



March 3, 2023

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

Re: Minor Modification to Approval under EM-AT&T-103-221026  
New Cingular Wireless PCS LLC ("AT&T") Site CT2200  
284 New Canaan Avenue, Norwalk, Connecticut

Dear Ms. Bachman:

AT&T received Connecticut Siting Council approval for modifications to its Facility located at 284 New Canaan Avenue, Norwalk. AT&T needs to add (3) 7/8" coax cable to its design. Attached please find revised plans showing the new coax and a structural analysis showing the flagpole can accommodate the change.

Please let me know if this change is approved or if you have questions or need anything else from me. Thank you for your time and consideration. I appreciate it.

Sincerely,

*Hollis M. Redding*

Hollis M. Redding  
SAI Communications, LLC  
12 Industrial Way  
Salem, NH 03079  
Mobile: 860-834-6964  
[hredding@saigrp.com](mailto:hredding@saigrp.com)

Enclosures

**(REVISED)**  
**STRUCTURAL ANALYSIS REPORT**

For

**AT&T SITE NUMBER: CT2200**  
**SITE NAME: NORWALK CT NEW CANAAN AVE**  
**TEP SITE NUMBER: 389588**

284 New Canaan Avenue  
Norwalk, CT 06850

**Antennas Enclosed within Fiberglass Shroud Secured to  
the Existing Flagpole**



Prepared for:



Dated: February 21, 2023 (Rev.1)  
June 22, 2022

Prepared by:



(TEP OPCO, LLC)  
45 Beechwood Drive  
North Andover, MA 01845  
(P) 978.557.5553  
[www.tepgroup.net](http://www.tepgroup.net)





## SCOPE OF WORK:

TEP Northeast (TEP NE) has been authorized by AT&T to conduct a structural evaluation of the 140' flagpole supporting the existing and proposed AT&T's antennas located at elevation 124' & 134' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

The following documents were used for our reference:

- Foundation Drawings prepared by Nello Corporation, dated July 2, 2014.
- Construction Drawings prepared by Dewberry Engineers Inc., dated March 12, 2015.
- Tower Mapping Report prepared by Provertic LLC., dated May 5, 2022.

## CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing flagpole **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The flagpole structure is rated at **79.2 %** - (Pole Section L3 from EL.91.2' – 110.7' Controlling).

## FOUNDATION SUMMARY:

Based on our evaluation, we have determined that the existing foundation **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The foundation is rated at **90.6 %** - (Axial Reaction Controlling).



**APPURTENANCES CONFIGURATION:**

Tenant	Appurtenances	Elev.	Mount
AT&T	<b>(3) NNHHS4-65A-R5 Antennas</b>	134'	Pipe Mast <b>Within 40"x10' Enclosure</b>
AT&T	<b>(3) TPA-65R-BU8DA-K Antennas</b>	124'	Pipe Mast <b>Within 40"x10' Enclosure</b>
AT&T	<b>(6) TMABPD7823VG12A TMA's</b>	114'	Pipe Mast Within 36"x10' Enclosure
AT&T	<b>(6) TMA192123B68-31 TMA's</b>	114'	Pipe Mast Within 36"x10' Enclosure
AT&T	(6) TMABPD7823VG12A TMA's	114'	Pipe Mast Within 36"x10' Enclosure

*\*Proposed AT&T Appurtenances shown in Bold.*

**AT&T EXISTING/PROPOSED COAX CABLES:**

Tenant	Coax Cables	Elev.	Mount
AT&T	(12) 1 5/8" Cables	134'	Inside Flagpole
AT&T	(12) 1 5/8" Cables	124'	Inside Flagpole
AT&T	<b>(3) 7/8" Cables</b>	124'	Inside Flagpole

*\*Proposed AT&T Coax Cables shown in Bold.*

**ANALYSIS RESULTS SUMMARY:**

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
<b>Pole Section-L1</b>	72.1 %	111.2 – 140.7	PASS	
<b>Pole Section-L2</b>	72.0 %	110.7 – 111.2	PASS	
<b>Pole Section-L3</b>	<b>79.2 %</b>	91.2 – 110.7	PASS	<b>Controlling</b>
<b>Pole Section-L4</b>	79.1 %	90.7 – 91.2	PASS	
<b>Pole Section-L5</b>	16.2 %	48.8 – 90.7	PASS	
<b>Pole Section-L6</b>	39.2 %	2.0 – 48.8	PASS	
<b>Base Plate &amp; Anchor Rods</b>	67.5 %	0 – 2.0	PASS	

**FOUNDATION RESULTS SUMMARY:**

	Original Design Reactions X 1.35	Proposed Reactions	Pass/Fail	Comments
<b>AXIAL</b>	35.6 k	<b>32.26 k</b>	PASS	
<b>SHEAR</b>	24.3 k	<b>10.45 k</b>	PASS	
<b>MOMENT</b>	1808 ft-k	<b>761 ft-k</b>	PASS	



## **CRITERIA:**

1. EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

County: Fairfield

Ultimate Wind Speed: 120 mph (2022 Connecticut State Building Code)

Structural Class: II

Exposure Category: B

Topographic Category: 1

Nominal Ice Thickness: 1 inch

2. Approximate height above grade to proposed antennas: 134' & 124'

**\*Calculations and referenced documents are attached.**

## **ASSUMPTIONS:**

1. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
2. The flagpole and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

## **SUPPORT RECOMMENDATIONS:**

TEP NE recommends that the proposed antennas and TMAs to be mounted within the existing and proposed shrouds supported by the flagpole.

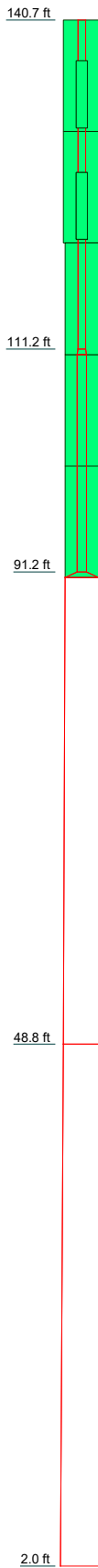
Reference TEP NE's Latest Construction Drawings for all component and connection requirements.



**Photo 1:** Photo illustrating the tower with appurtenances shown.

## CALCULATIONS

Section	1	2	3	4	5	6
Length (ft)	29.50	0.50	19.50	0.50	41.90	46.80
Number of Sides	1	1	1	1	18	18
Thickness (in)	0.3220	0.3220	0.5000	0.5000	0.3125	0.2500
Top Dia (in)	8.6250	8.6250	10.7500	10.7500	36.0000	40.8020
Bot Dia (in)	8.6250	10.7500	10.7500	36.0000	40.8020	46.6300
Grade			A53-B-35		A572-65	
Weight (lb)	843.1	16.1	1088.4	61.1	5386.4	5492.6



**DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION
40"x10' Shroud (ATI)	135.7	TMABPD7823VG12A TMA (No Wind)	114
NNHHS4-65A-R5 Antenna (No Wind) (ATI)	134	TMABPD7823VG12A TMA (No Wind)	114
NNHHS4-65A-R5 Antenna (No Wind)	134	TMAT192123B68-31 TMA (No Wind)	114
NNHHS4-65A-R5 Antenna (No Wind)	134	TMAT192123B68-31 TMA (No Wind)	114
40"x10' Shroud (ATI)	125.7	TMAT192123B68-31 TMA (No Wind)	114
TPA-65R-BU8DA-K Antenna (No Wind)	124	TMABPD7823VG12A TMA (No Wind)	114
TPA-65R-BU8DA-K Antenna (No Wind)	124	TMABPD7823VG12A TMA (No Wind)	114
TPA-65R-BU8DA-K Antenna (No Wind)	124	36"x10' Shroud (ATI)	105.7
36"x10' Shroud (ATI)	115.7	36"x10' Shroud (ATI)	95.7
TMABPD7823VG12A TMA (No Wind)	114		

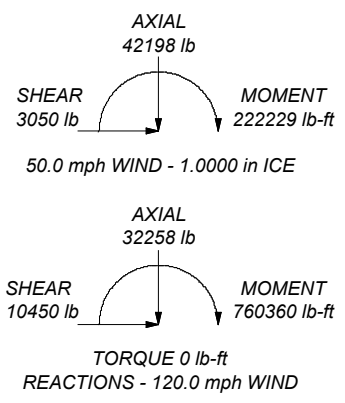
**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A572-65	65 ksi	80 ksi

**TOWER DESIGN NOTES**

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 120.0 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50.0 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.0 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 79.2%

ALL REACTIONS ARE FACTORED



<p><b>TEP Northeast</b>          45 Beechwood Drive          North Andover, MA 01845          Phone: (978) 557-5553          FAX: -</p>	<p>Job: <b>140' Flagpole</b></p>		
	<p>Project: <b>CT2200 - NORWALK CT NEW CANAAN AVE</b></p>		
	<p>Client: <b>AT&amp;T</b></p>	<p>Drawn by: <b>KM</b></p>	<p>App'd:</p>
	<p>Code: <b>TIA-222-H</b></p>	<p>Date: <b>02/21/23</b></p>	<p>Scale: <b>NTS</b></p>
	<p>Path:</p>	<p>Dwg No. <b>E-1</b></p>	

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<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b> 140' Flagpole	<b>Page</b> 1 of 16
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	<b>Client</b> AT&T	<b>Designed by</b> KM

## 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 Fairfield County, Connecticut.

Tower base elevation above sea level: 198.00 ft.

Basic wind speed of 120.0 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 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56.0 pcf.

A wind speed of 50.0 mph is used in combination with ice.

Temperature drop of 50.0 °F.

Deflections calculated using a wind speed of 60.0 mph.

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.

## Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	140.70-111.20	29.50	0.00	Round	8.6250	8.6250	0.3220		A53-B-35 (35 ksi)
L2	111.20-110.70	0.50	0.00	Round	8.6250	10.7500	0.3220		A53-B-35 (35 ksi)
L3	110.70-91.20	19.50	0.00	Round	10.7500	10.7500	0.5000		A53-B-35 (35 ksi)
L4	91.20-90.70	0.50	0.00	Round	10.7500	36.0000	0.5000		A53-B-35 (35 ksi)
L5	90.70-48.80	41.90	0.00	18	36.0000	40.8020	0.3125	1.2500	A572-65 (65 ksi)
L6	48.80-2.00	46.80		18	40.8020	46.6300	0.2500	1.0000	A572-65 (65 ksi)

## Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L1	8.6250	8.3993	72.4892	2.9378	4.3125	16.8091	144.9785	4.1971	0.0000	0
	8.6250	8.3993	72.4892	2.9378	4.3125	16.8091	144.9785	4.1971	0.0000	0

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b> 140' Flagpole	<b>Page</b> 2 of 16
	<b>Project</b> CT2200 - NORWALK CT NEW CANAAN AVE	<b>Date</b> 14:48:58 02/21/23
	<b>Client</b> AT&T	<b>Designed by</b> KM

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L2	8.6250	8.3993	72.4892	2.9378	4.3125	16.8091	144.9785	4.1971	0.0000	0
	10.7500	10.5489	143.5267	3.6886	5.3750	26.7026	287.0534	5.2713	0.0000	0
L3	10.7500	16.1007	211.9501	3.6282	5.3750	39.4326	423.9003	8.0455	0.0000	0
	10.7500	16.1007	211.9501	3.6282	5.3750	39.4326	423.9003	8.0455	0.0000	0
L4	10.7500	16.1007	211.9501	3.6282	5.3750	39.4326	423.9003	8.0455	0.0000	0
	36.0000	55.7633	8786.2002	12.5524	18.0000	488.1222	17572.4003	27.8650	0.0000	0
L5	36.5071	35.3975	5695.6431	12.6691	18.2880	311.4416	11398.7808	17.7021	5.7860	18.515
	41.3832	40.1605	8318.0521	14.3738	20.7274	401.3068	16647.0493	20.0841	6.6312	21.22
L6	41.3929	32.1780	6685.3049	14.3960	20.7274	322.5344	13379.4064	16.0921	6.7412	26.965
	47.3108	36.8025	10001.7643	16.4649	23.6880	422.2284	20016.6891	18.4048	7.7669	31.068

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L1				1	0	1			
140.70-111.20				1	0	1			
L2				1	1	1			
111.20-110.70				1	1	1			
L3				1	1	1			
110.70-91.20				1	1	1			
L4				1	1	1			
91.20-90.70				1	1	1			
L5				1	1	1			
90.70-48.80				1	1	1			
L6				1	1	1			
48.80-2.00				1	1	1			

## Monopole Base Plate Data

### Base Plate Data

Base plate is square	
Base plate is grouted	
Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	8
Embedment length	60.0000 in
p <sub>c</sub>	4.0 ksi
Grout space	4.0000 in
Base plate grade	A36
Base plate thickness	1.7500 in
Bolt circle diameter	53.5000 in
Outer diameter	60.0000 in
Inner diameter	24.0000 in
Base plate type	Plain Plate

## Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement	Total Number		C <sub>A</sub> A <sub>A</sub>	Weight
					ft			ft <sup>2</sup> /ft	plf
1 5/8	C	No	Yes	Inside Pole	136.00 - 2.00	12	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
1 5/8	C	No	Yes	Inside Pole	126.00 - 2.00	12	No Ice	0.00	1.04

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	3 of 16
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	<b>Client</b>	AT&T	<b>Designed by</b>	KM

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf	
7/8	C	No	Yes	Inside Pole	126.00 - 2.00	3	1/2" Ice 1" Ice No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00 0.00 0.00	1.04 1.04 0.54 0.54 0.54

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight lb
L1	140.70-111.20	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	518.18
L2	111.20-110.70	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	13.29
L3	110.70-91.20	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	518.31
L4	91.20-90.70	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	13.29
L5	90.70-48.80	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	1113.70
L6	48.80-2.00	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	1243.94

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight lb
L1	140.70-111.20	A	1.143	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	518.18
L2	111.20-110.70	A	1.129	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	13.29
L3	110.70-91.20	A	1.118	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	518.31
L4	91.20-90.70	A	1.107	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	13.29
L5	90.70-48.80	A	1.078	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	1113.70
L6	48.80-2.00	A	0.974	0.000	0.000	0.000	0.000	0.00

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	4 of 16	
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	<b>Client</b>	AT&T		<b>Designed by</b>	KM

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight lb
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1243.94

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>A</sub> A <sub>A</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Side ft <sup>2</sup>	Weight lb
40"x10' Shroud (AT&T)	A	None		0.0000	135.70	No Ice	17.04	2100.00
						1/2" Ice	24.46	2390.19
						1" Ice	25.23	2690.71
40"x10' Shroud (AT&T)	A	None		0.0000	125.70	No Ice	17.04	2100.00
						1/2" Ice	24.46	2390.19
						1" Ice	25.23	2690.71
36"x10' Shroud (AT&T)	A	None		0.0000	115.70	No Ice	15.56	1900.00
						1/2" Ice	22.30	2157.81
						1" Ice	23.04	2425.55
36"x10' Shroud (AT&T)	A	None		0.0000	105.70	No Ice	15.56	1900.00
						1/2" Ice	22.30	2157.81
						1" Ice	23.04	2425.55
36"x10' Shroud (AT&T)	A	None		0.0000	95.70	No Ice	15.56	1900.00
						1/2" Ice	22.30	2157.81
						1" Ice	23.04	2425.55
***								
NNHHS4-65A-R5 Antenna (No Wind) (AT&T)	A	None		0.0000	134.00	No Ice	0.00	73.00
						1/2" Ice	0.00	133.18
						1" Ice	0.00	199.15
NNHHS4-65A-R5 Antenna (No Wind)	B	None		0.0000	134.00	No Ice	0.00	73.00
						1/2" Ice	0.00	133.18
						1" Ice	0.00	199.15
NNHHS4-65A-R5 Antenna (No Wind)	C	None		0.0000	134.00	No Ice	0.00	73.00
						1/2" Ice	0.00	133.18
						1" Ice	0.00	199.15
TPA-65R-BU8DA-K Antenna (No Wind)	A	None		0.0000	124.00	No Ice	0.00	87.00
						1/2" Ice	0.00	184.58
						1" Ice	0.00	290.43
TPA-65R-BU8DA-K Antenna (No Wind)	B	None		0.0000	124.00	No Ice	0.00	87.00
						1/2" Ice	0.00	184.58
						1" Ice	0.00	290.43
TPA-65R-BU8DA-K Antenna (No Wind)	C	None		0.0000	124.00	No Ice	0.00	87.00
						1/2" Ice	0.00	184.58
						1" Ice	0.00	290.43
TMABPD7823VG12A TMA (No Wind)	A	None		0.0000	114.00	No Ice	0.00	25.00
						1/2" Ice	0.00	32.29
						1" Ice	0.00	41.43
TMABPD7823VG12A TMA (No Wind)	B	None		0.0000	114.00	No Ice	0.00	25.00
						1/2" Ice	0.00	32.29
						1" Ice	0.00	41.43
TMABPD7823VG12A TMA (No Wind)	C	None		0.0000	114.00	No Ice	0.00	25.00
						1/2" Ice	0.00	32.29
						1" Ice	0.00	41.43
TMAT192123B68-31 TMA (No Wind)	A	None		0.0000	114.00	No Ice	0.00	21.00
						1/2" Ice	0.00	27.74

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	5 of 16
	<b>Project</b>	CT2200 - NORWALK CT NEW CANAAN AVE	<b>Date</b>	14:48:58 02/21/23
	<b>Client</b>	AT&T	<b>Designed by</b>	KM

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	$C_{AA}$ Front	$C_{AA}$ Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
TMAT192123B68-31 TMA (No Wind)	B	None			0.0000	114.00	1" Ice	0.00	0.00	36.26
							No Ice	0.00	0.00	21.00
							1/2" Ice	0.00	0.00	27.74
TMAT192123B68-31 TMA (No Wind)	C	None			0.0000	114.00	1" Ice	0.00	0.00	36.26
							No Ice	0.00	0.00	21.00
							1/2" Ice	0.00	0.00	27.74
TMABPD7823VG12A TMA (No Wind)	A	None			0.0000	114.00	1" Ice	0.00	0.00	36.26
							No Ice	0.00	0.00	25.00
							1/2" Ice	0.00	0.00	32.29
TMABPD7823VG12A TMA (No Wind)	B	None			0.0000	114.00	1" Ice	0.00	0.00	41.43
							No Ice	0.00	0.00	25.00
							1/2" Ice	0.00	0.00	32.29
TMABPD7823VG12A TMA (No Wind)	C	None			0.0000	114.00	1" Ice	0.00	0.00	41.43
							No Ice	0.00	0.00	25.00
							1/2" Ice	0.00	0.00	32.29
							1" Ice	0.00	0.00	41.43

### Discrete Appurtenance Pressures - No Ice

$G_H = 1.100$

Description	Aiming Azimuth	Weight	Offset <sub>x</sub>	Offset <sub>z</sub>	z	K <sub>z</sub>	q <sub>z</sub>	$C_{AC}$ Front	$C_{AC}$ Side
		lb	ft	ft	ft		psf	ft <sup>2</sup>	ft <sup>2</sup>
40"x10' Shroud	0.0000	2100.00	0.00	0.00	135.70	1.078	37.5	17.04	17.04
40"x10' Shroud	0.0000	2100.00	0.00	0.00	125.70	1.055	36.7	17.04	17.04
36"x10' Shroud	0.0000	1900.00	0.00	0.00	115.70	1.030	35.8	15.56	15.56
36"x10' Shroud	0.0000	1900.00	0.00	0.00	105.70	1.004	34.9	15.56	15.56
36"x10' Shroud	0.0000	1900.00	0.00	0.00	95.70	0.976	33.9	15.56	15.56
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	73.00	0.00	0.00	134.00	1.074	37.4	0.00	0.00
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	73.00	0.00	0.00	134.00	1.074	37.4	0.00	0.00
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	73.00	0.00	0.00	134.00	1.074	37.4	0.00	0.00
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	87.00	0.00	0.00	124.00	1.051	36.5	0.00	0.00
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	87.00	0.00	0.00	124.00	1.051	36.5	0.00	0.00
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	87.00	0.00	0.00	124.00	1.051	36.5	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
TMAT192123B68-31 TMA (No Wind)	0.0000	21.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
TMAT192123B68-31 TMA (No Wind)	0.0000	21.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
TMAT192123B68-31 TMA (No Wind)	0.0000	21.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b> 140' Flagpole	<b>Page</b> 6 of 16
	<b>Project</b> CT2200 - NORWALK CT NEW CANAAN AVE	<b>Date</b> 14:48:58 02/21/23
	<b>Client</b> AT&T	<b>Designed by</b> KM

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>z</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>AAC</sub> Front ft <sup>2</sup>	C <sub>AAC</sub> Side ft <sup>2</sup>
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	35.7	0.00	0.00
Sum Weight:		10593.00							

**Discrete Appurtenance Pressures - With Ice**  $G_H = 1.100$

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>z</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>AAC</sub> Front ft <sup>2</sup>	C <sub>AAC</sub> Side ft <sup>2</sup>	t <sub>z</sub> in
40"x10' Shroud	0.0000	2786.79	0.00	0.00	135.70	1.078	6.5	25.47	25.47	1.1519
40"x10' Shroud	0.0000	2781.24	0.00	0.00	125.70	1.055	6.4	25.45	25.45	1.1431
36"x10' Shroud	0.0000	2501.18	0.00	0.00	115.70	1.030	6.2	23.25	23.25	1.1337
36"x10' Shroud	0.0000	2495.41	0.00	0.00	105.70	1.004	6.1	23.23	23.23	1.1235
36"x10' Shroud	0.0000	2489.12	0.00	0.00	95.70	0.976	5.9	23.22	23.22	1.1123
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	221.73	0.00	0.00	134.00	1.074	6.5	0.00	0.00	1.1504
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	221.73	0.00	0.00	134.00	1.074	6.5	0.00	0.00	1.1504
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	221.73	0.00	0.00	134.00	1.074	6.5	0.00	0.00	1.1504
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	324.01	0.00	0.00	124.00	1.051	6.3	0.00	0.00	1.1415
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	324.01	0.00	0.00	124.00	1.051	6.3	0.00	0.00	1.1415
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	324.01	0.00	0.00	124.00	1.051	6.3	0.00	0.00	1.1415
TMABPD7823VG12A TMA (No Wind)	0.0000	44.67	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMABPD7823VG12A TMA (No Wind)	0.0000	44.67	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMABPD7823VG12A TMA (No Wind)	0.0000	44.67	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMAT192123B68-31 TMA (No Wind)	0.0000	39.31	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMAT192123B68-31 TMA (No Wind)	0.0000	39.31	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMAT192123B68-31 TMA (No Wind)	0.0000	39.31	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMABPD7823VG12A TMA (No Wind)	0.0000	44.67	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMABPD7823VG12A TMA (No Wind)	0.0000	44.67	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
TMABPD7823VG12A TMA (No Wind)	0.0000	44.67	0.00	0.00	114.00	1.026	6.2	0.00	0.00	1.1320
Sum Weight:		15076.88								

**Discrete Appurtenance Pressures - Service**  $G_H = 1.100$

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	7 of 16
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	<b>Client</b>	AT&T	<b>Designed by</b>	KM

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>z</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>AAC</sub> Front ft <sup>2</sup>	C <sub>AAC</sub> Side ft <sup>2</sup>
40"x10' Shroud	0.0000	2100.00	0.00	0.00	135.70	1.078	8.4	17.04	17.04
40"x10' Shroud	0.0000	2100.00	0.00	0.00	125.70	1.055	8.2	17.04	17.04
36"x10' Shroud	0.0000	1900.00	0.00	0.00	115.70	1.030	8.0	15.56	15.56
36"x10' Shroud	0.0000	1900.00	0.00	0.00	105.70	1.004	7.8	15.56	15.56
36"x10' Shroud	0.0000	1900.00	0.00	0.00	95.70	0.976	7.6	15.56	15.56
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	73.00	0.00	0.00	134.00	1.074	8.4	0.00	0.00
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	73.00	0.00	0.00	134.00	1.074	8.4	0.00	0.00
NNHHS4-65A-R5 Antenna (No Wind)	0.0000	73.00	0.00	0.00	134.00	1.074	8.4	0.00	0.00
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	87.00	0.00	0.00	124.00	1.051	8.2	0.00	0.00
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	87.00	0.00	0.00	124.00	1.051	8.2	0.00	0.00
TPA-65R-BU8DA-K Antenna (No Wind)	0.0000	87.00	0.00	0.00	124.00	1.051	8.2	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMAT192123B68-31 TMA (No Wind)	0.0000	21.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMAT192123B68-31 TMA (No Wind)	0.0000	21.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMAT192123B68-31 TMA (No Wind)	0.0000	21.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
TMABPD7823VG12A TMA (No Wind)	0.0000	25.00	0.00	0.00	114.00	1.026	8.0	0.00	0.00
Sum Weight:		10593.00							

## 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

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	8 of 16
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<i>Comb. No.</i>	<i>Description</i>
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
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

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial lb</i>	<i>Major Axis Moment lb-ft</i>	<i>Minor Axis Moment lb-ft</i>
L1	140.7 - 111.2	Pole	Max Tension	8	4.75	0.00	0.00
			Max. Compression	26	-13487.06	0.00	0.00
			Max. Mx	8	-9656.29	-39756.81	0.00
			Max. My	2	-9656.29	0.00	39756.81
			Max. Vy	8	2602.26	-28427.13	0.00
			Max. Vx	2	-2602.26	0.00	28427.13
			Max. Torque	4			
L2	111.2 - 110.7	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13529.81	0.00	0.00
			Max. Mx	8	-9697.09	-41016.96	0.00
			Max. My	2	-9697.09	0.00	41016.96
			Max. Vy	8	2524.36	-41016.96	0.00
			Max. Vx	2	-2524.36	0.00	41016.96
			Max. Torque	4			
L3	110.7 - 91.2	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21494.53	0.00	0.00
			Max. Mx	8	-16199.64	-104702.69	0.00
			Max. My	2	-16199.64	0.00	104702.69
			Max. Vy	8	3985.22	-88515.20	0.00



<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	9 of 16
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	<b>Client</b>	AT&T	<b>Designed by</b>	KM

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L4	91.2 - 90.7	Pole	Max. Vx	2	-3985.22	0.00	88515.20
			Max. Torque	4			-0.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21600.39	0.00	0.00
			Max. Mx	8	-16292.85	-106670.45	0.00
			Max. My	2	-16292.85	0.00	106670.45
			Max. Vy	8	3963.60	-106670.45	0.00
			Max. Vx	2	-3963.60	0.00	106670.45
L5	90.7 - 48.8	Pole	Max. Torque	4			-0.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31601.04	0.00	0.00
			Max. Mx	8	-24064.99	-343160.72	0.00
			Max. My	2	-24064.99	0.00	343160.72
			Max. Vy	8	7327.94	-343160.72	0.00
			Max. Vx	2	-7327.94	0.00	343160.72
			Max. Torque	6			0.03
L6	48.8 - 2	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42198.11	0.00	0.00
			Max. Mx	8	-32252.76	-759800.50	0.00
			Max. My	2	-32252.76	0.00	759800.50
			Max. Vy	8	10457.31	-759800.50	0.00
			Max. Vx	2	-10457.31	0.00	759800.50
			Max. Torque	6			0.04

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	26	42198.11	0.00	0.00
	Max. H <sub>x</sub>	20	32257.36	10443.10	0.00
	Max. H <sub>z</sub>	2	32257.36	0.00	10443.10
	Max. M <sub>x</sub>	2	759800.50	0.00	10443.10
	Max. M <sub>z</sub>	8	759800.50	-10443.10	0.00
	Max. Torsion	6	0.04	-9047.66	5223.69
	Min. Vert	3	24192.94	0.00	10442.83
	Min. H <sub>x</sub>	8	32257.36	-10443.10	0.00
	Min. H <sub>z</sub>	14	32257.36	0.00	-10443.10
	Min. M <sub>x</sub>	14	-759800.50	0.00	-10443.10
	Min. M <sub>z</sub>	20	-759800.50	10443.10	0.00
	Min. Torsion	10	-0.04	-9047.66	-5223.69

### Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear <sub>x</sub> lb	Shear <sub>z</sub> lb	Overturning Moment, M <sub>x</sub> lb-ft	Overturning Moment, M <sub>z</sub> lb-ft	Torque lb-ft
Dead Only	26881.48	0.00	0.00	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	32257.36	0.00	-10443.10	-759800.50	0.00	0.00
0.9 Dead+1.0 Wind 0 deg - No Ice	24192.94	0.00	-10442.83	-747236.05	0.00	0.00
1.2 Dead+1.0 Wind 30 deg - No Ice	32257.52	5223.69	-9047.66	-658489.68	-380182.66	0.04

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	10 of 16
	<b>Project</b>	CT2200 - NORWALK CT NEW CANAAN AVE	<b>Date</b>	14:48:58 02/21/23
	<b>Client</b>	AT&T	<b>Designed by</b>	KM

<i>Load Combination</i>	<i>Vertical</i> <i>lb</i>	<i>Shear<sub>x</sub></i> <i>lb</i>	<i>Shear<sub>z</sub></i> <i>lb</i>	<i>Overturning Moment, M<sub>x</sub></i> <i>lb-ft</i>	<i>Overturning Moment, M<sub>z</sub></i> <i>lb-ft</i>	<i>Torque</i> <i>lb-ft</i>
Ice						
0.9 Dead+1.0 Wind 30 deg - No Ice	24193.19	5225.06	-9050.04	-647916.54	-374076.91	0.03
1.2 Dead+1.0 Wind 60 deg - No Ice	32257.52	9047.66	-5223.69	-380182.66	-658489.68	-0.04
0.9 Dead+1.0 Wind 60 deg - No Ice	24193.19	9050.04	-5225.06	-374076.91	-647916.54	-0.03
1.2 Dead+1.0 Wind 90 deg - No Ice	32257.36	10443.10	0.00	0.00	-759800.50	0.00
0.9 Dead+1.0 Wind 90 deg - No Ice	24192.94	10442.83	0.00	0.00	-747236.05	0.00
1.2 Dead+1.0 Wind 120 deg - No Ice	32257.52	9047.66	5223.69	380182.66	-658489.68	0.04
0.9 Dead+1.0 Wind 120 deg - No Ice	24193.19	9050.04	5225.06	374076.91	-647916.54	0.03
1.2 Dead+1.0 Wind 150 deg - No Ice	32257.52	5223.69	9047.66	658489.68	-380182.66	-0.04
0.9 Dead+1.0 Wind 150 deg - No Ice	24193.19	5225.06	9050.04	647916.54	-374076.91	-0.03
1.2 Dead+1.0 Wind 180 deg - No Ice	32257.36	0.00	10443.10	759800.50	0.00	0.00
0.9 Dead+1.0 Wind 180 deg - No Ice	24192.94	0.00	10442.83	747236.05	0.00	0.00
1.2 Dead+1.0 Wind 210 deg - No Ice	32257.52	-5223.69	9047.66	658489.68	380182.66	0.04
0.9 Dead+1.0 Wind 210 deg - No Ice	24193.19	-5225.06	9050.04	647916.54	374076.91	0.03
1.2 Dead+1.0 Wind 240 deg - No Ice	32257.52	-9047.66	5223.69	380182.66	658489.68	-0.04
0.9 Dead+1.0 Wind 240 deg - No Ice	24193.19	-9050.04	5225.06	374076.91	647916.54	-0.03
1.2 Dead+1.0 Wind 270 deg - No Ice	32257.36	-10443.10	0.00	0.00	759800.50	0.00
0.9 Dead+1.0 Wind 270 deg - No Ice	24192.94	-10442.83	0.00	0.00	747236.05	0.00
1.2 Dead+1.0 Wind 300 deg - No Ice	32257.52	-9047.66	-5223.69	-380182.66	658489.68	0.04
0.9 Dead+1.0 Wind 300 deg - No Ice	24193.19	-9050.04	-5225.06	-374076.91	647916.54	0.03
1.2 Dead+1.0 Wind 330 deg - No Ice	32257.52	-5223.69	-9047.66	-658489.68	380182.66	-0.04
0.9 Dead+1.0 Wind 330 deg - No Ice	24193.19	-5225.06	-9050.04	-647916.54	374076.91	-0.03
1.2 Dead+1.0 Ice+1.0 Temp	42198.11	0.00	0.00	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	42198.07	0.00	-3049.54	-222229.22	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	42198.07	1524.77	-2640.98	-192456.27	-111114.81	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	42198.07	2640.98	-1524.77	-111114.81	-192456.27	-0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	42198.07	3049.54	0.00	0.00	-222229.22	0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	42198.07	2640.98	1524.77	111114.81	-192456.27	0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	42198.07	1524.77	2640.98	192456.27	-111114.81	-0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	42198.07	0.00	3049.54	222229.22	0.00	0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	42198.07	-1524.77	2640.98	192456.27	111114.81	0.00
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	42198.07	-2640.98	1524.77	111114.81	192456.27	-0.00

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Load Combination	Vertical lb	Shear <sub>x</sub> lb	Shear <sub>z</sub> lb	Overturning Moment, M <sub>x</sub> lb-ft	Overturning Moment, M <sub>z</sub> lb-ft	Torque lb-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	42198.07	-3049.54	0.00	0.00	222229.22	0.00
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	42198.07	-2640.98	-1524.77	-111114.81	192456.27	0.00
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	42198.07	-1524.77	-2640.98	-192456.27	111114.81	-0.00
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	26881.44	0.00	-2376.50	-172293.70	0.00	0.00
Dead+Wind 30 deg - Service	26881.44	1188.25	-2058.11	-149210.78	-86146.95	0.00
Dead+Wind 60 deg - Service	26881.44	2058.11	-1188.25	-86146.95	-149210.78	-0.00
Dead+Wind 90 deg - Service	26881.44	2376.50	0.00	0.00	-172293.70	0.00
Dead+Wind 120 deg - Service	26881.44	2058.11	1188.25	86146.95	-149210.78	0.00
Dead+Wind 150 deg - Service	26881.44	1188.25	2058.11	149210.78	-86146.95	-0.00
Dead+Wind 180 deg - Service	26881.44	0.00	2376.50	172293.70	0.00	0.00
Dead+Wind 210 deg - Service	26881.44	-1188.25	2058.11	149210.78	86146.95	0.00
Dead+Wind 240 deg - Service	26881.44	-2058.11	1188.25	86146.95	149210.78	-0.00
Dead+Wind 270 deg - Service	26881.44	-2376.50	0.00	0.00	172293.70	0.00
Dead+Wind 300 deg - Service	26881.44	-2058.11	-1188.25	-86146.95	149210.78	0.00
Dead+Wind 330 deg - Service	26881.44	-1188.25	-2058.11	-149210.78	86146.95	-0.00

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-26881.48	0.00	0.00	26881.48	0.00	0.000%
2	0.00	-32257.78	-10454.25	0.00	32257.36	10443.10	0.033%
3	0.00	-24193.33	-10454.25	0.00	24192.94	10442.83	0.043%
4	5227.13	-32257.78	-9053.65	-5223.69	32257.52	9047.66	0.020%
5	5227.13	-24193.33	-9053.65	-5225.06	24193.19	9050.04	0.016%
6	9053.65	-32257.78	-5227.13	-9047.66	32257.52	5223.69	0.020%
7	9053.65	-24193.33	-5227.13	-9050.04	24193.19	5225.06	0.016%
8	10454.25	-32257.78	0.00	-10443.10	32257.36	0.00	0.033%
9	10454.25	-24193.33	0.00	-10442.83	24192.94	0.00	0.043%
10	9053.65	-32257.78	5227.13	-9047.66	32257.52	-5223.69	0.020%
11	9053.65	-24193.33	5227.13	-9050.04	24193.19	-5225.06	0.016%
12	5227.13	-32257.78	9053.65	-5223.69	32257.52	-9047.66	0.020%
13	5227.13	-24193.33	9053.65	-5225.06	24193.19	-9050.04	0.016%
14	0.00	-32257.78	10454.25	0.00	32257.36	-10443.10	0.033%
15	0.00	-24193.33	10454.25	0.00	24192.94	-10442.83	0.043%
16	-5227.13	-32257.78	9053.65	5223.69	32257.52	-9047.66	0.020%
17	-5227.13	-24193.33	9053.65	5225.06	24193.19	-9050.04	0.016%
18	-9053.65	-32257.78	5227.13	9047.66	32257.52	-5223.69	0.020%
19	-9053.65	-24193.33	5227.13	9050.04	24193.19	-5225.06	0.016%
20	-10454.25	-32257.78	0.00	10443.10	32257.36	0.00	0.033%
21	-10454.25	-24193.33	0.00	10442.83	24192.94	0.00	0.043%
22	-9053.65	-32257.78	-5227.13	9047.66	32257.52	5223.69	0.020%
23	-9053.65	-24193.33	-5227.13	9050.04	24193.19	5225.06	0.016%
24	-5227.13	-32257.78	-9053.65	5223.69	32257.52	9047.66	0.020%
25	-5227.13	-24193.33	-9053.65	5225.06	24193.19	9050.04	0.016%
26	0.00	-42198.11	0.00	0.00	42198.11	0.00	0.000%
27	0.00	-42198.11	-3052.88	0.00	42198.07	3049.54	0.008%
28	1526.44	-42198.11	-2643.87	-1524.77	42198.07	2640.98	0.008%
29	2643.87	-42198.11	-1526.44	-2640.98	42198.07	1524.77	0.008%
30	3052.88	-42198.11	0.00	-3049.54	42198.07	0.00	0.008%
31	2643.87	-42198.11	1526.44	-2640.98	42198.07	-1524.77	0.008%
32	1526.44	-42198.11	2643.87	-1524.77	42198.07	-2640.98	0.008%
33	0.00	-42198.11	3052.88	0.00	42198.07	-3049.54	0.008%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
34	-1526.44	-42198.11	2643.87	1524.77	42198.07	-2640.98	0.008%
35	-2643.87	-42198.11	1526.44	2640.98	42198.07	-1524.77	0.008%
36	-3052.88	-42198.11	0.00	3049.54	42198.07	0.00	0.008%
37	-2643.87	-42198.11	-1526.44	2640.98	42198.07	1524.77	0.008%
38	-1526.44	-42198.11	-2643.87	1524.77	42198.07	2640.98	0.008%
39	0.00	-26881.48	-2379.59	0.00	26881.44	2376.50	0.011%
40	1189.80	-26881.48	-2060.79	-1188.25	26881.44	2058.11	0.011%
41	2060.79	-26881.48	-1189.80	-2058.11	26881.44	1188.25	0.011%
42	2379.59	-26881.48	0.00	-2376.50	26881.44	0.00	0.011%
43	2060.79	-26881.48	1189.80	-2058.11	26881.44	-1188.25	0.011%
44	1189.80	-26881.48	2060.79	-1188.25	26881.44	-2058.11	0.011%
45	0.00	-26881.48	2379.59	0.00	26881.44	-2376.50	0.011%
46	-1189.80	-26881.48	2060.79	1188.25	26881.44	-2058.11	0.011%
47	-2060.79	-26881.48	1189.80	2058.11	26881.44	-1188.25	0.011%
48	-2379.59	-26881.48	0.00	2376.50	26881.44	0.00	0.011%
49	-2060.79	-26881.48	-1189.80	2058.11	26881.44	1188.25	0.011%
50	-1189.80	-26881.48	-2060.79	1188.25	26881.44	2058.11	0.011%

## Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	9	0.00112785	0.00034252
3	Yes	8	0.00115756	0.00047501
4	Yes	10	0.00069670	0.00131154
5	Yes	10	0.00042068	0.00103474
6	Yes	10	0.00069670	0.00131154
7	Yes	10	0.00042068	0.00103474
8	Yes	9	0.00112785	0.00034252
9	Yes	8	0.00115756	0.00047501
10	Yes	10	0.00069670	0.00131154
11	Yes	10	0.00042068	0.00103474
12	Yes	10	0.00069670	0.00131154
13	Yes	10	0.00042068	0.00103474
14	Yes	9	0.00112785	0.00034252
15	Yes	8	0.00115756	0.00047501
16	Yes	10	0.00069670	0.00131154
17	Yes	10	0.00042068	0.00103474
18	Yes	10	0.00069670	0.00131154
19	Yes	10	0.00042068	0.00103474
20	Yes	9	0.00112785	0.00034252
21	Yes	8	0.00115756	0.00047501
22	Yes	10	0.00069670	0.00131154
23	Yes	10	0.00042068	0.00103474
24	Yes	10	0.00069670	0.00131154
25	Yes	10	0.00042068	0.00103474
26	Yes	4	0.00000001	0.00000001
27	Yes	10	0.00129742	0.00069942
28	Yes	10	0.00129683	0.00073018
29	Yes	10	0.00129683	0.00073018
30	Yes	10	0.00129742	0.00069942
31	Yes	10	0.00129683	0.00073018
32	Yes	10	0.00129683	0.00073018
33	Yes	10	0.00129742	0.00069942
34	Yes	10	0.00129683	0.00073018

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35	Yes	10	0.00129683	0.00073018
36	Yes	10	0.00129742	0.00069942
37	Yes	10	0.00129683	0.00073018
38	Yes	10	0.00129683	0.00073018
39	Yes	8	0.00137026	0.00010698
40	Yes	8	0.00136988	0.00010972
41	Yes	8	0.00136988	0.00010972
42	Yes	8	0.00137026	0.00010698
43	Yes	8	0.00136988	0.00010972
44	Yes	8	0.00136988	0.00010972
45	Yes	8	0.00137026	0.00010698
46	Yes	8	0.00136988	0.00010972
47	Yes	8	0.00136988	0.00010972
48	Yes	8	0.00137026	0.00010698
49	Yes	8	0.00136988	0.00010972
50	Yes	8	0.00136988	0.00010972

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140.7 - 111.2	11.0352	42	1.0110	0.0000
L2	111.2 - 110.7	5.2853	42	0.6836	0.0000
L3	110.7 - 91.2	5.2141	42	0.6751	0.0000
L4	91.2 - 90.7	3.1463	42	0.2750	0.0000
L5	90.7 - 48.8	3.1175	42	0.2746	0.0000
L6	48.8 - 2	1.0139	42	0.1944	0.0000

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
135.70	40"x10' Shroud	42	9.9355	0.9694	0.0000	13509
134.00	NNHHS4-65A-R5 Antenna (No Wind)	42	9.5655	0.9548	0.0000	10082
125.70	40"x10' Shroud	42	7.8248	0.8764	0.0000	4503
124.00	TPA-65R-BU8DA-K Antenna (No Wind)	42	7.4876	0.8582	0.0000	4044
115.70	36"x10' Shroud	42	5.9807	0.7537	0.0000	2704
114.00	TMABPD7823VG12A TMA (No Wind)	42	5.7066	0.7285	0.0000	2655
105.70	36"x10' Shroud	42	4.5408	0.5624	0.0000	3588
95.70	36"x10' Shroud	42	3.4688	0.3189	0.0000	2291

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140.7 - 111.2	49.8399	4	4.6425	0.0000
L2	111.2 - 110.7	23.5353	4	3.1038	0.0000
L3	110.7 - 91.2	23.2126	4	3.0637	0.0000
L4	91.2 - 90.7	13.9038	4	1.2179	0.0000
L5	90.7 - 48.8	13.7764	4	1.2162	0.0000
L6	48.8 - 2	4.4761	4	0.8586	0.0000

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
135.70	40"x10' Shroud	4	44.7955	4.4466	0.0000	2913
134.00	NNHHS4-65A-R5 Antenna (No Wind)	4	43.0988	4.3779	0.0000	2174
125.70	40"x10' Shroud	4	35.1226	4.0086	0.0000	970
124.00	TPA-65R-BU8DA-K Antenna (No Wind)	4	33.5794	3.9230	0.0000	870
115.70	36"x10' Shroud	4	26.6977	3.4326	0.0000	581
114.00	TMABPD7823VG12A TMA (No Wind)	4	25.4494	3.3143	0.0000	570
105.70	36"x10' Shroud	4	20.1646	2.5403	0.0000	774
95.70	36"x10' Shroud	4	15.3409	1.4192	0.0000	501

### Base Plate Design Data

Plate Thickness in	Number of Anchor Bolts	Anchor Bolt Size in	Actual Allowable Ratio Bolt Tension lb	Actual Allowable Ratio Bolt Compression lb	Actual Allowable Ratio Plate Stress ksi	Actual Allowable Ratio Stiffener Stress ksi	Controlling Condition	Ratio
1.7500	8	2.2500	81242.42	89305.65	21.881		Plate	0.68
			243576.14	404336.40	32.400			
			0.33	0.22	0.68			

### Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
L1	140.7 - 111.2	TP8.625x8.625x0.322	29.50	0.00	0.0	8.3993	-9657.47	264577.00	0.037
	(1)								
L2	111.2 - 110.7	TP10.75x8.625x0.322	0.50	0.00	0.0	8.3993	-9663.21	264577.00	0.037

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
	(2)								
L3	110.7 - 91.2 (3)	TP10.75x10.75x0.5	19.50	0.00	0.0	16.1007	-16199.80	507171.00	0.032
L4	91.2 - 90.7 (4)	TP36x10.75x0.5	0.50	0.00	0.0	16.1007	-16204.50	507171.00	0.032
L5	90.7 - 48.8 (5)	TP40.802x36x0.3125	41.90	0.00	0.0	40.1605	-24065.10	2349390.00	0.010
L6	48.8 - 2 (6)	TP46.63x40.802x0.25	46.80	0.00	0.0	36.8025	-32252.90	2114030.00	0.015

### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> lb-ft	φM <sub>ux</sub> lb-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M <sub>uy</sub> lb-ft	φM <sub>uy</sub> lb-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	140.7 - 111.2 (1)	TP8.625x8.625x0.322	39831.92	58300.58	0.683	0.00	58300.58	0.000
L2	111.2 - 110.7 (2)	TP10.75x8.625x0.322	39799.08	58300.58	0.683	0.00	58300.58	0.000
L3	110.7 - 91.2 (3)	TP10.75x10.75x0.5	104858.33	138004.17	0.760	0.00	138004.17	0.000
L4	91.2 - 90.7 (4)	TP36x10.75x0.5	104781.67	138004.17	0.759	0.00	138004.17	0.000
L5	90.7 - 48.8 (5)	TP40.802x36x0.3125	343512.50	2269616.67	0.151	0.00	2269616.67	0.000
L6	48.8 - 2 (6)	TP46.63x40.802x0.25	760360.00	2021158.33	0.376	0.00	2021158.33	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V <sub>u</sub> lb	φV <sub>n</sub> lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T <sub>u</sub> lb-ft	φT <sub>n</sub> lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	140.7 - 111.2 (1)	TP8.625x8.625x0.322	2550.86	79373.00	0.032	0.01	57941.17	0.000
L2	111.2 - 110.7 (2)	TP10.75x8.625x0.322	2633.62	99687.00	0.026	0.01	57941.17	0.000
L3	110.7 - 91.2 (3)	TP10.75x10.75x0.5	3939.85	152151.00	0.026	0.03	137113.33	0.000
L4	91.2 - 90.7 (4)	TP36x10.75x0.5	4245.86	526963.00	0.008	0.03	137113.33	0.000
L5	90.7 - 48.8 (5)	TP40.802x36x0.3125	7336.92	704817.00	0.010	0.03	2499191.67	0.000
L6	48.8 - 2 (6)	TP46.63x40.802x0.25	10461.60	645884.00	0.016	0.04	2623408.33	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	140.7 - 111.2 (1)	0.037	0.683	0.000	0.032	0.000	0.721	1.000	4.8.2 ✓
L2	111.2 - 110.7 (2)	0.037	0.683	0.000	0.026	0.000	0.720	1.000	4.8.2 ✓
L3	110.7 - 91.2 (3)	0.032	0.760	0.000	0.026	0.000	0.792	1.000	4.8.2 ✓

<b>tnxTower</b>  <b>TEP Northeast</b> 45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: -	<b>Job</b>	140' Flagpole	<b>Page</b>	16 of 16
	<b>Project</b>	CT2200 - NORWALK CT NEW CANAAN AVE	<b>Date</b>	14:48:58 02/21/23
	<b>Client</b>	AT&T	<b>Designed by</b>	KM

Section No.	Elevation ft	Ratio $P_u$	Ratio $M_{ux}$	Ratio $M_{uy}$	Ratio $V_u$	Ratio $T_u$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		$\phi P_n$	$\phi M_{nx}$	$\phi M_{ny}$	$\phi V_n$	$\phi T_n$			
L4	91.2 - 90.7 (4)	0.032	0.759	0.000	0.008	0.000	0.791	1.000	4.8.2 ✓
L5	90.7 - 48.8 (5)	0.010	0.151	0.000	0.010	0.000	0.162	1.000	4.8.2 ✓
L6	48.8 - 2 (6)	0.015	0.376	0.000	0.016	0.000	0.392	1.000	4.8.2 ✓

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\phi P_{allow}$ lb	% Capacity	Pass Fail	
L1	140.7 - 111.2	Pole	TP8.625x8.625x0.322	1	-9657.47	264577.00	72.1	Pass	
L2	111.2 - 110.7	Pole	TP10.75x8.625x0.322	2	-9663.21	264577.00	72.0	Pass	
L3	110.7 - 91.2	Pole	TP10.75x10.75x0.5	3	-16199.80	507171.00	79.2	Pass	
L4	91.2 - 90.7	Pole	TP36x10.75x0.5	4	-16204.50	507171.00	79.1	Pass	
L5	90.7 - 48.8	Pole	TP40.802x36x0.3125	5	-24065.10	2349390.00	16.2	Pass	
L6	48.8 - 2	Pole	TP46.63x40.802x0.25	6	-32252.90	2114030.00	39.2	Pass	
							Summary		
							Pole (L3)	79.2	Pass
							Base Plate	67.5	Pass
							<b>RATING =</b>	<b>79.2</b>	<b>Pass</b>



**PROJECT INFORMATION**

SCOPE OF WORK: **ITEMS TO BE MOUNTED ON THE EXISTING FLAGPOLE:**

- NEW AT&T ANTENNAS: NNHHS4-65A-R5 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: TPA65R-BU8DA-K (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T TMAS: TMA192123B68-31 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- NEW AT&T K SBT 782-11055 (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- NEW AT&T 40"Ø FRP SHROUDS (TOTAL OF 2)

**ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:**

- NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8863 N77 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4449 B5/B12 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66A (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T DIPLEXERS: DBC0062F3V52-1 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- NEW AT&T COMPATIBLE TRIPLEXERS (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- NEW AT&T SURGE ARRESTORS: TSXDC-4310FM (TYP. OF 24 PER SECTOR, TOTAL OF 72)
- ADD (1) 6648+ SCEDE CABLE.
- ADD (1) IDLe.
- ADD (1) INDOOR DC12.
- ADD (3) RECTIFIERS
- ADD (3) 7/8"Ø COAX

**ITEMS TO BE REMOVED:**

- EXISTING AT&T ANTENNAS: OPA-65R-LCUU-H8 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T RRUS: 11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3). (GROUND)
- EXISTING AT&T RRUS: 11 B5 (TYP. OF 1 PER SECTOR, TOTAL OF 3). (GROUND)
- EXISTING AT&T RRUS: 12 B12 (TYP. OF 2 PER SECTOR, TOTAL OF 6). (GROUND)
- EXISTING AT&T TMAS: TMABPD7823VG12A (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T DIPLEXERS: DBC2055F1V1-2 (TYP. OF 8 PER SECTOR, TOTAL OF 24).
- EXISTING AT&T SURGE ARRESTORS: APTDC-BDFDM-DBW (TYP. OF 12 PER SECTOR, TOTAL OF 36)
- EXISTING (2) AT&T FRP SHROUDS.

**ITEMS TO REMAIN:**

- (3) RRU'S, (6) TMA'S, (24) COAX CABLES.

SITE ADDRESS: 284 NEW CANAAN AVENUE  
NORWALK, CT 06850

LATITUDE: 41.1361389° N, 41° 8' 10.10" N

LONGITUDE: -73.4564167° W, -73° 27' 23.10" W

TYPE OF SITE: FLAGPOLE / INDOOR EQUIPMENT

STRUCTURE HEIGHT: 140'-0"±

RAD CENTER: 124'-0"±, 134'-0"±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	2
GN-1	GENERAL NOTES	2
A-1	COMPOUND & EQUIPMENT PLAN	2
A-2	ANTENNA LAYOUTS	2
A-3	ELEVATION	2
A-4	DETAILS	2
SN-1	STRUCTURAL NOTES	2
S-1	MOUNT MODIFICATION DESIGN	2
G-1	GROUNDING DETAILS	2
RF-1	RF PLUMBING DIAGRAM	2



**SITE NUMBER: CTL02200**

**SITE NAME: NORWALK CT NEW CANAAN AVE**

**FA CODE: 10113256**

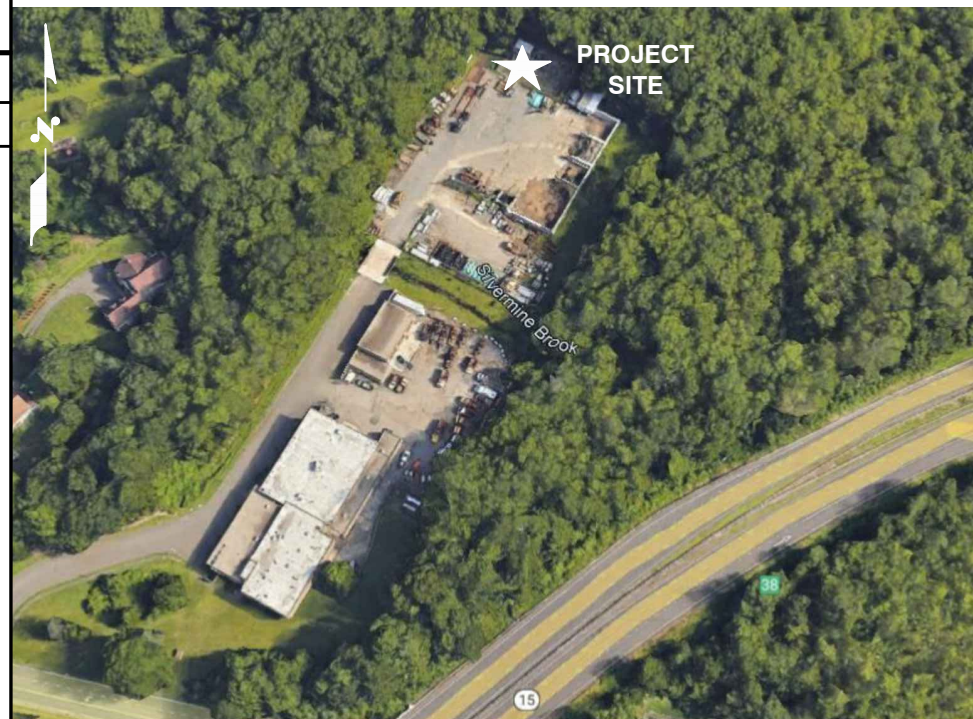
**PACE ID: MRCTB056525, MRCTB055515, MRCTB055101, MRCTB055117, MRCTB054293, MRCTB055642**

**PROJECT: 5G NR RADIO, 5G NR 1SR CBAND, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RETROFIT, 5G NR 1DR-1, LTE NEXT CARRIER, LTE 4C, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE 2022 UPGRADE**

**VICINITY MAP**

**DIRECTIONS TO SITE:**

INTERSECTION OF MERRITT PKWY (RT. 15) AND RT.123 (NEW CANAAN AVENUE ON NORTH SIDE OF MERRITT. NATIONAL GUARD ARMORY RAW LAND SITE. MAIN GATE 3829, SITE GATE 2500, GENERATOR PADLOCK 2500, DOOR 3534.



**GENERAL NOTES**

- 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.
- 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.
- 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.
- CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.
- NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)
  - TEP NORTHEAST (TEP OP&C, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OP&C, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

**72 HOURS**



**CALL BEFORE YOU DIG**



CALL TOLL FREE 1-800-922-4455

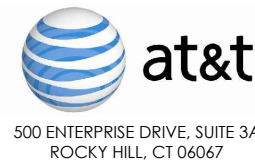
OR CALL 811

**UNDERGROUND SERVICE ALERT**



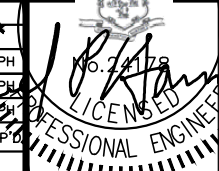
**SITE NUMBER: CTL02200**  
**SITE NAME: NORWALK CT NEW CANAAN AVE**

284 NEW CANAAN AVENUE  
NORWALK, CT 06850  
FAIRFIELD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/23/23	ISSUED FOR CONSTRUCTION	DOV	HC	OPH
1	08/04/22	ISSUED FOR CONSTRUCTION	DOV	HC	OPH
A	07/25/22	ISSUED FOR REVIEW	JS/GA	HC	OPH

SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: JS



SITE NUMBER	DRAWING NUMBER	REV
CTL02200	T-1	2

AT&T  
TITLE SHEET  
5G NR RADIO, 5G NR 1SR CBAND, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RETROFIT, 5G NR 1DR-1, LTE NEXT CARRIER, LTE 4C, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE

**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 – SAI  
 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 70-2020)**

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

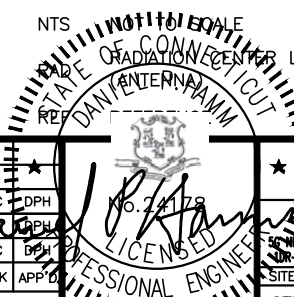
**AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;**

**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	OR	ORADIATION CENTER LINE	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REP	REPRODUCTION		



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

**SAI**  
 12 INDUSTRIAL WAY  
 SALEM, NH 03079

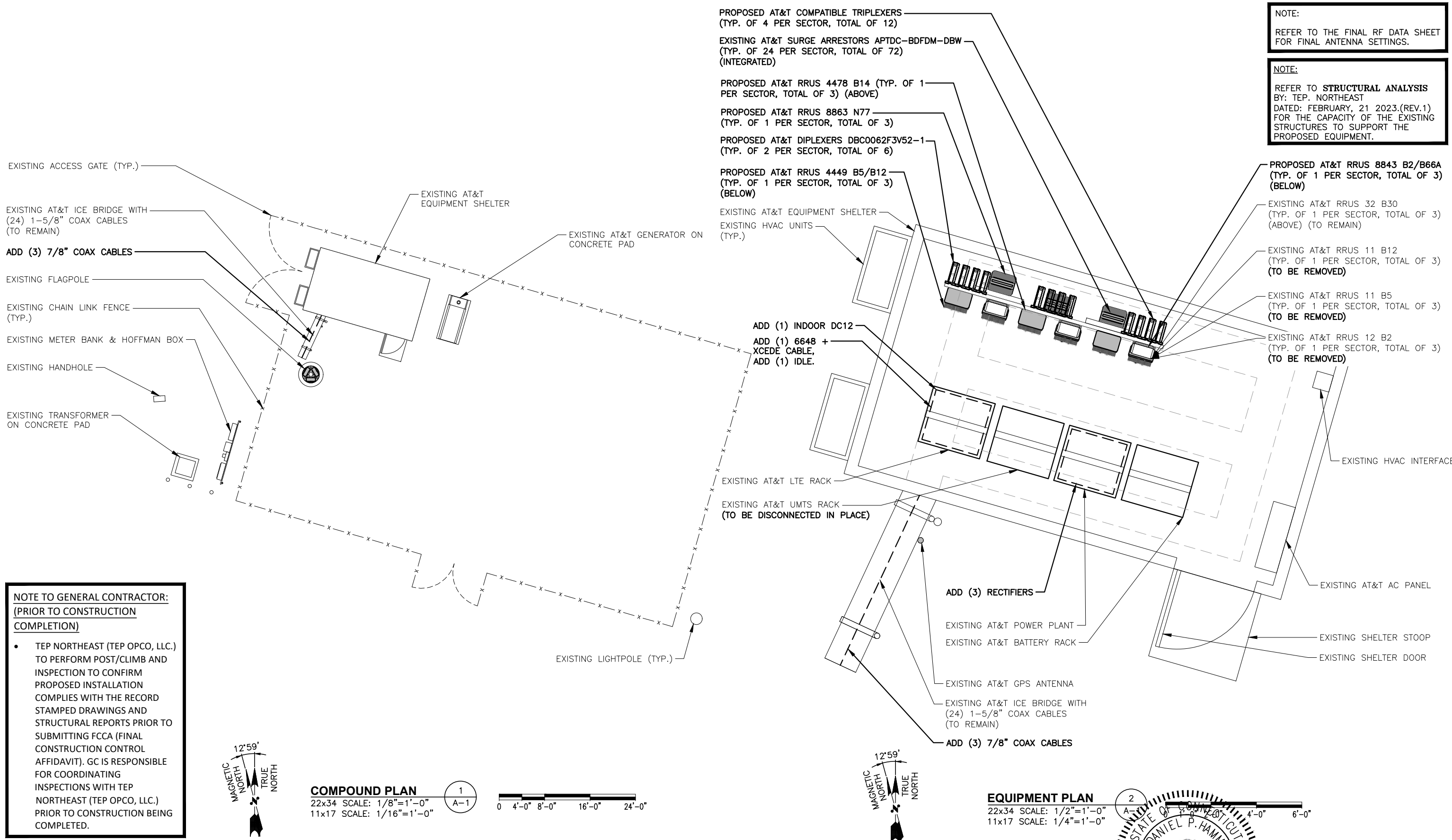
**SITE NUMBER: CTL02200**  
**SITE NAME: NORWALK CT NEW CANAAN AVE**  
 284 NEW CANAAN AVENUE  
 NORWALK, CT 06850  
 FAIRFIELD COUNTY

**at&t**  
 500 ENTERPRISE DRIVE, SUITE 3A  
 ROCKY HILL, CT 06067

NO.		DATE	REVISIONS	BY	CHK	APP'D	AT&T	
2	02/23/23		ISSUED FOR CONSTRUCTION	DO	HC	OPH	GENERAL NOTES	
1	08/04/22		ISSUED FOR CONSTRUCTION	DO	HC	OPH	5G NR RADIO, 5G NR 15R CBAND, ANTENNA MODIFICATIONS, 4T4R4X SOFTWARE RETROFIT, 5G NR	
A	07/25/22		ISSUED FOR REVIEW	JS/GA	HC	OPH	COR-1, LTE NEXT CARRIER, LTE 4G, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE	
SCALE:		DESIGNED BY:		DRAWN BY:		SITE NUMBER		REV
AS SHOWN		HC		JS		CTL02200		2

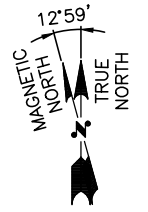
NOTE:  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:  
REFER TO **STRUCTURAL ANALYSIS** BY: TEP, NORTHEAST DATED: FEBRUARY, 21 2023.(REV.1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

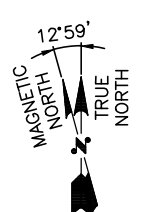
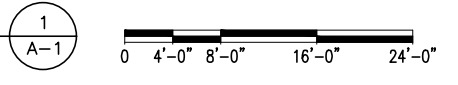


**NOTE TO GENERAL CONTRACTOR:  
(PRIOR TO CONSTRUCTION COMPLETION)**

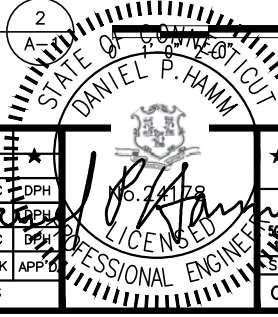
- TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.



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



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



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

**SAI**  
12 INDUSTRIAL WAY  
SALEM, NH 03079

**SITE NUMBER: CTL02200**  
**SITE NAME: NORWALK CT NEW CANAAN AVE**  
  
284 NEW CANAAN AVENUE  
NORWALK, CT 06850  
FAIRFIELD COUNTY

**at&t**  
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/23/23	ISSUED FOR CONSTRUCTION	DO	HC	OPH
1	08/04/22	ISSUED FOR CONSTRUCTION	DO	HC	OPH
A	07/25/22	ISSUED FOR REVIEW	JS/GA	HC	OPH

SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: JS

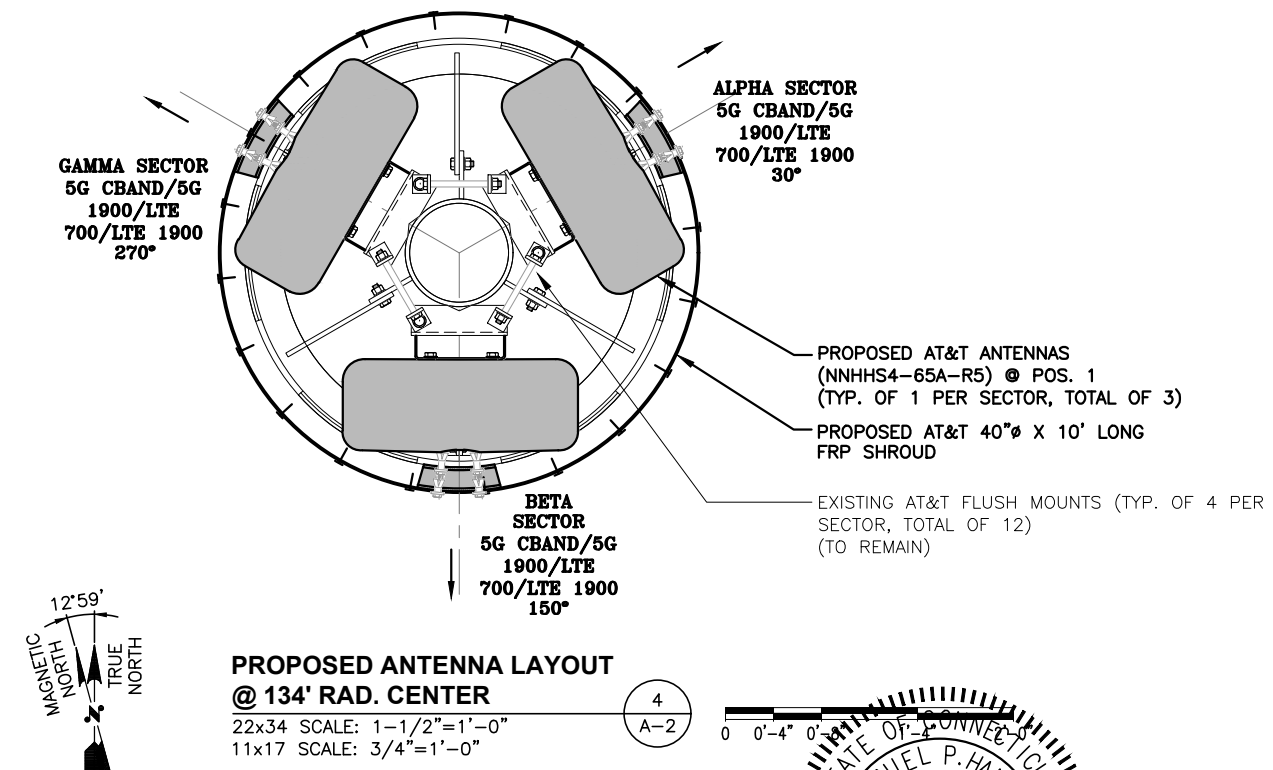
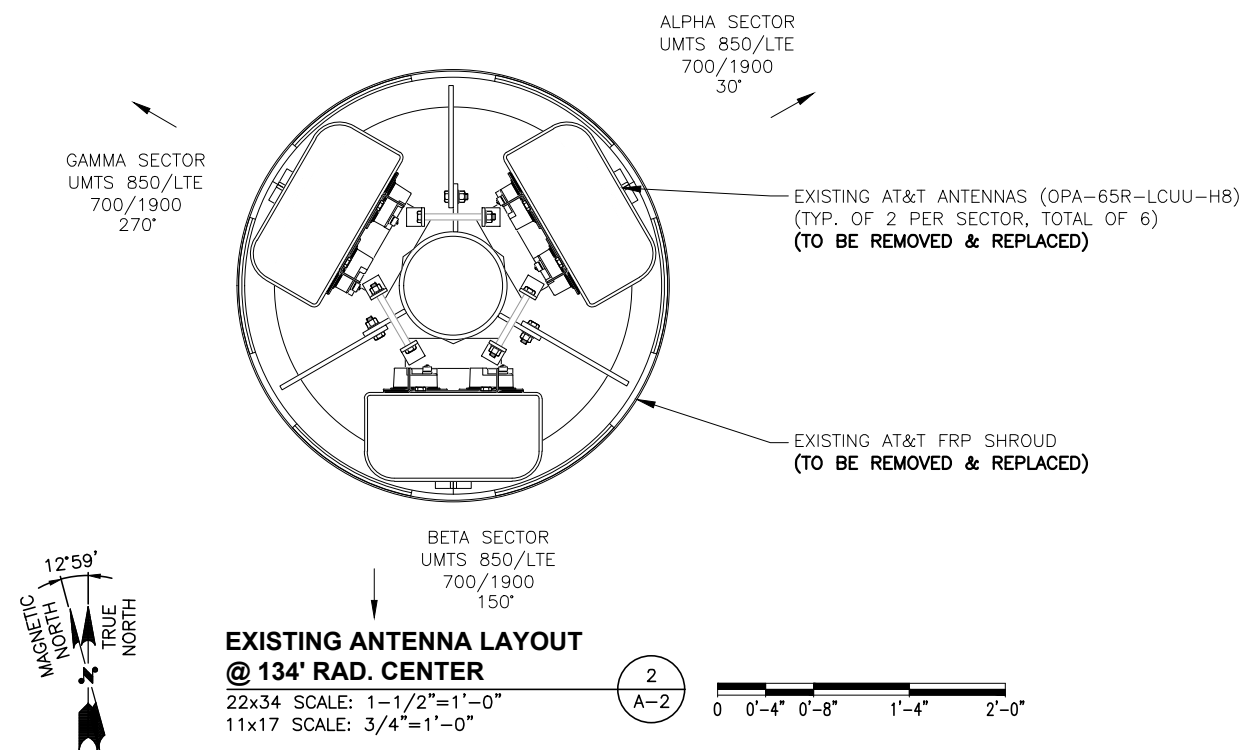
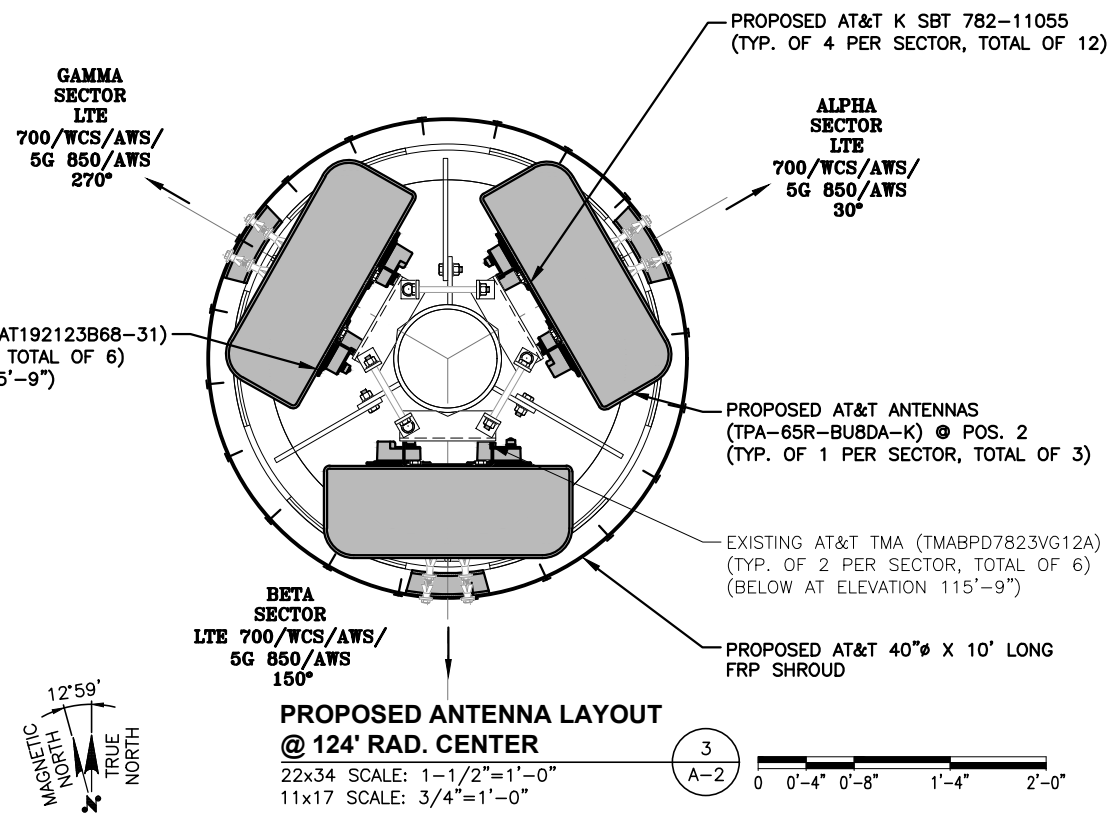
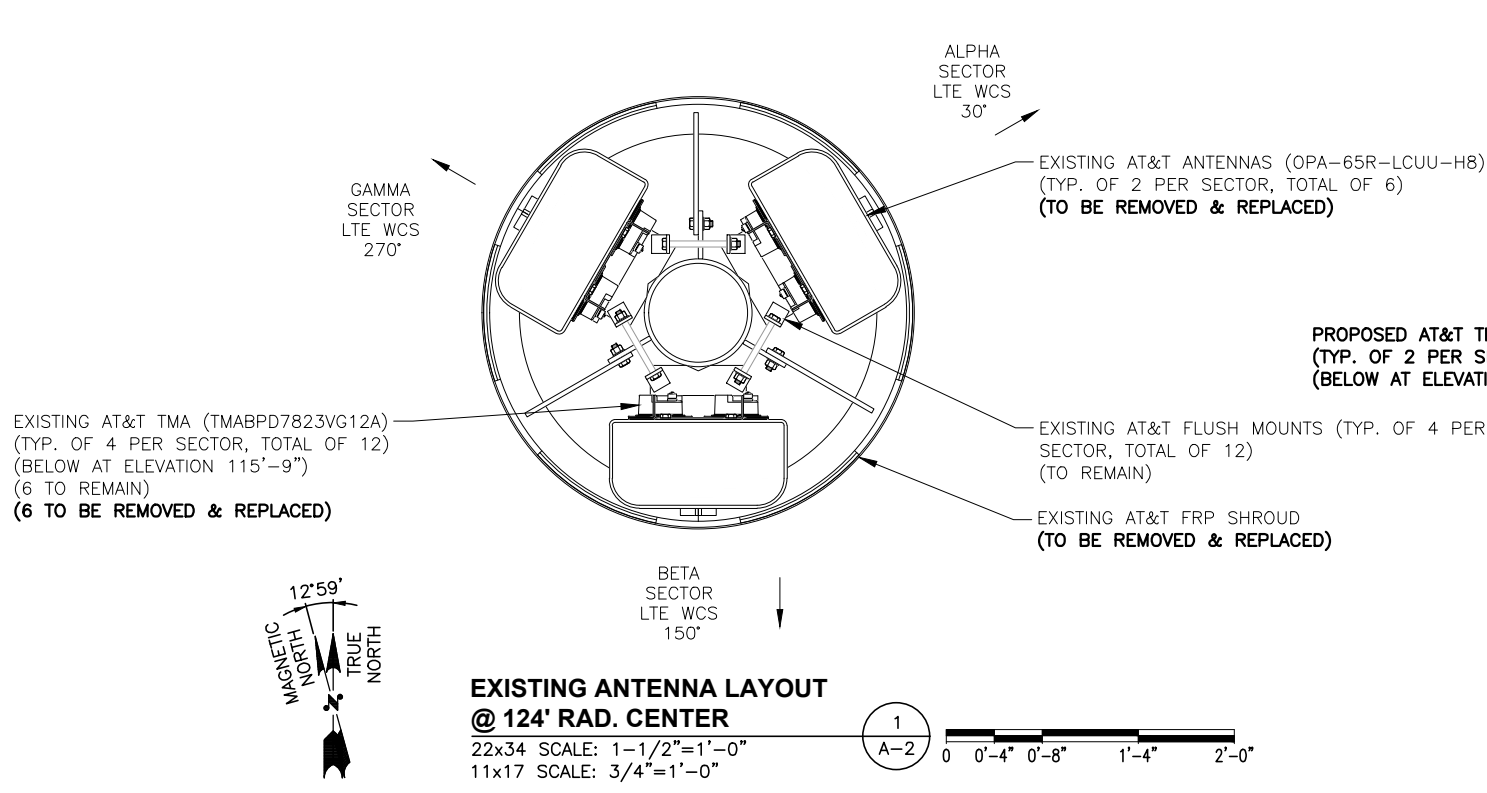
**AT&T**  
**COMPOUND & EQUIPMENT PLAN**  
5G NR RADIO, 5G NR 1SR CBAND, ANTENNA MODIFICATIONS, 4TXRX SOFTWARE RETROFIT, 5G NR 1SR-1, LTE NEXT CARRIER, LTE 4G, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE  
SITE NUMBER: CTL02200    DRAWING NUMBER: A-1    REV: 2

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
REFER TO **STRUCTURAL ANALYSIS** BY: TEP, NORTHEAST DATED: FEBRUARY, 21 2023.(REV.1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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(PRIOR TO CONSTRUCTION COMPLETION)

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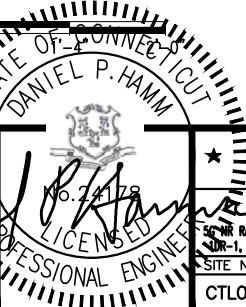


**SITE NUMBER:** CTL02200  
**SITE NAME:** NORWALK CT NEW CANAAN AVE

284 NEW CANAAN AVENUE  
NORWALK, CT 06850  
FAIRFIELD COUNTY



2	02/23/23	ISSUED FOR CONSTRUCTION	DC/HC/OPH
1	08/04/22	ISSUED FOR CONSTRUCTION	JS/HC/OPH
A	07/25/22	ISSUED FOR REVIEW	JS/GA/HC/OPH
NO.	DATE	REVISIONS	BY
		CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: JS



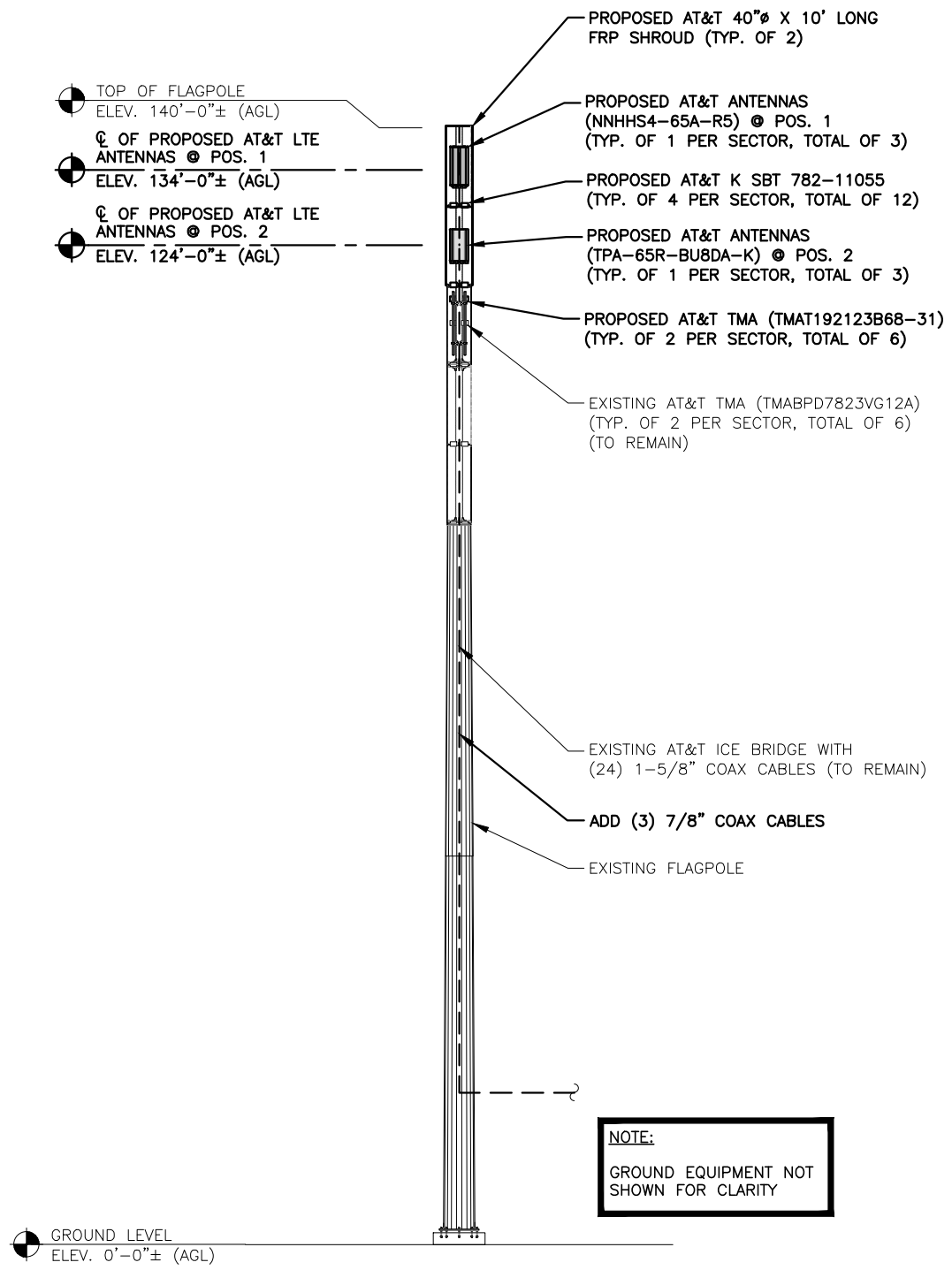
AT&T	
ANTENNA LAYOUTS	
5G NR RADIO, 5G NR 15R CBAND, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RETROFIT, 5G NR NR-1, LTE NEXT CARRIER, LTE 4G, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE	
SITE NUMBER	DRAWING NUMBER
CTL02200	A-2
	2

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

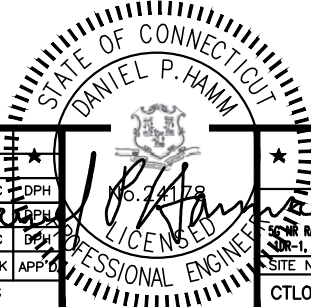
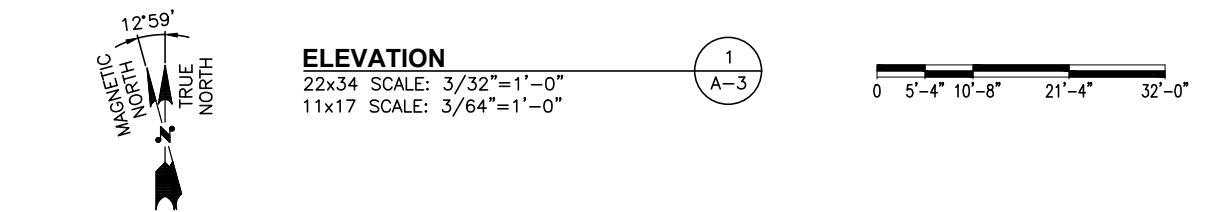
**NOTE:**  
REFER TO **STRUCTURAL ANALYSIS** BY: TEP, NORTHEAST DATED: FEBRUARY, 21 2023.(REV.1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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**NOTE:**  
GROUND EQUIPMENT NOT SHOWN FOR CLARITY



**SITE NUMBER: CTL02200**  
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284 NEW CANAAN AVENUE  
NORWALK, CT 06850  
FAIRFIELD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/23/23	ISSUED FOR CONSTRUCTION	DO	HC	OPH
1	08/04/22	ISSUED FOR CONSTRUCTION	AT	HC	OPH
A	07/25/22	ISSUED FOR REVIEW	JS/GA	HC	OPH

SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: JS

SITE NUMBER	DRAWING NUMBER	REV
CTL02200	A-3	2

AT&T  
ELEVATION  
5G NR RADIO, 5G NR 1SR CBAND, ANTENNA MODIFICATIONS, 4TXRX SOFTWARE RETROFIT, 5G NR 1SR-1, LTE NEXT CARRIER, LTE 4C, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE

**ANTENNA SCHEDULE**

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA C HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	SURGE
A1	PROPOSED	5G CBAND/5G 1900/LTE 700/LTE 1900	NNHHS4-65A-R5	59x19.6x7.8	134'-0"±	136'-7.5"±	30°	(E)(2) TMABPD7823VG12A	(P)(1)(G) 4478 B14 (700) (P)(1)(G) 8863 N77	18.1"x13.4"x8.3" 18.9"x14.4"x5.7"	(E)(4) 1-5/8 COAX (P)(1) 7/8 COAX	(P)(24) TSXDC-4310FM
A2	PROPOSED	LTE 700/WCS/AWS/ 5G 850/AWS	TPA-65R-BU8DA-K	104.3x28.7x16.9	124'-0"±	128'-4.2"±	30°	(P)(2) TMAT192123B68-31 (P)(2) DBC0062F3V52-1	(P)(1)(G) 4449 B5/B12 (850/700) (P)(1)(G) 8843 B2/B66A (AWS) (E)(1)(G) RRUS-32 B30 (WCS)	17.9"x13.2"x10.4" 14.9"x13.2"x10.9"	(E)(4) 1-5/8 COAX	
B1	PROPOSED	5G CBAND/5G 1900/LTE 700/LTE 1900	NNHHS4-65A-R5	59x19.6x7.8	134'-0"±	136'-7.5"±	150°	(E)(2) TMABPD7823VG12A	(P)(1)(G) 4478 B14 (700) (P)(1)(G) 8863 N77	18.1"x13.4"x8.3" 18.9"x14.4"x5.7"	(E)(4) 1-5/8 COAX (P)(1) 7/8 COAX	(P)(24) TSXDC-4310FM
B2	PROPOSED	LTE 700/WCS/AWS/ 5G 850/AWS	TPA-65R-BU8DA-K	104.3x28.7x16.9	124'-0"±	128'-4.2"±	150°	(P)(2) TMAT192123B68-31 (P)(2) DBC0062F3V52-1	(P)(1)(G) 4449 B5/B12 (850/700) (P)(1)(G) 8843 B2/B66A (AWS) (E)(1)(G) RRUS-32 B30 (WCS)	17.9"x13.2"x10.4" 14.9"x13.2"x10.9"	(E)(4) 1-5/8 COAX	
C1	PROPOSED	5G CBAND/5G 1900/LTE 700/LTE 1900	NNHHS4-65A-R5	59x19.6x7.8	134'-0"±	136'-7.5"±	270°	(E)(2) TMABPD7823VG12A	(P)(1)(G) 4478 B14 (700) (P)(1)(G) 8863 N77	18.1"x13.4"x8.3" 18.9"x14.4"x5.7"	(E)(4) 1-5/8 COAX (P)(1) 7/8 COAX	(P)(24) TSXDC-4310FM
C2	PROPOSED	LTE 700/WCS/AWS/ 5G 850/AWS	TPA-65R-BU8DA-K	104.3x28.7x16.9	124'-0"±	128'-4.2"±	270°	(P)(2) TMAT192123B68-31 (P)(2) DBC0062F3V52-1	(P)(1)(G) 4449 B5/B12 (850/700) (P)(1)(G) 8843 B2/B66A (AWS) (E)(1)(G) RRUS-32 B30 (WCS)	17.9"x13.2"x10.4" 14.9"x13.2"x10.9"	(E)(4) 1-5/8 COAX	

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
REFER TO **STRUCTURAL ANALYSIS** BY: TEP, NORTHEAST DATED: FEBRUARY, 21 2023.(REV.1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

**FINAL ANTENNA SCHEDULE** ①  
SCALE: N.T.S. A-4

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
P(3)	4449 B5/B12 (700)	17.9"x13.2"x10.4"
P(3)	8843 B2/B66A (AWS)	14.9"x13.2"x10.9"
P(3)	4478 B14 (700)	18.1"x13.4"x8.3"
P(3)	8863 N77	18.9"x14.4"x5.7"
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"

**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS

**NOTE:**  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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

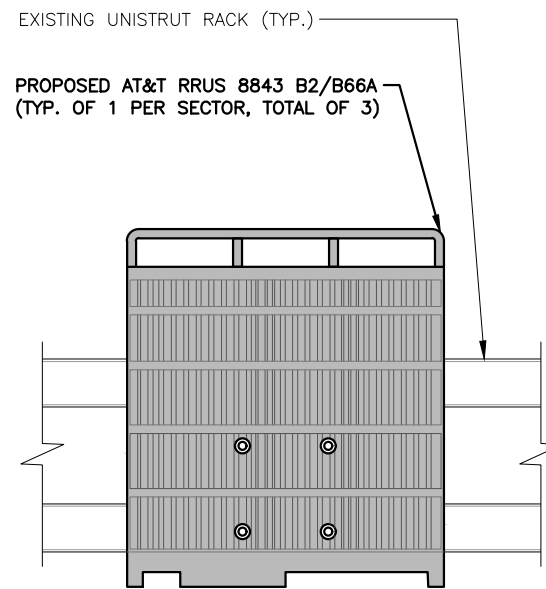
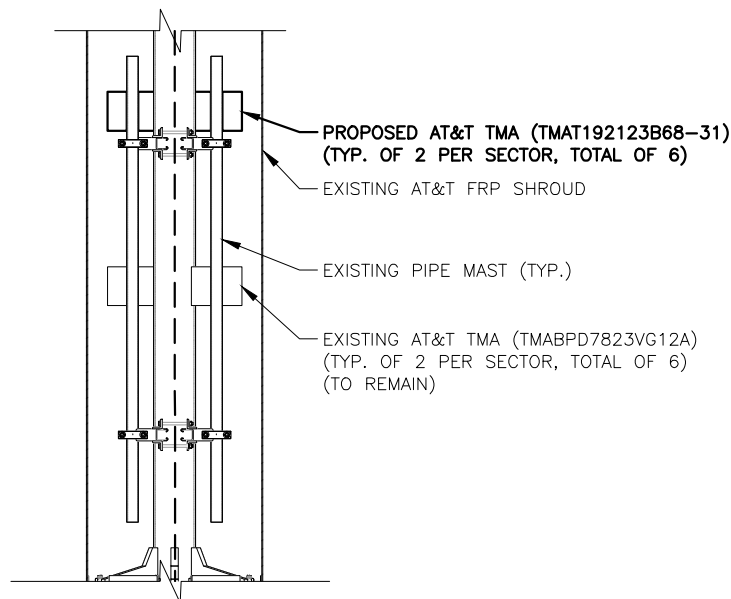
**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRUS DETAIL** ②  
SCALE: N.T.S. A-4

**PROPOSED TMA MOUNTING DETAIL** ③  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0"

**PROPOSED RADIO MOUNTING DETAIL** ④  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0"

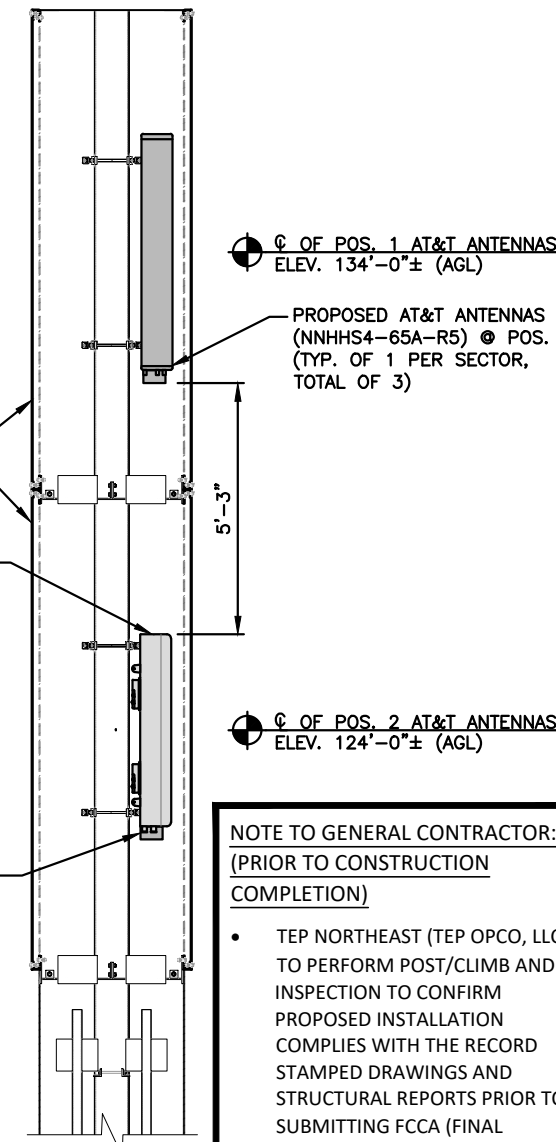
**PROPOSED ANTENNA MOUNTING DETAIL** ⑤  
22x34 SCALE: 1/2"=1'-0"  
11x17 SCALE: 1/4"=1'-0"



PROPOSED AT&T 40"Ø X 10' LONG FRP SHROUD (TYP. OF 2)

PROPOSED AT&T ANTENNAS (TPA-65R-BU8DA-K) @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED AT&T K SBT 782-11055 (TYP. OF 4 PER SECTOR, TOTAL OF 12)



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 TEP OPCO, LLC. 45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845 TEL: (978) 557-5553	 12 INDUSTRIAL WAY SALEM, NH 03079	SITE NUMBER: CTL02200 SITE NAME: NORWALK CT NEW CANAAN AVE  284 NEW CANAAN AVENUE NORWALK, CT 06850 FAIRFIELD COUNTY	 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067	2 02/23/23 ISSUED FOR CONSTRUCTION 1 08/04/22 ISSUED FOR CONSTRUCTION A 07/25/22 ISSUED FOR REVIEW	DESIGNED BY: HC DRAWN BY: JS	 LICENSED PROFESSIONAL ENGINEER STATE OF CONNECTICUT No. 22178 6/20/2023	AT&T DETAILS 5G NR RADIO, 5G NR 15R CBAND, ANTENNA MODIFICATIONS, 4T4R4X SOFTWARE RETROFIT, 5G NR RRU-1, LTE NEXT CARRIER, LTE 4G, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE
				SCALE: AS SHOWN	SITE NUMBER: CTL02200 DRAWING NUMBER: A-4 REV: 2		

**STRUCTURAL NOTES:**

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL", 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

**GENERAL:** WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

**NOTES:**

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**NOTES:**

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

**SPECIAL INSPECTION CHECKLIST**

**BEFORE CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
REQUIRED	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS <sup>3</sup>

ADDITIONAL TESTING AND INSPECTIONS:

**DURING CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

ADDITIONAL TESTING AND INSPECTIONS:

**AFTER CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:

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

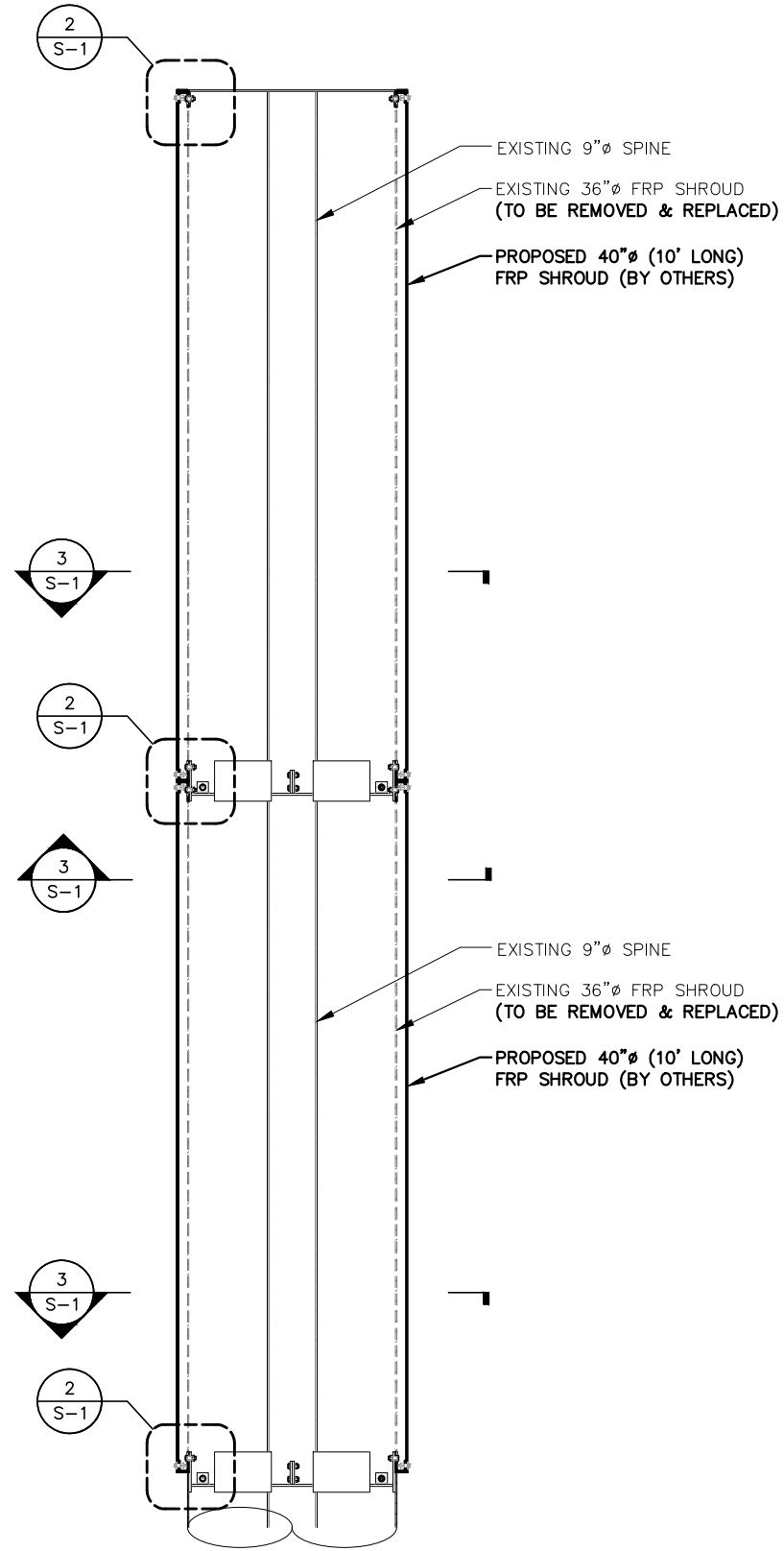
SAI  
12 INDUSTRIAL WAY  
SALEM, NH 03079

**SITE NUMBER: CTL02200**  
**SITE NAME: NORWALK CT NEW CANAAN AVE**

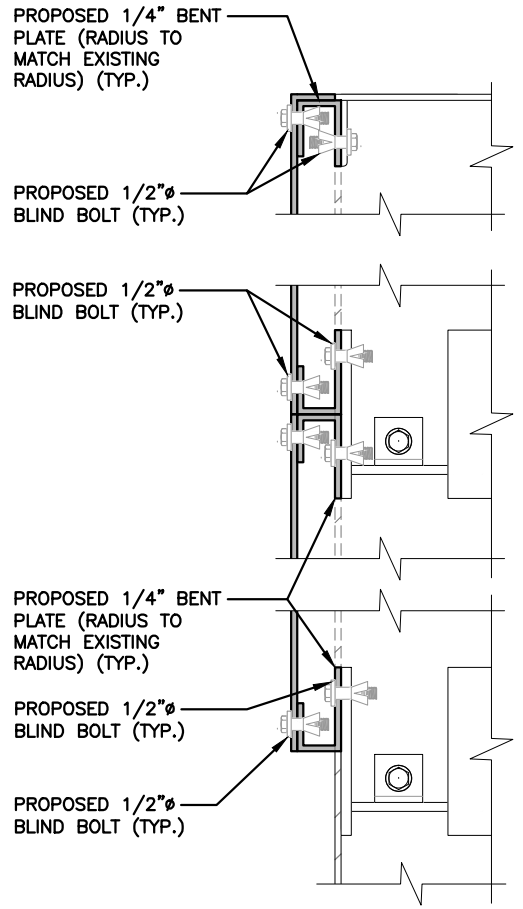
284 NEW CANAAN AVENUE  
NORWALK, CT 06850  
FAIRFIELD COUNTY

500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

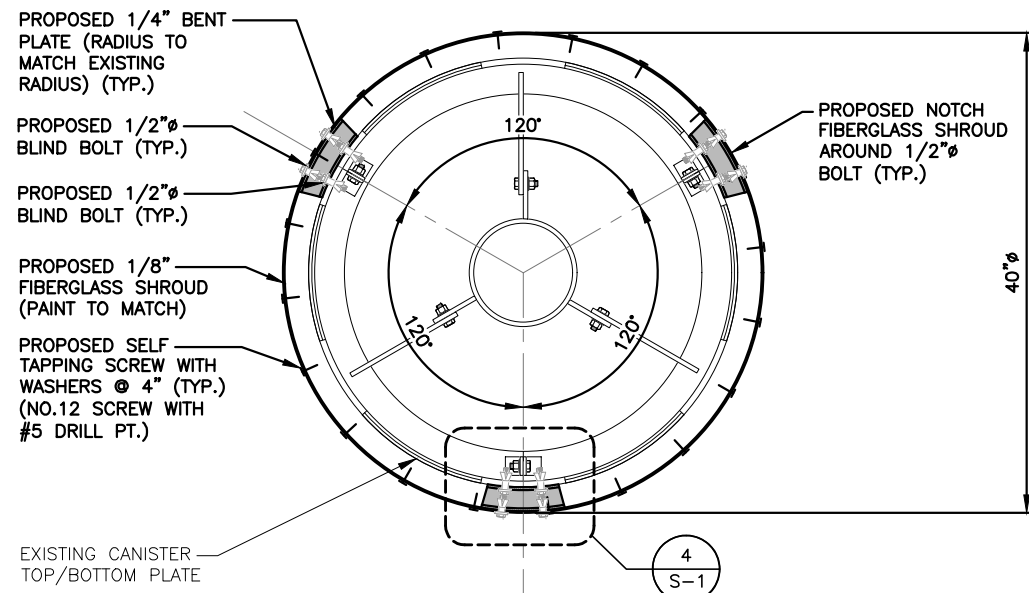
2 02/23/23 ISSUED FOR CONSTRUCTION		DO/WH/HC/DPH		AT&T STRUCTURAL NOTES 5G NR RADIO, 5G NR 15R CBAND, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RETROFIT, 5G NR 15R-1, LTE NEXT CARRIER, LTE 4G, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE	
1 08/04/22 ISSUED FOR CONSTRUCTION		AT/HC/DPH			
A 07/25/22 ISSUED FOR REVIEW		JS/GA/HC/DPH			
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: JS		
SITE NUMBER		DRAWING NUMBER		REV	
CTL02200		SN-1		2	



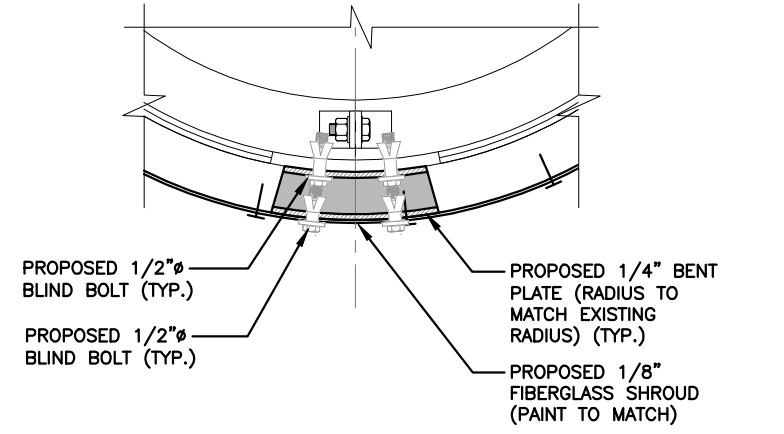
**PROPOSED FRP SHROUD MOUNTING DETAIL**  
 22x34 SCALE: 3/4"=1'-0"  
 11x17 SCALE: 3/8"=1'-0"



**CONNECTION DETAIL**  
 22x34 SCALE: 1"=1'-0"  
 11x17 SCALE: 1/2"=1'-0"



**SECTION DETAIL**  
 22x34 SCALE: 1-1/2"=1'-0"  
 11x17 SCALE: 3/4"=1'-0"



**CONNECTION DETAIL**  
 22x34 SCALE: 1"=1'-0"  
 11x17 SCALE: 3/8"=1'-0"

**NOTE:**  
 REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
 REFER TO **STRUCTURAL ANALYSIS** BY: TEP, NORTHEAST DATED: FEBRUARY, 21 2023.(REV.1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

**NOTE TO GENERAL CONTRACTOR:**  
 (PRIOR TO CONSTRUCTION COMPLETION)

- TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

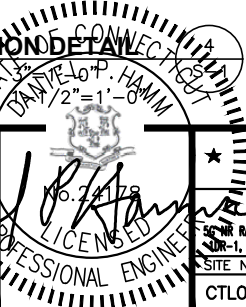


**SITE NUMBER: CTL02200**  
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 284 NEW CANAAN AVENUE  
 NORWALK, CT 06850  
 FAIRFIELD COUNTY



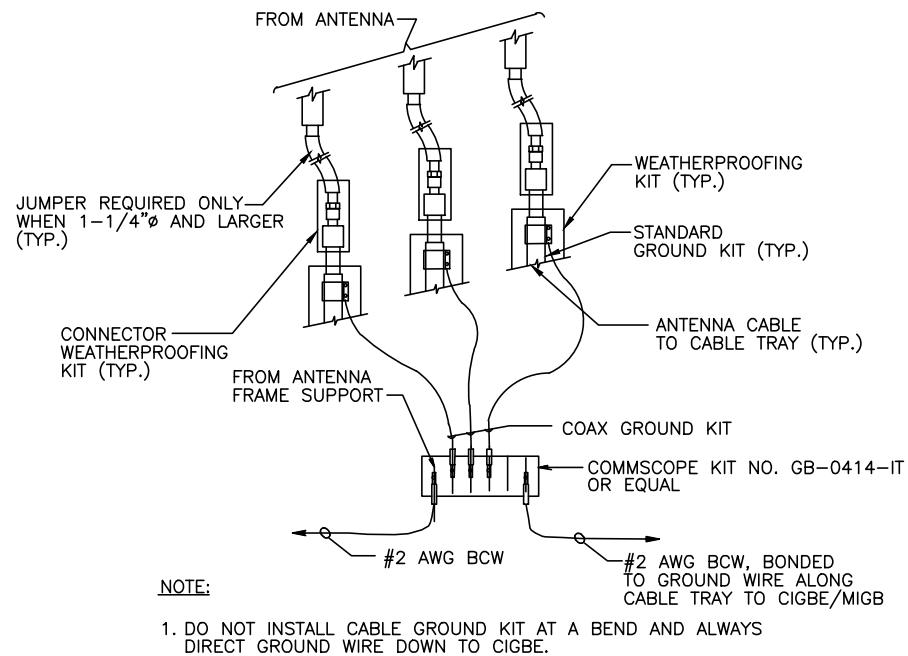
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/23/23	ISSUED FOR CONSTRUCTION	DOV	HC	OPH
1	08/04/22	ISSUED FOR CONSTRUCTION	DOV	HC	OPH
A	07/25/22	ISSUED FOR REVIEW	JS/GA	HC	OPH

SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: JS

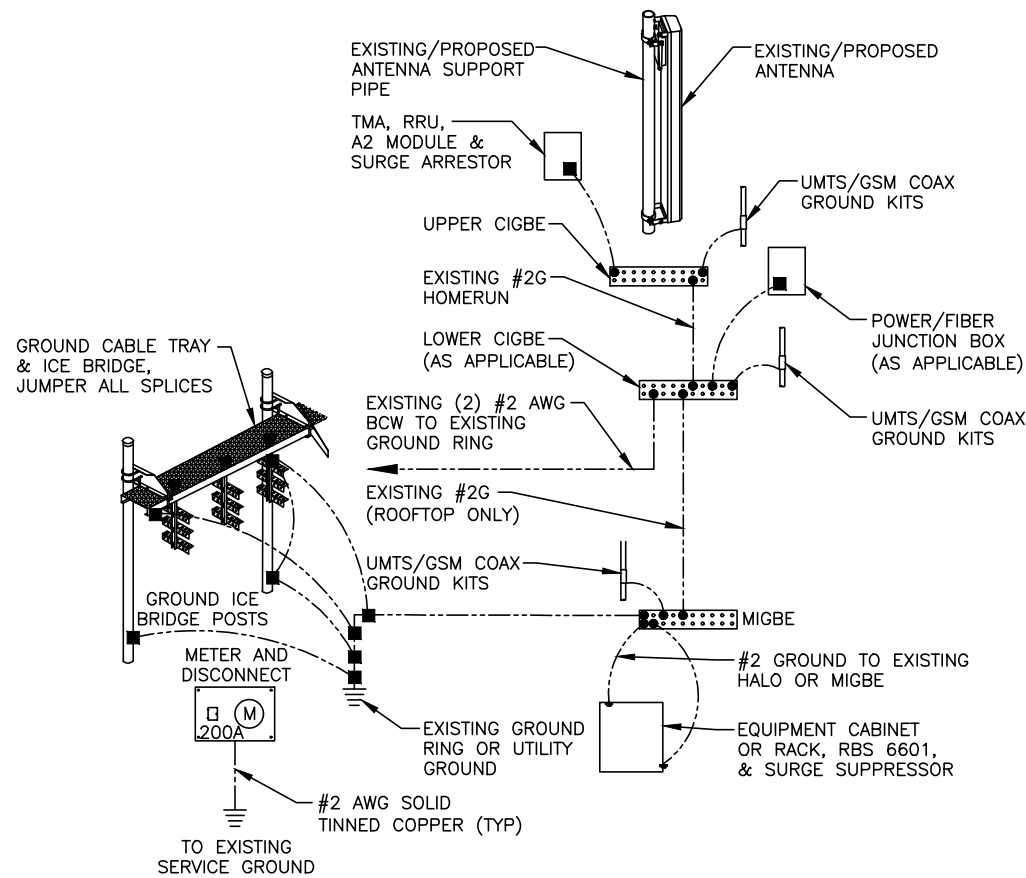


AT&T	
MOUNT MODIFICATION DESIGN	
5G NR RADIO, 5G NR 15R CBAND, ANTENNA MODIFICATIONS, 4T4R4X SOFTWARE RETROFIT, 5G NR 15R-1, LTE NEXT CARRIER, LTE 4G, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE	
SITE NUMBER	DRAWING NUMBER
CTL02200	S-1
	2

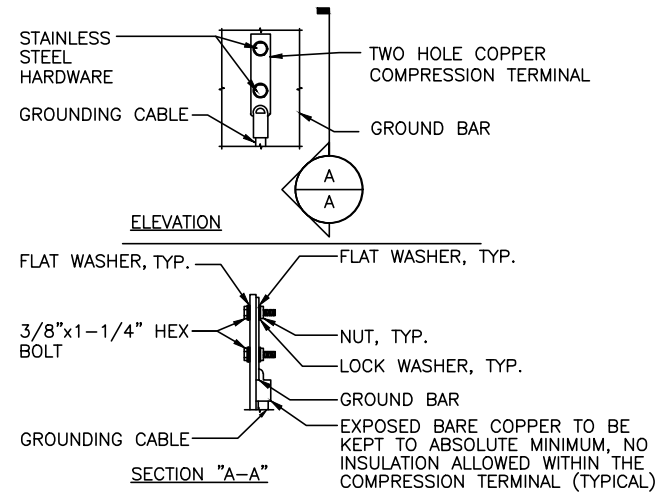




**GROUND WIRE TO GROUND BAR CONNECTION DETAIL** 1  
SCALE: N.T.S. G-1



**GROUNDING RISER DIAGRAM** 2  
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

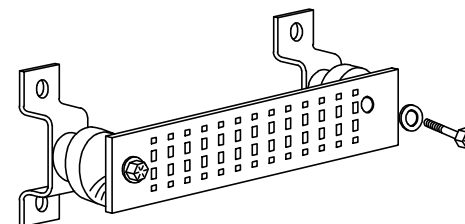
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**SECTION "P" - SURGE PRODUCERS**

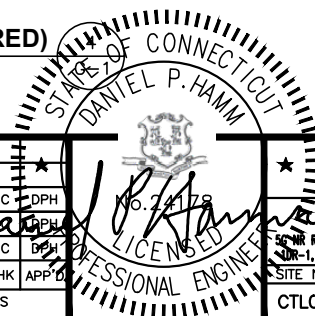
- CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
- +24V POWER SUPPLY RETURN BAR (#2 AWG)
- 48V POWER SUPPLY RETURN BAR (#2 AWG)
- RECTIFIER FRAMES.

**SECTION "A" - SURGE ABSORBERS**

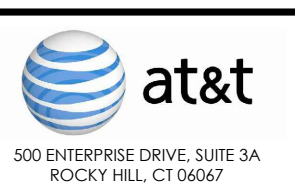
- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)



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



**SITE NUMBER: CTL02200**  
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284 NEW CANAAN AVENUE  
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FAIRFIELD COUNTY



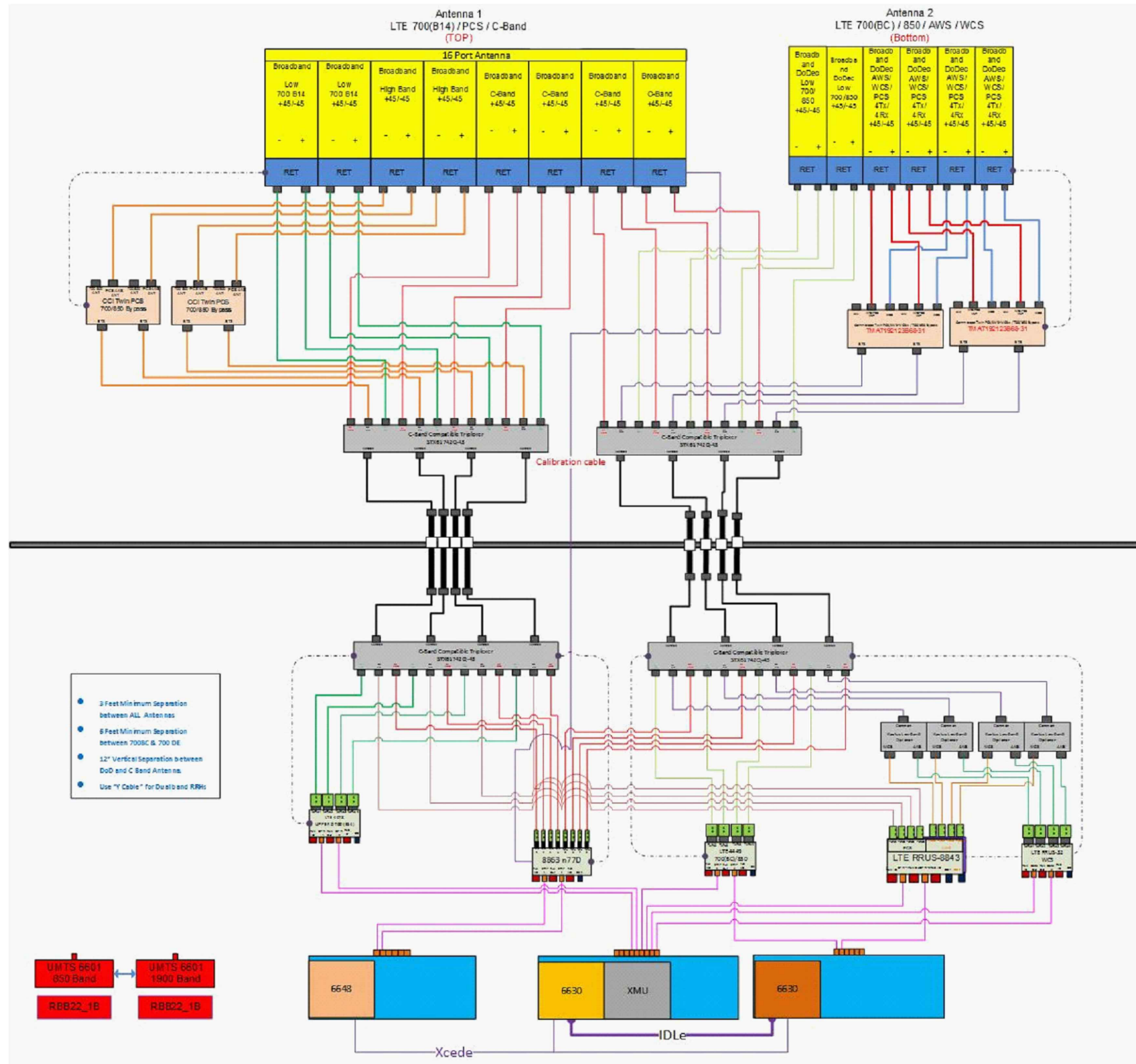
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/23/23	ISSUED FOR CONSTRUCTION	DO	HC	OPH
1	08/04/22	ISSUED FOR CONSTRUCTION	DO	HC	OPH
A	07/25/22	ISSUED FOR REVIEW	JS/GA	HC	OPH

SCALE: AS SHOWN DESIGNED BY: HC DRAWN BY: JS

SITE NUMBER	DRAWING NUMBER	REV
CTL02200	G-1	2

AT&T  
GROUNDING DETAILS  
5G NR RADIO, 5G NR 15R CBAND, ANTENNA MODIFICATIONS, 4T4R4X SOFTWARE RETROFIT, 5G NR 15R-1, LTE NEXT CARRIER, LTE 4G, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE

**NOTE:**  
 REV: 5  
 DATED: 02/10/2023  
 RFDS ID: 4860594



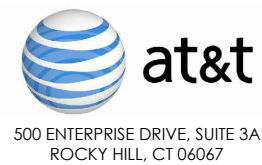
**RF PLUMBING DIAGRAM** 1  
 SCALE: N.T.S. RF-1

**NOTE:**  
 1. CONTRACTOR TO CONFIRM ALL PARTS.  
 2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.  
 3. RFDS USED FOR REFERENCE.

**NOTE:**  
 REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



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2	02/23/23	ISSUED FOR CONSTRUCTION	DO/YH	HC	DPH
1	08/04/22	ISSUED FOR CONSTRUCTION	YH	HC	DPH
A	07/25/22	ISSUED FOR REVIEW	JS/GA	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: JS		

AT&T		
RF PLUMBING DIAGRAM		
5G NR RADIO, 5G NR 15R CBAND, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RETROFIT, 5G NR 10R-1, LTE NEXT CARRIER, LTE 4C, CELL SITE RF MODIFICATIONS, 5G NR SOFTWARE UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CTL02200	RF-1	2