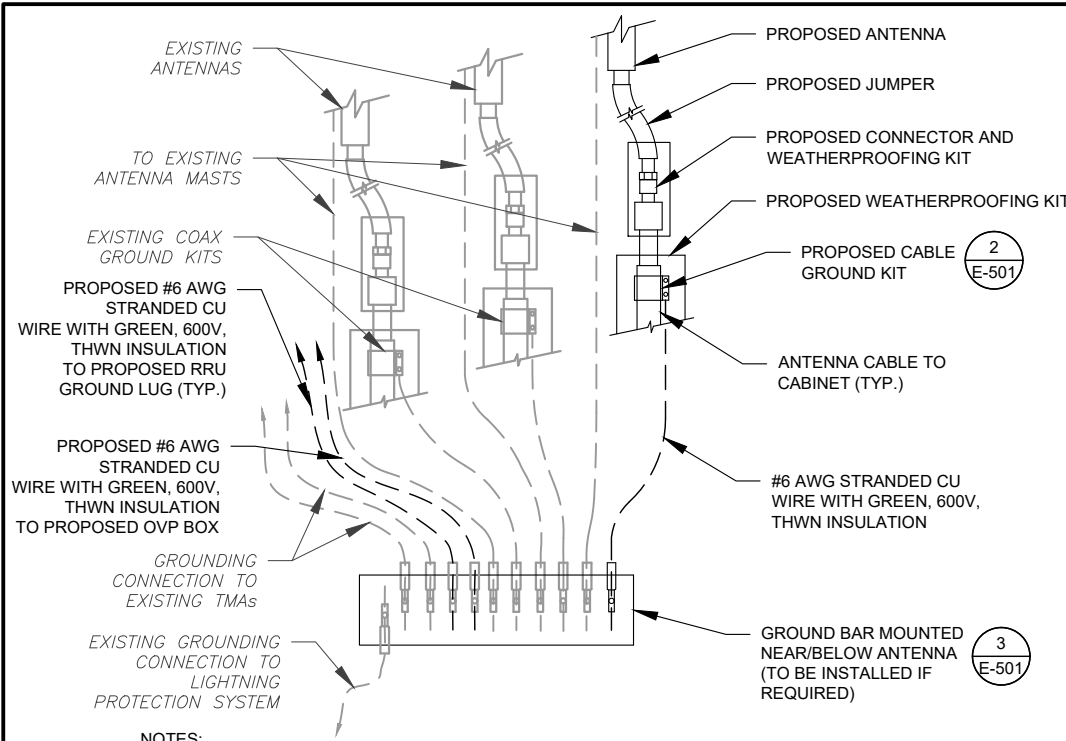
Digitally Signed: 2024-02-16



ATC JOB NO:	13669396_G0
CUSTOMER ID:	MANSFIELD CENTER CT
CUSTOMER #:	467947

CONSTRUCTION DETAILS

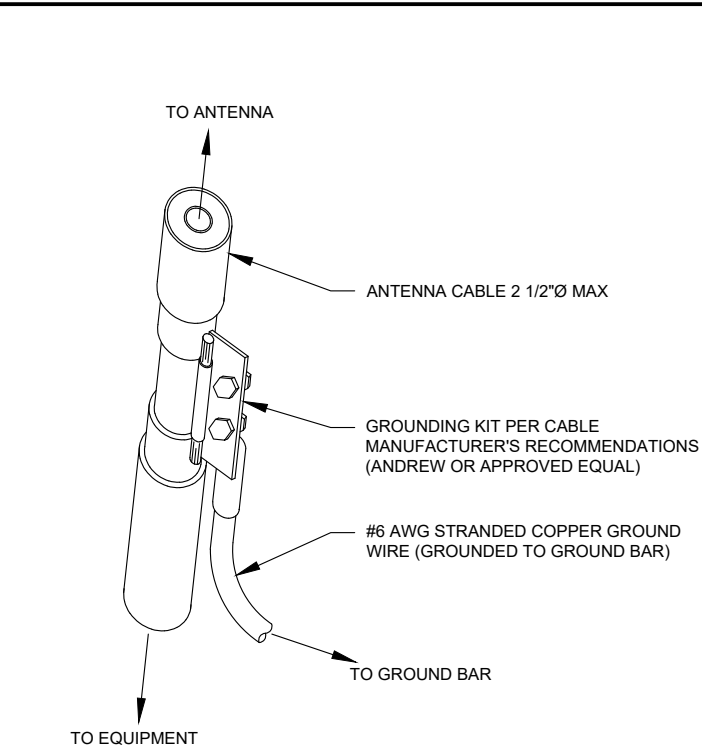
SHEET NUMBER:	REVISION:
C-501	0



NOTES:

- 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.
- SITE GROUNDING SHALL COMPLY WITH VERIZON GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

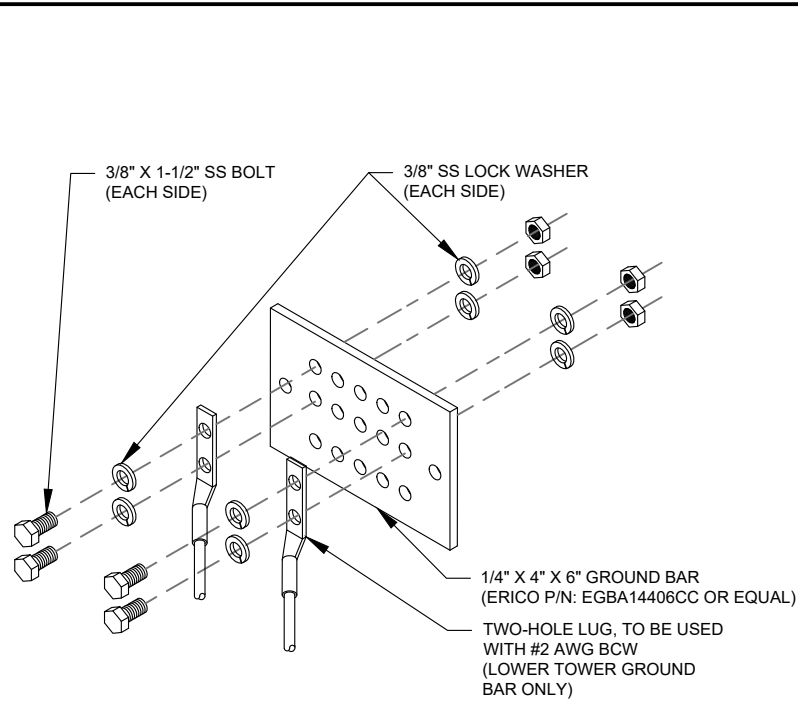
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



GROUND KIT NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- 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:

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

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

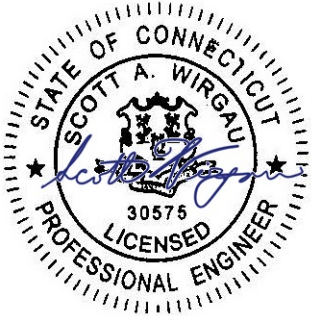
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PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	LLR	02/16/24

ATC SITE NUMBER:
376046
ATC SITE NAME:
MANSFIELD CENTER 1 CT
VERIZON SITE NAME:
MANSFIELD CENTER CT
SITE ADDRESS:
230 CLOVER MILL ROAD
STORRS MANSFIELD, CT 06268

SEAL:



Digitally Signed: 2024-02-16

verizon
ATC JOB NO: 13669396_G0
CUSTOMER ID: MANSFIELD CENTER CT
CUSTOMER #: 467947

GROUNDING DETAILS

SHEET NUMBER: E-501	REVISION: 0
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Colliers Engineering & Design, Architecture,
Landscape Architecture, Surveying, CT P.C
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

Mount Post-Modification Analysis Report
(1) 14.33-Ft Platform

December 21, 2023
Site ID: 5000245304-VZW / MANSFIELD CENTER CT
Page | 6

Requirements:

The existing mounts will be SUFFICIENT for the final loading configuration (attachment 2) after the modifications detailed in attachment 3 are successfully completed.

Contractor shall install the proposed OVP unit in place of the existing OVP unit(s).

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

- 1. Contractor Required PMI Report Deliverables
- 2. Antenna Placement Diagrams
- 3. Mount Modification Drawings
- 4. Mount Photos
- 5. Mount Mapping Report (for reference only)
- 6. Analysis Calculations

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix
SMART Tool Project #: 10216461
Colliers Engineering & Design Project #: 21777519 (Rev 1)
December 21, 2023

Site Information

Site ID: 5000245304-VZW / MANSFIELD CENTER CT
Site Name: MANSFIELD CENTER CT
Carrier Name: Verizon Wireless
Address: 230 Clover Mill Road
Mansfield, Connecticut 06268
Tolland County
Latitude: 41.775778°
Longitude: -72.222500°

Structure Information

Tower Type: 178-Ft Monopole
Mount Type: 14.33-Ft Platform

FUZE ID # 16244628

Analysis Results

Platform: 77.0% Pass w/ Modifications*

*Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.

***Contractor PMI Requirements:
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com

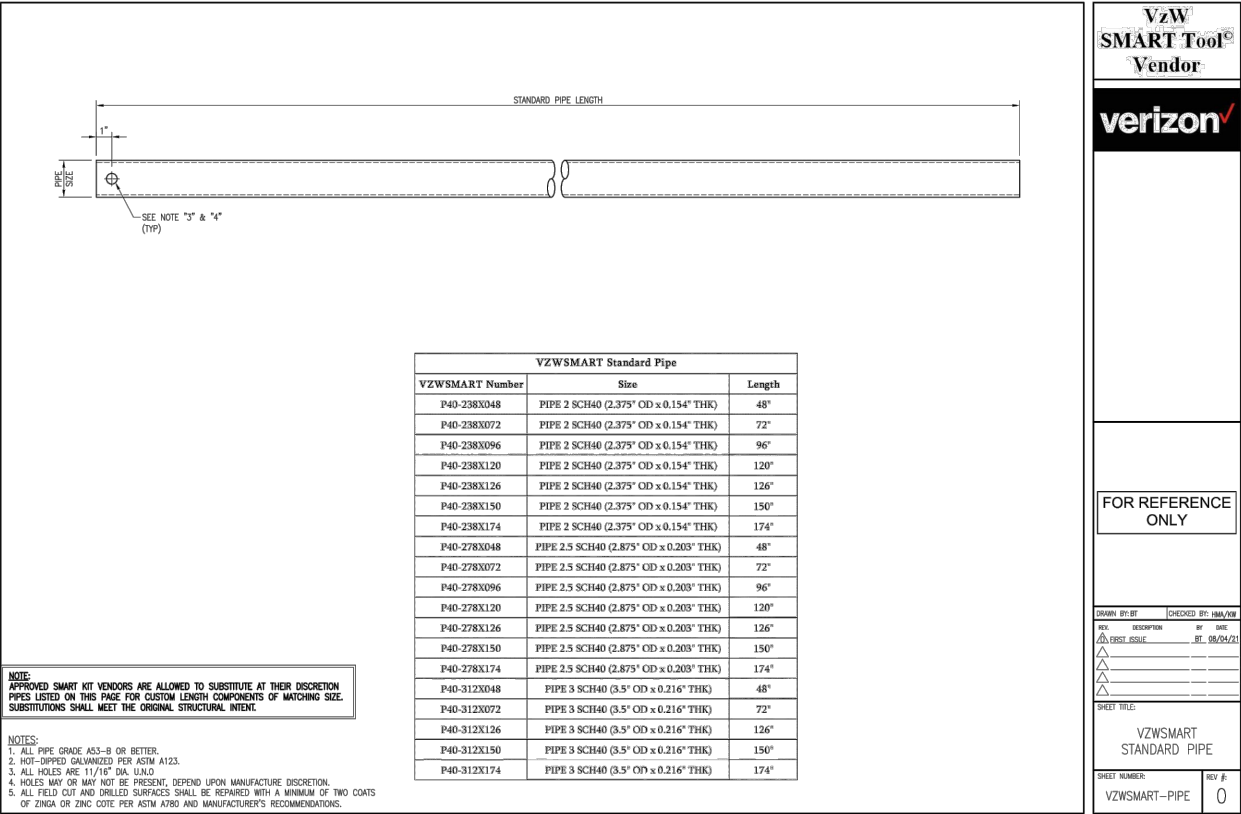
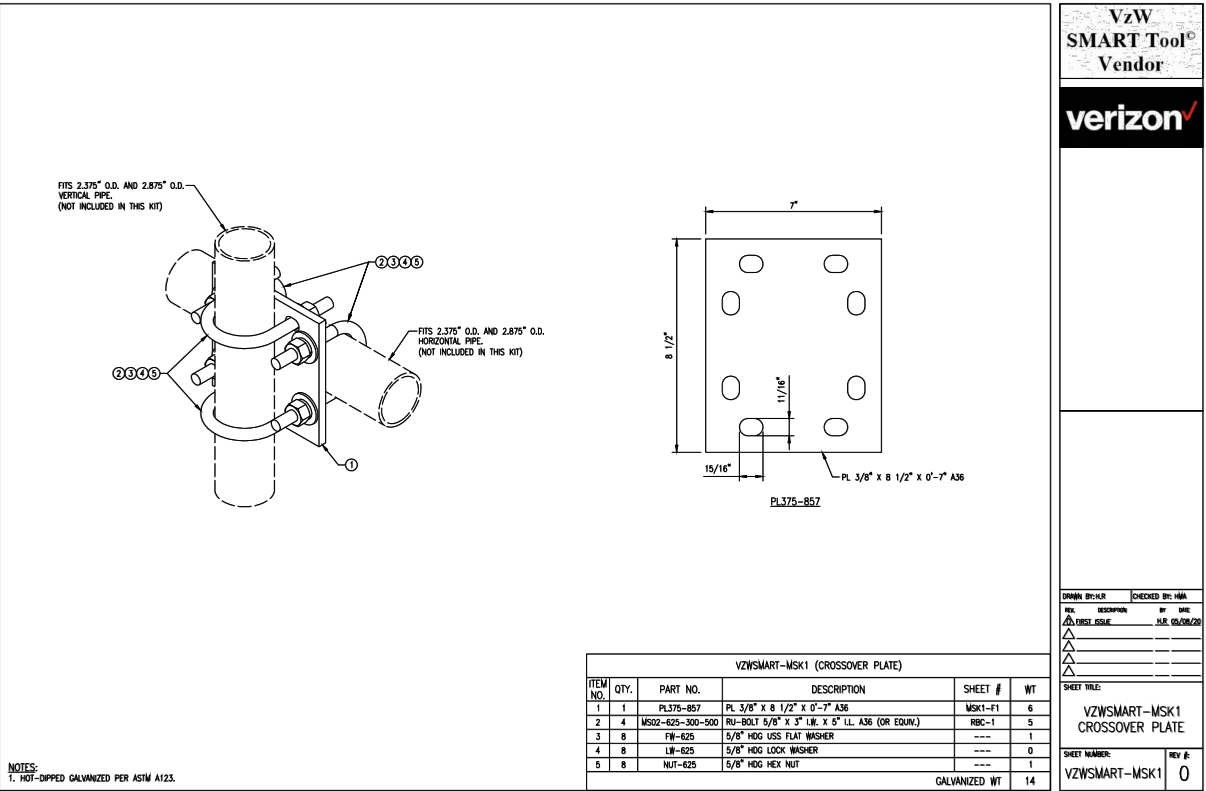
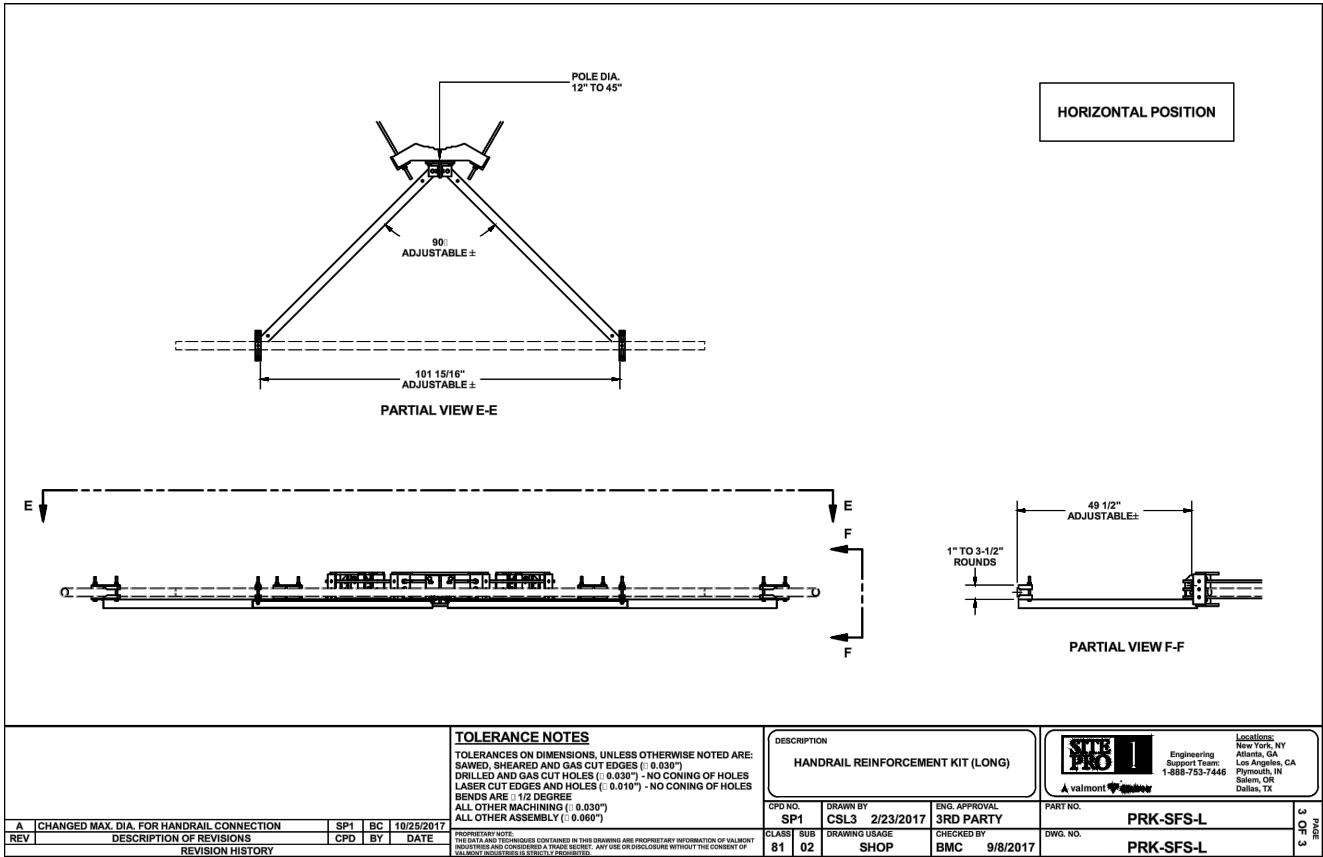
Report Prepared By: Cody Sherman



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 CONTRUCTION.

[illegible]

SUPPLEMENTAL	
SHEET NUMBER: R-603	REVISION: 0



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SUPPLEMENTAL

SHEET NUMBER:

R-604

REVISION:

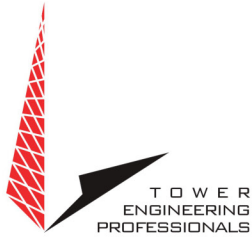
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CENTERLINE

EXHIBIT E

Power Density/RF Emissions Report



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Non-Ionizing Electromagnetic Radiation (NIER) Study

Site Number:

376046

Site Name:

Mansfield Center 1 CT

Location:

Storrs Mansfield, Connecticut

Tenants:

AT&T Mobility, T-Mobile, Dish Wireless
& Verizon Wireless

Prepared For:

American Tower, Inc.
Woburn, Massachusetts

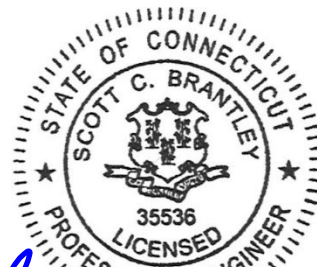
August 6th, 2024

149448 P435876

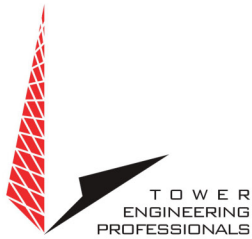
Prepared By:

Adam Carlson MS, CBRE, CPI
Engineering Associate RF Design & Service
Tower Engineering Professionals

Approved By:



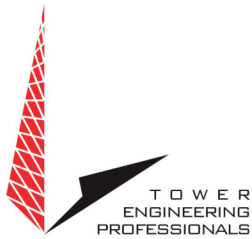
Scott C. Brantley
08/06/24



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RALEIGH, NORTH CAROLINA



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Non-Ionizing Electromagnetic Radiation (NIER) Study

376046 Mansfield Center 1 CT
Storrs Mansfield, Connecticut

INTRODUCTION

Tower Engineering Professionals RF Design & Services Division (TEP-RF) of Raleigh, North Carolina, has been retained by American Tower, Inc. (ATC), of Woburn, Massachusetts to evaluate the RF emissions compared to the Maximum Permissible Exposure (MPE) limit for facilities at this location. This evaluation uses compliance standards as outlined in Federal Communications Commission (FCC) document OET-65.

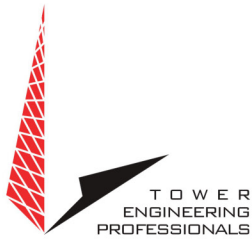
SITE AND FACILITY CONSIDERATIONS

Site 376046 Mansfield Center 1 CT is located at 230 Clover Mill Rd. in Storrs Mansfield, Connecticut at coordinates 41.775778, -72.222500. The support structure is 179' monopole. An aerial view of the tower can be found in Appendix 1, Site Photos. The tenants are AT&T Mobility (AT&T), T-Mobile (TMO), Dish Wireless (Dish) & Verizon Wireless (VZW). A table listing all antennae and effective radiated power (ERP) levels that were used in this study may be found in Appendix 2, Antenna Inventory.

POWER DENSITY CALCULATIONS

Power densities were calculated based on FCC MPE limits for both General Population/Uncontrolled and Occupational/Controlled environments.

For the purpose of this study, a radius of 100' from the base of the tower with a height of 6' above ground level was used, beyond 100' the MPE levels become *di minimus*. This study utilized FCC recognized and accepted software programs using the maximum ERP levels for the antenna models provided by ATC. Diagrams depicting the predicted spatial average power density level at any specific location may be found in Appendix 3, MPE Limit Study. Diagrams. Descriptions of RF signage can be found in Appendix 4, RF Hazard Signs. A discussion regarding the FCC limits may be found in Appendix 5, Information Pertaining to MPE Studies. Prediction Models used in this study may be found in Appendix 6, MPE Standards Methodology



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All data used in this study was collected from one or more of the following sources:

- ATC furnished data and does not include other unidentified communication facilities.
- Load List at 376046 Mansfield Center 1 CT. RF NIER Study 07/31/2024.
- FCC databases.
- Carrier standard configurations.
- Empirical data collected by TEP.

SITE MITIGATION & CONTROL

In order to comply with FCC, tenant, & ATC requirements, TEP recommends the placement of signage at the following points:

Site Entrance

1. Site ID Sign (tower owner defined)
2. RF Information Sign (Green)

Tower Access Point

1. RF Exposure Sign (Red)

Alpha Sector

No additional mitigation is required.

Beta Sector

No additional mitigation is required.

Gamma Sector

No additional mitigation is required

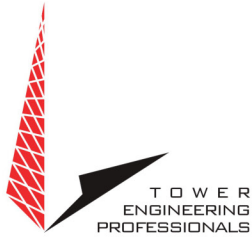
COMPLIANCE DETERMINATION

With the above mitigation implemented, this installation **WILL BE** in compliance with current FCC MPE limits as described in FCC OET-65.

Appendix 1 Site Photos



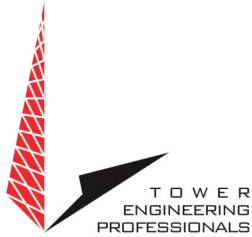
Aerial View of the Site



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Appendix 2.1 Antenna Inventory

376046 Mansfield Center 1 CT							
Antenna Inventory							
Antenna #	Carrier	Antenna Manufacturer	Antenna Model	Frequency Band (MHz)	Azimuth (°)	Effective Radiated Power (W)	Radiation Center (ft)
1	Other	Generic	20' Omni			300	192.0
2	Other	Generic	18' Dipole			300	191.0
3	Other	Generic	18' Dipole			300	191.0
4	Other	Generic	8' Yagi			400	186.0
5	Other	Generic	2' x 4' Grid Dish	2400-2485		15310	180.0
6	VZW	Samsung	MT6413-77A	3700	010	95295	178.0
7	VZW	Samsung	MT6413-77A	3700	120	95295	178.0
8	VZW	Samsung	MT6413-77A	3700	250	95295	178.0
9	VZW	Commscope	LNx-8513DS-VTM (39.2 lb)	800	000	16523	178.0
10	VZW	Commscope	LNx-8513DS-VTM (39.2 lb)	800	120	16523	178.0
11	VZW	Commscope	LNx-8513DS-VTM (39.2 lb)	800	240	16523	178.0
12	VZW	Commscope	NHH-65B-R2B	700/800/1900	010	36735	178.0
13	VZW	Commscope	NHH-65B-R2B	700/800/1900	120	36735	178.0
14	VZW	Commscope	NHH-65B-R2B	700/800/1900	250	36735	178.0
15	VZW	Commscope	NHH-65B-R2B	700/800/1900	010	36735	178.0
16	VZW	Commscope	NHH-65B-R2B	700/800/1900	120	36735	178.0
17	VZW	Commscope	NHH-65B-R2B	700/800/1900	250	36735	178.0

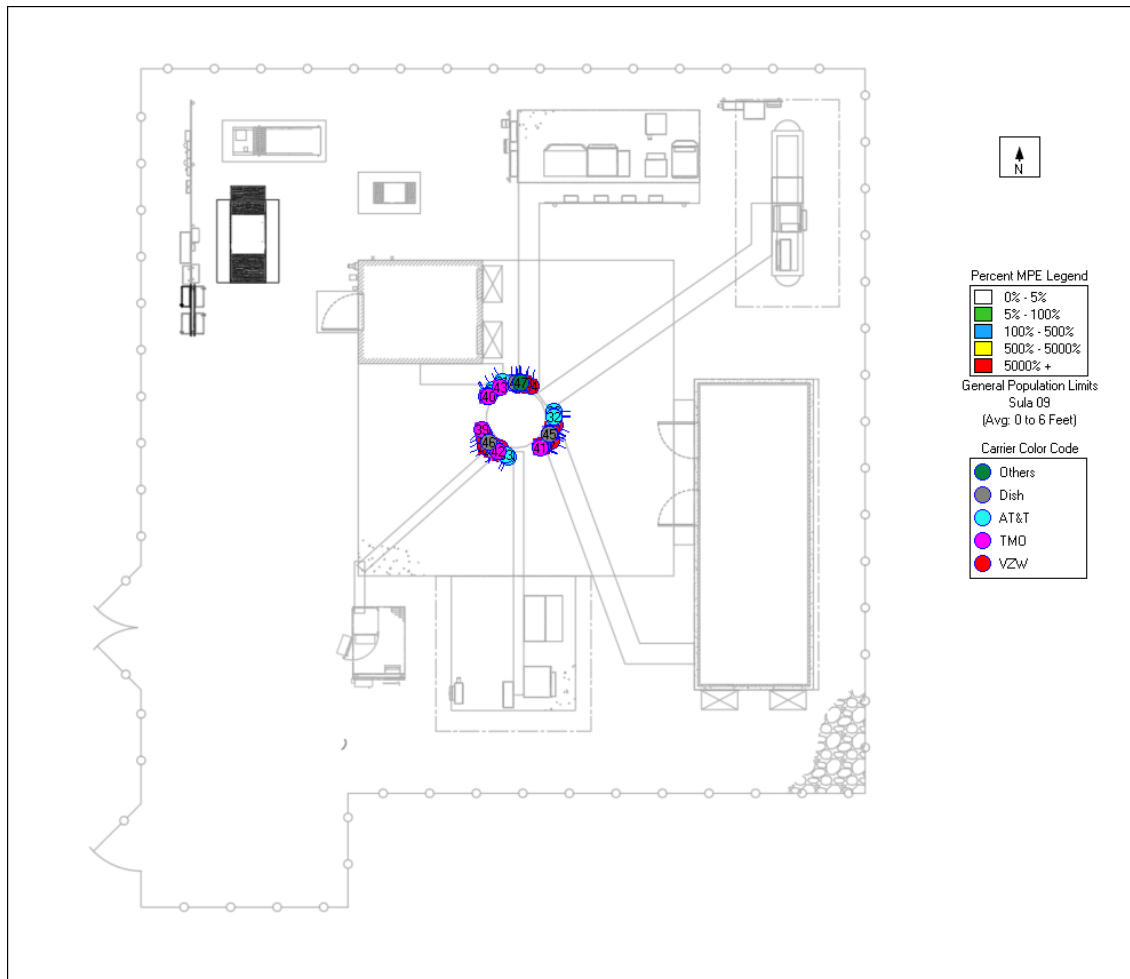


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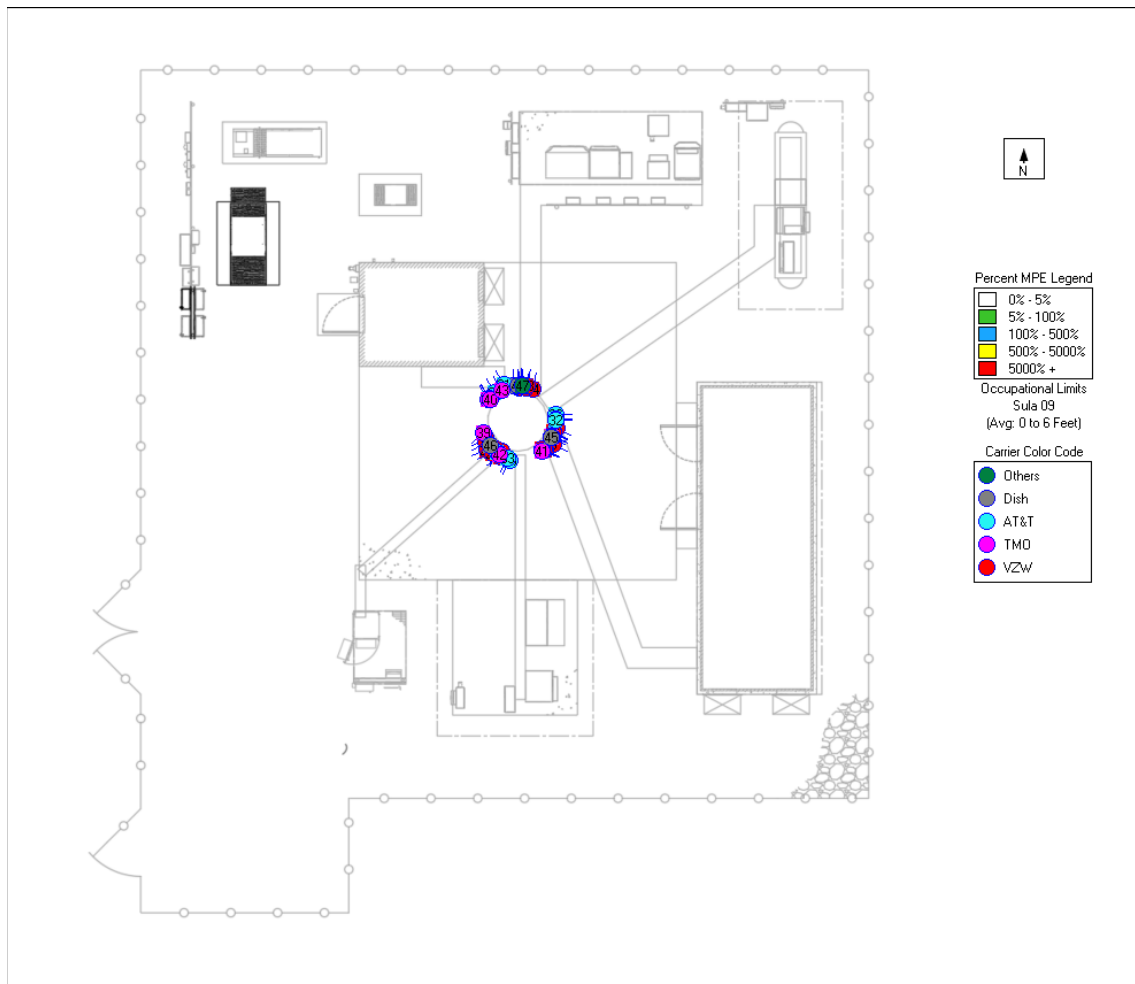
Appendix 2.2 Antenna Inventory

376046 Mansfield Center 1 CT							
Antenna Inventory							
Antenna #	Carrier	Antenna Manufacturer	Antenna Model	Frequency Band (MHz)	Azimuth (°)	Effective Radiated Power (W)	Radiation Center (ft)
18	AT&T	Powerwave Allgon	7770.00	1900	090	6066	168.0
19	AT&T	Powerwave Allgon	7770.00	1900	210	6066	168.0
20	AT&T	Powerwave Allgon	7770.00	1900	330	6066	168.0
21	AT&T	Commscope	NNH4-65B-R6	700/800	090	10819	168.0
22	AT&T	Commscope	NNH4-65B-R6	700/800	210	10819	168.0
23	AT&T	Commscope	NNH4-65B-R6	700/800	330	10819	168.0
24	AT&T	CCI	DMP65R-BU6DA	700/1900	090	18423	168.0
25	AT&T	CCI	DMP65R-BU6DA	700/1900	210	18423	168.0
26	AT&T	CCI	DMP65R-BU6DA	700/1900	330	18423	168.0
27	TMO	Commscope	VV-65B-R1B	1900/2100	110	37162	148.0
28	TMO	Commscope	VV-65B-R1B	1900/2100	230	37162	148.0
29	TMO	Commscope	VV-65B-R1B	1900/2100	330	37162	148.0
30	TMO	RFS	APXVAARR24_43-U-NA20	600/700	110	11599	148.0
31	TMO	RFS	APXVAARR24_43-U-NA20	600/700	230	11599	148.0
32	TMO	RFS	APXVAARR24_43-U-NA20	600/700	330	11599	148.0
33	TMO	Ericsson	AIR 6419 B41	3700	110	69207	148.0
34	TMO	Ericsson	AIR 6419 B41	3700	230	69207	148.0
35	TMO	Ericsson	AIR 6419 B41	3700	330	69207	148.0
36	DISH	JMA Wireless	MX08FRO665-21	600/1900/2100	000	27308	137.0
37	DISH	JMA Wireless	MX08FRO665-21	600/1900/2100	120	27308	137.0
38	DISH	JMA Wireless	MX08FRO665-21	600/1900/2100	240	27308	137.0
39	Other	Generic	18' Dipole			300	120.0
40	Other	Generic	18' Dipole			300	120.0
41	Other	Generic	8' Yagi			400	116.0
42	Other	Generic	8' Yagi			400	113.0
43	Other	Generic	9' Omni			300	113.0
44	Other	Generic	22' Dipole			300	111.0
45	Other	Generic	2' x 4' Grid Dish	2400-2485		15310	111.0

Appendix 3.1 MPE Limit Study General Population



Appendix 3.2 MPE Limit Study Occupational Limits





RF Safety Exposure Categorization								
Exposure Conditions	Control Measures	Signage						
<ul style="list-style-type: none"> Operational of the source(s) or locations where RF fields are too weak to cause exposures greater than General Public limit. <table border="1"> <tr> <th>Cat.</th> <th>Occupational Worker</th> <th>General Public</th> </tr> <tr> <td>1</td> <td><20%</td> <td><100%</td> </tr> </table>	Cat.	Occupational Worker	General Public	1	<20%	<100%	<ul style="list-style-type: none"> RF Safety Guideline/NIER report must be submitted to RFSO for approval. No special EME safety practices required in these areas. No signage required except Information sign. 	<p><i>*the antenna owner information and Antenna Structure Registration Number and must be displayed on the sign.</i></p> <p>INFORMATION sign for access to rooftop/access door.</p>
Cat.	Occupational Worker	General Public						
1	<20%	<100%						
<ul style="list-style-type: none"> Green zone is where the time and spatial-average is below 20% of Occupational Worker limit or <100% of General Public limit. 								
<ul style="list-style-type: none"> Operational of the source(s) or locations where RF exposure could cause exposure greater than General Public limit but not the Occupational Worker limit to be exceeded in accessible areas. <table border="1"> <tr> <th>Cat.</th> <th>Occupational Worker</th> <th>General</th> </tr> <tr> <td>2</td> <td>≥20% but <100%</td> <td>>100%</td> </tr> </table>	Cat.	Occupational Worker	General	2	≥20% but <100%	>100%	<ul style="list-style-type: none"> RF Safety Guideline/NIER report must be submitted to RFSO for approval. Recommended RF safety awareness training for all workers in this area. Controlled areas with barriers and/or signage required in these area. Do not walk in front of the antenna face or no loitering in this controlled area. Individual MUST have full control over any area where the exposure levels exceed the limit. 	<p>NOTICE signage shall be posted on the barriers/stanchion to prevent anyone from entering into the area - must be cordoned off around the antennas - 4 posts /3 signs).</p> <p>Or must be posted in location that can be easily viewed by individuals that enter the areas of concerns.</p>
Cat.	Occupational Worker	General						
2	≥20% but <100%	>100%						
<ul style="list-style-type: none"> Blue zone is where the spatial average is between 20%-100% of Occupational Worker limit. This limit MUST be less than the Occupational limit. 								
<ul style="list-style-type: none"> Operational of the source(s) or locations where RF exposure exceeded the Occupational Worker limit in accessible areas. <table border="1"> <tr> <th>Cat.</th> <th>Occupational Worker</th> <th>General Public</th> </tr> <tr> <td>3</td> <td>≥100%</td> <td>≥500%</td> </tr> </table>	Cat.	Occupational Worker	General Public	3	≥100%	≥500%	<ul style="list-style-type: none"> RF Safety Guideline/NIER report must be submitted to RFSO for approval. Individual shall not enter and work in these areas without RS approval Required RF safety training and access area is restricted only for authorized worker. Controlled areas with barriers and signage required in these area. Do not walk in front of the antenna face. Require reduction of RF power and approval from Radiation Safety prior any work on the antennas. 	<p>CAUTION signage shall be posted on the barriers/stanchion to prevent anyone from entering into the area (must be cordoned off around the antennas - 4 posts /3 signs).</p>
Cat.	Occupational Worker	General Public						
3	≥100%	≥500%						
<ul style="list-style-type: none"> Yellow zone is where the spatial average is above 100% of Occupational Worker limit. 								
<ul style="list-style-type: none"> Exposure will exceed exposure limit in accessible areas. <table border="1"> <tr> <th>Cat.</th> <th>Occupational Worker</th> <th>General Public</th> </tr> <tr> <td>4</td> <td>>500%</td> <td>>1000%</td> </tr> </table>	Cat.	Occupational Worker	General Public	4	>500%	>1000%	<ul style="list-style-type: none"> RF Safety Guideline/NIER report must be submitted to RFSO for approval. MUST re-engineer site to reduce the EME fields. No access allowed-Prohibited access! There must be controls to detect any unauthorized enter and terminate the RF energy in the area. Lock out tag out of transmitters during the maintenance of the antenna system. PPE is not sufficient. Special RF training and PPE are required. (Applies only to individuals trained by RS). 	<p>RF WARNING & Pacemaker DANGER signage or appropriate DANGER sign shall be posted very near radiation RF sources or if appropriate DANGER sign.</p>
Cat.	Occupational Worker	General Public						
4	>500%	>1000%						
<ul style="list-style-type: none"> Red zone is where the time and spatial-averaged levels fall above 500% of Occupational Worker limit or is not feasible to prevent exposures. 								



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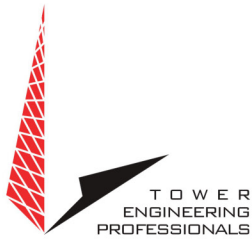
Appendix 5 Information Pertaining to MPE Studies

In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP), and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.



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MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: mW/cm^2), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General population/uncontrolled exposure limits apply to situations in which the general public 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 public 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. Additional details can be found in FCC OET 65.



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Appendix 6 MPE Standards Methodology

This study predicts RF field strength and power density levels that emanate from communications system antennae. It considers all transmitter power levels (less filter and line losses) delivered to each active transmitting antenna at the communications site. Calculations are performed to determine power density and MPE levels for each antenna as well as composite levels from all antennas. The calculated levels are based on where a human (Observer) would be standing at various locations at the site. The point of interest where the MPE level is predicted is based on the height of the Observer.

Compliance with the FCC limits on RF emissions are determined by spatially averaging a person's exposure over the projected area of an adult human body, that is approximately six-feet or two-meters, as defined in the ANSI/IEEE C95.1 standard. The MPE limits are specified as time-averaged exposure limits. This means that exposure is averaged over an identifiable time interval. It is 30 minutes for the general population/uncontrolled RF environment and 6 minutes for the occupational/controlled RF environment. However, in the case of the general public, time averaging should not be applied because the general public is typically not aware of RF exposure, and they do not have control of their exposure time. Therefore, it should be assumed that any RF exposure to the general public will be continuous.



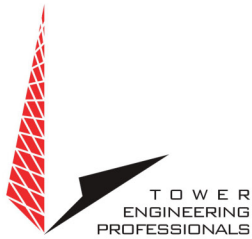
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The FCC's limits for exposure at different frequencies are shown in the following Tables.

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

f = frequency

* = Plane-wave equivalent power density



Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

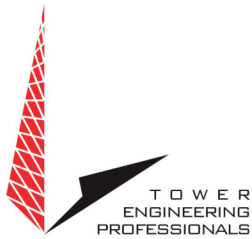
Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3 - 1.34	614	1.63	100*	30
1.34 - 30	824/f	2.19/f	180/F ²	30
30 -300	27.5	0.073	0.2	30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

f = frequency

* = Plane-wave equivalent power density

General population/uncontrolled exposures apply in situations in which the general public may be exposed or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

It is important to understand that these limits apply cumulatively to all sources of RF emissions affecting a given area. For example, if several different communications system antennas occupy a shared facility such as a tower or rooftop, then the total exposure from all systems at the facility must be within compliance of the FCC guidelines.



The field strength emanating from an antenna can be estimated based on the characteristics of an antenna radiating in free space. There are basically two field areas associated with a radiating antenna. When close to the antenna, the region is known as the Near Field. Within this region, the characteristics of the RF fields are very complex, and the wave front is extremely curved. As you move further from the antenna, the wave front has less curvature and becomes planar. The wave front still has a curvature, but it appears to occupy a flat plane in space (plane-wave radiation). This region is known as the Far Field.

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65.

Cylindrical Model (Near Field Predictions)

Spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation:

$$S = P \div 2\pi RL$$

Where:

S = Power Density

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length



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For directional-type antennas, power densities can be estimated by dividing the input power by that portion of a cylindrical surface area corresponding to the angular beam width of the antenna. For example, for the case of a 120-degree azimuthal beam width, the surface area should correspond to 1/3 that of a full cylinder. This would increase the power density near the antenna by a factor of three over that for a purely omni-directional antenna. Mathematically, this can be represented by the following formula:

$$S = (180 / \theta_{BW}) P \div \pi RL$$

Where:

S = Power Density

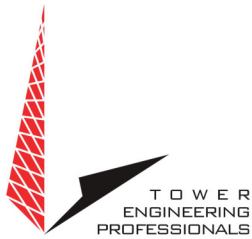
θ_{BW} = Beam width of antenna in degrees (3 dB half-power point)

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

If the antenna is a 360-degree omni-directional antenna, this formula would be equivalent to the previous formula.



Spherical Model (Far Field Predictions)

Spatially averaged plane-wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, if the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density.

These additional factors are considered, and the Far Field prediction model is determined by the following equation:

$$S = EIRP \times Rc \div 4\pi R^2$$

Where:

S = Power Density

EIRP = Effective Radiated Power from antenna

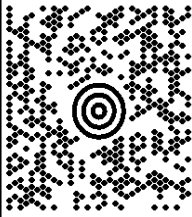
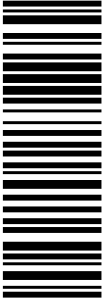
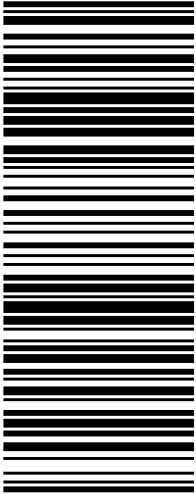

Rc = Reflection Coefficient (2.56)

R = Distance from the antenna

The EIRP includes the antenna gain. If the antenna pattern is considered, the antenna gain is relative based on the horizontal and vertical pattern gain values at that particular location in space, on a rooftop or on the ground. However, it is recommended that the antenna radiation pattern characteristics not be considered to provide a conservative "worst case" prediction. This is the equation is utilized for the Far Field exposure predictions herein.

EXHIBIT F

Mailing Receipts/Proof of Notice

C/O CULLEN MORGAN 941-549-7263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		1 LBS	1 OF 1
SHIP TO: AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN MA 01801-1053			
	MA 018 9-04 		
UPS GROUND TRACKING #: 1Z 9Y4 503 03 1042 4886			
			
BILLING: P/P			
Reference # 1: 13669396 & 13678030 Tower Owner CC			
CS 24.8.00. MACNV50 35.0A 08/2024*			
 TM			

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030310424886

Date: Friday, August 30, 2024 at 12:09:25 PM Eastern Daylight Time

From: UPS <pkginfo@ups.com>

To: Cullen Morgan <CMORGAN@CLINELLC.COM>



Hello, your package has been delivered.

Delivery Date: Friday, 08/30/2024

Delivery Time: 12:07 PM

Left At: DOCK

Signed by: DONNA

CENTERLINE SITE ACQUISITION

Tracking Number:

[1Z9Y45030310424886](#)

Ship To:

AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 018011053
US

Number of Packages:

1

UPS Service:

UPS Ground

Package Weight:

0.8 LBS

Reference Number:

13669396 & 13678030 TOWER OWNER CC

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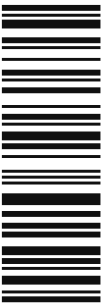
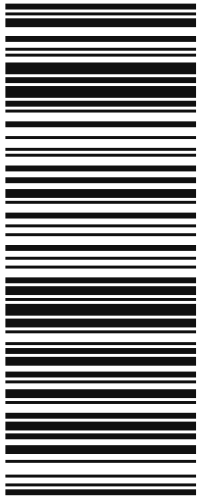
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C/O CULLEN MORGAN 941-549-7263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		1 LBS	1 OF 1
SHIP TO: TOWN OF MANSFIELD 4 S EAGLEVILLE ROAD STORRS MANSFIELD CT 06268-2574			
	CT 061 9-19 		
UPS GROUND			
TRACKING #: 1Z 9Y4 503 03 1540 3890			
			
BILLING: P/P			
Reference # 1: 13669396 Town CC			
CS 24.8.00. MACNV50 35.0A 08/2024*			
 ™			

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030315403890

Date: Friday, August 30, 2024 at 10:10:08 AM Eastern Daylight Time

From: UPS <pkginfo@ups.com>

To: Cullen Morgan <CMORGAN@CLINELLC.COM>



Hello, your package has been delivered.

Delivery Date: Friday, 08/30/2024

Delivery Time: 10:09 AM

Signed by: FERRERA

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030315403890
Ship To:	TOWN OF MANSFIELD 4 S EAGLEVILLE ROAD STORRS MANSFIELD, CT 062682574 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	0.8 LBS
Reference Number:	13669396 TOWN CC

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