



December 27, 2023

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

Re: Notice of Exempt Modification – Antenna and RRU Swap/Add
Property Address: 224 Lovely Street, Avon, CT
Applicant: AT&T Mobility, LLC

Dear Ms. Bachman:

On behalf of AT&T, please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16- 50j-72(b) (2).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line heights of 85', 95' and 105' level on an existing 110-foot monopole, owned by SRR Towers, and St. Mathews Lutheran Church as the Property Owner.

AT&T desires to modify its existing telecommunications facility by swapping six (6) antennas, nine (9) remote radio units and associated lines. The centerline height of said antennas and remote radio units is and will remain at 85', 95' and 105' on the existing antenna mount.

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

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to the following individuals: The Honorable Heather Maguire, Chairman of the Town of Avon, Brandon Robertson, Town Manager of the Town of Avon, SRR Towers, LLC, as tower and property owner.

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

- **EM-AT&T -004-120814** – AT&T Mobility, LLC notice of intent to modify an existing telecommunications facility located at 224 Lovely Street, Avon Connecticut.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 107-foot level of the 130-foot Monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require an extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in [Tab 2](#).
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.



6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

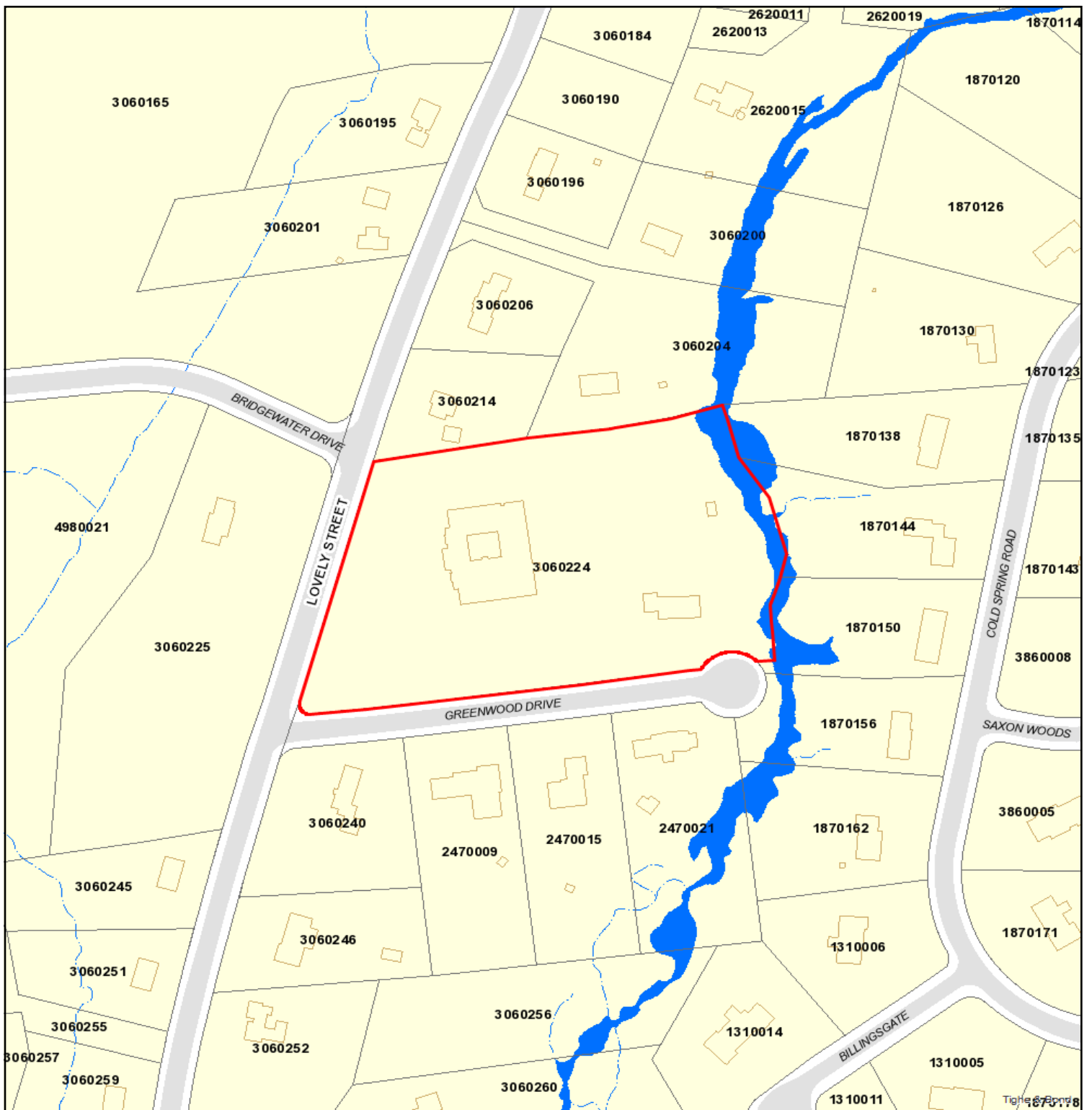
For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b) (2).

Sincerely,

Carolyn Seeley
Real Estate Specialist
Smartlink on behalf of AT&T
(978) 760-5577
Carolyn.seeley@smartlinkgroup.com

CC w/enclosures:

The Honorable Dan Polhamus, Chairman, Town of Avon
Brandon Robertson, Town Manager, Town of Avon
Hiram Peck III, Director of Planning, Town of Avon
SRR Towers, Tower & Property Owner



224 LOVELY STREET

12/27/2023 4:24:20

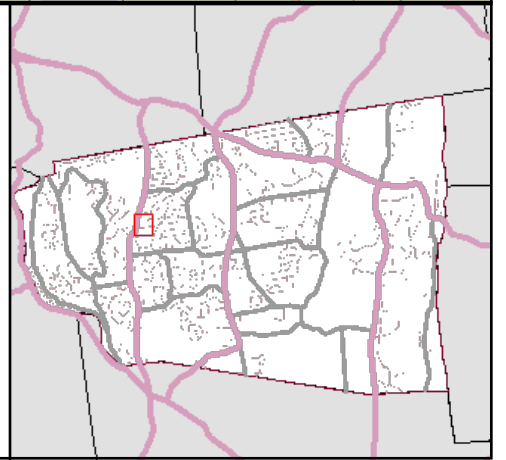
1"=200'

Property Information

GISPin	3060224
Address	224 LOVELY STREET
Sale Price	null



The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.





Structural Analysis Report

Structure : 108.9' Stealth Monopole
BlueSky Site Name : Avalon Lovely Street
BlueSky Site Number : CT-1239
Proposed Carrier : New Cingular Wireless PCS, LLC (ATT)
Carrier Site Name : Avon – Lovely Street
Carrier Site Number : CTL01257 / 100117744
Site Location : 224 Lovely Street
Avon, CT 06001 (Hartford County)
41.7996, -72.8896
Date : June 2, 2023
Max Member Stress Level : **67.0% (Tower)**
: **22.5% (Foundation)**
: **49.9% (Base Plate / Anchor Bolts)**
Result : **PASS**

Prepared by:



06/02/2023

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Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the new loads proposed by **ATT**. The objective of the analysis was to determine if the tower meets the current structural codes and standards with the proposed equipment installation.

Existing Structural Information

The following documents for the existing structure were made available for our structural analysis.

Tower Information	Previous Structural Analysis provided by Structural Components, Project No. 220849 Rev 1, dated January 27, 2023. Previous Structural Analysis provided by Cellsite Solutions dated April 10, 2023.
Foundation Information	Previous Structural Analysis provided by Structural Components, Project No. 220849 Rev 1, dated January 27, 2023.
Geotechnical Information	Not available at time of analysis.
Existing Equipment Information	BlueSky Towers colocation application. Previous Structural Analysis provided by Structural Components, Project No. 220849 Rev 1, dated January 27, 2023.
Tower Reinforcement Information	Tower has not been previously modified.

Final Proposed Equipment Loading for ATT

The following proposed loading was obtained from the BlueSky Towers Collocation Application:

Mount (Ft.)	Antenna/Equipment				Coax	
	RAD (Ft.)	Qty.	Antenna	Type	Qty.	Size/Type
105.0	-	1	Existing Stealth Canister	Mount	6 2	1.625" Coax 1.625" Coax
	105.0	3	CCI OPA65R-BU6DA	Panel		
	105.0	16	TSXDC-4310FM	Surge		
	100.0	2	TMABPD7823VG12A	TMA		
		2	TMA2093F02V1-1D	TMA		
95.0	-	1	Existing Stealth Canister	Mount	6 2	1.625" Coax 1.625" Coax
	95.0	3	CCI TPA65R-BU6DA	Panel		
	95.0	16	TSXDC-4310FM	Surge		
	90.0	2	TMABPD7823VG12A	TMA		
		2	TMA2093F02V1-1D	TMA		
85.0	-	1	Existing Stealth Canister	Mount	6 2	1.625" Coax 1.625" Coax
	85.0	3	Powerwave P65-16-XLH-RR	Panel		
	85.0	16	TSXDC-4310FM	Surge		
	80.0	2	TMABPD7823VG12A	TMA		
		2	TMA2093F02V1-1D	TMA		

Note: Other existing loading can be found on the tower profile attached.

Note: Proposed equipment is in Bold print.

Note: Proposed RRU's will be ground mounted.

Design Criteria

The tower was analyzed using tnxTower (Version 8.1.1.0) tower analysis software using the following design criteria.

State	Connecticut
City/County Building Code	Harford County 2022 Connecticut State Building Code
TIA/EIA Standard Code	TIA-222-H
Basic Wind Speed	116 MPH (Vult)
Basic Wind Speed w/ Ice	50 MPH w/ 1.50" Ice
Steel Grade	Pole Shaft A53-B-35 (35 KSI) / Base Plate A572 GR 50 (50 KSI) / Anchor Bolts A615-75 (75 KSI) / Splice Bolts A325
Exposure Category	B
Topographic Cat. (Height)	1 (0)
Risk Category	II
S_s	0.179
Seismic design Category	B

Analysis Results

Based on the foregoing information, our structural analysis determined that **the existing tower is structurally capable of supporting the proposed equipment loads without modification.** The existing tower foundation, splice plates, base plate, splice bolts and anchor bolts have also been evaluated. The foundation, splice plates, base plate, splice bolts and anchor bolts **were found to be structurally capable** of supporting the proposed loads. A seismic analysis has been performed on this site and is not controlling.

Assumptions

The below assumptions are true, complete, and accurate.

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. Foundations are considered to have been properly designed for the original design loads.
3. All member connections are considered to have been designed to meet the load carrying capacity of the connected member.
4. Antenna mount loads have been estimated based on generally accepted industry standards.
5. The mounts for the proposed antennas have been analyzed and designed by others.
6. See additional assumptions contained in the report attached.
7. Tower is within acceptable engineering tolerance at 105%.
8. Foundations are within acceptable engineering tolerance at 110%.

Conclusions

The existing tower described above **has sufficient capacity** to support the proposed loading based on the governing Building Code. The tower foundation, splice plates, base plate, splice bolts and anchor bolts have also been evaluated and **are acceptable**. A seismic analysis has been performed on this site and is not controlling.

We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance, please call us anytime at 941-400-2206.

Sincerely,

Analysis by:

Michael T De Boer, PE
Vice President of Engineering
Cellsite Solutions, LLC



06/02/2023

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but not necessarily limited, to:

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and its components, or relevant information.
- Information from drawings in possession of Cellsite Solutions, LLC, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Cellsite Solutions, LLC and used in the performance of our engineering services is correct and complete. In the absence of information contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in a uncorroded condition and have not deteriorated; and we, therefore consider that their capacity has not significantly changed from the original design condition.

All services will be performed to the codes and standards specified by the client, and we do not imply to meet any other code and standard requirements unless explicitly agreed to in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes and standards, the client shall specify the exact requirements. In the absence of information to the contrary, all work will be performed in accordance with the revision of ANSI/TIA/EIA-222-H requested.

All services are performed, results obtained, and recommendations made in accordance with the generally accepted engineering principles and practices. Cellsite Solutions LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Disclaimer of Warranties

Cellsite Solutions, LLC makes no warranties, express or implied, in connection with this report and disclaims any liability arising from the ability of the existing structure to support the design loads for which it was originally designed. Cellsite Solutions, LLC will not be responsible whatsoever for or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Cellsite Solutions, LLC pursuant to this report will be limited to the total fee received for preparation of this report.

Attachment 1:
Calculations

Section	1							
Size	P6.625x0.34875							
Length (ft)	20.08							
Grade	A53-B-35							
Weight (K)	0.5							
Section	2							
Size	P12.75x0.349							
Length (ft)	26.06							
Grade	A53-B-35							
Weight (K)	1.2							
Section	3							
Size	P36x0.34875							
Length (ft)	22.13							
Grade	A53-B-35							
Weight (K)	2.9							
Section	4							
Size	P36x0.34875							
Length (ft)	40.63							
Grade	A53-B-35							
Weight (K)	5.4							
Section								
Size								
Length (ft)								
Grade								
Weight (K)	10.0							



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Shroud Support at 108.9375'	108.94	(2) TMA2093F02V1-1D (ATT)	80
(16) TSXDC-4310FM (ATT)	105	(2) TMABPD7823VG12A (ATT)	80
(3) CCI OPA65R-BU6DA (ATT)	105	Shroud Support at 78.75	78.75
(2) TMA2093F02V1-1D (ATT)	100	(3) TMA21921B68-21-43 (T-Mobile)	75
(2) TMABPD7823VG12A (ATT)	100	(3) APVSPP18-C-A20 (T-Mobile)	75
Shroud Support at 98.895833	98.9	Shroud Support at 70.75	70.75
(3) CCI TPA65R-BU6DA (ATT)	95	(3) Commscope FVV-65B-R3 (Dish)	67
(16) TSXDC-4310FM (ATT)	95	Shroud Support at 62.7916667	62.79
(2) TMABPD7823VG12A (ATT)	90	(3) Commscope E15V95P63 Diplexer (Dish)	60
(2) TMA2093F02V1-1D (ATT)	90	(3) Commscope CDX623T-DS-T Diplexer (Dish)	60
Shroud Support at 88.8541667	88.85		
(3) Powerwave P65-16-XLH-RR (ATT)	85		
(16) TSXDC-4310FM (ATT)	85		

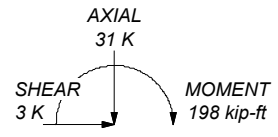
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi			

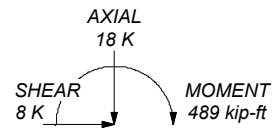
TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 116 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Weld together tower sections have flange connections.
9. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
10. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
11. Welds are fabricated with ER-70S-6 electrodes.
12. TOWER RATING: 67%

ALL REACTIONS ARE FACTORED



50 mph WIND - 1.500 in ICE



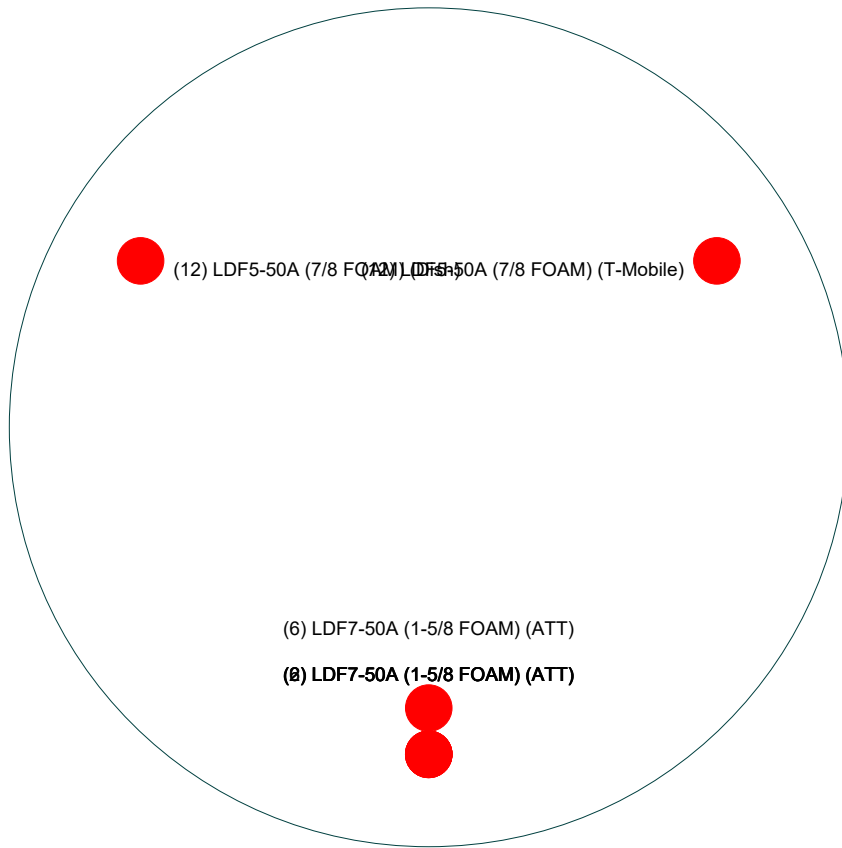
REACTIONS - 116 mph WIND

Cellsite Solutions, LLC		Job: CT-1239 (Avon CT)	
4150 C Street SW		Project: 108.9' Stealth Monopole Analysis	
Cedar Rapids, IA 52404		Client: Blue Sky (Dish)	Drawn by: mike.deboer
Phone: 319-826-3404		Code: TIA-222-H	Date: 06/02/23
FAX:		Path:	Scale: NTS
		Dwg No. E-1	

C:\Users\mike.deboer\OneDrive - CellSite Solutions LLC\Documents\BlueSky-CT-1239_SA_060123_ATT\CT-1239_SA_060123_ATT.dwg

Feed Line Plan

Round Flat App In Face App Out Face



Cellsite Solutions, LLC 4150 C Street SW Cedar Rapids, IA 52404 Phone: 319-826-3404 FAX:	Job: CT-1239 (Avon CT)		
	Project: 108.9' Stealth Monopole Analysis		
	Client: Blue Sky (Dish)	Drawn by: mike.deboer	App'd:
	Code: TIA-222-H	Date: 06/02/23	Scale: NTS
	Path:		Dwg No. E-7

tnxTower Cellsite Solutions, LLC 4150 C Street SW Cedar Rapids, IA 52404 Phone: 319-826-3404 FAX:	Job CT-1239 (Avon CT)	Page 1 of 20
	Project 108.9' Stealth Monopole Analysis	Date 10:08:03 06/02/23
	Client Blue Sky (Dish)	Designed by mike.deboer

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- Tower is located in Hartford County, Connecticut.
- Tower base elevation above sea level: 292.40 ft.
- Basic wind speed of 116 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.00 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.00 °F.
- Deflections calculated using a wind speed of 60 mph.
- Weld together tower sections have flange connections..
- Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
- Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
- Welds are fabricated with ER-70S-6 electrodes..
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

tnxTower Cellsite Solutions, LLC 4150 C Street SW Cedar Rapids, IA 52404 Phone: 319-826-3404 FAX:	Job	CT-1239 (Avon CT)	Page	2 of 20
	Project	108.9' Stealth Monopole Analysis	Date	10:08:03 06/02/23
	Client	Blue Sky (Dish)	Designed by	mike.deboer

Pole Section Geometry

Section	Elevation <i>ft</i>	Section Length <i>ft</i>	Pole Size	Pole Grade	Socket Length <i>ft</i>
L1	108.90-88.82	20.08	P6.625x0.34875	A53-B-35 (35 ksi)	
L2	88.82-62.76	26.06	P12.75x0.349	A53-B-35 (35 ksi)	
L3	62.76-40.63	22.13	P36x0.34875	A53-B-35 (35 ksi)	
L4	40.63-0.00	40.63	P36x0.34875	A53-B-35 (35 ksi)	

Tower Elevation <i>ft</i>	Gusset Area (per face) <i>ft²</i>	Gusset Thickness <i>in</i>	Gusset Grade	Adjust. Factor <i>A_f</i>	Adjust. Factor <i>A_r</i>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals <i>in</i>	Double Angle Stitch Bolt Spacing Horizontals <i>in</i>	Double Angle Stitch Bolt Spacing Redundants <i>in</i>
L1 108.90-88.82				1	1	1			
L2 88.82-62.76				1	1	1			
L3 62.76-40.63				1	1	1			
L4 40.63-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement <i>ft</i>	Total Number	Number Per Row	Clear Spacing <i>in</i>	Width or Diameter <i>in</i>	Perimeter <i>in</i>	Weight <i>klf</i>

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement <i>ft</i>	Total Number	<i>C_{AA}</i> <i>ft²/ft</i>	Weight <i>klf</i>
**** ATT ****								
LDF7-50A (1-5/8 FOAM) (ATT)	C	No	No	Inside Pole	105.00 - 0.00	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
LDF7-50A (1-5/8 FOAM) (ATT)	C	No	No	Inside Pole	105.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
LDF7-50A (1-5/8 FOAM)	C	No	No	Inside Pole	95.00 - 0.00	6	No Ice 1/2" Ice	0.00 0.00

tnxTower Cellsites Solutions, LLC 4150 C Street SW Cedar Rapids, IA 52404 Phone: 319-826-3404 FAX:	Job	CT-1239 (Avon CT)	Page	3 of 20
	Project	108.9' Stealth Monopole Analysis	Date	10:08:03 06/02/23
	Client	Blue Sky (Dish)	Designed by	mike.deboer

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight klf
(ATT)							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
LDF7-50A (1-5/8 FOAM)	C	No	No	Inside Pole	95.00 - 0.00	2	No Ice	0.00	0.00
(ATT)							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
LDF7-50A (1-5/8 FOAM)	C	No	No	Inside Pole	85.00 - 0.00	6	No Ice	0.00	0.00
(ATT)							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
LDF7-50A (1-5/8 FOAM)	C	No	No	Inside Pole	85.00 - 0.00	2	No Ice	0.00	0.00
(ATT)							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
****T-Mobile****									
LDF5-50A (7/8 FOAM)	B	No	No	Inside Pole	75.00 - 0.00	12	No Ice	0.00	0.00
(T-Mobile)							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
****Dish****									
LDF5-50A (7/8 FOAM)	A	No	No	Inside Pole	67.00 - 0.00	12	No Ice	0.00	0.00
(Dish)							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	108.90-88.82	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.15
L2	88.82-62.76	A	0.000	0.000	0.000	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.49
L3	62.76-40.63	A	0.000	0.000	0.000	0.000	0.09
		B	0.000	0.000	0.000	0.000	0.09
		C	0.000	0.000	0.000	0.000	0.44
L4	40.63-0.00	A	0.000	0.000	0.000	0.000	0.16
		B	0.000	0.000	0.000	0.000	0.16
		C	0.000	0.000	0.000	0.000	0.80

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	108.90-88.82	A	1.674	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

tnxTower Cellsite Solutions, LLC 4150 C Street SW Cedar Rapids, IA 52404 Phone: 319-826-3404 FAX:	Job	CT-1239 (Avon CT)	Page	4 of 20
	Project	108.9' Stealth Monopole Analysis	Date	10:08:03 06/02/23
	Client	Blue Sky (Dish)	Designed by	mike.deboer

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L2	88.82-62.76	C	1.630	0.000	0.000	0.000	0.000	0.15
		A		0.000	0.000	0.000	0.000	0.02
		B		0.000	0.000	0.000	0.000	0.05
L3	62.76-40.63	C	1.569	0.000	0.000	0.000	0.000	0.49
		A		0.000	0.000	0.000	0.000	0.09
		B		0.000	0.000	0.000	0.000	0.09
L4	40.63-0.00	C	1.429	0.000	0.000	0.000	0.000	0.44
		A		0.000	0.000	0.000	0.000	0.16
		B		0.000	0.000	0.000	0.000	0.16
		C		0.000	0.000	0.000	0.000	0.80

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	108.90-88.82	0.000	0.000	0.000	0.000
L2	88.82-62.76	0.000	0.000	0.000	0.000
L3	62.76-40.63	0.000	0.000	0.000	0.000
L4	40.63-0.00	0.000	0.000	0.000	0.000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

User Defined Loads

Description	Elevation ft	Offset From Centroid ft	Azimuth Angle °	Weight K	F _x K	F _z K	Wind Force K	C _{AA} ft ²	
Shroud Support at 108.9375'	108.94	0.00	0.00	No Ice	0.31	0.00	0.00	0.33	9.04
				Ice	1.36	0.00	0.00	0.14	20.33
				Service	0.31	0.00	0.00	0.08	9.04
Shroud Support at 98.895833	98.90	0.00	0.00	No Ice	0.31	0.00	0.00	0.63	18.08
				Ice	1.35	0.00	0.00	0.26	40.63
				Service	0.31	0.00	0.00	0.15	18.08
Shroud Support at 88.8541667	88.85	0.00	0.00	No Ice	0.31	0.00	0.00	0.62	18.13
				Ice	1.35	0.00	0.00	0.26	40.71
				Service	0.31	0.00	0.00	0.15	18.13
Shroud Support at 78.75	78.75	0.00	0.00	No Ice	0.29	0.00	0.00	0.54	16.29
				Ice	1.10	0.00	0.00	0.22	36.54
				Service	0.29	0.00	0.00	0.13	16.29
Shroud Support at 70.75	70.75	0.00	0.00	No Ice	0.27	0.00	0.00	0.57	17.74
				Ice	1.33	0.00	0.00	0.22	37.29
				Service	0.27	0.00	0.00	0.14	17.74
Shroud Support at 62.7916667	62.79	0.00	0.00	No Ice	0.00	0.00	0.00	0.32	10.54
				Ice	0.00	0.00	0.00	0.12	21.16
				Service	0.00	0.00	0.00	0.08	10.54

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	Client	Blue Sky (Dish)	Designed by	mike.deboer

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
****ATT****									
(3) CCI OPA65R-BU6DA (ATT)	C	None			0.00	105.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.06 0.10 0.14 0.21
(16) TSXDC-4310FM (ATT)	C	None			0.00	105.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.01
(2) TMABPD7823VG12A (ATT)	C	None			0.00	100.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.02 0.03 0.04 0.06
(2) TMA2093F02V1-1D (ATT)	C	None			0.00	100.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.02 0.03 0.04 0.06
(3) CCI TPA65R-BU6DA (ATT)	C	None			0.00	95.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.07 0.10 0.13 0.19
(16) TSXDC-4310FM (ATT)	C	None			0.00	95.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.01
(2) TMABPD7823VG12A (ATT)	C	None			0.00	90.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.02 0.03 0.04 0.06
(2) TMA2093F02V1-1D (ATT)	C	None			0.00	90.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.02 0.03 0.04 0.06
(3) Powerwave P65-16-XLH-RR (ATT)	C	None			0.00	85.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.07 0.10 0.14 0.20
(16) TSXDC-4310FM (ATT)	C	None			0.00	85.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.01
(2) TMABPD7823VG12A (ATT)	C	None			0.00	80.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.02 0.03 0.04 0.06
(2) TMA2093F02V1-1D (ATT)	C	None			0.00	80.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.02 0.03 0.04 0.06
****T-Mobile****									
(3) APVSPP18-C-A20 (T-Mobile)	C	None			0.00	75.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.06 0.00 0.00 0.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
(3) TMA1921B68-21-43 (T-Mobile)	C	None			0.00	75.00	No Ice 0.00 1/2" Ice 0.00 1" Ice 0.00 2" Ice 0.00	0.00 0.00 0.00 0.00	0.02 0.00 0.00 0.00
****Dish****									
(3) Commscope FVV-65B-R3 (Dish)	C	None			0.00	67.00	No Ice 8.25 1/2" Ice 8.48 1" Ice 8.94 2" Ice 9.86	5.50 5.79 6.24 7.14	0.04 0.09 0.14 0.24
(3) Commscope CDX623T-DS-T Diplexer (Dish)	C	None			0.00	60.00	No Ice 0.37 1/2" Ice 0.48 1" Ice 0.60 2" Ice 0.84	0.33 0.44 0.56 0.80	0.03 0.04 0.05 0.07
(3) Commscope E15V95P63 Diplexer (Dish)	C	None			0.00	60.00	No Ice 0.38 1/2" Ice 0.49 1" Ice 0.61 2" Ice 0.85	0.34 0.45 0.57 0.81	0.03 0.04 0.05 0.07

Tower Pressures - No Ice

$$G_H = 1.100$$

Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _{AA} In Face	C _{AA} Out Face
ft	ft		ksf	ft ²	c	ft ²	ft ²	ft ²		ft ²	ft ²
L1 108.90-88.82	98.86	0.985	0.03	11.086	A	0.000	11.086	11.086	100.00	0.000	0.000
					B	0.000	11.086		100.00	0.000	0.000
					C	0.000	11.086		100.00	0.000	0.000
L2 88.82-62.76	75.79	0.913	0.03	27.689	A	0.000	27.689	27.689	100.00	0.000	0.000
					B	0.000	27.689		100.00	0.000	0.000
					C	0.000	27.689		100.00	0.000	0.000
L3 62.76-40.63	51.70	0.818	0.03	66.390	A	0.000	66.390	66.390	100.00	0.000	0.000
					B	0.000	66.390		100.00	0.000	0.000
					C	0.000	66.390		100.00	0.000	0.000
L4 40.63-0.00	20.34	0.7	0.02	121.890	A	0.000	121.890	121.890	100.00	0.000	0.000
					B	0.000	121.890		100.00	0.000	0.000
					C	0.000	121.890		100.00	0.000	0.000

Tower Pressure - With Ice

$$G_H = 1.100$$

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Section Elevation ft	z ft	K _Z	q _z ksf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 108.90-88.82	98.86	0.985	0.01	1.674	16.688	A	0.000	16.688	16.688	100.00	0.000	0.000
						B	0.000	16.688	100.00	0.000	0.000	
						C	0.000	16.688	100.00	0.000	0.000	
L2 88.82-62.76	75.79	0.913	0.01	1.630	34.769	A	0.000	34.769	34.769	100.00	0.000	0.000
						B	0.000	34.769	100.00	0.000	0.000	
						C	0.000	34.769	100.00	0.000	0.000	
L3 62.76-40.63	51.70	0.818	0.00	1.569	72.176	A	0.000	72.176	72.176	100.00	0.000	0.000
						B	0.000	72.176	100.00	0.000	0.000	
						C	0.000	72.176	100.00	0.000	0.000	
L4 40.63-0.00	20.34	0.7	0.00	1.429	131.568	A	0.000	131.568	131.568	100.00	0.000	0.000
						B	0.000	131.568	100.00	0.000	0.000	
						C	0.000	131.568	100.00	0.000	0.000	

Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 108.90-88.82	98.86	0.985	0.01	11.086	A	0.000	11.086	11.086	100.00	0.000	0.000
					B	0.000	11.086	100.00	0.000	0.000	
					C	0.000	11.086	100.00	0.000	0.000	
L2 88.82-62.76	75.79	0.913	0.01	27.689	A	0.000	27.689	27.689	100.00	0.000	0.000
					B	0.000	27.689	100.00	0.000	0.000	
					C	0.000	27.689	100.00	0.000	0.000	
L3 62.76-40.63	51.70	0.818	0.01	66.390	A	0.000	66.390	66.390	100.00	0.000	0.000
					B	0.000	66.390	100.00	0.000	0.000	
					C	0.000	66.390	100.00	0.000	0.000	
L4 40.63-0.00	20.34	0.7	0.01	121.890	A	0.000	121.890	121.890	100.00	0.000	0.000
					B	0.000	121.890	100.00	0.000	0.000	
					C	0.000	121.890	100.00	0.000	0.000	

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
L1 108.90-88.82	0.15	0.47	A	1	0.74	0.03	1	1	11.086	0.29	0.01	C
			B	1	0.74	1	1	11.086				
			C	1	0.74	1	1	11.086				
L2 88.82-62.76	0.55	1.21	A	1	0.6	0.03	1	1	27.689	0.54	0.02	C
			B	1	0.6	1	1	27.689				
			C	1	0.6	1	1	27.689				
L3 62.76-40.63	0.61	2.94	A	1	0.6	0.03	1	1	66.390	1.16	0.05	C
			B	1	0.6	1	1	66.390				
			C	1	0.6	1	1	66.390				
L4 40.63-0.00	1.12	5.40	A	1	0.6	0.02	1	1	121.890	1.83	0.04	C
			B	1	0.6	1	1	121.890				
			C	1	0.6	1	1	121.890				

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
Sum Weight:	2.43	10.02						OTM	166.63 kip-ft	3.82		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 108.90-88.82	0.15	0.47	A	1	0.74	0.03	1	1	11.086	0.29	0.01	C
			B	1	0.74		1	1	11.086			
			C	1	0.74		1	1	11.086			
L2 88.82-62.76	0.55	1.21	A	1	0.6	0.03	1	1	27.689	0.54	0.02	C
			B	1	0.6		1	1	27.689			
			C	1	0.6		1	1	27.689			
L3 62.76-40.63	0.61	2.94	A	1	0.6	0.03	1	1	66.390	1.16	0.05	C
			B	1	0.6		1	1	66.390			
			C	1	0.6		1	1	66.390			
L4 40.63-0.00	1.12	5.40	A	1	0.6	0.02	1	1	121.890	1.83	0.04	C
			B	1	0.6		1	1	121.890			
			C	1	0.6		1	1	121.890			
Sum Weight:	2.43	10.02						OTM	166.63 kip-ft	3.82		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 108.90-88.82	0.15	0.47	A	1	0.74	0.03	1	1	11.086	0.29	0.01	C
			B	1	0.74		1	1	11.086			
			C	1	0.74		1	1	11.086			
L2 88.82-62.76	0.55	1.21	A	1	0.6	0.03	1	1	27.689	0.54	0.02	C
			B	1	0.6		1	1	27.689			
			C	1	0.6		1	1	27.689			
L3 62.76-40.63	0.61	2.94	A	1	0.6	0.03	1	1	66.390	1.16	0.05	C
			B	1	0.6		1	1	66.390			
			C	1	0.6		1	1	66.390			
L4 40.63-0.00	1.12	5.40	A	1	0.6	0.02	1	1	121.890	1.83	0.04	C
			B	1	0.6		1	1	121.890			
			C	1	0.6		1	1	121.890			
Sum Weight:	2.43	10.02						OTM	166.63 kip-ft	3.82		

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Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 108.90-88.82	0.15	0.81	A	1	1.2	0.01	1	1	16.688	0.13	0.01	C
			B	1	1.2		1	1	16.688			
			C	1	1.2		1	1	16.688			
L2 88.82-62.76	0.55	1.95	A	1	1.2	0.01	1	1	34.769	0.25	0.01	C
			B	1	1.2		1	1	34.769			
			C	1	1.2		1	1	34.769			
L3 62.76-40.63	0.61	4.53	A	1	1.2	0.00	1	1	72.176	0.47	0.02	C
			B	1	1.2		1	1	72.176			
			C	1	1.2		1	1	72.176			
L4 40.63-0.00	1.12	8.06	A	1	1.2	0.00	1	1	131.568	0.73	0.02	C
			B	1	1.2		1	1	131.568			
			C	1	1.2		1	1	131.568			
Sum Weight:	2.43	15.35						OTM	71.18 kip-ft	1.59		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 108.90-88.82	0.15	0.81	A	1	1.2	0.01	1	1	16.688	0.13	0.01	C
			B	1	1.2		1	1	16.688			
			C	1	1.2		1	1	16.688			
L2 88.82-62.76	0.55	1.95	A	1	1.2	0.01	1	1	34.769	0.25	0.01	C
			B	1	1.2		1	1	34.769			
			C	1	1.2		1	1	34.769			
L3 62.76-40.63	0.61	4.53	A	1	1.2	0.00	1	1	72.176	0.47	0.02	C
			B	1	1.2		1	1	72.176			
			C	1	1.2		1	1	72.176			
L4 40.63-0.00	1.12	8.06	A	1	1.2	0.00	1	1	131.568	0.73	0.02	C
			B	1	1.2		1	1	131.568			
			C	1	1.2		1	1	131.568			
Sum Weight:	2.43	15.35						OTM	71.18 kip-ft	1.59		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 108.90-88.82	0.15	0.81	A	1	1.2	0.01	1	1	16.688	0.13	0.01	C
			B	1	1.2		1	1	16.688			
			C	1	1.2		1	1	16.688			
L2	0.55	1.95	A	1	1.2	0.01	1	1	34.769	0.25	0.01	C

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Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
88.82-62.76			B	1	1.2		1	1	34.769			
			C	1	1.2		1	1	34.769			
L3 62.76-40.63	0.61	4.53	A	1	1.2	0.00	1	1	72.176	0.47	0.02	C
			B	1	1.2		1	1	72.176			
			C	1	1.2		1	1	72.176			
L4 40.63-0.00	1.12	8.06	A	1	1.2	0.00	1	1	131.568	0.73	0.02	C
			B	1	1.2		1	1	131.568			
			C	1	1.2		1	1	131.568			
Sum Weight:	2.43	15.35						OTM	71.18 kip-ft	1.59		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
L1 108.90-88.82	0.15	0.47	A	1	1.2	0.01	1	1	11.086	0.11	0.01	C
			B	1	1.2		1	1	11.086			
			C	1	1.2		1	1	11.086			
L2 88.82-62.76	0.55	1.21	A	1	0.772	0.01	1	1	27.689	0.17	0.01	C
			B	1	0.772		1	1	27.689			
			C	1	0.772		1	1	27.689			
L3 62.76-40.63	0.61	2.94	A	1	0.6	0.01	1	1	66.390	0.28	0.01	C
			B	1	0.6		1	1	66.390			
			C	1	0.6		1	1	66.390			
L4 40.63-0.00	1.12	5.40	A	1	0.6	0.01	1	1	121.890	0.44	0.01	C
			B	1	0.6		1	1	121.890			
			C	1	0.6		1	1	121.890			
Sum Weight:	2.43	10.02						OTM	46.93 kip-ft	0.99		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
L1 108.90-88.82	0.15	0.47	A	1	1.2	0.01	1	1	11.086	0.11	0.01	C
			B	1	1.2		1	1	11.086			
			C	1	1.2		1	1	11.086			
L2 88.82-62.76	0.55	1.21	A	1	0.772	0.01	1	1	27.689	0.17	0.01	C
			B	1	0.772		1	1	27.689			
			C	1	0.772		1	1	27.689			
L3 62.76-40.63	0.61	2.94	A	1	0.6	0.01	1	1	66.390	0.28	0.01	C
			B	1	0.6		1	1	66.390			
			C	1	0.6		1	1	66.390			
L4 40.63-0.00	1.12	5.40	A	1	0.6	0.01	1	1	121.890	0.44	0.01	C
			B	1	0.6		1	1	121.890			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
Sum Weight:	2.43	10.02	C	1	0.6		1	1	121.890 46.93 kip-ft	0.99		

Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 108.90-88.82	0.15	0.47	A B C	1 1 1	1.2 1.2 1.2	0.01	1 1 1	1 1 1	11.086 11.086 11.086	0.11	0.01	C
L2 88.82-62.76	0.55	1.21	A B C	1 1 1	0.772 0.772 0.772	0.01	1 1 1	1 1 1	27.689 27.689 27.689	0.17	0.01	C
L3 62.76-40.63	0.61	2.94	A B C	1 1 1	0.6 0.6 0.6	0.01	1 1 1	1 1 1	66.390 66.390 66.390	0.28	0.01	C
L4 40.63-0.00	1.12	5.40	A B C	1 1 1	0.6 0.6 0.6	0.01	1 1 1	1 1 1	121.890 121.890 121.890	0.44	0.01	C
Sum Weight:	2.43	10.02						OTM	46.93 kip-ft	0.99		

Force Totals

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Overturning Moments, M _x	Sum of Overturning Moments, M _z	Sum of Torques
	K	K	K	kip-ft	kip-ft	kip-ft
Leg Weight	10.02					
Bracing Weight	0.00					
Total Member Self-Weight	10.02			0.00	0.00	
Total Weight	15.35			0.00	0.00	
Wind 0 deg - No Ice		0.00	-7.67	-478.47	0.00	0.00
Wind 30 deg - No Ice		3.83	-6.64	-414.36	-239.23	0.00
Wind 60 deg - No Ice		6.64	-3.83	-239.23	-414.36	0.00
Wind 90 deg - No Ice		7.67	0.00	0.00	-478.47	0.00
Wind 120 deg - No Ice		6.64	3.83	239.23	-414.36	0.00
Wind 150 deg - No Ice		3.83	6.64	414.36	-239.23	0.00
Wind 180 deg - No Ice		0.00	7.67	478.47	0.00	0.00
Wind 210 deg - No Ice		-3.83	6.64	414.36	239.23	0.00
Wind 240 deg - No Ice		-6.64	3.83	239.23	414.36	0.00
Wind 270 deg - No Ice		-7.67	0.00	0.00	478.47	0.00
Wind 300 deg - No Ice		-6.64	-3.83	-239.23	414.36	0.00
Wind 330 deg - No Ice		-3.83	-6.64	-414.36	239.23	0.00
Member Ice	5.34					
Total Weight Ice	27.74			0.00	0.00	

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Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 0 deg - Ice		0.00	-3.00	-188.56	0.00	0.00
Wind 30 deg - Ice		1.50	-2.60	-163.29	-94.28	0.00
Wind 60 deg - Ice		2.60	-1.50	-94.28	-163.29	0.00
Wind 90 deg - Ice		3.00	0.00	0.00	-188.56	0.00
Wind 120 deg - Ice		2.60	1.50	94.28	-163.29	0.00
Wind 150 deg - Ice		1.50	2.60	163.29	-94.28	0.00
Wind 180 deg - Ice		0.00	3.00	188.56	0.00	0.00
Wind 210 deg - Ice		-1.50	2.60	163.29	94.28	0.00
Wind 240 deg - Ice		-2.60	1.50	94.28	163.29	0.00
Wind 270 deg - Ice		-3.00	0.00	0.00	188.56	0.00
Wind 300 deg - Ice		-2.60	-1.50	-94.28	163.29	0.00
Wind 330 deg - Ice		-1.50	-2.60	-163.29	94.28	0.00
Total Weight	15.35			0.00	0.00	
Wind 0 deg - Service		0.00	-1.92	-121.58	0.00	0.00
Wind 30 deg - Service		0.96	-1.66	-105.29	-60.79	0.00
Wind 60 deg - Service		1.66	-0.96	-60.79	-105.29	0.00
Wind 90 deg - Service		1.92	0.00	0.00	-121.58	0.00
Wind 120 deg - Service		1.66	0.96	60.79	-105.29	0.00
Wind 150 deg - Service		0.96	1.66	105.29	-60.79	0.00
Wind 180 deg - Service		0.00	1.92	121.58	0.00	0.00
Wind 210 deg - Service		-0.96	1.66	105.29	60.79	0.00
Wind 240 deg - Service		-1.66	0.96	60.79	105.29	0.00
Wind 270 deg - Service		-1.92	0.00	0.00	121.58	0.00
Wind 300 deg - Service		-1.66	-0.96	-60.79	105.29	0.00
Wind 330 deg - Service		-0.96	-1.66	-105.29	60.79	0.00

Load Combinations

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

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Comb. No.	Description
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	108.9 - 88.82	Pole	Max Tension	27	0.00	0.00	-0.00
			Max. Compression	26	-7.10	0.00	0.00
			Max. Mx	8	-2.49	-17.10	0.00
			Max. My	2	-2.49	0.00	17.10
			Max. Vy	8	1.96	-17.10	0.00
			Max. Vx	2	-1.96	0.00	17.10
			Max. Torque	4			
L2	88.82 - 62.76	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-14.06	0.00	0.00
			Max. Mx	8	-6.05	-92.19	0.00
			Max. My	2	-6.05	0.00	92.19
			Max. Vy	8	4.70	-92.19	0.00
			Max. Vx	2	-4.70	0.00	92.19
			Max. Torque	4			
L3	62.76 - 40.63	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.33	0.00	0.00
			Max. Mx	8	-10.53	-210.69	0.00
			Max. My	2	-10.53	0.00	210.69
			Max. Vy	8	5.96	-210.69	0.00
			Max. Vx	2	-5.96	0.00	210.69
			Max. Torque	4			
L4	40.63 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.81	0.00	0.00
			Max. Mx	8	-18.42	-488.53	0.00
			Max. My	2	-18.42	0.00	488.53
			Max. Vy	8	7.67	-488.53	0.00
			Max. Vx	2	-7.67	0.00	488.53
			Max. Torque	4			

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Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	30.81	0.00	3.00
	Max. H _x	20	18.42	7.67	0.00
	Max. H _z	2	18.42	0.00	7.67
	Max. M _x	2	488.53	0.00	7.67
	Max. M _z	8	488.53	-7.67	0.00
	Max. Torsion	12	0.00	-3.83	-6.64
	Min. Vert	7	13.82	-6.64	3.83
	Min. H _x	8	18.42	-7.67	0.00
	Min. H _z	14	18.42	0.00	-7.67
	Min. M _x	14	-488.53	0.00	-7.67
	Min. M _z	20	-488.53	7.67	0.00
	Min. Torsion	4	-0.00	-3.83	6.64

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	15.35	0.00	0.00	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	18.42	0.00	-7.67	-488.53	0.00	0.00
0.9 Dead+1.0 Wind 0 deg - No Ice	13.82	0.00	-7.67	-485.93	0.00	0.00
1.2 Dead+1.0 Wind 30 deg - No Ice	18.42	3.83	-6.64	-423.08	-244.26	0.00
0.9 Dead+1.0 Wind 30 deg - No Ice	13.82	3.83	-6.64	-420.83	-242.97	0.00
1.2 Dead+1.0 Wind 60 deg - No Ice	18.42	6.64	-3.83	-244.26	-423.08	-0.00
0.9 Dead+1.0 Wind 60 deg - No Ice	13.82	6.64	-3.83	-242.97	-420.83	-0.00
1.2 Dead+1.0 Wind 90 deg - No Ice	18.42	7.67	0.00	0.00	-488.53	0.00
0.9 Dead+1.0 Wind 90 deg - No Ice	13.82	7.67	0.00	0.00	-485.93	0.00
1.2 Dead+1.0 Wind 120 deg - No Ice	18.42	6.64	3.83	244.26	-423.08	0.00
0.9 Dead+1.0 Wind 120 deg - No Ice	13.82	6.64	3.83	242.97	-420.83	0.00
1.2 Dead+1.0 Wind 150 deg - No Ice	18.42	3.83	6.64	423.08	-244.26	-0.00
0.9 Dead+1.0 Wind 150 deg - No Ice	13.82	3.83	6.64	420.83	-242.97	-0.00
1.2 Dead+1.0 Wind 180 deg - No Ice	18.42	0.00	7.67	488.53	0.00	0.00
0.9 Dead+1.0 Wind 180 deg - No Ice	13.82	0.00	7.67	485.93	0.00	0.00
1.2 Dead+1.0 Wind 210 deg - No Ice	18.42	-3.83	6.64	423.08	244.26	0.00
0.9 Dead+1.0 Wind 210 deg - No Ice	13.82	-3.83	6.64	420.83	242.97	0.00

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 240 deg - No Ice	18.42	-6.64	3.83	244.26	423.08	-0.00
0.9 Dead+1.0 Wind 240 deg - No Ice	13.82	-6.64	3.83	242.97	420.83	-0.00
1.2 Dead+1.0 Wind 270 deg - No Ice	18.42	-7.67	0.00	0.00	488.53	0.00
0.9 Dead+1.0 Wind 270 deg - No Ice	13.82	-7.67	0.00	0.00	485.93	0.00
1.2 Dead+1.0 Wind 300 deg - No Ice	18.42	-6.64	-3.83	-244.26	423.08	0.00
0.9 Dead+1.0 Wind 300 deg - No Ice	13.82	-6.64	-3.83	-242.97	420.83	0.00
1.2 Dead+1.0 Wind 330 deg - No Ice	18.42	-3.83	-6.64	-423.08	244.26	-0.00
0.9 Dead+1.0 Wind 330 deg - No Ice	13.82	-3.83	-6.64	-420.83	242.97	-0.00
1.2 Dead+1.0 Ice+1.0 Temp	30.81	0.00	0.00	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	30.81	0.00	-3.00	-197.98	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	30.81	1.50	-2.60	-171.46	-98.99	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	30.81	2.60	-1.50	-98.99	-171.46	-0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	30.81	3.00	0.00	0.00	-197.98	0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	30.81	2.60	1.50	98.99	-171.46	0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	30.81	1.50	2.60	171.46	-98.99	-0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	30.81	0.00	3.00	197.98	0.00	0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	30.81	-1.50	2.60	171.46	98.99	0.00
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	30.81	-2.60	1.50	98.99	171.46	-0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	30.81	-3.00	0.00	0.00	197.98	0.00
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	30.81	-2.60	-1.50	-98.99	171.46	0.00
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	30.81	-1.50	-2.60	-171.46	98.99	-0.00
Dead+Wind 0 deg - Service	15.35	0.00	-1.92	-123.74	0.00	0.00
Dead+Wind 30 deg - Service	15.35	0.96	-1.66	-107.16	-61.87	0.00
Dead+Wind 60 deg - Service	15.35	1.66	-0.96	-61.87	-107.16	-0.00
Dead+Wind 90 deg - Service	15.35	1.92	0.00	0.00	-123.74	0.00
Dead+Wind 120 deg - Service	15.35	1.66	0.96	61.87	-107.16	0.00
Dead+Wind 150 deg - Service	15.35	0.96	1.66	107.16	-61.87	-0.00
Dead+Wind 180 deg - Service	15.35	0.00	1.92	123.74	0.00	0.00
Dead+Wind 210 deg - Service	15.35	-0.96	1.66	107.16	61.87	0.00
Dead+Wind 240 deg - Service	15.35	-1.66	0.96	61.87	107.16	-0.00
Dead+Wind 270 deg - Service	15.35	-1.92	0.00	0.00	123.74	0.00
Dead+Wind 300 deg - Service	15.35	-1.66	-0.96	-61.87	107.16	0.00
Dead+Wind 330 deg - Service	15.35	-0.96	-1.66	-107.16	61.87	-0.00

Solution Summary

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-15.35	0.00	0.00	15.35	0.00	0.000%
2	0.00	-18.42	-7.67	0.00	18.42	7.67	0.000%
3	0.00	-13.82	-7.67	0.00	13.82	7.67	0.000%
4	3.83	-18.42	-6.64	-3.83	18.42	6.64	0.000%
5	3.83	-13.82	-6.64	-3.83	13.82	6.64	0.000%
6	6.64	-18.42	-3.83	-6.64	18.42	3.83	0.000%
7	6.64	-13.82	-3.83	-6.64	13.82	3.83	0.000%
8	7.67	-18.42	0.00	-7.67	18.42	0.00	0.000%
9	7.67	-13.82	0.00	-7.67	13.82	0.00	0.000%
10	6.64	-18.42	3.83	-6.64	18.42	-3.83	0.000%
11	6.64	-13.82	3.83	-6.64	13.82	-3.83	0.000%
12	3.83	-18.42	6.64	-3.83	18.42	-6.64	0.000%
13	3.83	-13.82	6.64	-3.83	13.82	-6.64	0.000%
14	0.00	-18.42	7.67	0.00	18.42	-7.67	0.000%
15	0.00	-13.82	7.67	0.00	13.82	-7.67	0.000%
16	-3.83	-18.42	6.64	3.83	18.42	-6.64	0.000%
17	-3.83	-13.82	6.64	3.83	13.82	-6.64	0.000%
18	-6.64	-18.42	3.83	6.64	18.42	-3.83	0.000%
19	-6.64	-13.82	3.83	6.64	13.82	-3.83	0.000%
20	-7.67	-18.42	0.00	7.67	18.42	0.00	0.000%
21	-7.67	-13.82	0.00	7.67	13.82	0.00	0.000%
22	-6.64	-18.42	-3.83	6.64	18.42	3.83	0.000%
23	-6.64	-13.82	-3.83	6.64	13.82	3.83	0.000%
24	-3.83	-18.42	-6.64	3.83	18.42	6.64	0.000%
25	-3.83	-13.82	-6.64	3.83	13.82	6.64	0.000%
26	0.00	-30.81	0.00	0.00	30.81	0.00	0.000%
27	0.00	-30.81	-3.00	0.00	30.81	3.00	0.000%
28	1.50	-30.81	-2.60	-1.50	30.81	2.60	0.000%
29	2.60	-30.81	-1.50	-2.60	30.81	1.50	0.000%
30	3.00	-30.81	0.00	-3.00	30.81	0.00	0.000%
31	2.60	-30.81	1.50	-2.60	30.81	-1.50	0.000%
32	1.50	-30.81	2.60	-1.50	30.81	-2.60	0.000%
33	0.00	-30.81	3.00	0.00	30.81	-3.00	0.000%
34	-1.50	-30.81	2.60	1.50	30.81	-2.60	0.000%
35	-2.60	-30.81	1.50	2.60	30.81	-1.50	0.000%
36	-3.00	-30.81	0.00	3.00	30.81	0.00	0.000%
37	-2.60	-30.81	-1.50	2.60	30.81	1.50	0.000%
38	-1.50	-30.81	-2.60	1.50	30.81	2.60	0.000%
39	0.00	-15.35	-1.92	0.00	15.35	1.92	0.000%
40	0.96	-15.35	-1.66	-0.96	15.35	1.66	0.000%
41	1.66	-15.35	-0.96	-1.66	15.35	0.96	0.000%
42	1.92	-15.35	0.00	-1.92	15.35	0.00	0.000%
43	1.66	-15.35	0.96	-1.66	15.35	-0.96	0.000%
44	0.96	-15.35	1.66	-0.96	15.35	-1.66	0.000%
45	0.00	-15.35	1.92	0.00	15.35	-1.92	0.000%
46	-0.96	-15.35	1.66	0.96	15.35	-1.66	0.000%
47	-1.66	-15.35	0.96	1.66	15.35	-0.96	0.000%
48	-1.92	-15.35	0.00	1.92	15.35	0.00	0.000%
49	-1.66	-15.35	-0.96	1.66	15.35	0.96	0.000%
50	-0.96	-15.35	-1.66	0.96	15.35	1.66	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001

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2	Yes	4	0.0000001	0.00009638
3	Yes	4	0.0000001	0.00003901
4	Yes	4	0.0000001	0.00091607
5	Yes	4	0.0000001	0.00061787
6	Yes	4	0.0000001	0.00091607
7	Yes	4	0.0000001	0.00061787
8	Yes	4	0.0000001	0.00009638
9	Yes	4	0.0000001	0.00003901
10	Yes	4	0.0000001	0.00091607
11	Yes	4	0.0000001	0.00061787
12	Yes	4	0.0000001	0.00091607
13	Yes	4	0.0000001	0.00061787
14	Yes	4	0.0000001	0.00009638
15	Yes	4	0.0000001	0.00003901
16	Yes	4	0.0000001	0.00091607
17	Yes	4	0.0000001	0.00061787
18	Yes	4	0.0000001	0.00091607
19	Yes	4	0.0000001	0.00061787
20	Yes	4	0.0000001	0.00009638
21	Yes	4	0.0000001	0.00003901
22	Yes	4	0.0000001	0.00091607
23	Yes	4	0.0000001	0.00061787
24	Yes	4	0.0000001	0.00091607
25	Yes	4	0.0000001	0.00061787
26	Yes	4	0.0000001	0.0000001
27	Yes	5	0.0000001	0.00034775
28	Yes	5	0.0000001	0.00036356
29	Yes	5	0.0000001	0.00036356
30	Yes	5	0.0000001	0.00034775
31	Yes	5	0.0000001	0.00036356
32	Yes	5	0.0000001	0.00036356
33	Yes	5	0.0000001	0.00034775
34	Yes	5	0.0000001	0.00036356
35	Yes	5	0.0000001	0.00036356
36	Yes	5	0.0000001	0.00034775
37	Yes	5	0.0000001	0.00036356
38	Yes	5	0.0000001	0.00036356
39	Yes	4	0.0000001	0.0000001
40	Yes	4	0.0000001	0.00002075
41	Yes	4	0.0000001	0.00002075
42	Yes	4	0.0000001	0.0000001
43	Yes	4	0.0000001	0.00002075
44	Yes	4	0.0000001	0.00002075
45	Yes	4	0.0000001	0.0000001
46	Yes	4	0.0000001	0.00002075
47	Yes	4	0.0000001	0.00002075
48	Yes	4	0.0000001	0.0000001
49	Yes	4	0.0000001	0.00002075
50	Yes	4	0.0000001	0.00002075

Maximum Tower Deflections - Service Wind

Section No.	Elevation <i>ft</i>	Horz. Deflection <i>ft</i>	Gov. Load Comb.	Tilt <i>o</i>	Twist <i>o</i>
L1	108.9 - 88.82	0.60	42	0.84	0.00
L2	88.82 - 62.76	0.33	42	0.56	0.00
L3	62.76 - 40.63	0.14	39	0.20	0.00
L4	40.63 - 0	0.07	39	0.16	0.00

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Section No.	Elevation ft	Horz. Deflection ft	Gov. Load Comb.	Tilt °	Twist °
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Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection ft	Tilt °	Twist °	Radius of Curvature ft
108.94	Shroud Support at 108.9375'	42	0.60	0.84	0.00	11871
105.00	(3) CCI OPA65R-BU6DA	42	0.54	0.79	0.00	11871
100.00	(2) TMABPD7823VG12A	42	0.47	0.73	0.00	6669
98.90	Shroud Support at 98.895833	42	0.46	0.71	0.00	5935
95.00	(3) CCI TPA65R-BU6DA	42	0.41	0.66	0.00	4270
90.00	(2) TMABPD7823VG12A	42	0.34	0.58	0.00	3229
88.85	Shroud Support at 88.8541667	42	0.33	0.56	0.00	3140
85.00	(3) Powerwave P65-16-XLH-RR	42	0.29	0.50	0.00	3204
80.00	(2) TMABPD7823VG12A	39	0.25	0.42	0.00	3591
78.75	Shroud Support at 78.75	42	0.24	0.40	0.00	3704
75.00	(3) APVSPP18-C-A20	39	0.21	0.34	0.00	4090
70.75	Shroud Support at 70.75	39	0.18	0.29	0.00	4638
67.00	(3) Commscope FVV-65B-R3	39	0.16	0.24	0.00	5260
62.79	Shroud Support at 62.7916667	39	0.14	0.20	0.00	6138
60.00	(3) Commscope CDX623T-DS-T Diplexer	39	0.12	0.19	0.00	6783

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection ft	Gov. Load Comb.	Tilt °	Twist °
L1	108.9 - 88.82	2.32	2	3.24	0.00
L2	88.82 - 62.76	1.29	2	2.18	0.00
L3	62.76 - 40.63	0.54	2	0.79	0.00
L4	40.63 - 0	0.26	2	0.64	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection ft	Tilt °	Twist °	Radius of Curvature ft
108.94	Shroud Support at 108.9375'	2	2.32	3.24	0.00	3122
105.00	(3) CCI OPA65R-BU6DA	2	2.11	3.05	0.00	3122
100.00	(2) TMABPD7823VG12A	2	1.84	2.79	0.00	1753
98.90	Shroud Support at 98.895833	2	1.78	2.74	0.00	1560
95.00	(3) CCI TPA65R-BU6DA	2	1.58	2.53	0.00	1122
90.00	(2) TMABPD7823VG12A	2	1.34	2.25	0.00	848
88.85	Shroud Support at 88.8541667	2	1.29	2.18	0.00	824
85.00	(3) Powerwave P65-16-XLH-RR	2	1.14	1.94	0.00	841
80.00	(2) TMABPD7823VG12A	2	0.96	1.63	0.00	942
78.75	Shroud Support at 78.75	2	0.92	1.56	0.00	971
75.00	(3) APVSPP18-C-A20	2	0.81	1.34	0.00	1072

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			ft	°	°	ft
70.75	Shroud Support at 70.75	2	0.70	1.11	0.00	1215
67.00	(3) Commscope FVV-65B-R3	2	0.62	0.94	0.00	1377
62.79	Shroud Support at 62.7916667	2	0.54	0.79	0.00	1606
60.00	(3) Commscope CDX623T-DS-T Diplexer	2	0.49	0.73	0.00	1773

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
L1	108.9 - 88.82 (1)	P6.625x0.34875	20.08	0.00	0.0	6.876	-2.49	216.61	0.011
L2	88.82 - 62.76 (2)	P12.75x0.349	26.06	0.00	0.0	13.597	-6.05	428.30	0.014
L3	62.76 - 40.63 (3)	P36x0.34875	22.13	0.00	0.0	39.061	-10.53	1194.58	0.009
L4	40.63 - 0 (4)	P36x0.34875	40.63	0.00	0.0	39.061	-18.42	1194.58	0.015

Pole Bending Design Data

Section No.	Elevation	Size	M _{ux}	φM _{ux}	Ratio	M _{uy}	φM _{uy}	Ratio
	ft		kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{ux}}$	kip-ft	kip-ft	$\frac{M_{uy}}{\phi M_{uy}}$
L1	108.9 - 88.82 (1)	P6.625x0.34875	17.10	36.10	0.474	0.00	36.10	0.000
L2	88.82 - 62.76 (2)	P12.75x0.349	92.19	140.92	0.654	0.00	140.92	0.000
L3	62.76 - 40.63 (3)	P36x0.34875	210.69	1055.48	0.200	0.00	1055.48	0.000
L4	40.63 - 0 (4)	P36x0.34875	488.53	1055.48	0.463	0.00	1055.48	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V _u	φV _n	Ratio	Actual T _u	φT _n	Ratio
	ft		K	K	$\frac{V_u}{\phi V_n}$	kip-ft	kip-ft	$\frac{T_u}{\phi T_n}$
L1	108.9 - 88.82 (1)	P6.625x0.34875	1.96	64.98	0.030	0.00	35.86	0.000
L2	88.82 - 62.76 (2)	P12.75x0.349	4.70	128.49	0.037	0.00	140.09	0.000
L3	62.76 - 40.63 (3)	P36x0.34875	5.96	369.12	0.016	0.00	991.33	0.000
L4	40.63 - 0 (4)	P36x0.34875	7.67	369.12	0.021	0.00	991.33	0.000

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Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
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Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{ux}	Ratio M_{uy} ϕM_{uy}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	108.9 - 88.82 (1)	0.011	0.474	0.000	0.030	0.000	0.486	1.000	4.8.2 ✓
L2	88.82 - 62.76 (2)	0.014	0.654	0.000	0.037	0.000	0.670	1.000	4.8.2 ✓
L3	62.76 - 40.63 (3)	0.009	0.200	0.000	0.016	0.000	0.209	1.000	4.8.2 ✓
L4	40.63 - 0 (4)	0.015	0.463	0.000	0.021	0.000	0.479	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	108.9 - 88.82	Pole	P6.625x0.34875	1	-2.49	216.61	48.6	Pass
L2	88.82 - 62.76	Pole	P12.75x0.349	2	-6.05	428.30	67.0	Pass
L3	62.76 - 40.63	Pole	P36x0.34875	3	-10.53	1194.58	20.9	Pass
L4	40.63 - 0	Pole	P36x0.34875	4	-18.42	1194.58	47.9	Pass
Summary								
Pole (L2)							67.0	Pass
RATING =							67.0	Pass

Monopole Flange Plate Connection

Elevation = 88.82 ft.

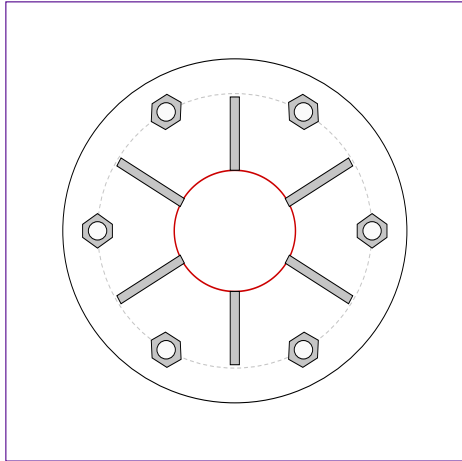


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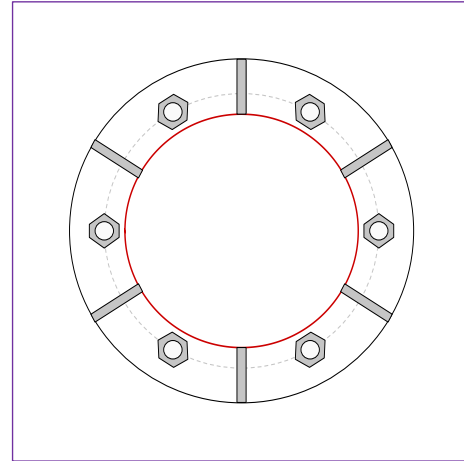
Applied Loads	
Moment (kip-ft)	17.10
Axial Force (kips)	2.49
Shear Force (kips)	1.96

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(6) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 15" BC

Top Plate Data

18.8" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

(6) 6.5"H x 4"W x 0.5"T, Notch: 0.5"
 plate: Fy= 50 ksi ; weld: Fy= 60 ksi
 horiz. weld: 0.25" fillet
 vert. weld: 0.25" fillet

Top Pole Data

6.625" x 0.34875" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

18.8" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

(6) 6.5"H x 3"W x 0.5"T, Notch: 0.5"
 plate: Fy= 50 ksi ; weld: Fy= 60 ksi
 horiz. weld: 0.25" fillet
 vert. weld: 0.25" fillet

Bottom Pole Data

12.75" x 0.349" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	8.69
Allowable (kips)	54.54
Stress Rating:	15.2% Pass

Top Plate Capacity

Max Stress (ksi):	15.70	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	33.2%	Pass
Tension Side Stress Rating:	35.5%	Pass

Top Stiffener Capacity

Horizontal Weld:	32.5%	Pass
Vertical Weld:	23.4%	Pass
Plate Flexure+Shear:	8.1%	Pass
Plate Tension+Shear:	13.2%	Pass
Plate Compression:	23.4%	Pass

Top Pole Capacity

Punching Shear:	10.5%	Pass
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Bottom Plate Capacity

Max Stress (ksi):	5.42	(Flexural (b/Le>2))
Allowable Stress (ksi):	45.00	
Stress Rating:	11.5%	Pass
Tension Side Stress Rating:	3.6%	Pass

Bottom Stiffener Capacity

Horizontal Weld:	18.2%	Pass
Vertical Weld:	8.8%	Pass
Plate Flexure+Shear:	2.4%	Pass
Plate Tension+Shear:	7.3%	Pass
Plate Compression:	9.6%	Pass

Bottom Pole Capacity

Punching Shear:	3.4%	Pass
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Monopole Flange Plate Connection

Elevation = 62.76 ft.

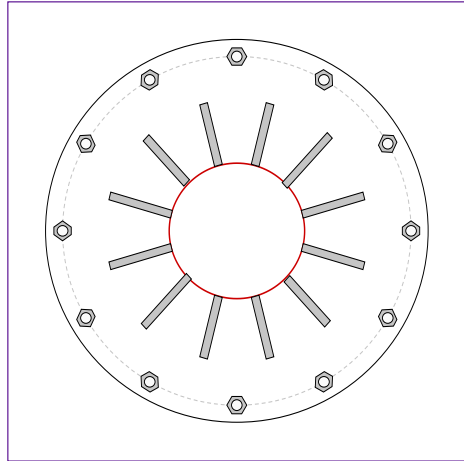


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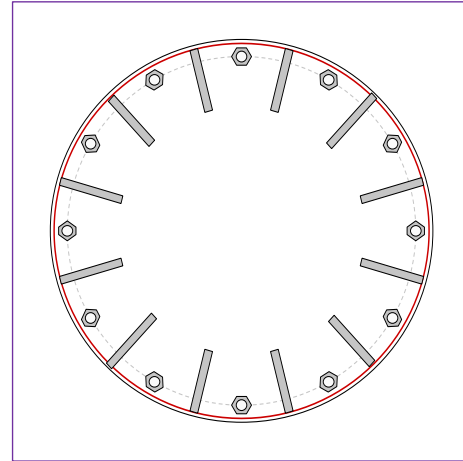
Applied Loads	
Moment (kip-ft)	92.19
Axial Force (kips)	6.05
Shear Force (kips)	4.70

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(12) 1" \varnothing bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 32.8" BC

Top Plate Data

36" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

(12) 11.5"H x 6"W x 0.75"T, Notch: 0.75"
 plate: Fy= 50 ksi ; weld: Fy= 60 ksi
 horiz. weld: 0.25" fillet
 vert. weld: 0.25" fillet

Top Pole Data

12.75" x 0.349" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

36" ID x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

(12) 11.5"H x 6"W x 0.75"T, Notch: 0.75"
 plate: Fy= 50 ksi ; weld: Fy= 60 ksi
 horiz. weld: 0.25" fillet
 vert. weld: 0.25" fillet

Bottom Pole Data

36" x 0.34875" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	10.74
Allowable (kips)	54.54
Stress Rating:	18.7% Pass

Top Plate Capacity

Max Stress (ksi):	17.84	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	37.8%	Pass
Tension Side Stress Rating:	52.7%	Pass

Top Stiffener Capacity

Horizontal Weld:	35.2%	Pass
Vertical Weld:	20.4%	Pass
Plate Flexure+Shear:	4.1%	Pass
Plate Tension+Shear:	9.5%	Pass
Plate Compression:	14.4%	Pass

Top Pole Capacity

Punching Shear:	8.4%	Pass
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Bottom Plate Capacity

Max Stress (ksi):	4.35	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	9.2%	Pass
Tension Side Stress Rating:	N/A	

Bottom Stiffener Capacity

Horizontal Weld:	32.3%	Pass
Vertical Weld:	3.3%	Pass
Plate Flexure+Shear:	0.1%	Pass
Plate Tension+Shear:	-0.4%	Pass
Plate Compression:	3.0%	Pass

Bottom Pole Capacity

Punching Shear:	0.1%	Pass
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Monopole Flange Plate Connection

Elevation = 40.63 ft.

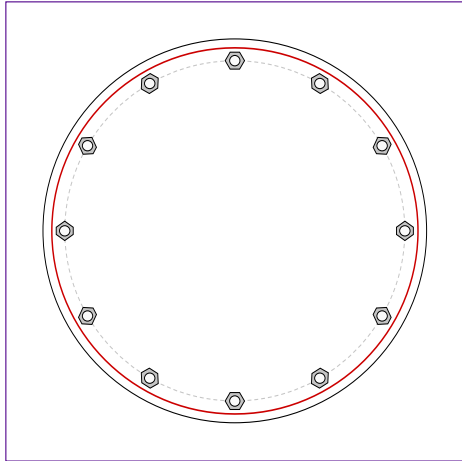


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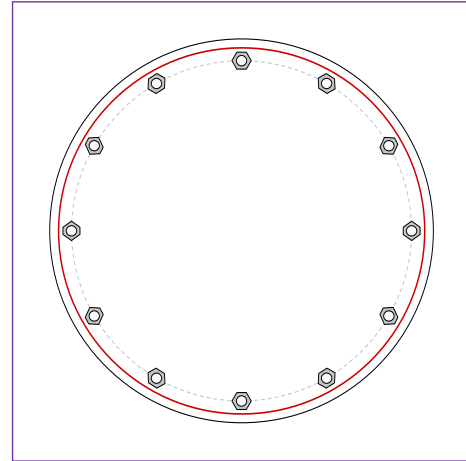
Applied Loads	
Moment (kip-ft)	210.69
Axial Force (kips)	10.53
Shear Force (kips)	5.96

*TIA-222-H Section 15.5 Applied

Top Plate - Internal



Bottom Plate - Internal



Connection Properties

Bolt Data

(12) 1" \emptyset bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 32.8" BC

Top Plate Data

37" ID x 1.25" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

36" x 0.34875" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

37" ID x 1.25" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

36" x 0.34875" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	24.81
Allowable (kips)	54.53
Stress Rating:	43.3% Pass

Top Plate Capacity

Max Stress (ksi):	14.17	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	30.0%	Pass
Tension Side Stress Rating:	12.9%	Pass

Bottom Plate Capacity

Max Stress (ksi):	14.17	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	30.0%	Pass
Tension Side Stress Rating:	12.9%	Pass

Monopole Base Plate Connection

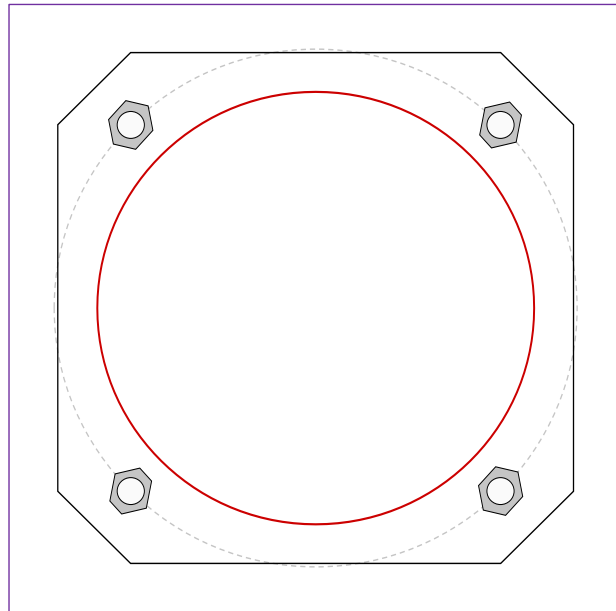


Site Info	
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Analysis Considerations	
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Grout Considered:	No
I_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	488.53
Axial Force (kips)	18.42
Shear Force (kips)	7.67

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
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Anchor Rod Data
(4) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 43.1" BC
Base Plate Data
42.5" W x 2.75" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi); Clip: 6 in
Stiffener Data
N/A
Pole Data
36" x 0.34875" round pole (A53-B-35; $F_y=35$ ksi, $F_u=60$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
$Pu_c = 140.47$	$\phi Pn_c = 268.39$	Stress Rating
$Vu = 1.92$	$\phi Vn = 120.77$	49.9%
$Mu = n/a$	$\phi Mn = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	11.13	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	23.6%	Pass

Drilled Pier Foundation

BU # :	CT-1239
Site Name:	Avon CT
Order Number:	
TIA-222 Revison:	H
Tower Type:	Monopole



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	489	
Axial Force (kips)	18	
Shear Force (kips)	8	

Material Properties		
Concrete Strength, f _c :	3	ksi
Rebar Strength, F _y :	60	ksi
Tie Yield Strength, F _y :	40	ksi

Pier Design Data		
Depth	20.25	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
<i>From 0.5' above grade to 20.25' below grade</i>		
Pier Diameter	5.5	ft
Rebar Quantity	22	
Rebar Size	8	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing	12	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check		
	Compression	Uplift
D _{v=0} (ft from TOC)	5.14	-
Soil Safety Factor	7.23	-
Max Moment (kip-ft)	517.91	-
Rating*	17.5%	-
Soil Vertical Check		
	Compression	Uplift
Skin Friction (kips)	131.21	-
End Bearing (kips)	427.65	-
Weight of Concrete (kips)	88.74	-
Total Capacity (kips)	558.86	-
Axial (kips)	106.74	-
Rating*	18.2%	-
Reinforced Concrete Flexure		
	Compression	Uplift
Critical Depth (ft from TOC)	4.89	-
Critical Moment (kip-ft)	517.81	-
Critical Moment Capacity	2188.09	-
Rating*	22.5%	-
Reinforced Concrete Shear		
	Compression	Uplift
Critical Depth (ft from TOC)	14.89	-
Critical Shear (kip)	69.31	-
Critical Shear Capacity	358.22	-
Rating*	18.4%	-
Structural Foundation Rating*		22.5%
Soil Interaction Rating*		18.2%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
N/A	<input type="checkbox"/>
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	<input type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Soil Profile														
Groundwater Depth	N/A				# of Layers	1								
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y _{soil} (pcf)	Y _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	20.25	20.25	110	150	0	30	0.000	0.000	0.50	0.50	24		Cohesionless



BU: CT-1239
 WO:
 Order:

Structure: A
 Rev:

Location

	Decimal Degrees	Deg	Min	Sec	
Lat:	41.798978	+	41	47	56.32
Long:	-72.888372	-	72	53	18.14

Code and Site Parameters

Seismic Design Code:	TIA-222-H	
Site Soil:	D (Default)	Default
Risk Category:	II	
<u>USGS Seismic Reference</u>		
S _S :	0.1790	g
S ₁ :	0.0540	g
T _L :	6	s

Seismic Design Category Determination

Importance Factor, I _e :	1
Acceleration-based site coefficient, F _a :	1.6000
Velocity-based site coefficient, F _v :	2.4000
Design spectral response acceleration short period, S _{DS} :	0.1909 g
Design spectral response acceleration 1 s period, S _{D1} :	0.0864 g
Seismic Design Category Based on S _{DS} :	B
Seismic Design Category Based on S _{D1} :	B
Seismic Design Category Based on S ₁ :	N/A
Controlling Seismic Design Category:	B



BU: CT-1239
 WO:
 Order:

Structure: A
 Rev:

Tower Details

Tower Type:	Stepped Monopole	
Height, h:	109	ft
Effective Seismic Weight, W:	13.00	kips
Amplification Factor, A _s :	1.0	2.7.8.1

Seismic Base Shear

Response Modification Factor, R:	1.5	
Discrete Appurtenance Weight in Top 1/3 of Structure, W _U :	1.101	kips
W _L :	11.89723015	kips
E:	29000.0	ksi
g:	386.088	in/s ²
Average Moment of Inertia, I _{avg} :	3645.66123	in ⁴
F _a :	0.595498547	hz
Approximate Fundamental Period Monopole, T _a :	1.6793	s
		2.7.7.1.3.3
Seismic Response Coefficient, C _s	0.1273	2.7.7.1.1
Seismic Response Coefficient Max 1, C _{smax}	0.0343	2.7.7.1.1
Seismic Response Coefficient Max 2, C _{smax}	N/A	2.7.7.1.1
Seismic Response Coefficient Min 1, C _{smin}	0.0300	2.7.7.1.1
Seismic Response Coefficient Min 2, C _{smin}	N/A	2.7.7.1.1
Controlling Seismic Response Coefficient, C _{sc}	0.0343	
Seismic Base Shear, V	0.446	kips
		2.7.7.1.1

Vertical Distribution Factors

Period Related Exponent, k:	1.590	2.7.7.1.2
Sum of w _i h _i ^k	6701.32	2.7.7.1.2

Tower Section Loads								
Section Number	Length	Top Height	Mid Height, h_x	Section Weight, w_x	$w_x h_x^k$	C_{vx}	F_{xh}	F_{vx}
1 - 1	0.08	108.90	108.86	0.0019	3.24	0.0005	0.0002	0.0001
1 - 2	10.00	108.82	103.82	0.2340	375.27	0.0560	0.0250	0.0089
1 - 3	10.00	98.82	93.82	0.2340	319.46	0.0477	0.0213	0.0089
2 - 1	6.06	88.82	85.79	0.2804	332.04	0.0495	0.0221	0.0107
2 - 2	10.00	82.76	77.76	0.4627	468.68	0.0699	0.0312	0.0177
2 - 3	10.00	72.76	67.76	0.4627	376.57	0.0562	0.0251	0.0177
3 - 1	2.13	62.76	61.70	0.2831	198.51	0.0296	0.0132	0.0108
3 - 2	10.00	60.63	55.63	1.3291	790.63	0.1180	0.0526	0.0508
3 - 3	10.00	50.63	45.63	1.3291	576.99	0.0861	0.0384	0.0508
4 - 1	0.63	40.63	40.32	0.0837	29.85	0.0045	0.0020	0.0032
4 - 2	10.00	40.00	35.00	1.3291	378.51	0.0565	0.0252	0.0508
4 - 3	10.00	30.00	25.00	1.3291	221.71	0.0331	0.0148	0.0508
4 - 4	10.00	20.00	15.00	1.3291	98.43	0.0147	0.0065	0.0508
4 - 5	10.00	10.00	5.00	1.3291	17.17	0.0026	0.0011	0.0508
Sum				10.0173	4187.06			

Discrete Loads						
Name	h_x	w_x	$w_x h_x^k$	C_{vx}	F_{xH}	F_{xV}
(3) CCI OPA65R-BU6DA	105.00	0.1860	303.71	0.0453	0.0202	0.0071
(16) TSXDC-4310FM	105.00	0.0160	26.13	0.0039	0.0017	0.0006
(2) TMABPD7823VG12A	100.00	0.0400	60.44	0.0090	0.0040	0.0015
(2) TMA2093F02V1-1D	100.00	0.0400	60.44	0.0090	0.0040	0.0015
(3) CCI TPA65R-BU6DA	95.00	0.2070	288.29	0.0430	0.0192	0.0079
(16) TSXDC-4310FM	95.00	0.0160	22.28	0.0033	0.0015	0.0006
(2) TMABPD7823VG12A	90.00	0.0400	51.12	0.0076	0.0034	0.0015
(2) TMA2093F02V1-1D	90.00	0.0400	51.12	0.0076	0.0034	0.0015
(3) Powerwave P65-16-XLH-RR	85.00	0.1950	227.56	0.0340	0.0151	0.0074
(16) TSXDC-4310FM	85.00	0.0160	18.67	0.0028	0.0012	0.0006
(2) TMABPD7823VG12A	80.00	0.0400	42.39	0.0063	0.0028	0.0015
(2) TMA2093F02V1-1D	80.00	0.0400	42.39	0.0063	0.0028	0.0015
(3) APVSP18-C-A20	75.00	0.1710	163.55	0.0244	0.0109	0.0065
(3) TMA11921B68-21-43	75.00	0.0540	51.65	0.0077	0.0034	0.0021
(3) Commscope FVV-65B-R3	67.00	0.1320	105.53	0.0157	0.0070	0.0050
(3) Commscope CDX623T-DS-T Diplexer	60.00	0.0900	60.37	0.0090	0.0040	0.0034
(3) Commscope E15V95P63 Diplexer	60.00	0.0900	60.37	0.0090	0.0040	0.0034
Sum		1.4130	1636.02			

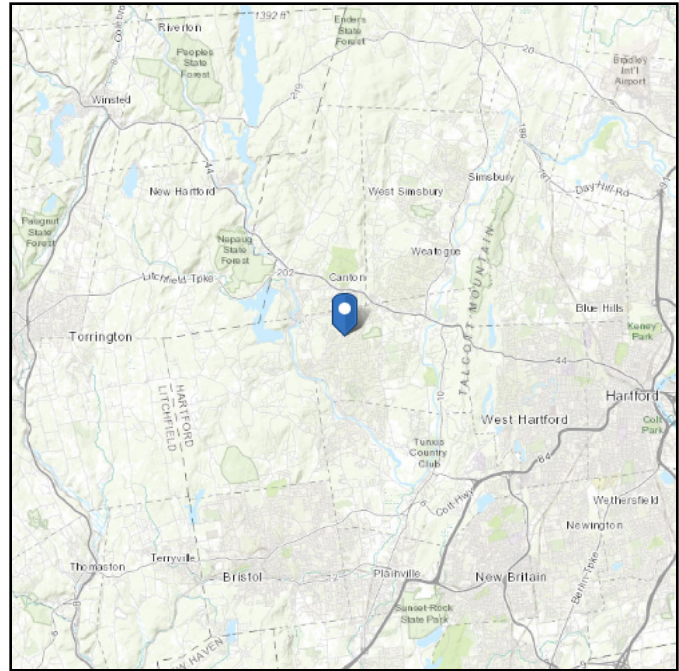
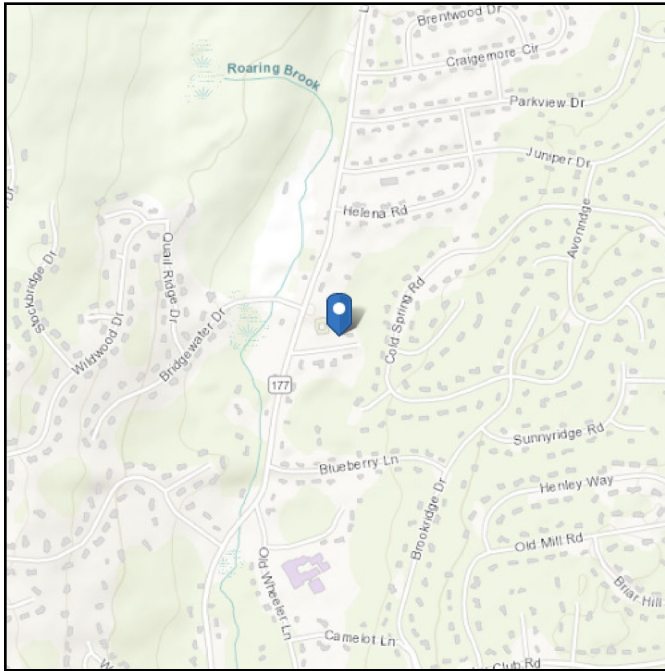
Linear Loads								
Name	Start Height	End Height	h_x	w_x	$w_x h_x^k$	C_{vx}	F_{xh}	F_{sv}
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	99.00	105.00	102.00	0.0098	15.34	0.0023	0.0010	0.0004
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	89.00	99.00	94.00	0.0164	22.46	0.0034	0.0015	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	79.00	89.00	84.00	0.0164	18.78	0.0028	0.0012	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	69.00	79.00	74.00	0.0164	15.35	0.0023	0.0010	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	59.00	69.00	64.00	0.0164	12.19	0.0018	0.0008	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	49.00	59.00	54.00	0.0164	9.30	0.0014	0.0006	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	39.00	49.00	44.00	0.0164	6.72	0.0010	0.0004	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	29.00	39.00	34.00	0.0164	4.46	0.0007	0.0003	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	19.00	29.00	24.00	0.0164	2.56	0.0004	0.0002	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	9.00	19.00	14.00	0.0164	1.09	0.0002	0.0001	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	0.00	9.00	4.50	0.0148	0.16	0.0000	0.0000	0.0006
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	99.00	105.00	102.00	0.0295	46.03	0.0069	0.0031	0.0011
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	89.00	99.00	94.00	0.0492	67.38	0.0101	0.0045	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	79.00	89.00	84.00	0.0492	56.35	0.0084	0.0037	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	69.00	79.00	74.00	0.0492	46.06	0.0069	0.0031	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	59.00	69.00	64.00	0.0492	36.57	0.0055	0.0024	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	49.00	59.00	54.00	0.0492	27.91	0.0042	0.0019	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	39.00	49.00	44.00	0.0492	20.16	0.0030	0.0013	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	29.00	39.00	34.00	0.0492	13.38	0.0020	0.0009	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	19.00	29.00	24.00	0.0492	7.69	0.0011	0.0005	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	9.00	19.00	14.00	0.0492	3.27	0.0005	0.0002	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 105	0.00	9.00	4.50	0.0443	0.48	0.0001	0.0000	0.0017
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	89.00	95.00	92.00	0.0098	13.02	0.0019	0.0009	0.0004
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	79.00	89.00	84.00	0.0164	18.78	0.0028	0.0012	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	69.00	79.00	74.00	0.0164	15.35	0.0023	0.0010	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	59.00	69.00	64.00	0.0164	12.19	0.0018	0.0008	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	49.00	59.00	54.00	0.0164	9.30	0.0014	0.0006	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	39.00	49.00	44.00	0.0164	6.72	0.0010	0.0004	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	29.00	39.00	34.00	0.0164	4.46	0.0007	0.0003	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	19.00	29.00	24.00	0.0164	2.56	0.0004	0.0002	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	9.00	19.00	14.00	0.0164	1.09	0.0002	0.0001	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	0.00	9.00	4.50	0.0148	0.16	0.0000	0.0000	0.0006
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	89.00	95.00	92.00	0.0295	39.07	0.0058	0.0026	0.0011
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	79.00	89.00	84.00	0.0492	56.35	0.0084	0.0037	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	69.00	79.00	74.00	0.0492	46.06	0.0069	0.0031	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	59.00	69.00	64.00	0.0492	36.57	0.0055	0.0024	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	49.00	59.00	54.00	0.0492	27.91	0.0042	0.0019	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	39.00	49.00	44.00	0.0492	20.16	0.0030	0.0013	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	29.00	39.00	34.00	0.0492	13.38	0.0020	0.0009	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	19.00	29.00	24.00	0.0492	7.69	0.0011	0.0005	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	9.00	19.00	14.00	0.0492	3.27	0.0005	0.0002	0.0019
(6) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 95	0.00	9.00	4.50	0.0443	0.48	0.0001	0.0000	0.0017
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	79.00	85.00	82.00	0.0098	10.85	0.0016	0.0007	0.0004
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	69.00	79.00	74.00	0.0164	15.35	0.0023	0.0010	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	59.00	69.00	64.00	0.0164	12.19	0.0018	0.0008	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	49.00	59.00	54.00	0.0164	9.30	0.0014	0.0006	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	39.00	49.00	44.00	0.0164	6.72	0.0010	0.0004	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	29.00	39.00	34.00	0.0164	4.46	0.0007	0.0003	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	19.00	29.00	24.00	0.0164	2.56	0.0004	0.0002	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	9.00	19.00	14.00	0.0164	1.09	0.0002	0.0001	0.0006
(2) andrew (cci) LDF7-50A (1-5/8 FOAM) From 0 to 85	0.00	9.00	4.50	0.0148	0.16	0.0000	0.0000	0.0006
****T-Mobile**** From 0 to 85	79.00	85.00	82.00	0.0049	5.42	0.0008	0.0004	0.0002
****T-Mobile**** From 0 to 85	69.00	79.00	74.00	0.0082	7.68	0.0011	0.0005	0.0003
****T-Mobile**** From 0 to 85	59.00	69.00	64.00	0.0082	6.10	0.0009	0.0004	0.0003
****T-Mobile**** From 0 to 85	49.00	59.00	54.00	0.0082	4.65	0.0007	0.0003	0.0003
****T-Mobile**** From 0 to 85	39.00	49.00	44.00	0.0082	3.36	0.0005	0.0002	0.0003
****T-Mobile**** From 0 to 85	29.00	39.00	34.00	0.0082	2.23	0.0003	0.0001	0.0003
****T-Mobile**** From 0 to 85	19.00	29.00	24.00	0.0082	1.28	0.0002	0.0001	0.0003
****T-Mobile**** From 0 to 85	9.00	19.00	14.00	0.0082	0.54	0.0001	0.0000	0.0003
****T-Mobile**** From 0 to 85	0.00	9.00	4.50	0.0074	0.08	0.0000	0.0000	0.0003
****Dish**** From 0 to 75	69.00	75.00	72.00	0.0020	1.77	0.0003	0.0001	0.0001
****Dish**** From 0 to 75	59.00	69.00	64.00	0.0033	2.45	0.0004	0.0002	0.0001
****Dish**** From 0 to 75	49.00	59.00	54.00	0.0033	1.87	0.0003	0.0001	0.0001
****Dish**** From 0 to 75	39.00	49.00	44.00	0.0033	1.35	0.0002	0.0001	0.0001
****Dish**** From 0 to 75	29.00	39.00	34.00	0.0033	0.90	0.0001	0.0001	0.0001
****Dish**** From 0 to 75	19.00	29.00	24.00	0.0033	0.52	0.0001	0.0000	0.0001
****Dish**** From 0 to 75	9.00	19.00	14.00	0.0033	0.22	0.0000	0.0000	0.0001
****Dish**** From 0 to 75	0.00	9.00	4.50	0.0030	0.03	0.0000	0.0000	0.0001
**** From 0 to 67	59.00	67.00	63.00	0.0026	1.91	0.0003	0.0001	0.0001
**** From 0 to 67	49.00	59.00	54.00	0.0033	1.87	0.0003	0.0001	0.0001
**** From 0 to 67	39.00	49.00	44.00	0.0033	1.35	0.0002	0.0001	0.0001
**** From 0 to 67	29.00	39.00	34.00	0.0033	0.90	0.0001	0.0001	0.0001
**** From 0 to 67	19.00	29.00	24.00	0.0033	0.52	0.0001	0.0000	0.0001
**** From 0 to 67	9.00	19.00	14.00	0.0033	0.22	0.0000	0.0000	0.0001
**** From 0 to 67	0.00	9.00	4.50	0.0030	0.03	0.0000	0.0000	0.0001
Sum				1.5680	878.25			

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Latitude: 41.798978
Longitude: -72.888372
Elevation: 292.40228682406445 ft (NAVD 88)



Wind

Results:

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	89 Vmph
100-year MRI	96 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Thu Jun 01 2023

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

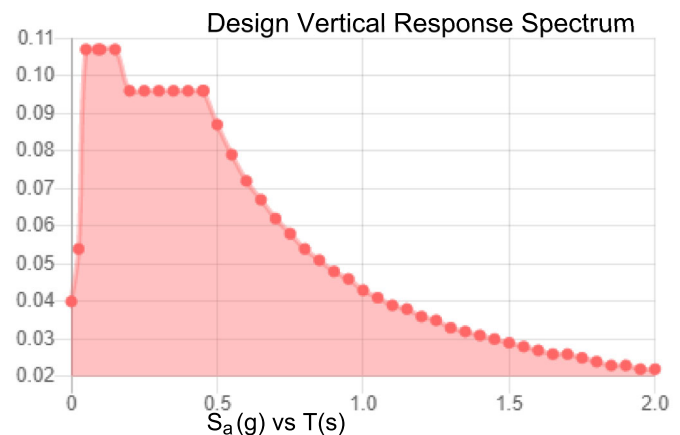
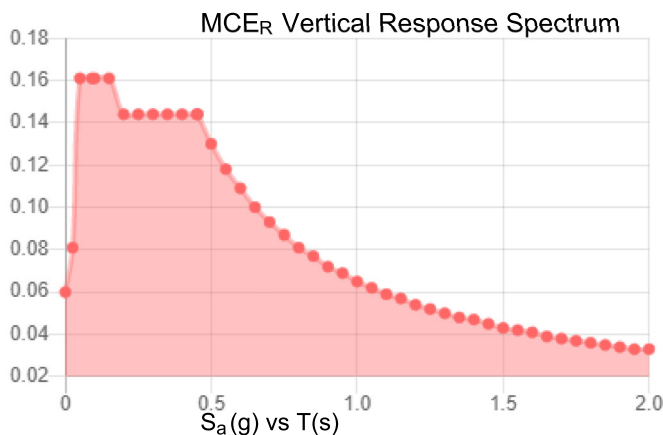
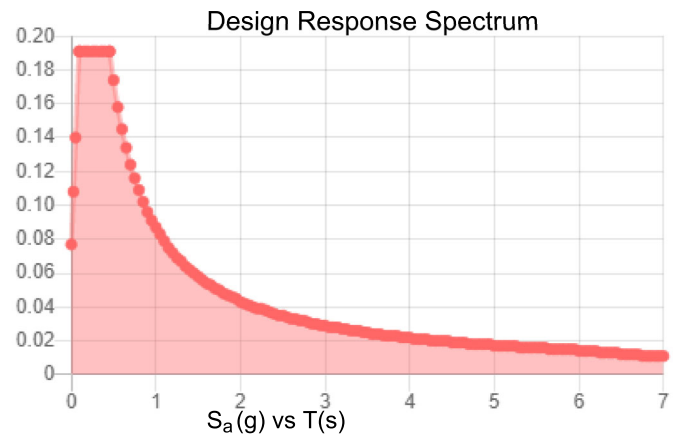
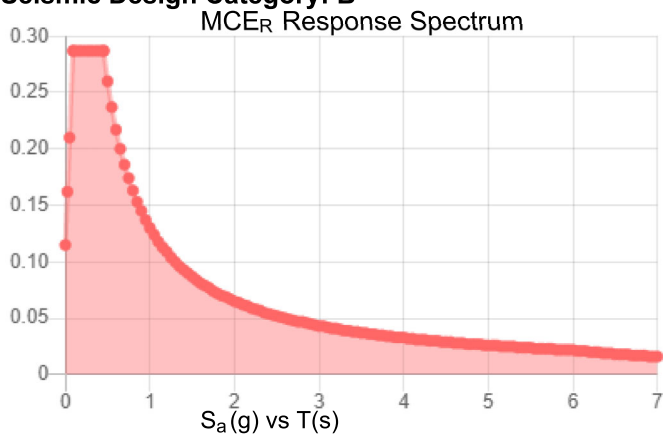
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class:

Results:

S_s :	0.179	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.096
F_v :	2.4	PGA _M :	0.153
S_{MS} :	0.287	F_{PGA} :	1.6
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.191	C_v :	0.7

Seismic Design Category: B



Data Accessed:

Thu Jun 01 2023

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.50 in.

Concurrent Temperature: 5 F

Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Thu Jun 01 2023

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Attachment 2:
Collocation Application

SRR Towers Collocation Application

Installation Type: Anchor Collocation Add to Existing

Contact: James Burgess Site Number: CTHA514A
 Email: jamesb@blueskytower.com Site Name: AT&T AVON FLAGPOLE
 Office: 617-549-2800 Submittal Date: _____
 Fax: _____ Revision Date(s): _____

PLEASE SUBMIT THIS APPLICATION VIA E-MAIL. Include Drawings, Specification Sheets, RFDS, Antenna Data Sheets

Applicant Information

Applicant Name: New Cingular Wireless PCS, LLC Primary Contact/Agent Name: Smartlink group
 Applicant Site Name: Avon-lovely st Contact/Agent Company Name: Dawonda McCary
 Applicant Site Number: CTL01257/ 100117744 Contact/Agent Number: 7087706306
 Proposed ON AIR Date: _____ Contact Email: dawonda.mccary@smartlinkgroup.com

Applicant Contact Information

Leasing Contact Name: Dawonda McCary Email: dawonda.mccary@smartlinkgroup.com Number: 7087706306
 RF Contact Name: Mohammad Minhaj Hussain Email: mh705r@att.com Number: 510-493-3024
 Construction Contact Name: _____ Email: _____ Number: _____
 Emergency Contact Name: NOC Email: _____ Number: 800.288.2020
 Account Payable Contact Name: _____ Email: _____ Number: _____

Tower Information

Latitude: 41.475632 N Structure Type: FLAGPOLE
 Longitude: -72.5318139 W Structure Height: 109'
 AMSL: 87/97/107 FT Site Address: 224 Lovely street Avon Ct 06001

EQUIPMENT SPECIFICATIONS

Summary of Work to be Completed:

EXISTING CONDITIONS - List all installed equipment prior to proposed modification. If this is a new installation, proceed to FINAL CONFIGURATION.

	SECTOR 1	SECTOR 2	SECTOR 3	SECTOR 4 (if necessary)
Current RAD Center (Ft AGL)	87/97/107	87/97/107	87/97/107	
Tower Mount Height (if different than RAD ctr)				
Mount Type (Label "Existing" if no change)	EXISTING NO CHANGE	EXISTING NO CHANGE	EXISTING NO CHANGE	
Mount Model #				
Antenna Manufacturer	POWERWAVE	POWERWAVE	POWERWAVE	
Antenna Model# (Attach Specs)	P65-16-XLH-RR	P65-16-XLH-RR	P65-16-XLH-RR	
Antenna Dimensions (WxHxD in inches)	72"x12"x6"	72"x12"x6"	72"x12"x6"	
Antenna Weight (Lbs.)	64 LBS	64 LBS	64 LBS	
Antenna Quantity	3	3	3	
Dish Manufacturer				
Dish Model# (attach Specs)				
Dish Diameter (Ft)				
Dish Weight (Lbs.)				
Dish Mount Height				
Azimuths				
Total # of Coax Lines per Sector	6	6	6	
Diameter Of Coax Cables (In)	1 5/8"	1 5/8"	1 5/8"	
Total # of Hybrid Cables per Sector				
Diameter Of Hybrid Cables (In)				
Total # of other Cables per Sector				
Diameter Of Other Cables (In)				
Quantity of RRUs per Sector	2	2	2	
Manufacturer	ERICSSON	ERICSSON	ERICSSON	
Model	RRUS-11 B12/ RRUS-11	RRUS-11 B12/ RRUS-11	RRUS-11 B12/ RRUS-11	
Dimensions	20"x17"x7"	20"x17"x7"	20"x17"x7"	
Weight (Lbs.)	50.7 LBS	50.7 LBS	50.7 LBS	
Quantity of TMAs per Sector	3	3	3	
Manufacturer	POWERWAVE	POWERWAVE	POWERWAVE	
Model	TT19-08BP111-001	TT19-08BP111-001	TT19-08BP111-001	
Dimensions	9.8"x6.6X5.3"	9.8"x6.6X5.3"	9.8"x6.6X5.3"	
Weight (Lbs.)	16LBS	16LBS	16LBS	
Quantity of Surge Arrestors per Sector				
Manufacturer				
Model				
Antenna Model & Quantity to be Removed per Sector (if Applicable)	(2) P65-16-XLH-RR	(2) P65-16-XLH-RR	(2) P65-16-XLH-RR	
RRU Model & Quantity to be Removed per Sector (if Applicable)	(2) RRUS-11 B12/ RRUS-11	(2) RRUS-11 B12/ RRUS-11	(2) RRUS-11 B12/ RRUS-11	
Line/Cable Type, Size & Quantity to be Removed (if Applicable)				
List Any Other Equipment to be Removed (if Applicable)	(3) TT19-08BP111-001	(3) TT19-08BP111-001	(3) TT19-08BP111-001	

FINAL CONFIGURATION - List all installed equipment after proposed modification or initial installation.

	SECTOR 1	SECTOR 2	SECTOR 3	SECTOR 4 (if necessary)
Current/Proposed RAD Center (Ft AGL)	85/95/105	85/95/105	85/95/105	
Tower Mount Height (if different than RAD ctr)				
Mount Type (Label "Existing" if no change)	EXISTING NO CHANGE	EXISTING NO CHANGE	EXISTING NO CHANGE	
Mount Model #				
Antenna Manufacturer	CCI/ POWERWAVE	CCI/ POWERWAVE	CCI/ POWERWAVE	
Antenna Model# (Attach Specs)	5R-BU6DA/ TPA65R-BU6DA-K/P65-16-XLH	5R-BU6DA/ TPA65R-BU6DA-K/P65-16-XLH	5R-BU6DA/ TPA65R-BU6DA-K/P65-16-XLH	
Antenna Dimensions (WxHxD in inches)	2"x21"x7.8"/71.2"x20"x7.7"/72"x12"	2"x21"x7.8"/71.2"x20"x7.7"/72"x12"	2"x21"x7.8"/71.2"x20"x7.7"/72"x12"	
Antenna Weight (Lbs.)	60.2LBS/69LBS/65LBS	60.2LBS/69LBS/65LBS	60.2LBS/69LBS/64LBS	
Antenna Quantity	3	3	3	
Dish Manufacturer				
Dish Model# (attach Specs)				
Dish Diameter (Ft)				
Dish Weight (Lbs.)				
Dish Mount Height				
Azimuths				

Total # of Coax Lines per Sector	8	8	8
Diameter Of Coax Cables (In)	1 5/8"	1 5/8"	1 5/8"
Total # of Hybrid Cables per Sector			
Diameter Of Hybrid Cables (In)			
Total # of other Cables per Sector			
Diameter Of Other Cables (In)			
Quantity of RRU's per Sector			
Manufacturer			
Model			
Quantity of TMAs per Sector	4	4	4
Manufacturer			
Model	(2)TMABPD7823VG12A(2)TMA2093F02V1-1D	(2)TMABPD7823VG12A (2)TMA2093F02V1-1D	(2)TMABPD7823VG12A(2)TMA2093F02V1-1D
Quantity of Surge Arrestors per Sector	16	16	16
Manufacturer			
Model	(12) @ 105'6" & (4) @ 95'6" - TSXDC-4310FM	(12) @ 105'6" & (4) @ 95'6" - TSXDC-4310FM	(12) @ 105'6" & (4) @ 95'6" - TSXDC-4310FM
Transmit Frequency (MHz)			
Receive Frequency (MHz)			
Antenna Gain (Db)			
Type of Technology	LTE 3C	LTE 3C	LTE 3C
TX Power Output			
ERP (Watts)			
Electric Service Required (Amps/Volts)			

GROUND SPACE REQUIREMENTS

Existing Lease Area:	DIMS: L(ft) 10	W(ft) 16	OR	160	Square footage
New/Add 'l Lease Area being requested:	DIMS: L(ft)	W(ft)	OR		Square footage
Shelter:	DIMS: L(ft)	W(ft)	H(ft)		
Concrete Pad for Shelter/Cabinets:	DIMS: L(ft)	W(ft)			

POWER REQUIREMENTS

Power Provided by:	Electrical Service Provider:	Electrical Service Telephone Number:
Average Monthly Power Consumption:	KWH units	
Is a multi-tenant meter rack present:	Yes	How many, if any, empty meter banks are present:
Telco/Interconnect Requirements:	POTS <input type="checkbox"/>	T1 <input type="checkbox"/>
Fiber Provider:	MICROWAVE <input type="checkbox"/>	FIBER OPTIC <input checked="" type="checkbox"/>

BACK-UP POWER INFORMATION

Generator Required:	Generation Location:	Fuel Type:
Generator Ground Space Requirement: DIMS: L(ft)	W(ft)	H(ft)
BST Generator:	Generator Owner:	Shared Generator Peak Usage: KW
Generator Capacity: KW	Generator Make:	Generator Model:
Fuel Tank Location:	Fuel Tank Size: DIMS: L(ft)	W(ft)
Pad for Fuel Tank (if required)	DIMS: L(ft)	W(ft)
Comments:		

Comments: List any pertinent information that was not included above.

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING LIGHT POLE:

- INSTALL NEW AT&T ANTENNAS: OPA65R-BU6DA @ POS. 1 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL NEW AT&T ANTENNAS: TPA65R-BU6DA-K @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL NEW AT&T TMA: TMA2093F02V1-1D (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- INSTALL NEW AT&T TMA: TMABPD7823VG12A (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- INSTALL NEW 2x3 COAX PORT
- INSTALL NEW (6) LINES OF 1-5/8" COAX

ITEMS TO BE MOUNTED IN EQUIPMENT LOCATION:

- INSTALL 1x6651+XCEDE CABLE
- FINAL = 1x6630/1xXMU/1x6651+XCEDE CABLE
- INSTALL NEW AT&T SURGE ARRESTOR: TSXDC-4310FM (TYP. OF 16 PER SECTOR, TOTAL OF 48).
- INSTALL NEW AT&T DIPLEXER: CBC426-DS-43 (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- INSTALL NEW AT&T DIPLEXER: CTX41727-DS-43 (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- INSTALL RRUS-4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- INSTALL RRUS-8843 B2/B66A (1900/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- INSTALL RRUS-4449 B5/B12 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- INSTALL COMPONENT: K SBT 782-11055 (TYP. OF 4 PER SECTOR, TOTAL OF 12)
- INSTALL COMPONENT: APTDC-BDFDM-DB (TYP. OF 4 PER SECTOR, TOTAL OF 12)

ITEMS TO BE REMOVED:

- DECOMMISSION EXISTING AT&T ANTENNA: P65-16-XLH-RR (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- DECOMMISSION EXISTING AT&T SURGE ARRESTOR: APTDC-BDFDM-DBW (TOTAL OF 6).
- DECOMMISSION EXISTING AT&T DIPLEXER: CM1007-DBPXBC-003 (TOTAL OF 18).
- DECOMMISSION EXISTING AT&T TMA: TT19-08BP111-001 (TOTAL OF 6).
- DECOMMISSION EXISTING AT&T TMA: DTMAP0721VG12A (TOTAL OF 3).
- DECOMMISSION EXISTING AT&T RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- DECOMMISSION EXISTING AT&T 850 RRUS-11 (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO REMAIN:

- (3) ANTENNAS, (18) COAX

RFDS: FINAL APPROVED V5 RFDS 5/22/2023

SITE ADDRESS: 224 LOVELY STREET
AVON, CT 06001

LATITUDE: 41.7989778° N, 41° 47' 56.32008" N

LONGITUDE: 72.8883722° W, 72° 53' 18.13992" W

TYPE OF SITE: STEALTH UNIPOLE / INDOOR EQUIPMENT

STRUCTURE HEIGHT: 109'-6"±

RAD CENTER: 105'-6"±, 95'-6"±, 85'-6"±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CTL01257

SITE NAME: AVON LOVELY STREET

FA CODE: 10117744

PACE ID: MRCTB062159, MRCTB062245, MRCTB062255, MRCTB062298, MRCTB062276

PROJECT: LTE NEXT CARRIER, LTE 3C, 5G NR RADIO, 5G NR 1DR-1, 5G NR SOFTWARE RADIO, 5G NR 1SR 1DR-2, ANTENNA MODS, 4TXRX SOFTWARE RETROFIT, 2023 UPGRADE

ISSUED FOR PERMITTING

VICINITY MAP

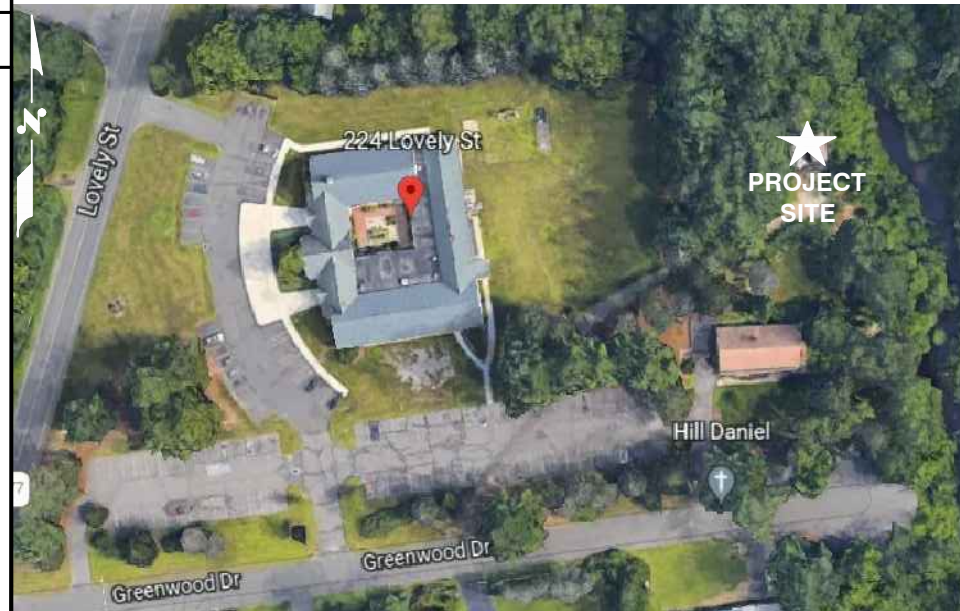
DIRECTIONS TO SITE:
HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. 0.3 MI TURN LEFT ONTO CAPITAL BLVD. 0.3 MI TURN LEFT ONTO WEST ST. 0.3 MI TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN. 1.8 MI TAKE EXIT 22N TO MERGE ONTO CT-9 N TOWARD NEW BRITAIN. 11.0 MI TAKE EXIT 32 ON THE LEFT TO MERGE ONTO I-84 W TOWARD WATERBURY. 1.2 MI TAKE EXIT 39 TOWARD CT-4-FARMINGTON. 0.4 MI MERGE ONTO STATE HWY 508. 0.6 MI SLIGHT LEFT ONTO CT-4 WEST. 4.9 MI TURN RIGHT ONTO CT-177 NORTH-CT-4 WEST-MAIN ST.

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	2
GN-1	GENERAL NOTES	2
A-1	COMPOUND PLAN	2
A-2	EQUIPMENT PLANS	2
A-3	ANTENNA LAYOUT PLANS	2
A-4	ELEVATION	2
A-5	DETAILS	2
A-6	DETAILS	2
G-1	GROUNDING DETAILS	2
RF-1	RF PLUMBING DIAGRAM	2



72 HOURS



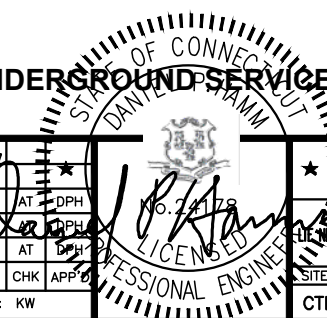
CALL BEFORE YOU DIG



CALL TOLL FREE 1-800-922-4455

OR CALL 811

UNDERGROUND SERVICE ALERT



SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET

224 LOVELY STREET
AVON, CT 06001
HARTFORD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
2	12/28/23	ISSUED FOR PERMITTING	SG	AT	DPH
1	12/12/22	ISSUED FOR REVIEW	AS	AT	DPH
0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: KW

SITE NUMBER	DRAWING NUMBER	REV
CTL01257	T-1	2

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – SMARTLINK
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. **APPLICABLE BUILDING CODES:**
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: IBC 2021 WITH 2022 CT STATE BUILDING CODE AMENDMENTS
ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

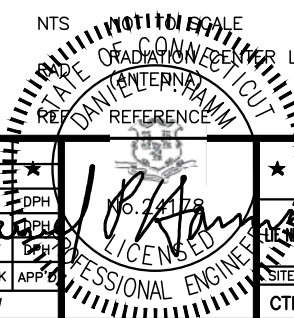
AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	REF	REFERENCE	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING				



TEP
NORTHEAST
 TEP OPGCO, LLC.
 45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
 TEL: (978) 557-5553

smartlink
 SMARTLINK
 1997 ANNAPOLIS EXCHANGE PKWY SUITE 200
 ANNAPOLIS, MD 21401

SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET
 224 LOVELY STREET
 AVON, CT 06001
 HARTFORD COUNTY

AT&T
 500 ENTERPRISE DRIVE, SUITE 3A
 ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	12/28/23	ISSUED FOR PERMITTING	SG	AT	DPH
1	12/12/22	ISSUED FOR REVIEW	AS	AT	DPH
0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH

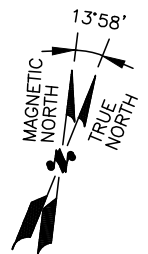
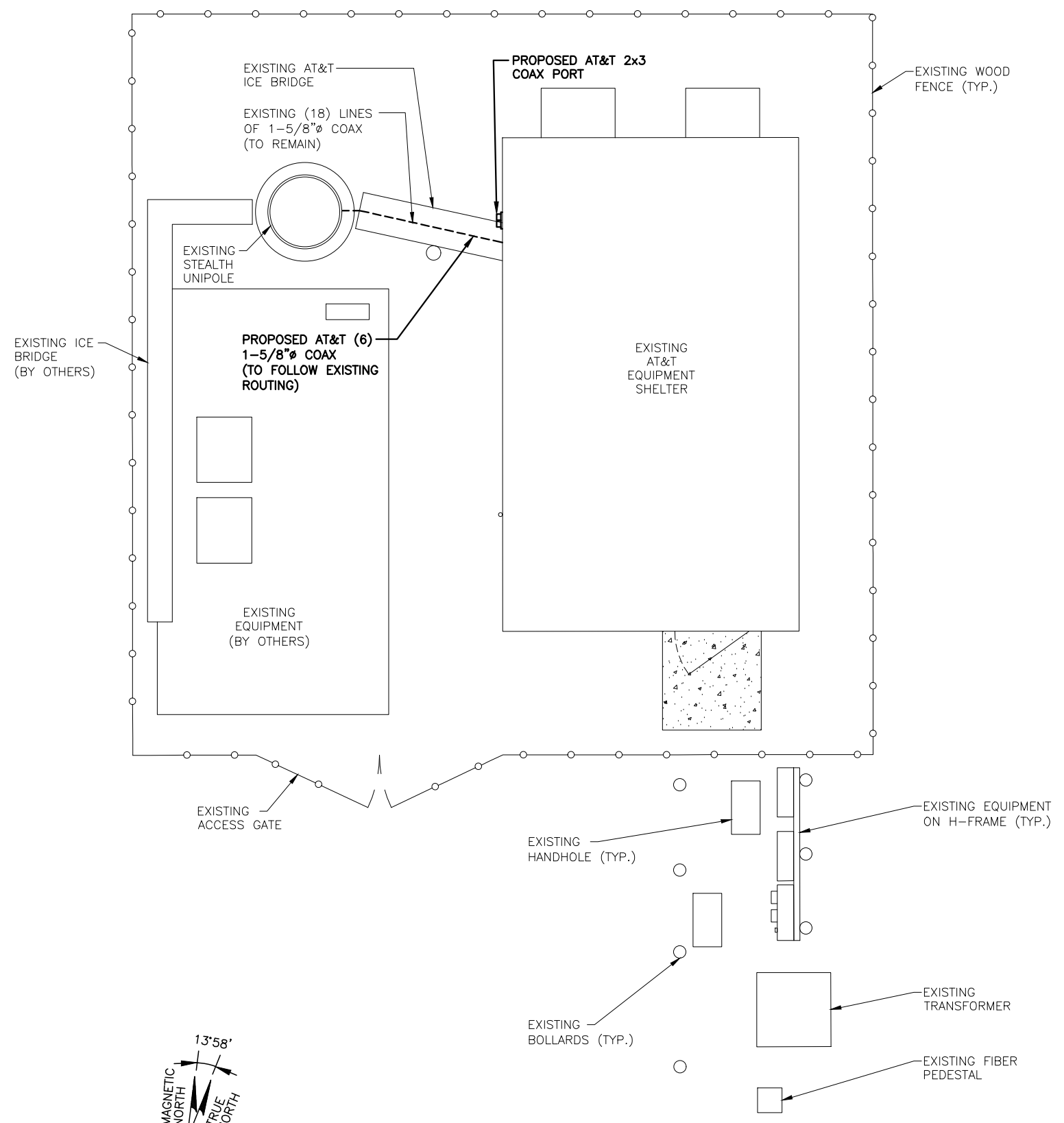
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AT&T
 GENERAL NOTES
 ELITE NEXT CARRIER, LTE 3C, 5G NR RADIO, 5G NR 10R-1, 5G NR SOFTWARE RADIO, 5G NR 1SR 10R-2, ANTENNA MODS, 4TDRX SOFTWARE RETROFIT, 2023 UPGRADE
 SITE NUMBER: CTL01257 DRAWING NUMBER: GN-1 REV: 2

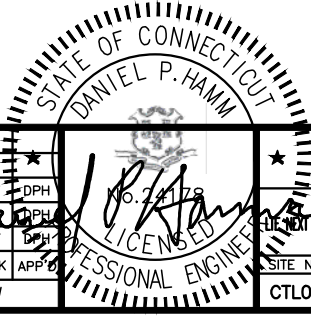
NOTE:
GC TO VERIFY ADDITIONAL COAX FIT PRIOR TO CONSTRUCTION.

NOTE:
REFER TO FINAL-APPROVED V5 RFDS DATED 05/22/23 FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



COMPOUND PLAN
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"
1
A-1



SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET

224 LOVELY STREET
AVON, CT 06001
HARTFORD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
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1	12/12/22	ISSUED FOR REVIEW	AS	AT	DPH
0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: KW

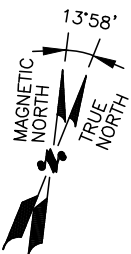
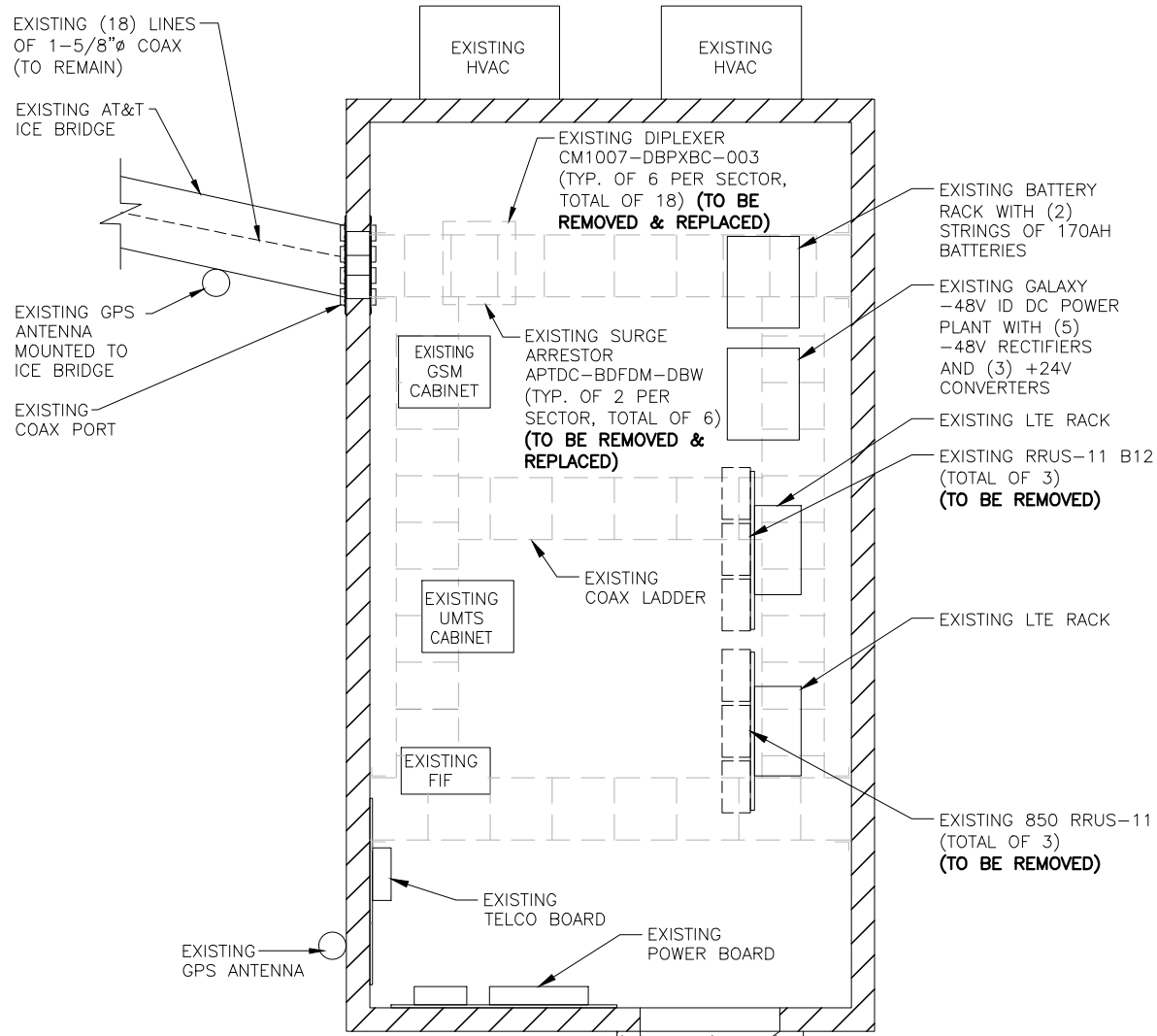
SITE NUMBER	DRAWING NUMBER	REV
CTL01257	A-1	2

AT&T
COMPOUND PLAN
5G NR CARRIER, LTE 3C, 5G NR RADIO, 5G NR TDR-1, 5G NR SOFTWARE RADIO, 5G NR 1SR TDR-2, ANTENNA MODS, 4TDRX SOFTWARE RETROFIT, 2023 UPGRADE

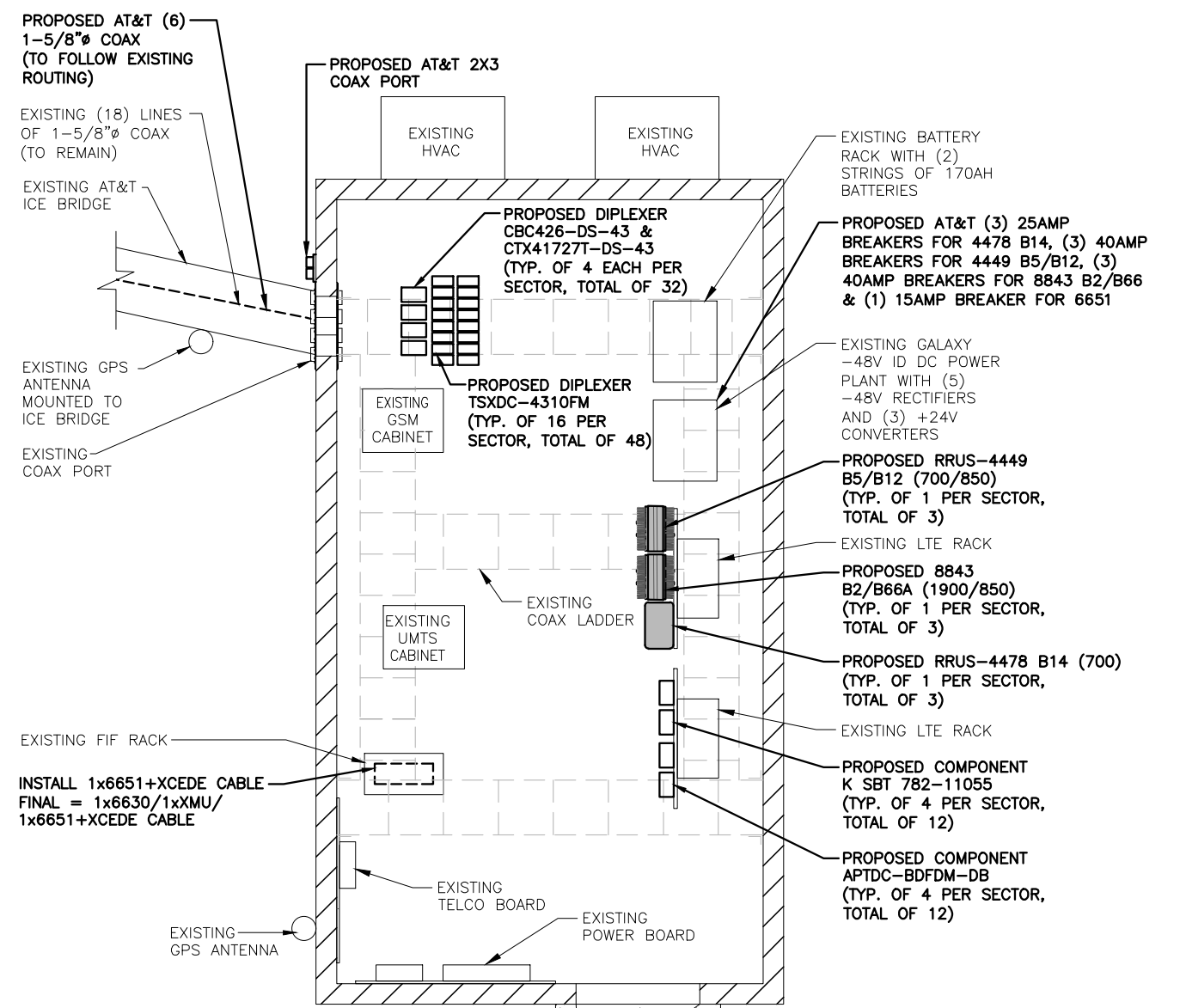
NOTE:
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NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
REFER TO FINAL-APPROVED V5 RFDS DATED 05/22/23 FOR FINAL ANTENNA SETTINGS.



EXISTING EQUIPMENT PLAN 1
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
A-2



PROPOSED EQUIPMENT PLAN
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
A-2

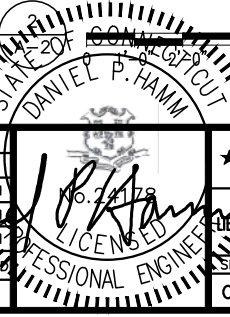


SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET

224 LOVELY STREET
AVON, CT 06001
HARTFORD COUNTY



2	12/28/23	ISSUED FOR PERMITTING	SG	AT	DPH
1	12/12/22	ISSUED FOR REVIEW	AS	AT	DPH
0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: KW		

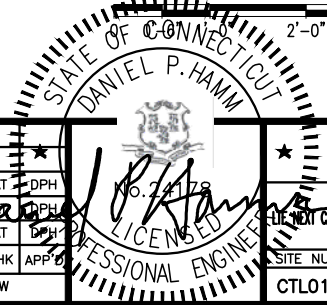
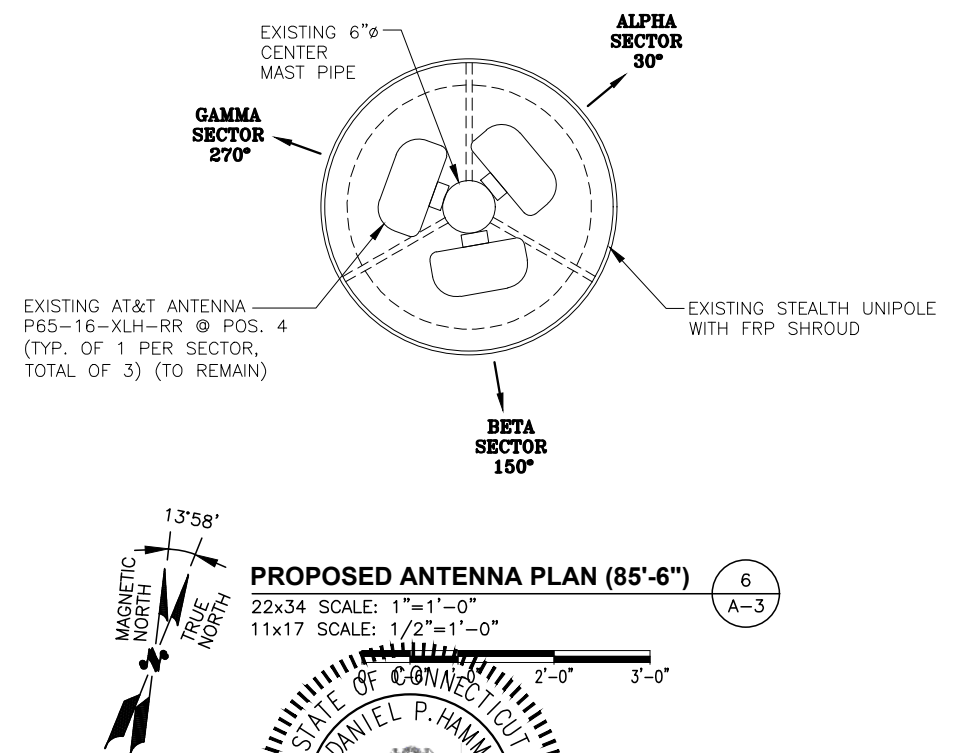
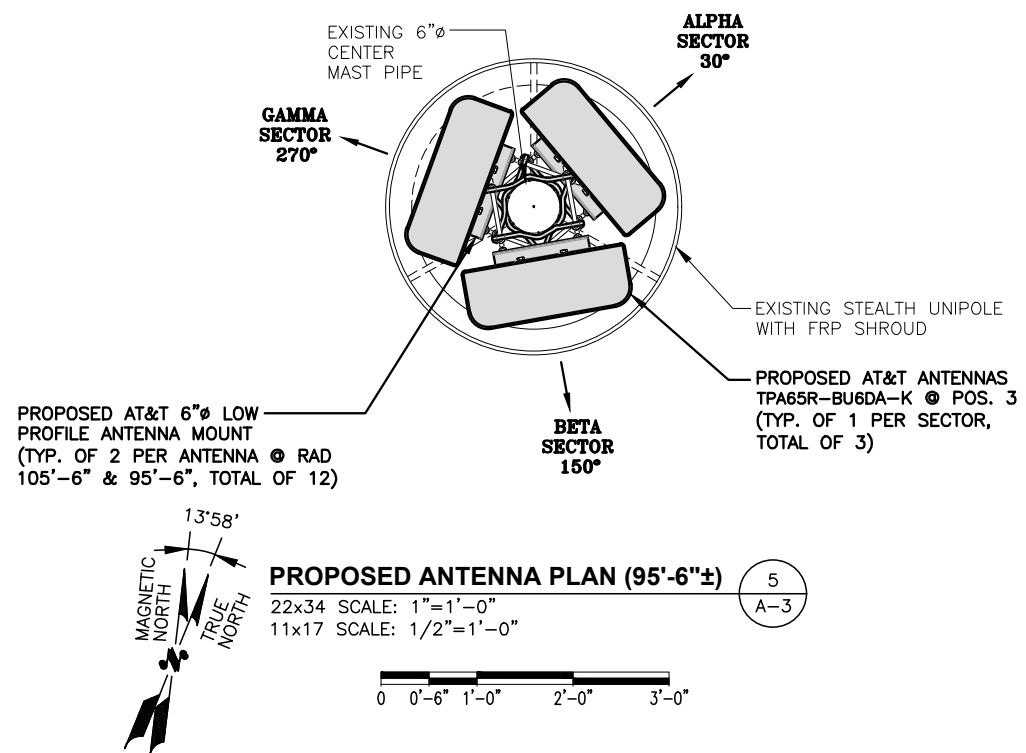
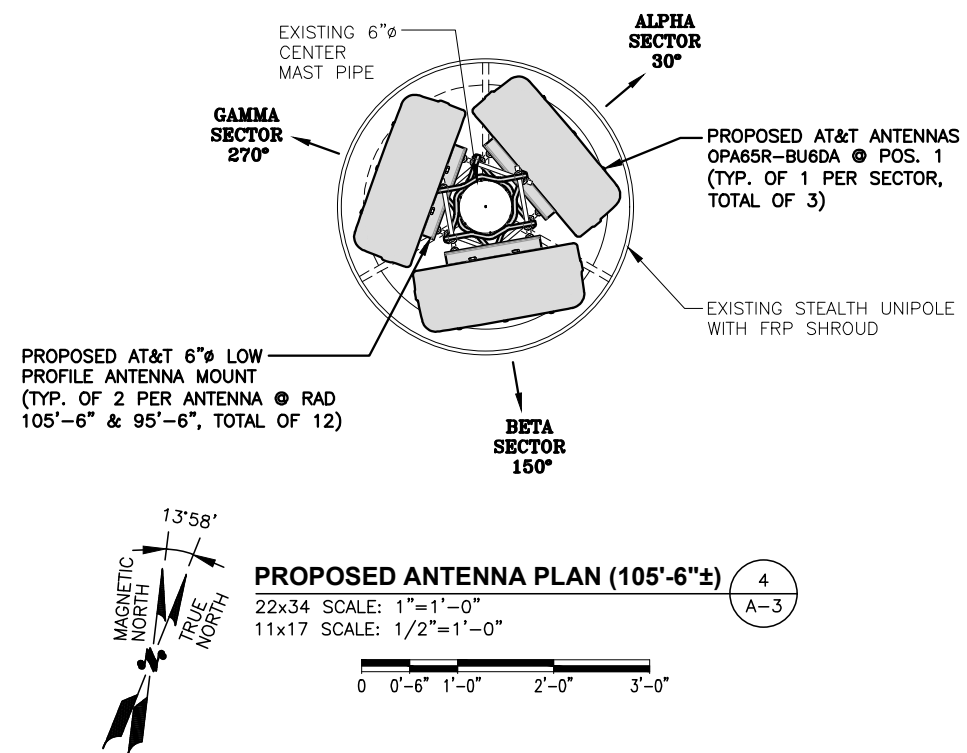
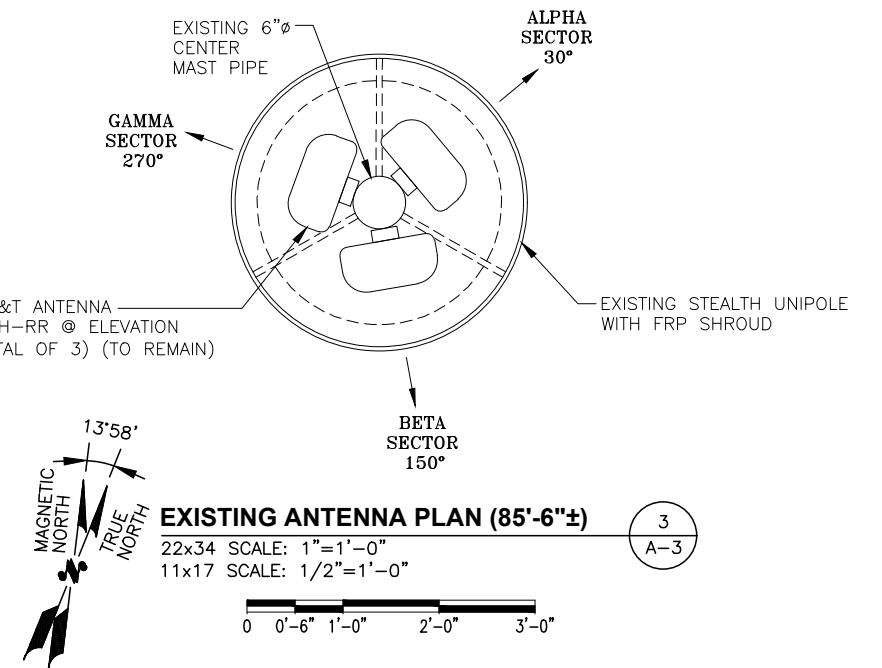
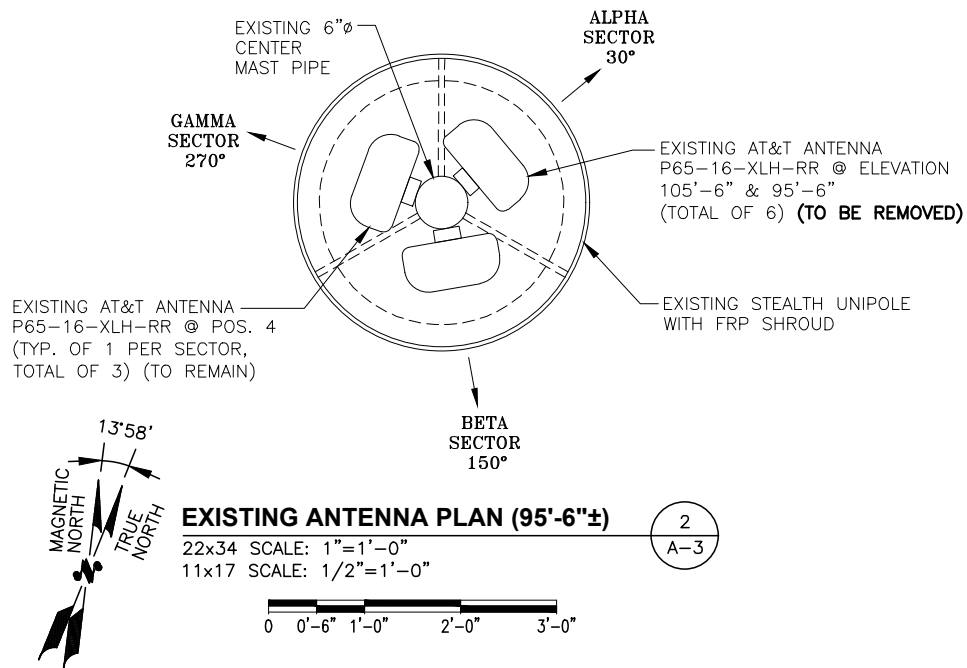
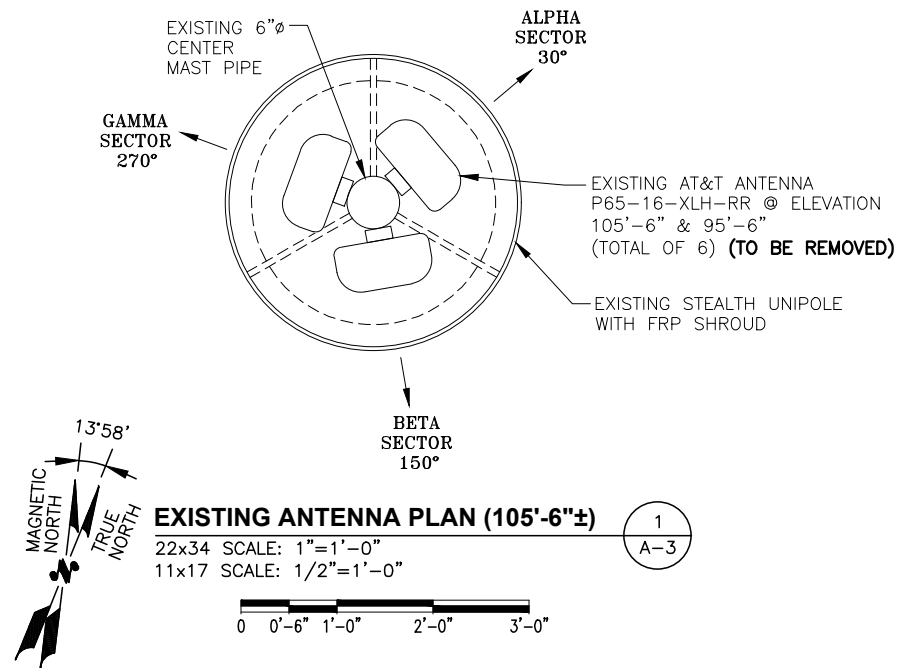


AT&T	
EQUIPMENT PLANS	
5G NR 10R-1, 5G NR SOFTWARE RADIO, 5G NR 1SR 10R-2, ANTENNA MODS, 4TRX SOFTWARE RETROFIT, 2023 UPGRADE	
SITE NUMBER	DRAWING NUMBER
CTL01257	A-2
	2

NOTE:
GC TO VERIFY ADDITIONAL COAX FIT PRIOR TO CONSTRUCTION.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
REFER TO FINAL-APPROVED V5 RFDS DATED 05/22/23 FOR FINAL ANTENNA SETTINGS.



SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET

224 LOVELY STREET
AVON, CT 06001
HARTFORD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: KW

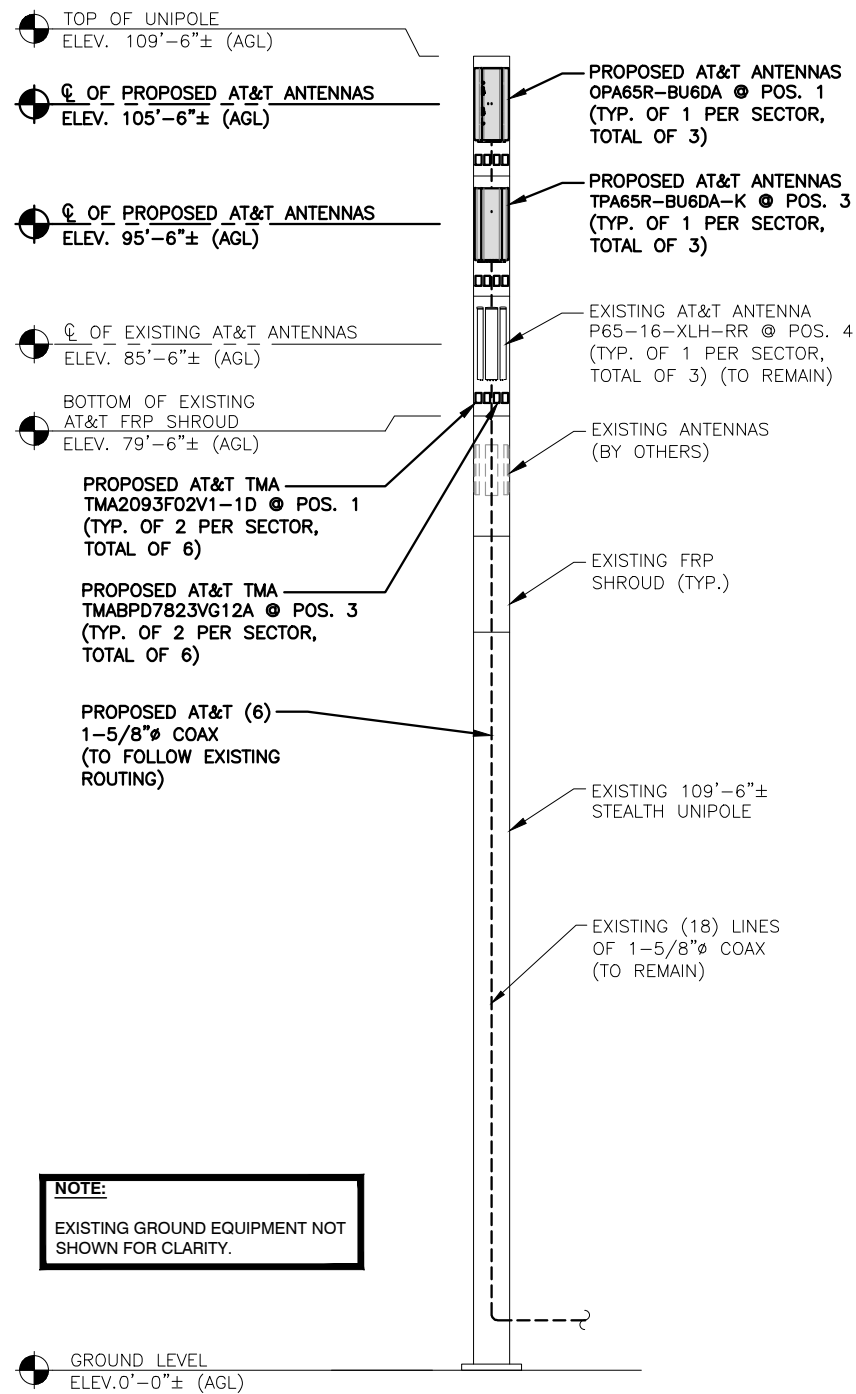
AT&T		
SITE NUMBER	DRAWING NUMBER	REV
CTL01257	A-3	2

ANTENNA LAYOUT PLANS
5G NR RADIO, 5G NR 10R-1, 5G NR SOFTWARE RADIO, 5G NR 1SR
10R-2, ANTENNA MODS, 4TDRX SOFTWARE RETROFIT, 2023 UPGRADE

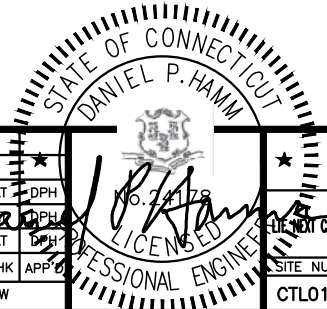
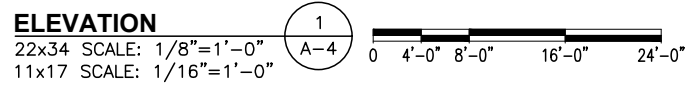
NOTE:
GC TO VERIFY ADDITIONAL COAX FIT PRIOR TO CONSTRUCTION.

NOTE:
REFER TO FINAL-APPROVED V5 RFDS DATED 05/22/23 FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

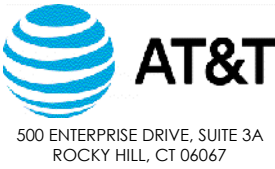


NOTE:
EXISTING GROUND EQUIPMENT NOT SHOWN FOR CLARITY.



SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET

224 LOVELY STREET
AVON, CT 06001
HARTFORD COUNTY



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0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: KW

SITE NUMBER		DRAWING NUMBER		REV
CTL01257		A-4		2

AT&T

ELEVATION
5G NR CARRIER, LTE 3C, 5G NR RADIO, 5G NR 10R-1, 5G NR SOFTWARE RADIO, 5G NR 1SR 10R-2, ANTENNA MODS, 4TDRX SOFTWARE RETROFIT, 2023 UPGRADE

ANTENNA SCHEDULE											
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA Ø HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	SURGE ARRESTOR
A1	PROPOSED	LTE 700 BC/5G 850/PCS	OPA65R-BU6DA	71.2"x21"x7.8"	105'-6"±	30°	(P)(2) TMA2093F02V1-1D (P)(4) CBC426-DS-43	(P)(1)RRUS-4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (1900/850) (P)(2) K SBT 782-11055 (P)(2) APTDC-BDFDM-DB	17.9"x13.19"x9.4" 14.9"x13.2"x10.9" - -	(E)(6) 1 5/8"Ø COAX CABLES (P)(2) 1 5/8"Ø COAX CABLES	(P)(12) TSXDC-4310FM
A2	-	-	-	-	-	-	-	-	-	-	-
A3	PROPOSED	LTE 700 B14/AWS	TPA65R-BU6DA-K	71.2"x21"x7.7"	95'-6"±	30°	(P)(2) TMABPD7823VG12A (P)(4) CTX41727T-DS-43	(P)(1)RRUS-4478 B14 (700) (P)(2) K SBT 782-11055 (P)(2) APTDC-BDFDM-DB	18.1"x13.4"x8.26" - -	-	(P)(4) TSXDC-4310FM
A4	EXISTING	LTE	P65-16-XLH-RR	72"x12"x6"	85'-6"±	30°	-	-	-	-	-
B1	PROPOSED	LTE 700 BC/5G 850/PCS	OPA65R-BU6DA	71.2"x21"x7.8"	105'-6"±	150°	(P)(2) TMA2093F02V1-1D (P)(4) CBC426-DS-43	(P)(1)RRUS-4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (1900/850) (P)(2) K SBT 782-11055 (P)(2) APTDC-BDFDM-DB	17.9"x13.19"x9.4" 14.9"x13.2"x10.9" - -	(E)(6) 1 5/8"Ø COAX CABLES (P)(2) 1 5/8"Ø COAX CABLES	(P)(12) TSXDC-4310FM
B2	-	-	-	-	-	-	-	-	-	-	-
B3	PROPOSED	LTE 700 B14/AWS	TPA65R-BU6DA-K	71.2"x21"x7.7"	95'-6"±	150°	(P)(2) TMABPD7823VG12A (P)(4) CTX41727T-DS-43	(P)(1)RRUS-4478 B14 (700) (P)(2) K SBT 782-11055 (P)(2) APTDC-BDFDM-DB	18.1"x13.4"x8.26" - -	-	(P)(4) TSXDC-4310FM
B4	EXISTING	LTE	P65-16-XLH-RR	72"x12"x6"	85'-6"±	150°	-	-	-	-	-
C1	PROPOSED	LTE 700 BC/5G 850/PCS	OPA65R-BU6DA	71.2"x21"x7.8"	105'-6"±	270°	(P)(2) TMA2093F02V1-1D (P)(4) CBC426-DS-43	(P)(1)RRUS-4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (1900/850) (P)(2) K SBT 782-11055 (P)(2) APTDC-BDFDM-DB	17.9"x13.19"x9.4" 14.9"x13.2"x10.9" - -	(E)(6) 1 5/8"Ø COAX CABLES (P)(2) 1 5/8"Ø COAX CABLES	(P)(12) TSXDC-4310FM
C2	-	-	-	-	-	-	-	-	-	-	-
C3	PROPOSED	LTE 700 B14/AWS	TPA65R-BU6DA-K	71.2"x21"x7.7"	95'-6"±	270°	(P)(2) TMABPD7823VG12A (P)(4) CTX41727T-DS-43	(P)(1)RRUS-4478 B14 (700) (P)(2) K SBT 782-11055 (P)(2) APTDC-BDFDM-DB	18.1"x13.4"x8.26" - -	-	(P)(4) TSXDC-4310FM
C4	EXISTING	LTE	P65-16-XLH-RR	72"x12"x6"	85'-6"±	270°	-	-	-	-	-

NOTE:
GC TO VERIFY ADDITIONAL COAX
FIT PRIOR TO CONSTRUCTION.

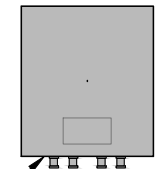
NOTE:
REFER TO FINAL-APPROVED V5 RFDS
DATED 05/22/23 FOR FINAL ANTENNA
SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF
THE EXISTING STRUCTURES TO
SUPPORT THE PROPOSED EQUIPMENT
SHALL BE DETERMINED PRIOR TO
CONSTRUCTION.

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
(P)(3)	4478 B14 (700)	18.1"x13.4"x8.26"
(P)(3)	8843 B2/B66A (1900/850)	14.9"x13.2"x10.9"
(P)(3)	4449 B5/B12 (700/850)	17.9"x13.19"x9.44"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRU
FREQUENCY AND
MODEL NUMBER

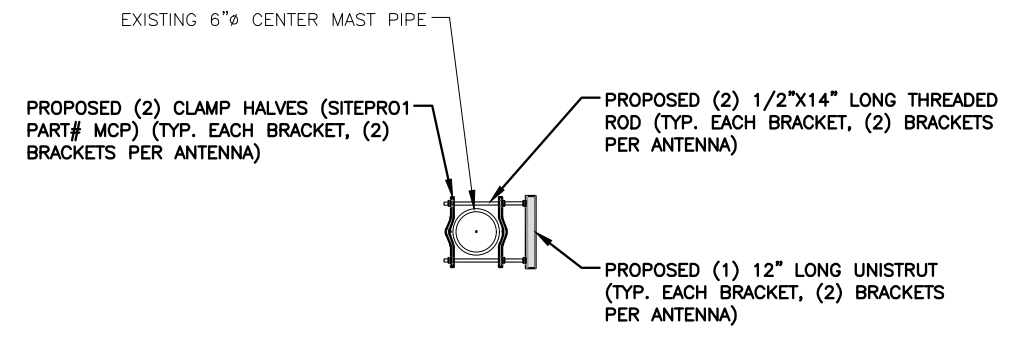


PROPOSED RRU REFER TO THE
FINAL RFDS AND CHART FOR
QUANTITY, MODEL AND DIMENSIONS

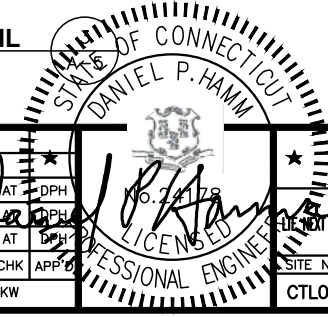
NOTE:
MOUNT PER MANUFACTURER'S
SPECIFICATIONS.

PROPOSED RRUS DETAIL 2
A-5

FINAL ANTENNA SCHEDULE 1
SCALE: N.T.S. A-5

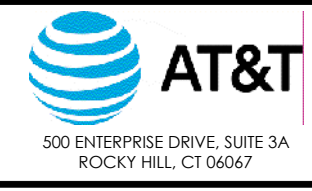


ANTENNA MOUNTING BRACKET DETAIL
SCALE: N.T.S.



SITE NUMBER: CTL01257
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AVON, CT 06001
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SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: KW

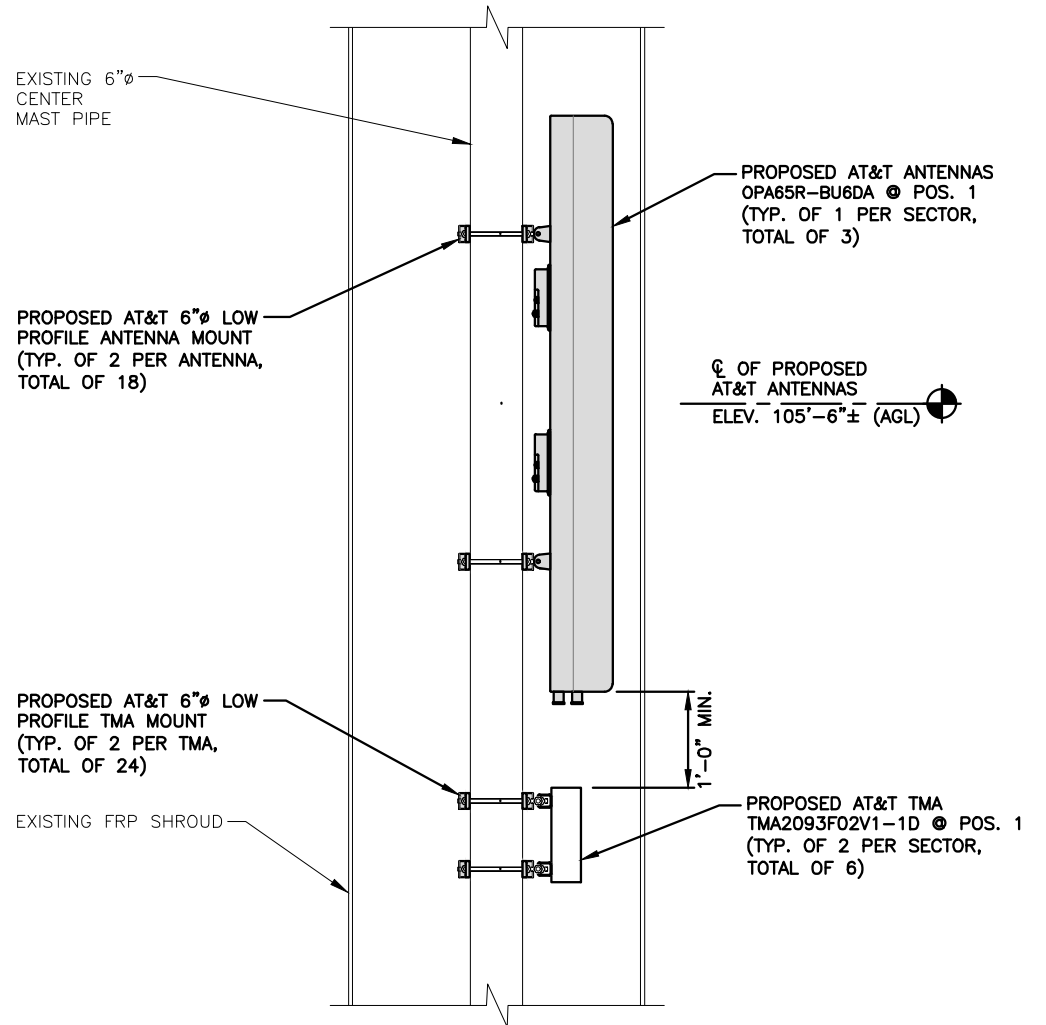
SITE NUMBER	DRAWING NUMBER	REV
CTL01257	A-5	2

AT&T
DETAILS
SITE-NEXT CARRIER, LTE 3C, 5G NR RADIO, 5G NR TDR-1, 5G NR SOFTWARE RADIO, 5G NR 1SR
TDR-2, ANTENNA MODS, 4TDRX SOFTWARE RETROFIT, 2023 UPGRADE

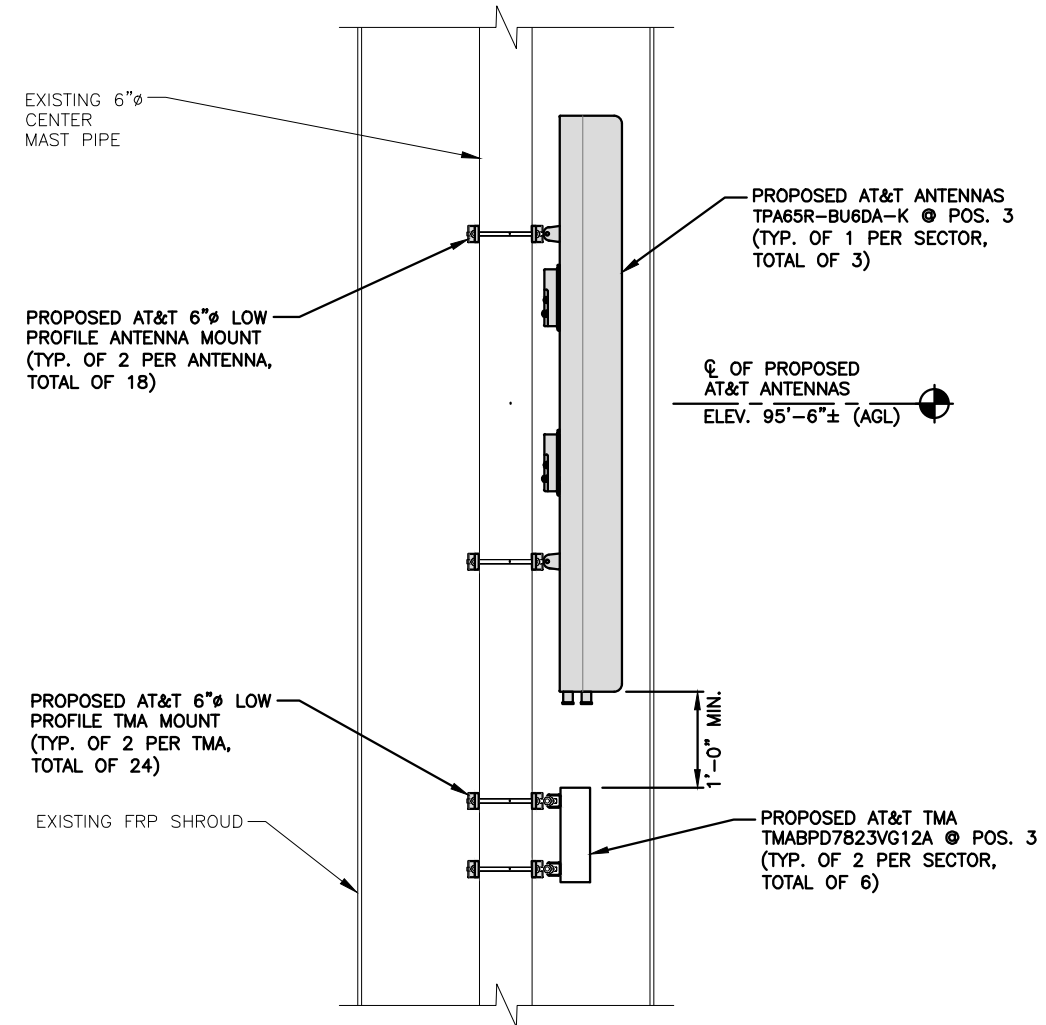
NOTE:
GC TO VERIFY ADDITIONAL COAX FIT PRIOR TO CONSTRUCTION.

NOTE:
REFER TO FINAL-APPROVED V5 RFDS DATED 05/22/23 FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



ANTENNA MOUNTING DETAIL 1
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



ANTENNA MOUNTING DETAIL 2
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



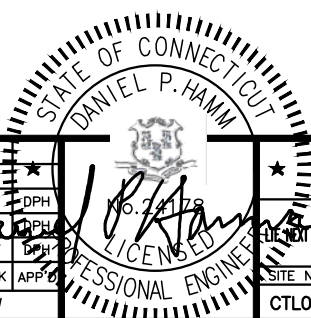
SITE NUMBER: CTL01257
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AVON, CT 06001
HARTFORD COUNTY

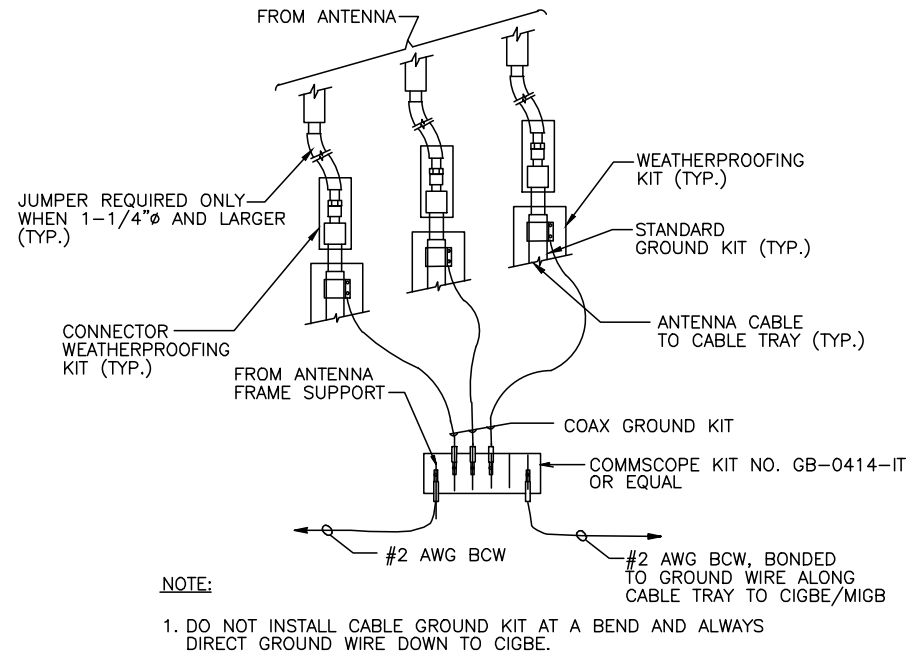


NO.	DATE	REVISIONS	BY	CHK	APP'D
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1	12/12/22	ISSUED FOR REVIEW	AS	AT	DPH
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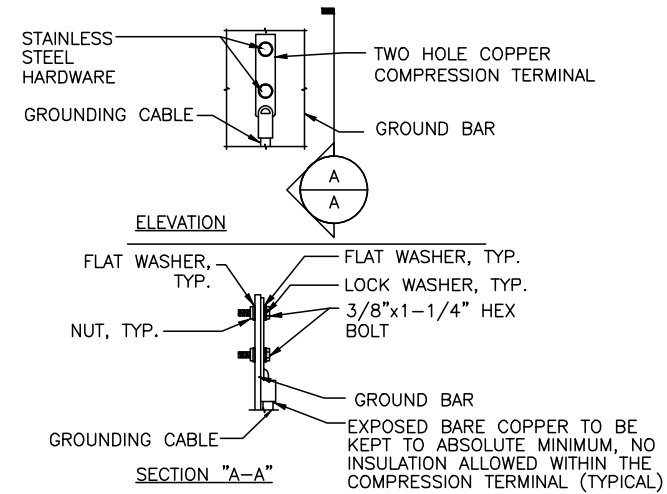
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: KW



AT&T		
DETAILS		
5G NR CARRIER, LTE 3C, 5G NR RADIO, 5G NR TDR-1, 5G NR SOFTWARE RADIO, 5G NR 1SR TDR-2, ANTENNA MODS, 4TDRX SOFTWARE RETROFIT, 2023 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CTL01257	A-6	2

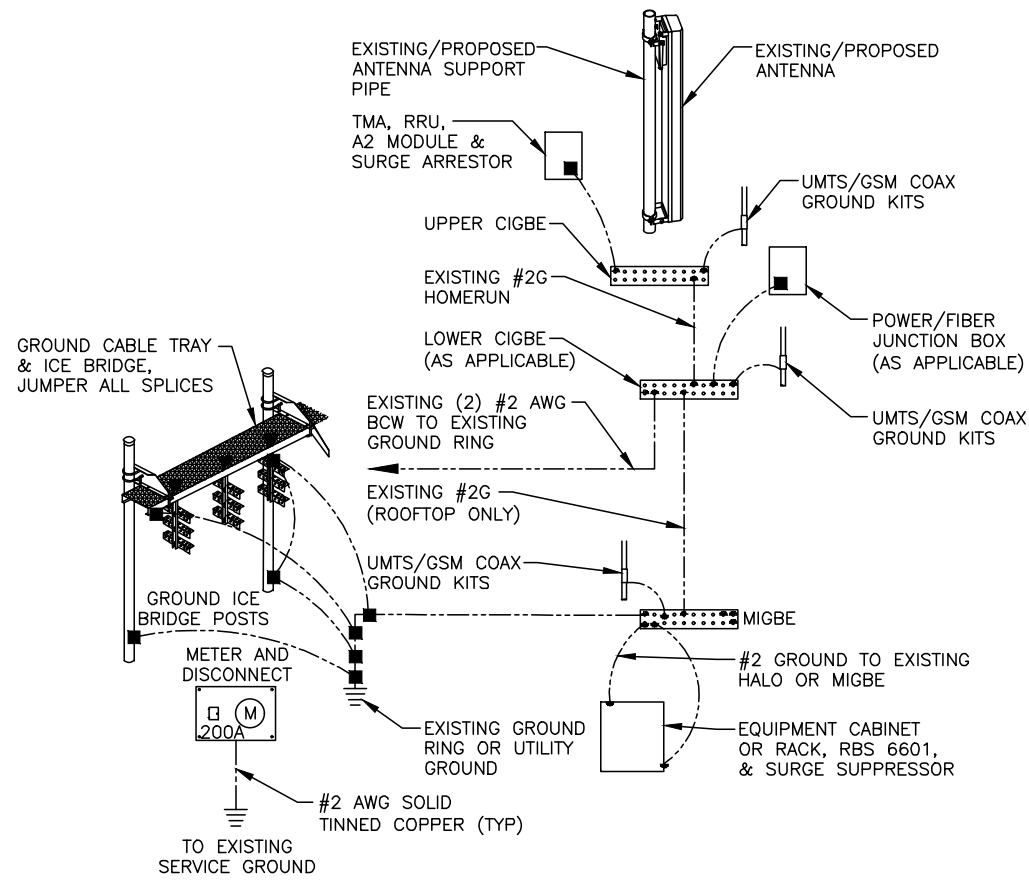


GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
SCALE: N.T.S. G-1



- NOTES:
 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
 3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL 3
SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
SCALE: N.T.S. G-1

AT&T GROUNDING STANDARDS TO BE FOLLOWED:
 ATT-TP-76416
 ATT-TP-76300
 ATT-CEM-18002
 ATT-002-290-531
 ATT-002-290-701
 ATT-CEM-23001

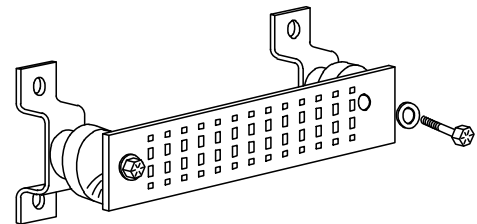
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
- +24V POWER SUPPLY RETURN BAR (#2 AWG)
- 48V POWER SUPPLY RETURN BAR (#2 AWG)
- RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)



GROUND BAR - DETAIL (AS REQUIRED)
SCALE: N.T.S.

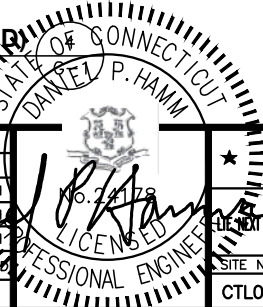


SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET

 224 LOVELY STREET
 AVON, CT 06001
 HARTFORD COUNTY



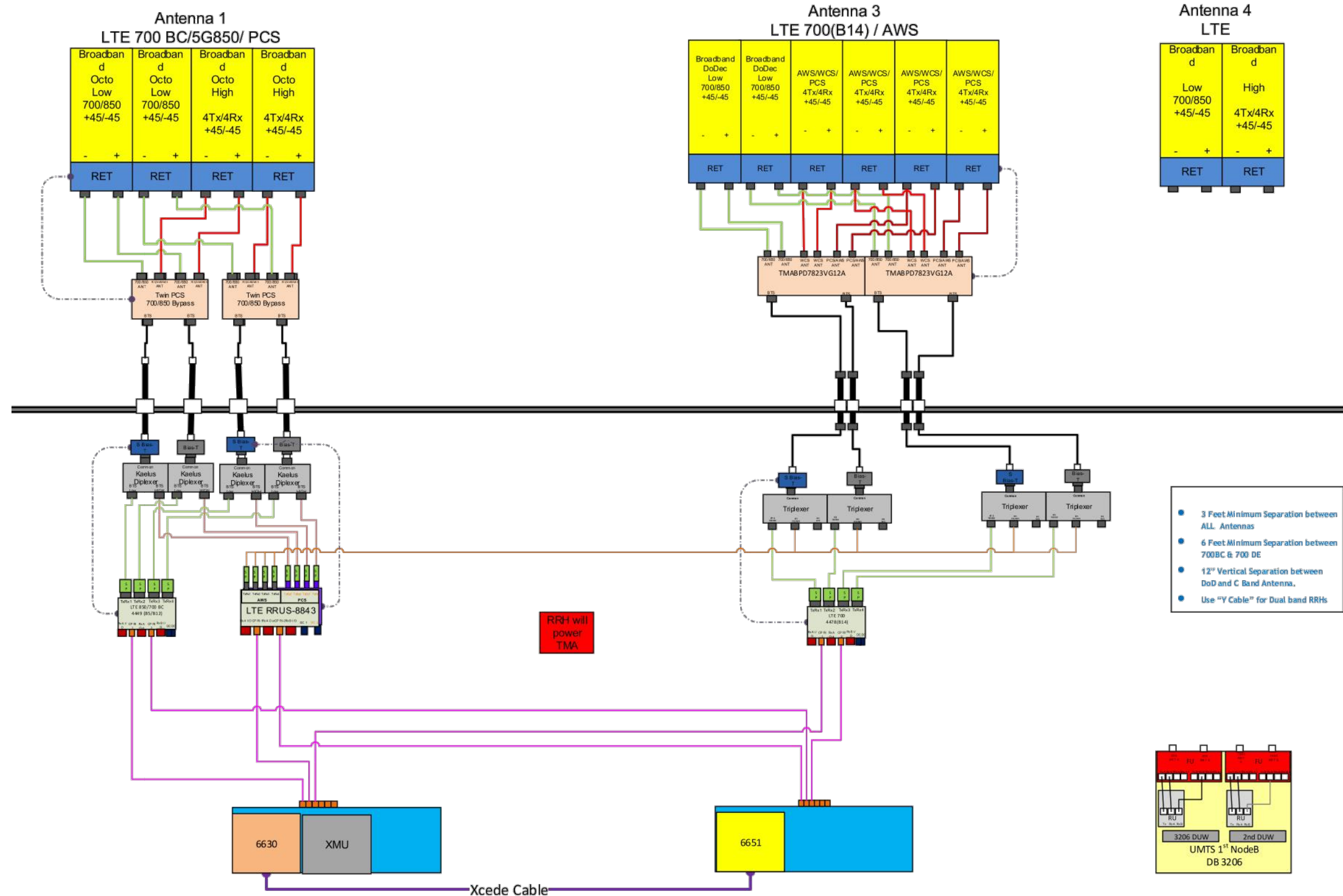
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	12/28/23	ISSUED FOR PERMITTING	SG	AT	DPH
1	12/12/22	ISSUED FOR REVIEW	AS	AT	DPH
0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH



SITE NUMBER	DRAWING NUMBER	REV
CTL01257	G-1	2

AT&T
 GROUNDING DETAILS
 ELITE-NEXT CARRIER, LTE 3C, 5G NR RADIO, 5G NR 10R-1, 5G NR SOFTWARE RADIO, 5G NR 1SR 10R-2, ANTENNA MODS, 4TDRX SOFTWARE RETROFIT, 2023 UPGRADE

FINAL APPROVED V5 RFDS 5/22/2023



RF PLUMBING DIAGRAM 1
SCALE: N.T.S. RF-1

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:
REFER TO FINAL-APPROVED V5 RFDS DATED 05/22/23 FOR FINAL ANTENNA SETTINGS.



SITE NUMBER: CTL01257
SITE NAME: AVON LOVELY STREET

224 LOVELY STREET
AVON, CT 06001
HARTFORD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
2	12/28/23	ISSUED FOR PERMITTING	SG	AT	DPH
1	12/12/22	ISSUED FOR REVIEW	JS	AT	DPH
0	11/11/22	ISSUED FOR REVIEW	KW	AT	DPH
SCALE: AS SHOWN			DESIGNED BY: AT	DRAWN BY: KW	

AT&T		
RF PLUMBING DIAGRAM		
LTE NEXT CARRIER, LTE 3C, 5G NR RADIO, 5G NR 10R-1, 5G NR SOFTWARE RADIO, 5G NR 1SR 10R-2, ANTENNA MODS, 4TXRX SOFTWARE RETROFIT, 2023 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CTL01257	RF-1	2

April 17, 2023

Emissions Analysis for Site: **CTL01257– AVON LOVELY STREET**

MobileComm Professionals, Inc was directed to analyze the proposed AT&T facility located at **224 LOVELY STREET, AVON, CT 06001**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general 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.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the 700 and 850 MHz Bands are approximately $0.467 mW/cm^2$ and $0.567 mW/cm^2$ respectively or $466.667 \mu W/cm^2$ and $566.667 \mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 2300 MHz (WCS), 3540 MHz (DoD Band) and 3840 MHz (C-Band) bands is $1 mW/cm^2$ or $1000 \mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

1. Theoretical Calculations: Methods and Procedures

MobileComm Professionals, Inc has performed theoretical modeling of the site using a software tool, RoofMaster® Version 40.12.23.2022, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

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

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

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

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

2. Antenna Inventory & Power Data

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (°)	H B W (°)	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power Per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density (μW/cm ²)	Allowable MPE (μW/cm ²)	Calculated MPE%
A	1	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	30	73	12.15	6	4	40.00	2339.48	3838.13	105.50	0.000185	466.67	0.000040
A	1	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	30	64	13.05	6	4	40.00	2878.19	4721.93	105.50	0.000088	566.67	0.000015
A	1	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	30	68	15.95	6	4	40.00	5612.03	9207.04	105.50	0.000154	1000.00	0.000015
A	2	AT&T	CCI	TPA65R-BU6D	Panel	700	LTE(FN)	30	73	12.35	6	4	40.00	2449.74	4019.02	95.50	0.000109	466.67	0.000023
A	2	AT&T	CCI	TPA65R-BU6D	Panel	2100	LTE/5G	30	66	16.25	6	4	40.00	6013.40	9865.52	95.50	0.000358	1000.00	0.000036
B	3	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	150	73	12.15	6	4	40.00	2339.48	3838.13	105.50	0.161874	466.67	0.034687
B	3	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	150	64	13.05	6	4	40.00	2878.19	4721.93	105.50	0.190736	566.67	0.033659
B	3	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	150	68	15.95	6	4	40.00	5612.03	9207.04	105.50	0.176780	1000.00	0.017678
B	4	AT&T	CCI	TPA65R-BU6D	Panel	700	LTE(FN)	150	73	12.35	6	4	40.00	2449.74	4019.02	95.50	0.193234	466.67	0.041407
B	4	AT&T	CCI	TPA65R-BU6D	Panel	2100	LTE/5G	150	66	16.25	6	4	40.00	6013.40	9865.52	95.50	0.212400	1000.00	0.021240
C	5	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	270	73	12.15	6	4	40.00	2339.48	3838.13	105.50	0.000063	466.67	0.000014
C	5	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	270	64	13.05	6	4	40.00	2878.19	4721.93	105.50	0.000053	566.67	0.000009
C	5	AT&T	CCI	OPA65R-BU6D	Panel	1900	LTE/5G	270	68	15.95	6	4	40.00	5612.03	9207.04	105.50	0.000064	1000.00	0.000006
C	6	AT&T	CCI	TPA65R-BU6D	Panel	700	LTE(FN)	270	73	12.35	6	4	40.00	2449.74	4019.02	95.50	0.000082	466.67	0.000018
C	6	AT&T	CCI	TPA65R-BU6D	Panel	2100	LTE/5G	270	66	16.25	6	4	40.00	6013.40	9865.52	95.50	0.000350	1000.00	0.000035
A	7	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	600	LTE	0	64.7	11.85	6	2	30.00	818.75	1343.23	75.00	0.000096	400.00	0.000024
A	7	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	600	5G	0	64.7	11.85	6	1	80.00	1091.67	1790.98	75.00	0.000127	400.00	0.000032
A	7	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	700	LTE	0	61.1	12.95	6	2	30.00	1054.75	1730.42	75.00	0.000051	466.67	0.000011
A	7	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	1900	LTE	0	70	14.75	6	2	60.00	3192.87	5238.19	75.00	0.000123	1000.00	0.000012
A	7	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	1900	UMTS	0	70	14.75	6	2	30.00	1596.44	2619.09	75.00	0.000061	1000.00	0.000006
A	7	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	2100	LTE	0	70	14.75	6	2	60.00	3192.87	5238.19	75.00	0.000224	1000.00	0.000022
B	8	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	600	LTE	120	64.7	11.85	6	2	30.00	818.75	1343.23	75.00	0.085981	400.00	0.021495
B	8	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	600	5G	120	64.7	11.85	6	1	80.00	1091.67	1790.98	75.00	0.114641	400.00	0.028660
B	8	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	700	LTE	120	61.1	12.95	6	2	30.00	1054.75	1730.42	75.00	0.114934	466.67	0.024629
B	8	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	1900	LTE	120	70	14.75	6	2	60.00	3192.87	5238.19	75.00	0.205542	1000.00	0.020554
B	8	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	1900	UMTS	120	70	14.75	6	2	30.00	1596.44	2619.09	75.00	0.102771	1000.00	0.010277
B	8	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	2100	LTE	120	70	14.75	6	2	60.00	3192.87	5238.19	75.00	0.154138	1000.00	0.015414
C	9	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	600	LTE	240	64.7	11.85	6	2	30.00	818.75	1343.23	75.00	0.001371	400.00	0.000343
C	9	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	600	5G	240	64.7	11.85	6	1	80.00	1091.67	1790.98	75.00	0.001828	400.00	0.000457
C	9	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	700	LTE	240	61.1	12.95	6	2	30.00	1054.75	1730.42	75.00	0.000594	466.67	0.000127
C	9	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	1900	LTE	240	70	14.75	6	2	60.00	3192.87	5238.19	75.00	0.001495	1000.00	0.000150
C	9	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	1900	UMTS	240	70	14.75	6	2	30.00	1596.44	2619.09	75.00	0.000748	1000.00	0.000075
C	9	T-Mobile	RFS	APXVAR18_43-C-NA20	Panel	2100	LTE	240	70	14.75	6	2	60.00	3192.87	5238.19	75.00	0.001299	1000.00	0.000130
																Calculated Power Density (μW/cm ²)	1.722554%	Calculated MPE%	0.2713%

Table 2: Antenna Inventory & Power Data

*NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6449 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6449 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6449 due to its similarity.

3. Compliance Summary

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

The anticipated composite MPE value for this site assuming all carriers present is 0.2713% of the allowable FCC established general public limit sampled at the ground level.

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

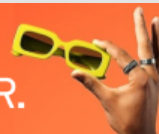


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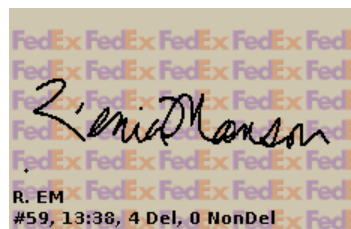
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1/4/24 4:04 AM

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Town of Avon



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SHIP DATE 1/2/24

STANDARD TRANSIT 1/4/24 before 5:00 PM

ACTUAL DELIVERY 1/4/24 at 1:35 PM

Services

SERVICE FedEx 2Day

TERMS Shipper

SPECIAL HANDLING SECTION Deliver Weekday

Package details

WEIGHT 0.5 lbs / 0.23 kgs


TOTAL PIECES 1

TOTAL SHIPMENT WEIGHT 0.5 lbs / 0.23 kgs



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Local Scan Time 

Wednesday, 12/27/23

- 9:10 PM
Shipment information sent to FedEx

Tuesday, 1/2/24

- 3:55 PM
Picked up
WEST BOYLSTON, MA
- 3:56 PM
Shipment arriving early
WEST BOYLSTON, MA
- 8:05 PM
Left FedEx origin facility
WEST BOYLSTON, MA

Wednesday, 1/3/24

- 1:59 AM
Arrived at FedEx hub
WILLINGTON, CT
- 7:03 AM
At local FedEx facility
WINDSOR, CT
- 7:11 AM
On FedEx vehicle for delivery
WINDSOR, CT
- 12:03 PM
Operational Delay
Incorrect Address
WINDSOR, CT
- 12:03 PM
Operational Delay
Incorrect Address
WINDSOR, CT
- 12:04 PM
Shipment arriving On-Time
WINDSOR, CT



- 4:04 AM
At local FedEx facility
WINDSOR, CT
- 5:06 AM
On FedEx vehicle for delivery
WINDSOR, CT
- ☑ 1:35 PM
Delivered
AVON, CT

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9787605577

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1/2/24 3:55 PM

ON THE WAY

WILMINGTON, MA
1/3/24 6:58 AM

OUT FOR DELIVERY

WILMINGTON, MA
1/3/24 8:28 AM

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352 Park St Suite 106



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SHIP DATE  1/2/24

STANDARD TRANSIT  1/4/24 before 5:00 PM

ACTUAL DELIVERY 1/3/24 at 10:14 AM

 Services

SERVICE FedEx 2Day

TERMS Shipper

SPECIAL HANDLING SECTION Deliver Weekday

 Package details

WEIGHT 0.5 lbs / 0.23 kgs

TOTAL PIECES 1

TOTAL SHIPMENT WEIGHT 0.5 lbs / 0.23 kgs

PACKAGING FedEx Envelope



Travel history



Ascending



Local Scan Time



Wednesday, 12/27/23

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Tuesday, 1/2/24

- 3:55 PM
Picked up
WEST BOYLSTON, MA
- 3:56 PM
Shipment arriving early
WEST BOYLSTON, MA
- 8:05 PM
Left FedEx origin facility
WEST BOYLSTON, MA
- 9:31 PM
At destination sort facility
RAYNHAM, MA

Wednesday, 1/3/24

- 2:05 AM
Arrived at FedEx hub
WILLINGTON, CT
- 4:16 AM
Departed FedEx hub
WILLINGTON, CT
- 6:58 AM
At local FedEx facility
WILMINGTON, MA
- 8:28 AM
On FedEx vehicle for delivery
WILMINGTON, MA
- 10:14 AM
Delivered
NORTH READING, MA

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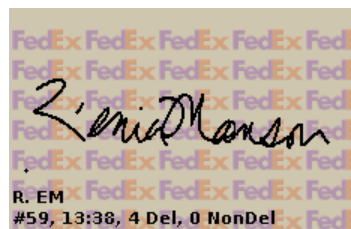
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WEST BOYLSTON, MA
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WINDSOR, CT
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OUT FOR DELIVERY

WINDSOR, CT
1/4/24 5:05 AM

DELIVERED

Brandon Robertson
Town of Avon



Delivered
1/4/24 at 1:35 PM

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TRACKING NUMBER 774621189562

DELIVERED TO Shipping/Receiving

SHIPPER REFERENCE CTL01257

SHIP DATE  1/2/24

STANDARD TRANSIT  1/4/24 before 5:00 PM

ACTUAL DELIVERY 1/4/24 at 1:35 PM

Services

SERVICE FedEx 2Day

TERMS Shipper

SPECIAL HANDLING SECTION Deliver Weekday

Package details

WEIGHT 0.5 lbs / 0.23 kgs

TOTAL PIECES 1

TOTAL SHIPMENT WEIGHT 0.5 lbs / 0.23 kgs



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Travel history

Ascending 

Local Scan Time 

Wednesday, 12/27/23

- 9:08 PM
Shipment information sent to FedEx

Tuesday, 1/2/24

- 3:55 PM
Picked up
WEST BOYLSTON, MA
- 3:56 PM
Shipment arriving early
WEST BOYLSTON, MA
- 8:05 PM
Left FedEx origin facility
WEST BOYLSTON, MA

Wednesday, 1/3/24

- 1:59 AM
Arrived at FedEx hub
WILLINGTON, CT
- 7:03 AM
At local FedEx facility
WINDSOR, CT
- 7:11 AM
On FedEx vehicle for delivery
WINDSOR, CT
- 12:03 PM
Operational Delay
Incorrect Address
WINDSOR, CT
- 12:03 PM
Operational Delay
Incorrect Address
WINDSOR, CT
- 12:04 PM
Shipment arriving On-Time
WINDSOR, CT



- 4:04 AM
At local FedEx facility
WINDSOR, CT
- 5:05 AM
On FedEx vehicle for delivery
WINDSOR, CT
- ☑ 1:35 PM
Delivered
AVON, CT

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All (30)



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LANGUAGE

[United States](#)

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FedEx® Tracking



 SHOPRUNNER by FedEx.

READY TO SHOP AGAIN? SAVE ON YOUR NEXT ORDER.



SHOP NOW

DELIVERED

Thursday

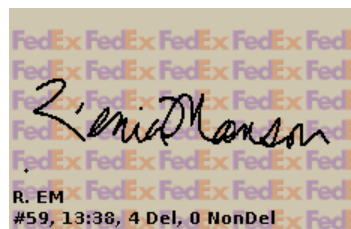
1/4/24 at 1:35 PM

Signed for by: R.EM

[↓ Obtain proof of delivery](#)

DELIVERY STATUS

Delivered 



TRACKING ID

774621150139   

FROM

Smartlink LLC
Carolyn Seeley
6 Jasmine Rd
Oxford, MA US 01540
9787605577

Label Created
12/27/23 9:00 PM

WE HAVE YOUR PACKAGE

WEST BOYLSTON, MA
1/2/24 3:55 PM

ON THE WAY

WINDSOR, CT
1/4/24 4:04 AM

OUT FOR DELIVERY

WINDSOR, CT
1/4/24 5:05 AM

DELIVERED

Dan Polhamus
Town of Avon



Delivered
1/4/24 at 1:35 PM

[↓ View travel history](#)

Want updates on this shipment? Enter your email and we will do the rest!

YOUR EMAIL
pbaker915

SUBMIT

✖ Your email is invalid.

MORE OPTIONS

Manage Delivery



Shipment facts



Shipment overview

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