



July 5, 2023

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

RE:

Notice of Exempt Modification -T-Mobile: CTFF013A

Crown Site ID #857525

24 Dinglebrook Lane, Newtown, CT 06470

Latitude: 41° 28′ 1.01″ / Longitude: -73° 20′ 2.05″

#### Dear Ms. Bachman:

Please accept this letter by Crown Castle USA Inc. on behalf of T-Mobile Northeast LLC ("T-Mobile") for notification of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2) and §16-50aa. The property is owned by Genesis TT LLC. The tower is operated by CCATT LLC ("Crown Castle"). A copy of this letter is being sent to Daniel C. Rosenthal, First Selectman, Town of Newtown and Rob Sibley, Director of Land Use, Town of Newtown as well as Genesis TT LLC, property owner. The facility was approved by the Connecticut Siting Council, Docket No. 376 on August 27, 2009.

T-Mobile proposes to install four (4) antennas and ancillary equipment at the 129' mount level on the existing 150-foot monopole tower located at 24 Dinglebrook Lane, Newtown, CT. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

#### **Planned Modification:**

Tower:

#### **Installed New:**

- (4) Ericsson-AIR 6419 B41 Antennas
- (4) Hybrid Cables (6x24)
- (4) Ericsson-4460 B2/B25 B66 RRUs

#### Remove:

- (4) Hybrid Cables (6x12)
- (4) Ericsson-AIR 32 B2A/B66AA Antennas

The Foundation for a Wireless World.

CrownCastle.com

Page 2

Ground:

Installed New:

- (1) B160 Battery Cabinet
- (1) 6161 Cabinet

The planned modification to the facility falls within the activities explicitly provided for in R.C.S.A §16-50j 72(b)(2), specifically:

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

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely.

Jeffrey Barbadora

Site Acquisition Specialist 1800 W. Park Drive, Suite 250

Westborough, MA 01581

(781) 970-0053

Jeff.Barbadora@crowncastle.com

#### Melanie A. Bachman

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#### Attachments

cc:

Daniel C. Rosenthal, First Selectman Town of Newtown 3 Primrose Street Newtown, CT 06470 (203) 270-4201

Rob Sibley, Director of Land Use Town of Newtown 3 Primrose Street Newtown, CT 06470 (203) 270-4351

Genesis TT LLC Property Owner C/O Lease Administration 1001 3<sup>rd</sup> Ave West, Suite 420 Bradenton, FL 34205 (941) 757-5010 DOCKET NO. 376 - New Cingular Wireless PCS, LLC (AT&T) }
application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a } telecommunications facility located at 24 Dinglebrook Lane, Newtown, Connecticut.

Siting

Council

August 27, 2009

#### **Decision and Order**

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New Cingular Wireless PCS, LLC (AT&T), hereinafter referred to as the Certificate Holder, for a telecommunications facility located at 24 Dinglebrook Lane, Newtown, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

- The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level. The height at the top of the Certificate Holder's antennas shall not exceed 152-foot 6inches feet above ground level.
- 2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Newtown for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
  - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road including its possible relocation, utility line, and landscaping; and
  - construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the <u>2002 Connecticut Guidelines for Soil Erosion and</u> <u>Sediment Control</u>, as amended.
- 3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

- 4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
- 5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
- 6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Newtown public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
- 7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
- 8. Not later than 45 days after the installation of the monopole, at least one carrier's antennas shall be installed on the tower.
- 9. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Newtown. Any proposed modifications to this Decision and Order shall likewise be so served.
- 10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
- 11. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
- 12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Newtown Bee.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

Docket No. 376 Decision and Order Page 3

The parties and intervenors to this proceeding are:

#### <u>Applicant</u> <u>Its Representative</u>

New Cingular Wireless PCS, LLC (AT&T)

Christopher B. Fisher, Esq.
Cuddy & Feder LLP

445 Hamilton Avenue, 14th Floor

White Plains, NY 10601

AT&T

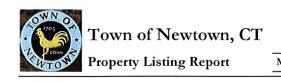
500 Enterprise Drive Rocky Hill, CT 06067 Attention: Michele Briggs

#### <u>Intervenor</u> <u>Its Representative</u>

Cellco Partnership d/b/a Verizon Wireless

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street

Hartford, CT 06103-3597



Map Block Lot 22-3-4-C

Building #

PID

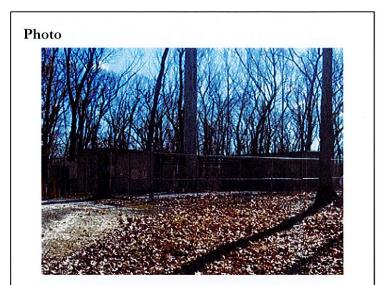
15217 Account

00174600C

#### **Property Information**

24 DINGLE	24 DINGLEBROOK LANE			
GENESIS TT LLC				
C/O TARPON TOWERS II, LLC				
8916 77TH	TERRAC	CE EAST	#103	
LAKEWOO	DD	FL	34202	
4310	CELL S	SITE		
ī				
R-2				
	GENESIS C/O TARPO 8916 77TH LAKEWOO 4310	GENESIS TT LLC  C/O TARPON TOW  8916 77TH TERRAC  LAKEWOOD  4310 CELL S	GENESIS TT LLC  C/O TARPON TOWERS II, LI  8916 77TH TERRACE EAST  LAKEWOOD FL  4310 CELL SITE  I	

Neighborhood	0	
Acreage	0	
Utilities	Well,Septic	
Lot Setting/Desc	NA	NA
Book / Page	1120/0239	
Additional Info		



Sketch



#### **Primary Construction Details**

Year Built	0
Building Desc.	CELL SITE
Building Style	NA
Building Grade	
Stories	0
Occupancy	
Exterior Walls	
Exterior Walls 2	NA
Roof Style	2
Roof Cover	
Interior Walls	
Interior Walls 2	NA
Interior Floors 1	
Interior Floors 2	NA

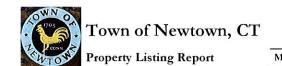
II	
Heating Fuel	
Heating Type	
AC %	
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	
Fireplaces	0

#### (\*Industrial / Commercial Details)

Building Use	Vacant
Building Condition	
Sprinkler %	NA
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA
Foundation	NA

Report Created On

7/5/2023



Map Block Lot 22-3

22-3-4-C

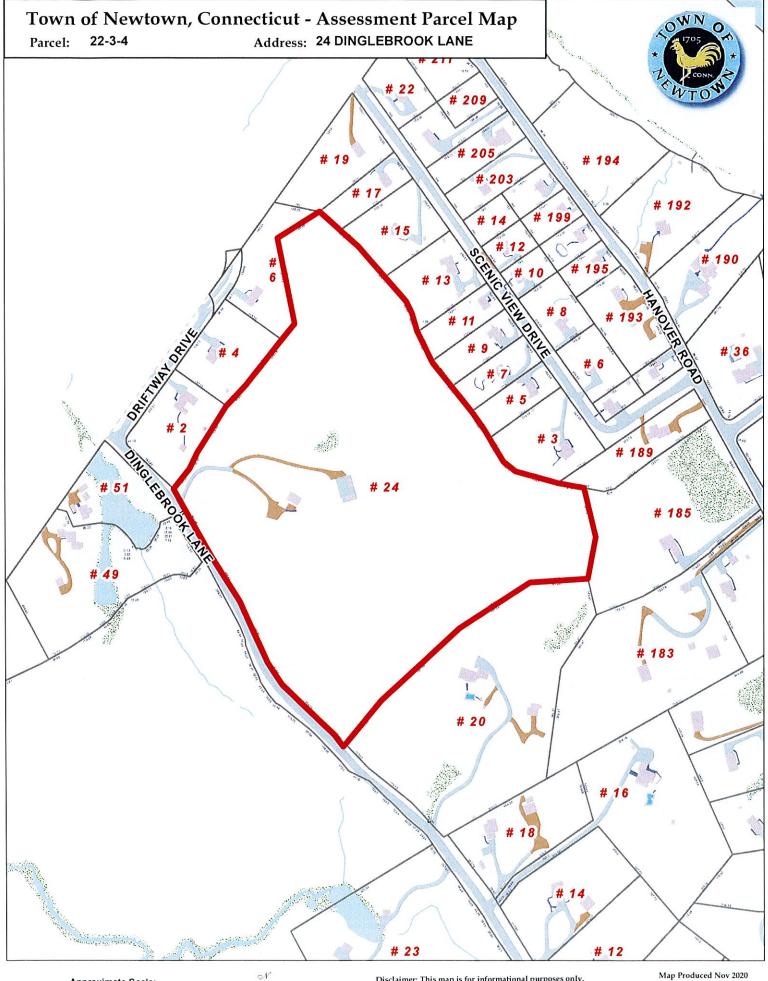
Building # 1

PID

15217 Account

00174600C

Valuation Sumr			% of Appraised Value)	Sub Areas			
Item	Appr	aised	Assessed	Subarea Typ	oe .	Gross Area (sq ft)	Living Area (sq f
Buildings	0		0				
Extras	0		0				
Improvements							
Outbuildings	156550		109590				
Land	384000	9	268800				
Γotal	540550		378390				
Outbuilding ar	nd Extra F	eatures					
Туре		Description	on				
Cell Tower		1.00 Units					
Cellular Shed 400.00 S.F.							
Cellular Shed		360.00 S.F.					
Fence		250.00 L.F.					
						-	
						<u> </u>	
,							
				Total Area		0	0
Sales History							
Owner of Record				Book/ Page	Sale Date	Sale I	Price
LUNDGREN PAUL F	REST			0857/0723	12/25/200	0 0	
GENESIS TT LLC				1120/0239	12/05/201	18 62000	00
LINDA LUNDGREN I	HEE HEE			1112/0725	06/04/201	18 0	



#### Barbadora, Jeff

From:

TrackingUpdates@fedex.com

Sent:

Thursday, July 6, 2023 10:15 AM

To:

Barbadora, Jeff

Subject:

FedEx Shipment 772643176406: Your package has been delivered

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



# Hi. Your package was delivered Thu, 07/06/2023 at 10:08am.



Delivered to 3 PRIMROSE ST, NEWTOWN, CT 06470 Received by W.ANNA

**OBTAIN PROOF OF DELIVERY** 

## How was your delivery?











TRACKING NUMBER

772643176406

FROM

Crown Castle

1800 West Park Drive

Suite 200

WESTBOROUGH, MA, US, 01581

TO

Town of Newtown

First Selectman Daniel Rosenthal

3 Primrose Street

NEWTOWN, CT, US, 06470

REFERENCE

799001.7680

SHIPPER REFERENCE

799001.7680

SHIP DATE

Wed 7/05/2023 05:42 PM

DELIVERED TO

Receptionist/Front Desk

PACKAGING TYPE

FedEx Envelope

ORIGIN

WESTBOROUGH, MA, US, 01581

DESTINATION

NEWTOWN, CT, US, 06470

NUMBER OF PIECES

TOTAL SHIPMENT WEIGHT

1.00 LB

SERVICE TYPE

FedEx Priority Overnight

#### Barbadora, Jeff

From:

TrackingUpdates@fedex.com

Sent:

Thursday, July 6, 2023 10:17 AM

To:

Barbadora, Jeff

Subject:

FedEx Shipment 772643193383: Your package has been delivered

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# Hi. Your package was delivered Thu, 07/06/2023 at 10:10am.



Delivered to 3 PRIMROSE ST, NEWTOWN, CT 06470 Received by F.DAWN

**OBTAIN PROOF OF DELIVERY** 

### How was your delivery?











TRACKING NUMBER 772643193383

> Crown Castle FROM

> > 1800 West Park Drive

Suite 200

WESTBOROUGH, MA, US, 01581

TO Town of Newtown

Rob Sibley, Director of Land Use

3 Primrose Street

NEWTOWN, CT, US, 06470

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

> SHIP DATE Wed 7/05/2023 05:42 PM

DELIVERED TO Receptionist/Front Desk

PACKAGING TYPE FedEx Envelope

> ORIGIN WESTBOROUGH, MA, US, 01581

NEWTOWN, CT, US, 06470 DESTINATION

NUMBER OF PIECES

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight

#### Barbadora, Jeff

From:

TrackingUpdates@fedex.com

Sent:

Monday, July 10, 2023 10:17 AM

To:

Barbadora, Jeff

Subject:

FedEx Shipment 772643222041: Your package has been delivered

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# Hi. Your package was delivered Mon, 07/10/2023 at 10:10am.



Delivered to 8916 77TH TER E 103, BRADENTON, FL 34205 Received by B.BOWMAN

**OBTAIN PROOF OF DELIVERY** 

How was your delivery?



TRACKING NUMBER 772643222041

FROM Crown Castle

1800 West Park Drive

Suite 200

WESTBOROUGH, MA. US. 01581

TO Genesis TT LLC

c/o Lease Administration 1001 3rd Avenue West

Suite 420

BRADENTON, FL, US, 34205

DOOR TAG NUMBER DT106021008342

**REFERENCE** 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Wed 7/05/2023 05:42 PM

DELIVERED TO Receptionist/Front Desk

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

DESTINATION BRADENTON, FL, US, 34205

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight

Date: May 15, 2023



Telamon Tower Engineering, PLLC 319 Chapanoke Road, Suite 118

Raleigh, NC 27603 (405) 348-5460

Engineering@ttepllc.com

Subject:

**Mount Analysis Report** 

Carrier Designation:

T-Mobile Equipment Change-Out

Carrier Site Number: Carrier Site Name:

CTFF013A CTFF013A

Crown Castle Designation:

**BU Number:** 

857525

Site Name:

**NEWTOWN DINGLEBROOK** 

JDE Job Number: Order Number:

745974 649515 Rev. 0

Engineering Firm Designation:

Telamon Tower Engineering, PLLC Project #:42284-CTFF013A-02-MA

Site Data:

24 DINGLEBROOK LANE, NEWTOWN, CT 06470, Fairfield County

Latitude: 41° 28' 1.01" Longitude: -73° 20' 2.05"

Structure Information:

**Tower Height & Type:** 

149 ft Monopole

**Mount Elevation:** 

131 ft

Mount Width & Type:

12.5 ft Platform w/ Support Rails

Telamon Tower Engineering, PLLC is pleased to submit this "Mount Analysis Report" to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

#### Platform w/ Support Rails

Sufficient

This analysis utilizes an ultimate 3-second gust wind speed of 115 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Vignesh Hari

Respectfully Submitted by:

Digitally signed by David W Chickering Date: 2023.05.15

11:49:26 -04'00'

OF CONNECTION OF

David Chickering Telamon Tower Engineering PLLC PE # 35683 Exp. 01/31/2024

#### 1) INTRODUCTION

The proposed equipment is to be mounted to the existing 4-sector 12.5 ft Platform w/ Support Rails.

#### 2) ANALYSIS CRITERIA

**Building Code:** 

2021 IBC

TIA-222 Revision:

TIA-222-H

Risk Category:

Ш

**Ultimate Wind Speed:** 

115 mph

**Exposure Category:** 

С

Topographic Factor, Kzt:

1.00

Ice Thickness:

1 in

Wind Speed with Ice:

50 mph

Seismic S<sub>s</sub>:

0.21

Seismic S<sub>1</sub>:

....

ocisinic o<sub>1</sub>.

0.06

Live Loading Wind Speed:

30 mph

Man Live Load at Mount Pipes:

500 lb

Man Live Load at Mid/End-Points:

250 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
	131.0	4	Ericsson	RADIO 4449 B12/B71	
		4	RFS Celwave	APXVAARR24_43-U-NA20	]
121.0	129.0	4	Ericsson	RADIO 4460 B2/B25_B66_TMO	12.5 ft Platform w/ Support
131.0		4	Ericsson	AIR 6419 B41_TMO_CCIV2	Rails
	400.0	1	Ericsson	ANT3 A 0.9 HPX	1
	128.0	2	Ericsson	MINI-LINK 6365	

#### 3) ANALYSIS PROCEDURE

**Table 2 - Documents Provided** 

Document	Remarks	Reference	Source
SITE PHOTOS	DATED OCTOBER 06, 2022		CCI SITES
MOUNT DRAWINGS	SITE PRO 1 DWG# F4P-HRK12		SITE PRO 1
LOADING APPLICATION	ORDER #649515 Rev. 0 MAY 08, 2023	-	CCI SITES
STRUCTURAL ANALYSIS	CROWN CASTLE PROJECT# 2150233, DATED AUGUST 18, 2022	10533751	CCI SITES
MOUNT ANALYSIS	TELAMON TOWER ENGINEERING, PLLC, PROJECT #42284-CTFF013A-01-MA DATED APRIL 25, 2023	10925379	CCI SITES
RFDS	T-MOBILE, SITE ID: CTFF013A, VER 2.0, DATED APRIL 11, 2023	1	CCI SITES

#### 3.1) Analysis Method

RISA-3D (Version 20.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed, using Microsoft Excel, by Telamon Tower Engineering, PLLC was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the analysis is included in Appendix B.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 Tower Mount Analysis (Rev. E).

#### 3.2) Assumptions

- 1) The analysis of the existing tower or the effect of the mount attachment to the tower is not within the current scope of work.
- 2) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design and manufacturer's specifications.
- 3) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1.
- 4) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report. All U-Bolt connections have been properly tightened. This analysis will be required to be revised if the existing conditions in the field allowance was made for any damaged, missing, or rusted members.
- 5) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate

Q325/ASTM A36 (GR 36)

HSS (Rectangular)

Q235

Pipe

ASTM A53 (GR 35)

**Connection Bolts** 

ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Telamon Tower Engineering, PLLC should be notified to determine the effect on the structural integrity of the antenna mounting system.

#### 4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

Notes	Component	Component Critical Member Centerlin		% Capacity	Pass/Fail	
1, 3	Stand-Off Horizontals	G_SA1	131	31%	Pass	
1, 3	Support Rail	A_SR1	131	19%	Pass	
1, 3	Bracing Members	M354	131	25%	Pass	
1, 3	Mount Pipes	A_MP3_S	131	35%	Pass	
1, 3	Grating Pipe	M519_1	131	10%	Pass	
1, 3	Corner Plates	M193	131	46%	Pass	
2-3	Connections	-	131	17%	Pass	

Structure Rating (max from all components) =	46%
Structure Rating (max from all components) =	46%

Notes:

All sectors are typical.

#### 4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.

<sup>2)</sup> See additional documentation in "Appendix D – Additional Calculations" for detailed mount connection calculations.

Date: May 18, 2023



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

Subject: Structural Analysis Report

Carrier Designation: T-Mobile Co-Locate

Site Number: CTFF013A Site Name: CTFF013A

Crown Castle Designation: BU Number: 857525

Site Name: NEWTOWN DINGLEBROOK

 JDE Job Number:
 745974

 Work Order Number:
 2229563

 Order Number:
 649515 Rev. 0

Engineering Firm Designation: Crown Castle Project Number: 2229563

Site Data: 24 DINGLEBROOK LANE, NEWTOWN, FAIRFIELD County, CT

Latitude 41° 28' 1.01", Longitude -73° 20' 2.05"

149 Foot - Monopole Tower

Crown Castle is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above-mentioned tower.

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

LC7: Proposed Equipment Configuration

Sufficient Capacity - 96.9%

This analysis has been performed in accordance with the 2022 Connecticut Building Code based upon an ultimate 3-second gust wind speed of 115 mph. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Jared Koski, El

Respectfully submitted by:

Terry P. Styran, P.E. Senior Project Engineer P ST CENSEO HILLIAM STORY OF CONVECTION OF C

Terry P Styran 2023.05.19 12:31:17 -04'00'

#### 1) INTRODUCTION

This tower is a 149 ft Monopole tower designed by Sabre Communications. The tower has been modified multiple times to accommodate additional loading.

#### 2) ANALYSIS CRITERIA

TIA-222 Revision:

TIA-222-H

Risk Category:

Ш

Wind Speed:

115 mph

Exposure Category:

C

Topographic Factor:

1

Ice Thickness:

1 in

Wind Speed with Ice:

50 mph

Service Wind Speed:

60 mph

**Table 1 - Proposed Equipment Configuration** 

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		4	ericsson	RADIO 4449 B12/B71		
	131.0	1	mounts	Site Pro1_F4P-12[W]_Platform		
	131.0	1	mounts	Site Pro1_F4P-HRK12_Handrail Kit	2 - 4	
131.0		4	ericsson	AIR 6419 B41_TMO_CCIV2 w/ Mount Pipe		
	129.0	4	ericsson	RADIO 4460 B2/B25 B66_TMO		1-5/8
		4	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
	120.0	1	ericsson	ANT3 A 0.9 HPX		
	128.0	2	ericsson	MINI-LINK 6365		

**Table 2 - Other Considered Equipment** 

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
164.0 153.0	164.0	1	dbspectra	DS1F06F36U-D	1	
	152.0	1 1	tower mounts	8' x 2" Mount Pipe		7/8
	153.0	1	tower mounts	Side Arm Mount [SO 102-1]		
148.0		3	ericsson	RRUS-11		
		3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe		
	150.0	6	powerwave technologies	P90-14-XLH-RR w/ Mount Pipe	1 2	3/8 3/4 1-5/8
		6	powerwave technologies	TT19-08BP111-001	12	
		1	raycap	DC6-48-60-18-8F		
	148.0	1 1	tower mounts	Platform Mount [LP 602-1]		
140.0	142.0	3	alcatel lucent	B13 RRH 4X30	8	1-5/8
140.0	142.0	3	alcatel lucent	B66A RRH4X45	0	1-5/6

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	nokia	AHCA		
		6	andrew	DB846F65ZAXY w/ Mount Pipe		
	140.0	6	commscope	JAHH-65B-R3B w/ Mount Pipe		
		1	rfs celwave	DB-C1-12C-24AB-0Z		
		1	tower mounts	T-Arm Mount [TA 602-3]		
		3	fujitsu	TA08025-B604		
		3	fujitsu	TA08025-B605		
119.0	119.0	3	jma wireless	MX08FRO665-21 w/ Mount Pipe	1	1-1/2
		1	raycap	RDIDC-9181-PF-48	-	
		1	tower mounts	Commscope MC-PK8-DSH		
		1	dbspectra	DS1F03P36D-D	1	
90.0	90.0	1	tower mounts	8' x 2" Mount Pipe		7/8
		1	tower mounts	Side Arm Mount [SO 102-3]		

#### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided** 

Document	Reference	Source
4-GEOTECHNICAL REPORTS	4308150	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	4895572	CCISITES
4-TOWER MANUFACTURER DRAWINGS	4570932	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	4860017	CCISITES
4-POST-MODIFICATION INSPECTION	4871327	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5461906	CCISITES
4-POST-MODIFICATION INSPECTION	5652840	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7839699	CCISITES
4-POST-MODIFICATION INSPECTION	8504433	CCISITES

#### 3.1) Analysis Method

tnxTower (version 8.1.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the reinforcing elements. These calculations are presented in Appendix C.

#### 3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

#### 4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	149 - 144	Pole	TP16.865x16x0.1875	Pole	10.7%	Pass
L2	144 - 139	Pole	TP17.73x16.865x0.1875	.73x16.865x0.1875 Pole		Pass
L3	139 - 134	Pole	TP18.595x17.73x0.1875	Pole	32.0%	Pass
L4	134 - 129	Pole	TP19.459x18.595x0.1875	Pole	46.6%	Pass
L5	129 - 125	Pole	TP20.151x19.459x0.1875	Pole	60.8%	Pass
L6	125 - 124.75	Pole + Reinf.	TP20.195x20.151x0.35	Reinf. 15 Tension Rupture	59.2%	Pass
L7	124.75 - 119.75	Pole + Reinf.	TP21.059x20.195x0.3438	Reinf. 15 Tension Rupture	75.1%	Pass
L8	119.75 - 118.5	Pole + Reinf.	TP21.276x21.059x0.3438	Reinf. 15 Tension Rupture	79.5%	Pass
L9	118.5 - 118.25	Pole + Reinf.	TP21.319x21.276x0.625	Reinf. 9 Tension Rupture	46.6%	Pass
L10	118.25 - 117	Pole + Reinf.	TP21.535x21.319x0.625	Reinf. 9 Tension Rupture	49.3%	Pass
L11	117 - 116.75	Pole + Reinf.	TP21.578x21.535x0.625	Reinf. 9 Tension Rupture	49.9%	Pass
L12	116.75 - 111.75	Pole + Reinf.	TP22.443x21.578x0.6	Reinf. 9 Tension Rupture	60.2%	Pass
L13	111.75 - 106.75	Pole + Reinf.	TP23.308x22.443x0.575	Reinf. 9 Tension Rupture	69.7%	Pass
L14	106.75 - 98.5	Pole + Reinf.	TP24.735x23.308x0.5625	Reinf. 9 Tension Rupture	78.0%	Pass
L15	98.5 - 97	Pole + Reinf.	TP24.62x23.755x0.625	Reinf. 9 Tension Rupture	78.8%	Pass
L16	97 - 96.75	Pole + Reinf.	TP24.663x24.62x0.7625	Reinf. 9 Tension Rupture	65.3%	Pass
L17	96.75 - 93.98	Pole + Reinf.	TP25.142x24.663x0.75	Reinf. 9 Tension Rupture	68.5%	Pass
L18	93.98 - 93.73	Pole + Reinf.	TP25.186x25.142x0.75	Reinf. 9 Tension Rupture	68.8%	Pass
L19	93.73 - 91.5	Pole + Reinf.	TP25.572x25.186x0.75	Reinf. 9 Tension Rupture	71.2%	Pass
L20	91.5 - 91.38	Pole + Reinf.	TP25.592x25.572x0.6375	Reinf. 26 Tension Rupture	80.1%	Pass
L21	91.38 - 91.25	Pole + Reinf.	TP25.615x25.592x0.9	Reinf. 26 Tension Rupture	60.3%	Pass
L22	91.25 - 91.13	Pole + Reinf.	TP25.636x25.615x0.9	Reinf. 26 Tension Rupture	60.4%	Pass
L23	91.13 - 89	Pole + Reinf.	TP26.004x25.636x0.8875	Reinf. 26 Tension Rupture	62.4%	Pass
L24	89 - 88.75	Pole + Reinf.	TP26.047x26.004x0.75	Reinf. 26 Tension Rupture	73.4%	Pass
L25	88.75 - 83.75	Pole + Reinf.	TP26.913x26.047x0.725	Reinf. 26 Tension Rupture	78.6%	Pass
L26	83.75 - 80.08	Pole + Reinf.	TP27.548x26.913x0.7125	Reinf. 26 Tension Rupture	82.1%	Pass
L27	80.08 - 79.83	Pole + Reinf.	TP27.591x27.548x0.9	Reinf. 25 Tension Rupture	65.5%	Pass
L28	79.83 - 74.83	Pole + Reinf.	TP28.456x27.591x0.875	Reinf. 25 Tension Rupture	69.3%	Pass
L29	74.83 - 73.5	Pole + Reinf.	TP28.686x28.456x0.875	Reinf. 25 Tension Rupture	70.3%	Pass
L30	73.5 - 73.25	Pole + Reinf.	TP28.73x28.686x1.075	Reinf. 25 Tension Rupture	58.6%	Pass
L31	73.25 - 71	Pole + Reinf.	TP29.119x28.73x1.05	Reinf. 25 Tension Rupture	60.0%	Pass
L32	71 - 70.75	Pole + Reinf.	TP29.162x29.119x0.925	Reinf. 25 Tension Rupture	67.5%	Pass
L33	70.75 - 65.75	Pole + Reinf.	TP30.027x29.162x0.9	Reinf. 25 Tension Rupture	70.8%	Pass
L34	65.75 - 64.13	Pole + Reinf.	TP30.308x30.027x0.9	Reinf. 25 Tension Rupture	71.8%	Pass
L35	64.13 - 63.88	Pole + Reinf.	TP30.351x30.308x0.675	Reinf. 25 Tension Rupture	92.9%	Pass
L36	63.88 - 63	Pole + Reinf.	TP30.503x30.351x0.675	Reinf. 25 Tension Rupture	93.5%	Pass
L37	63 - 62.75	Pole + Reinf.	TP30.547x30.503x0.825	Reinf. 25 Tension Rupture	76.9%	Pass
L38	62.75 - 62.08	Pole + Reinf.	TP30.663x30.547x0.825	Reinf. 25 Tension Rupture	77.3%	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L39	62.08 - 61.83	Pole + Reinf.	TP30.706x30.663x0.775	Reinf. 24 Tension Rupture	81.4%	Pass
L40	61.83 - 60.67	Pole + Reinf.	TP30.907x30.706x0.7625	Reinf. 24 Tension Rupture	82.1%	Pass
L41	60.67 - 60.42	Pole + Reinf.	TP30.95x30.907x0.85	Reinf. 24 Tension Rupture	79.4%	Pass
L42	60.42 - 59	Pole + Reinf.	TP31.196x30.95x0.85	Reinf. 24 Tension Rupture	80.2%	Pass
L43	59 - 58.75	Pole + Reinf.	TP31.239x31.196x0.8375	Reinf. 12 Tension Rupture	74.6%	Pass
L44	58.75 - 53.75	Pole + Reinf.	TP32.104x31.239x0.825	Reinf. 12 Tension Rupture	77.4%	Pass
L45	53.75 - 48.5	Pole + Reinf.	TP33.013x32.104x0.825	Reinf. 12 Tension Rupture	77.7%	Pass
L46	48.5 - 47.5	Pole + Reinf.	TP32.682x31.691x0.8625	Reinf. 6 Tension Rupture	74.0%	Pass
L47	47.5 - 46.88	Pole + Reinf.	TP32.789x32.682x0.8625	Reinf. 6 Tension Rupture	74.3%	Pass
L48	46.88 - 46.63	Pole + Reinf.	TP32.832x32.789x0.875	Reinf. 4 Tension Rupture	72.7%	Pass
L49	46.63 - 43.5	Pole + Reinf.	TP33.372x32.832x0.8625	Reinf. 4 Tension Rupture	74.0%	Pass
L50	43.5 - 43.25	Pole + Reinf.	TP33.415x33.372x1.0125	Reinf. 11 Tension Rupture	68.4%	Pass
L51	43.25 - 38.25	Pole + Reinf.	TP34.278x33.415x1	Reinf. 11 Tension Rupture	70.3%	Pass
L52	38.25 - 33.25	Pole + Reinf.	TP35.14x34.278x0.9875	Reinf. 11 Tension Rupture	72.1%	Pass
L53	33.25 - 32.58	Pole + Reinf.	TP35.256x35.14x0.975	Reinf. 11 Tension Rupture	72.3%	Pass
L54	32.58 - 32.33	Pole + Reinf.	TP35.299x35.256x0.9875	Reinf. 11 Tension Rupture	72.1%	Pass
L55	32.33 - 29.67	Pole + Reinf.	TP35.758x35.299x0.9625	Reinf. 11 Tension Rupture	73.0%	Pass
L56	29.67 - 29.42	Pole + Reinf.	TP35.801x35.758x0.8125	Reinf. 11 Tension Rupture	91.7%	Pass
L57	29.42 - 29.13	Pole + Reinf.	TP35.851x35.801x0.8125	Reinf. 11 Tension Rupture	91.8%	Pass
L58	29.13 - 28.88	Pole + Reinf.	TP35.894x35.851x0.95	Reinf. 10 Tension Rupture	75.3%	Pass
L59	28.88 - 28	Pole + Reinf.	TP36.046x35.894x0.9375	Reinf. 10 Tension Rupture	75.6%	Pass
L60	28 - 27.75	Pole + Reinf.	TP36.089x36.046x0.9125 Reinf. 10 Tension Rup		78.7%	Pass
L61	27.75 - 26.92	Pole + Reinf.	TP36.232x36.089x0.9125	Reinf. 10 Tension Rupture	79.0%	Pass
L62	26.92 - 26.67	Pole + Reinf.	TP36.275x36.232x0.875 Reinf. 10 Tension Rupture		79.9%	Pass
L63	26.67 - 26.5	Pole + Reinf.	TP36.304x36.275x0.875	TP36.304x36.275x0.875 Reinf. 10 Tension Rupture		Pass
L64	26.5 - 26.25	Pole + Reinf.	TP36.347x36.304x0.8375 Reinf. 10 Tension Rupture		80.7%	Pass
L65	26.25 - 24.92	Pole + Reinf.	TP36.577x36.347x0.8375	Reinf. 10 Tension Rupture	81.1%	Pass
L66	24.92 - 24.67	Pole + Reinf.	TP36.62x36.577x0.8	Reinf. 1 Tension Rupture	80.2%	Pass
L67	24.67 - 22.17	Pole + Reinf.	TP37.051x36.62x0.7875	Reinf. 1 Tension Rupture	80.9%	Pass
L68	22.17 - 21.92	Pole + Reinf.	TP37.094x37.051x0.8625	Reinf. 1 Tension Rupture	73.0%	Pass
L69	21.92 - 16.92	Pole + Reinf.	TP37.957x37.094x0.8375	Reinf. 1 Tension Rupture	74.4%	Pass
L70	16.92 - 11.92	Pole + Reinf.	TP38.819x37.957x0.825	Reinf. 1 Tension Rupture	75.7%	Pass
L71	11.92 - 6.92	Pole + Reinf.	TP39.681x38.819x0.8125	Reinf. 1 Tension Rupture	76.9%	Pass
L72	6.92 - 1.92	Pole + Reinf.	TP40.544x39.681x0.8	Reinf. 1 Tension Rupture	78.0%	Pass
L73	1.92 - 1.5	Pole + Reinf.	TP40.616x40.544x0.8	Reinf. 1 Tension Rupture	78.1%	Pass
L74	1.5 - 1.25	Pole + Reinf.	TP40.659x40.616x0.6375	Reinf. 3 Tension Rupture	95.7%	Pass
L75	1.25 - 1	Pole + Reinf.	TP40.703x40.659x0.4938	Pole	85.5%	Pass
L76	1 - 0	Pole + Reinf.	TP40.875x40.703x0.4875	Pole	85.7%	Pass
		Ì			Summary	
				Pole	85.0%	Pass
		<u> </u>		Reinforcement	95.7%	Pass
		İ		Overall	95.7%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	66.1	Pass
1	Base Plate	0	86.9	Pass
1	Base Foundation (Structure)	0	96.9	Pass
1	Base Foundation (Soil Interaction)	0	52.2	Pass

96.9%

Notes:

#### 4.1) Recommendations

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

The results of the tilt and twist values for a 60 mph 3-second gust service wind speed per the TIA-222-H Standard are given below:

Critical Deflections and Radius of Curvature - Service Wind						
Elevation	Appurtenance	Gov.	Deflection	Tilt	Twist	Radius of
		Load				Curvature
ft		Comb.	in	0	0	ft
128.0000	ANT3 A 0.9 HPX	14	19.87	1.59	0.01	2622

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

# T--Mobile---

T-MOBILE SITE NUMBER: CTFF013A **T-MOBILE SITE NAME:** CTFF013A SITE TYPE: **MONOPOLE** 

150'-0" **TOWER HEIGHT:** 

**BUSINESS UNIT #:857525** 

LOCATION MAP

NO SCALE

24 DINGLEBROOK LANE **SITE ADDRESS:** NEWTOWN, CT 06470

**FAIRFIELD COUNTY:** 

FAIRFIELD COUNTY **JURISDICTION:** 

CTFF013A: 4SEC-67D5998E 1XAIR+1QP+1OP

merican Energy P Enterprises, Inc

### SITE INFORMATION NEWTOWN DINGLEBROOK

CROWN CASTLE USA INC. SITE NAME: SITE ADDRESS:

24 DINGLEBROOK LANE NEWTOWN, CT 06470

41° 28' 01.01" (41.466947°) N

FAIRFIELD

VERIFY

COUNTY: MAP/PARCEL#: AREA OF CONSTRUCTION:

EXISTING LATITUDE:

-73° 20' 02.05" (73.333903°) W LONGITUDE NAD83 LAT/LONG TYPE: GROUND ELEVATION: ±413 FT CURRENT ZONING: TBD

IURISDICTION: FAIRFIELD COUNTY

OCCUPANCY CLASSIFICATION: U TYPE OF CONSTRUCTION:

A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

PROPERTY OWNER:

TOWER OWNER: CROWN CASTLE

2000 CORPORATE DRIVE CANONSBURG, PA 15317

CARRIER/APPLICANT:

1 RAVINIA DRIVE, SUITE 1000

ATLANTA, GA 30346

ELECTRIC PROVIDER

A&E FIRM

CROWN CASTLE

CONTACTS

USA INC. DISTRICT

**PROJECT TEAM** 

FORT WASHINGTON, PA 19034

1500 CORPORATE DRIVE

CANONSBURG, PA 15317

500 WEST OFFICE CENTER DR. SUITE 150.

TRICIA PELON - PROJECT MANAGER

TRICIA PELON@CRÓWNCASTLE.COM

JENNIFER MERSING - CONSTRUCTION MANAGER

JENNIFER.MERSING@CROWNCASTLE.COM

TELCO PROVIDER: TBD

#### **DRAWING INDEX**

SHEET#	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & EQUIPMENT PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
	·

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 1X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTIN IMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OF BE RESPONSIBLE FOR SAME

#### PROJECT DESCRIPTION

THE PURPOSE OF THIS PROIECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY

#### TOWER SCOPE OF WORK:

- REMOVE (4) HYBRID CABLES (6X12)
- REMOVE (4) ANTENNAS
- INSTALL (4) ANTENNAS
- INSTALL (4) HYBRID CABLES (6X24) INSTALL (4) 4460 RRUS

INSTALL (2) EQUIPMENT CABINETS

#### GROUND SCOPE OF WORK:

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

#### APPLICABLE CODES/REFERENCE **DOCUMENTS**

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

BUILDING MECHANICAL

ELECTRICAL

2022 CONNECTICUT BUILDING CODE/2021 IBC 2022 CONNECTICUT BUILDING CODE/2021 IMC 2022 CONNECTICUT BUILDING CODE/2020 NEC

#### REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: CROWN CASTLE

DATED: 05/18/23

MOUNT ANALYSIS: TELAMON TOWER ENGINEERING, PLLC

DATED: 05/15/23

RFDS REVISION: 2

DATED: 04/11/2023

ORDER ID: 649515

REVISION:

CALL CONNECTICUT ONE CALL

#### **APPROVALS**

APPROVAL SIGNATURE DATE PROPERTY OWNER OR REP LAND USE PLANNER T-MOBILE OPERATIONS NETWORK BACKHAUL CONSTRUCTION MANAGER

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.





500 West Office Center Dr. Suite 150 | Fort Washington, PA 19034 www.infinigy.com

T-MOBILE SITE NUMBER: CTFF013A

> BU #: **857525 NEWTOWN** DINGLEBROOK

24 DINGLEBROOK LANE NEWTOWN, CT 06470

> EXISTING 150'-0" MONOPOLE

ISSUED FOR:					
REV	DATE	DRWN	DESCRIPTION	DES./QA	
Α	06/01/23	CB	PRELIMINARY	CB	
0	06/12/23	CB	100% FINALS	CB	
1	06/29/23	CB	100% FINALS	CB	

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

#### CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

- NOTICE TO PROCEED- NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE STUDY OF THE CROWN CASTLE USA INC. NOC AT 800-788-7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
- "LOOK UP" CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT: THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR TEINFUNCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRIT OR "UNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGE! AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFET MAINTENANCE AND CONTRACTOR NOTICE TICKET.
- PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED-STD-10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322
- ALL SITE WORK TO COMPLY WITH DAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED-STD-10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR
- INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS." IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR 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 V ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES. ORDINANCES AND APPLICABLE REGULATIONS
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- RECOMMENDATIONS OWNLESS SPECIFICALLY STATED OTHERWISE.

  9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

  10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- SPECIFICATIONS, LATEST APPROVED REVISION.

  CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

  ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE
- EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT
- 16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION, EROSION CONTRO MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- 19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION
- 20. CONTRACTOR 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

#### **GENERAL NOTES:**

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
  CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
  CARRIER: T-MOBILE
  - FOWER OWNER: CROWN CASTLE USA INC.
- TOWER OWNER: CROWN CASTLE USA INC.

  THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
  THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF
  CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS,
  TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR
  PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED
  TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE
  INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
  NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL
  DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT,
  AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS,
  GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER
  CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
  SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO
  ASSIST IN THE FABRICATION AND OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY.
- ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS.
- OF THE CONTINGATION TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OF CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION DELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL WISIT 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 CROWN CASTLE. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORPOANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES, CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUE FUNNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL INSTALLATIONS AND ATTERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

  IF THE SPECIFIC DECUMPENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEM<mark>ENTS, PAVEMENTS, CURBS, LANDS</mark>CAPING AND STRUCTURES, ANY
- DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF GROWN CASTLE USA INC.
  CONTRACTOR 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
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CO<mark>NDITION. TRASH AND</mark> DEBRIS SHOULD BE REMOVED FROM SITE ON

#### CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST—IN—PLACE CONCRETE.
  UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90'F AT TIME OF
- CONCRETE EXPOSED TO FREEZE—THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FARRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS: #4 BARS AND SMALLER
- ON DRAWINGS CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH...
- CONCRETE EXPOSED TO EARTH OR WEATHER
  #6 BARS AND LARGER.....
- #5 BARS AND SMALLER.  $.1-1/2^{*}$ CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- BEAMS AND COLUMNS. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

#### GREENFIELD GROUNDING NOTES:

- 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
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

  THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT
- 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.
- EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

  CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
  ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
  USE OF 90' BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45' BENDS CAN BE ADEQUATELY SUPPORTED.
  EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

  COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

  ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXCHEMMCALLY BONDED OR BOLIED TO THE BRIDGE AND THE TOWER GROUND BAR.

  APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

  ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

  MISCELLANGROUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

  BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) \$2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

  GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LICHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS,

  METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

  ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION
- POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
  BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/O COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

#### **ELECTRICAL INSTALLATION NOTES:**

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE
- FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
  CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- AND TRIP HAZARDS ARE FLIMINATED

- AND TRIP HAZARDS ARE ELIMINATED.

  WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

  ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

  ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

  ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT APAPETE CODE PRET THE COVERBRING JURISDICTION.
- NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

  EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

  ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND DEPORTS AND CONFIGURATION). CIRCUIT ID'S).

- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
  ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
  ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER)
  WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

  POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS
- OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75' C (90' C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE
- 15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR
- EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT) OR METAL—CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

  SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION
- COURS OR FLEXIBLE METALLIC CONDOIT (LIQUID-THE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

  CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION—TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND 20.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS
- (WIREMOLD SPECMATE WIREWAY).
  SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

  CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE

  DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE

  LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES
  IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN

  A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERFENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERFENDICULAR TO STRUCTURE WALL AND CELLING LINES, ALL CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING, CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON LOCKNUT ON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON DISIDE AND INSIDE. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY—COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR
- BETTER) FOR EXTERIOR LOCATIONS
- METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY—COATED OR NON—CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS NONMETALIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

APWA UNIFORM COLOR CODE:

TEMPORARY SURVEY MARKINGS

ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES

COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS

RECLAIMED WATER, IRRIGATION, AND

YELLOW GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS

SEWERS AND DRAIN LINES

POTABLE WATER

SLURRY LINES

WHITE PROPOSED EXCAVATION

- 27 THE CONTRACTOR SHALL NOTIFY AND ORTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC.
- TO CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY ADTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC.

  E CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE
  THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY. 28. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T-MOBILE".
- 30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED

CONDUCTOR COLOR CODE					
SYSTEM	CONDUCTOR	COLOR			
	A PHASE	BLACK			
120/240V, 1Ø	B PHASE	RED			
120/2400, 19	NEUTRAL	WHITE			
	GROUND	GREEN			
	A PHASE	BLACK			
	B PHASE	RED			
120/208V, 3Ø	C PHASE	BLUE			
	NEUTRAL	WHITE			
	GROUND	GREEN			
	A PHASE	BROWN			
	B PHASE	ORANGE OR PURPLE			
277/480V, 3Ø	C PHASE	YELLOW			
	NEUTRAL	GREY			
	GROUND	GREEN			
DC VOLTAGE	POS (+)	RED**			
DC VOLIAGE	NEG (-)	BLACK**			

\* SEE NEC 210.5(C)(1) AND (2)
\*\* POLARITY MARKED AT TERMINATION

#### ABBREVIATIONS:

BREVIATIONS:						
_						
IT	ANTENNA					
)	EXISTING					
-	FACILITY INTERFACE FRAME					
N	GENERATOR					
S	GLOBAL POSITIONING SYSTEM					
М	GLOBAL SYSTEM FOR MOBILE					
E	LONG TERM EVOLUTION					
E BB	MASTER GROUND BAR					
<i>-</i>	MICROWAVE					
)	NEW					
) .c	NATIONAL ELECTRIC CODE					
)	PROPOSED					
(	POWER PLANT					
Υ	QUANTITY					
ĊT .	RECTIFIER					
S	RADIO BASE STATION					
T	REMOTE ELECTRIC TILT					
DS	RADIO FREQUENCY DATA SHEET					

REMOTE RADIO HEAD REMOTE RADIO UNIT TOWER MOUNTED AMPLIFIER UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM UMTS W.P.

### 1 RAVINIA DRIVE, SUITE 1000 ATLANTA, GA 30346



CANONSBURG, PA 15317

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T-MOBILE SITE NUMBER: CTFF013A

> BU #: 857525 **NEWTOWN** DINGLEBROOK

24 DINGLEBROOK LANE NEWTOWN, CT 06470

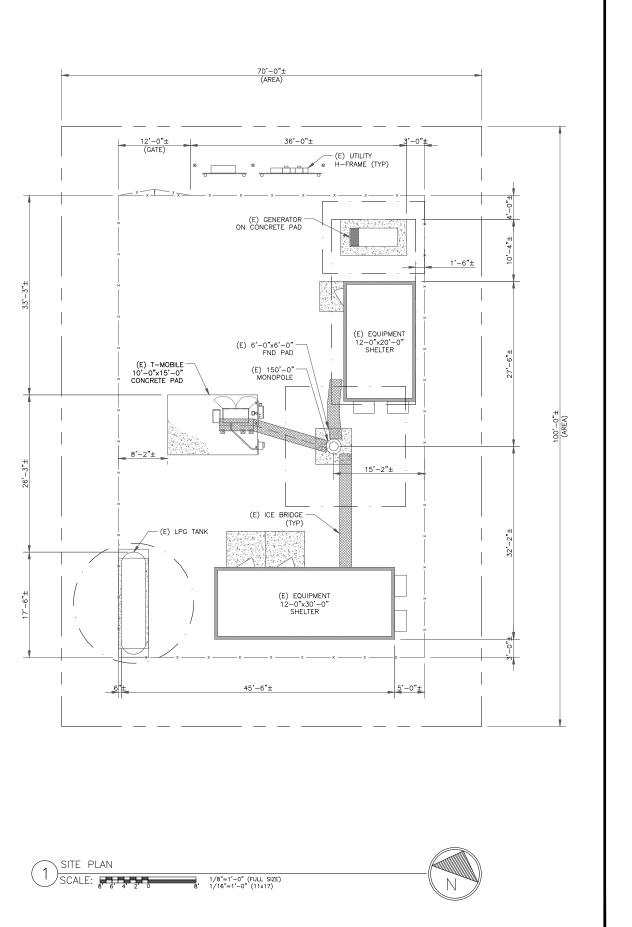
> **EXISTING 150'-0"** MONOPOLE

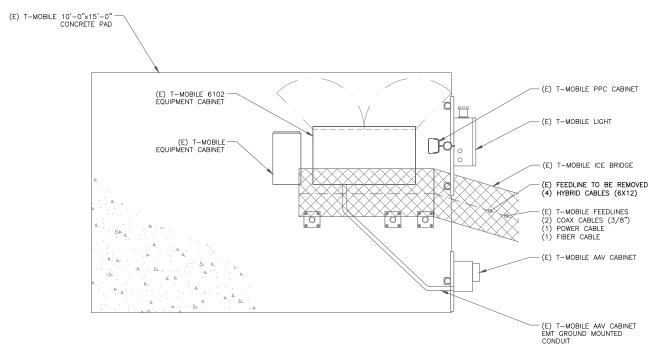
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	0	06/12/23	CB	100% FINALS	CB
	1	06/29/23	CB	100% FINALS	CB

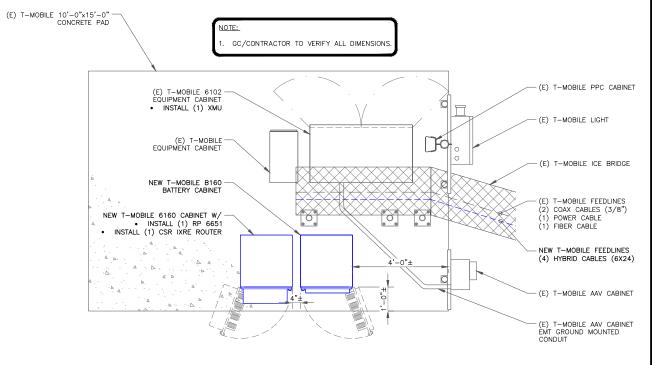


IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. TO ALTER THIS DOCUMENT

SHEET NUMBER







EQUIPMENT PLANS



1 RAVINIA DRIVE, SUITE 1000 ATLANTA, GA 30346



CANONSBURG, PA 15317

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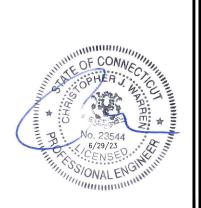
T-MOBILE SITE NUMBER: **CTFF013A** 

BU #: **857525 NEWTOWN DINGLEBROOK** 

24 DINGLEBROOK LANE NEWTOWN, CT 06470

> EXISTING 150'-0" MONOPOLE

	ISSUED FOR:								
REV	DATE	DRWN	DESCRIPTION	DES./QA					
Α	06/01/23	CB	PRELIMINARY	CB					
0	06/12/23	CB	100% FINALS	CB					
1	06/29/23	CB	100% FINALS	CB					

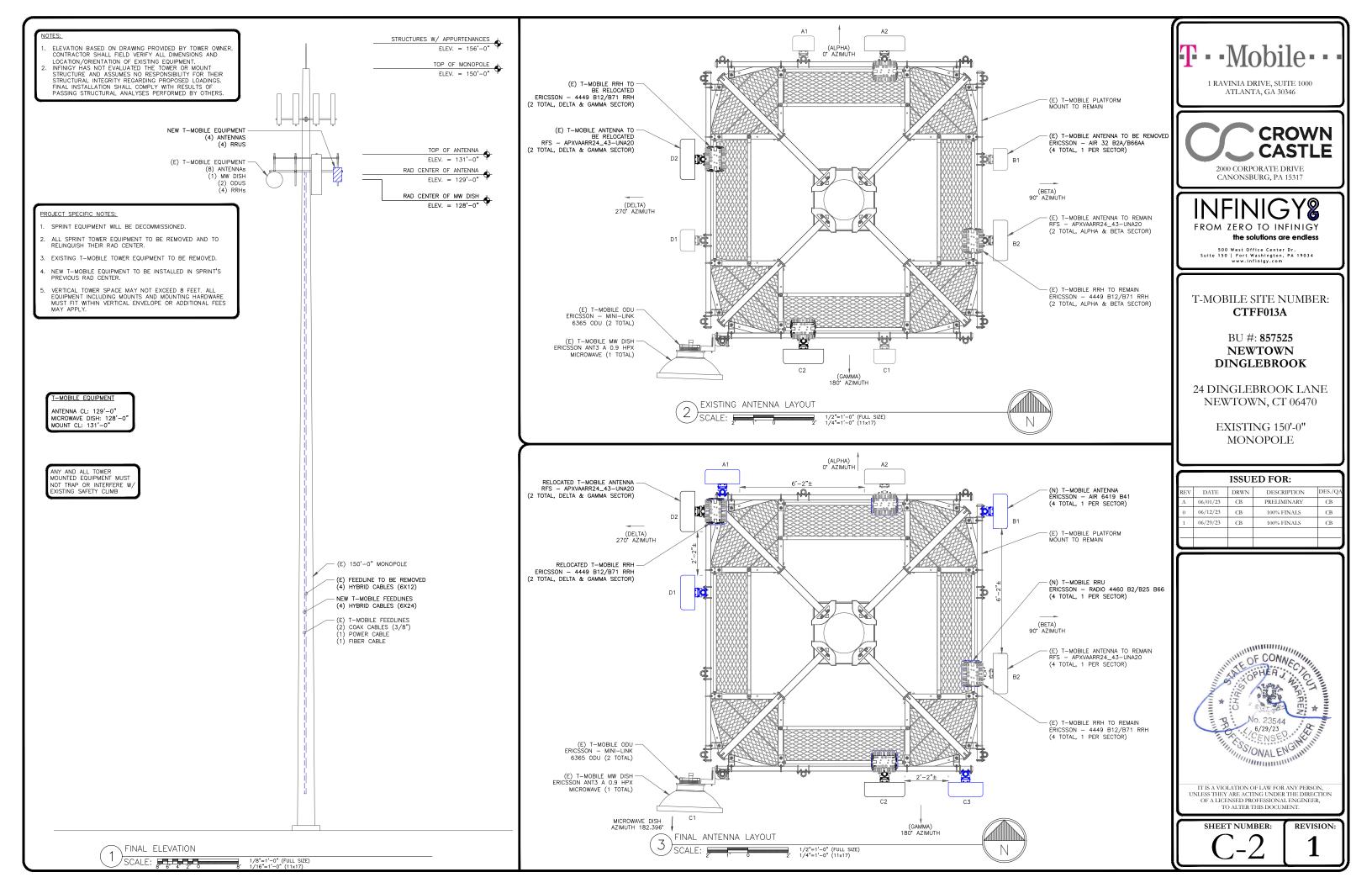


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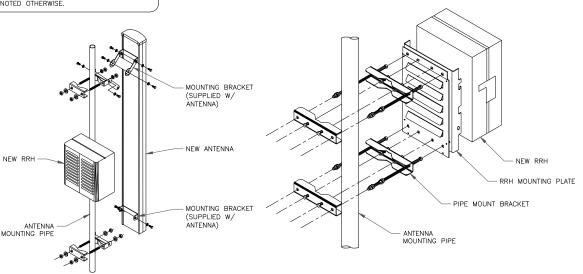


						ANTENNA SCHEDULE				
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	N2500	129'-0"	0*	ERICSSON	AIR 6419 B41	-	-	-	-
ALPHA	A2	L700,L600,N600,G1900, L2100,L1900,N1900	129'-0"	0*	RFS	APXVAARR24_43-U-NA20 - 2/2/2		2/2/2	(1) ERICSSON - 4449 B12/B71 (1) ERICSSON - RADIO 4460 B25+B66	(1) 6X24 HYBRID 60M IN LENGTH
ВЕТА	В1	N2500	129'-0"	90*	ERICSSON	AIR 6419 B41	-	-	-	-
ВЕТА	B2	L700,L600,N600,G1900, L2100,L1900,N1900	129'-0"	90*	RFS	APXVAARR24_43-U-NA20	-	2/2/2	(1) ERICSSON - 4449 B12/B71 (1) ERICSSON - RADIO 4460 B25+B66	(1) 6X24 HYBRID 60M IN LENGTH
GAMMA	C1	N2500	129'-0"	180*	ERICSSON	AIR 6419 B41	-	-	_	-
GAMMA	C2	L700,L600,N600,G1900, L2100,L1900,N1900	129'-0"	180*	RFS	APXVAARR24_43-U-NA20	-	2/2/2	(1) ERICSSON - 4449 B12/B71 (1) ERICSSON - RADIO 4460 B25+B66	(1) 6X24 HYBRID 60M IN LENGTH
GAMMA	C3	-	128'-0"	182.396*	ERICSSON	ANT3 A 0.9 HPX	-	-	(2) ERICSSON - MINI-LINK 6365	(2) 3/8" COAX (1) POWER CABLE (1) FIBER CABLE
DELTA	D1	N2500	129'-0"	270°	ERICSSON	AIR 6419 B41		-	-	-
DELTA	D2	L700,L600,N600,G1900, L2100,L1900,N1900	129'-0"	270°	RFS	APXVAARR24_43-U-NA20	-	2/2/2	(1) ERICSSON - 4449 B12/B71 (1) ERICSSON - RADIO 4460 B25+B66	(1) 6X24 HYBRID 60M IN LENGTH

ANTENNA AND CABLE SCHEDULE SCALE: NOT TO SCALE

#### INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS
INSTRUCTIONS TO ENSURE THAT ALL RRHS
RECEIVE ELECTRICAL POWER WITHIN 24
HOURS OF BEING REMOVED FROM THE
MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS
HARDWARE TO BE GALVANIZED UNLESS
NOTED OTHERWISE.



ANTENNA WITH RRH MOUNTING DETAIL SCALE: NOT TO SCALE

1 RAVINIA DRIVE, SUITE 1000 ATLANTA, GA 30346



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CANONSBURG, PA 15317

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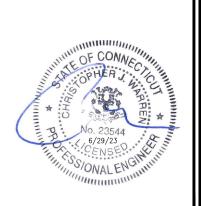
T-MOBILE SITE NUMBER: CTFF013A

> BU #: **857525 NEWTOWN** DINGLEBROOK

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> EXISTING 150'-0" MONOPOLE

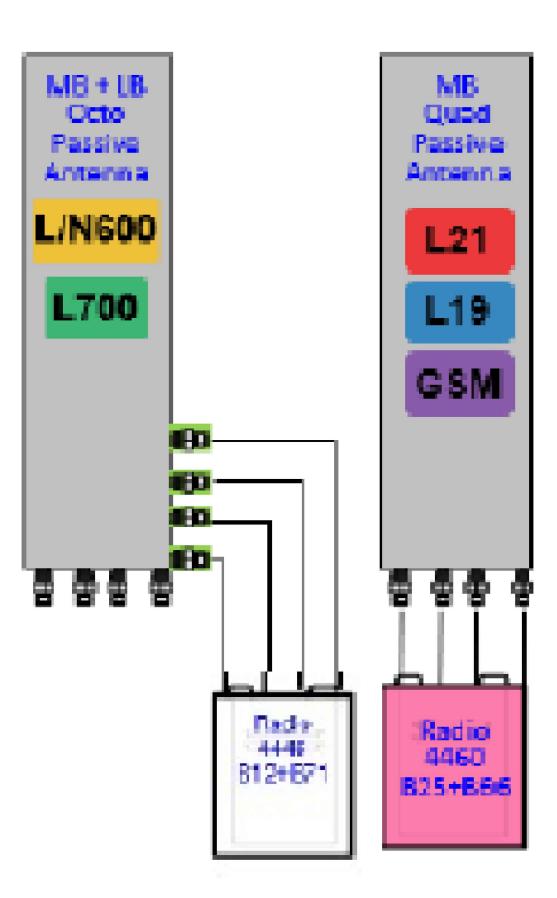
ISSUED FOR:								
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0	06/12/23	CB	100% FINALS	CB				
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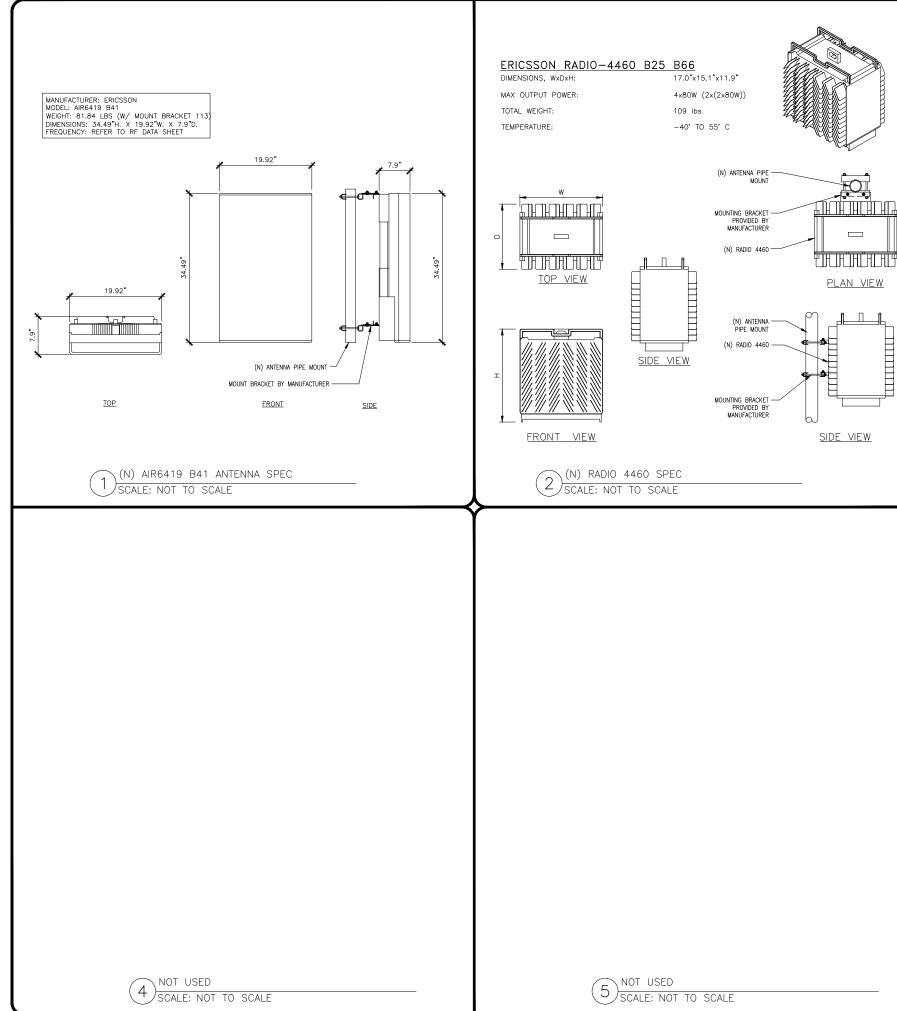


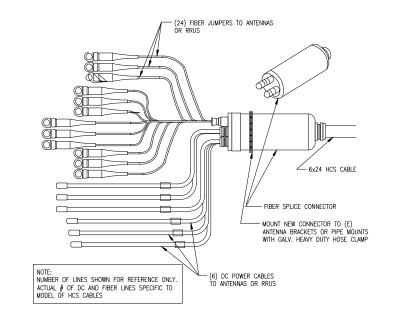
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SHEET NUMBER:

-4

1) PLUMBING DIAGRAM SCALE: NOT TO SCALE





(N) 6X24 HCS CABLE DETAIL SCALE: NOT TO SCALE



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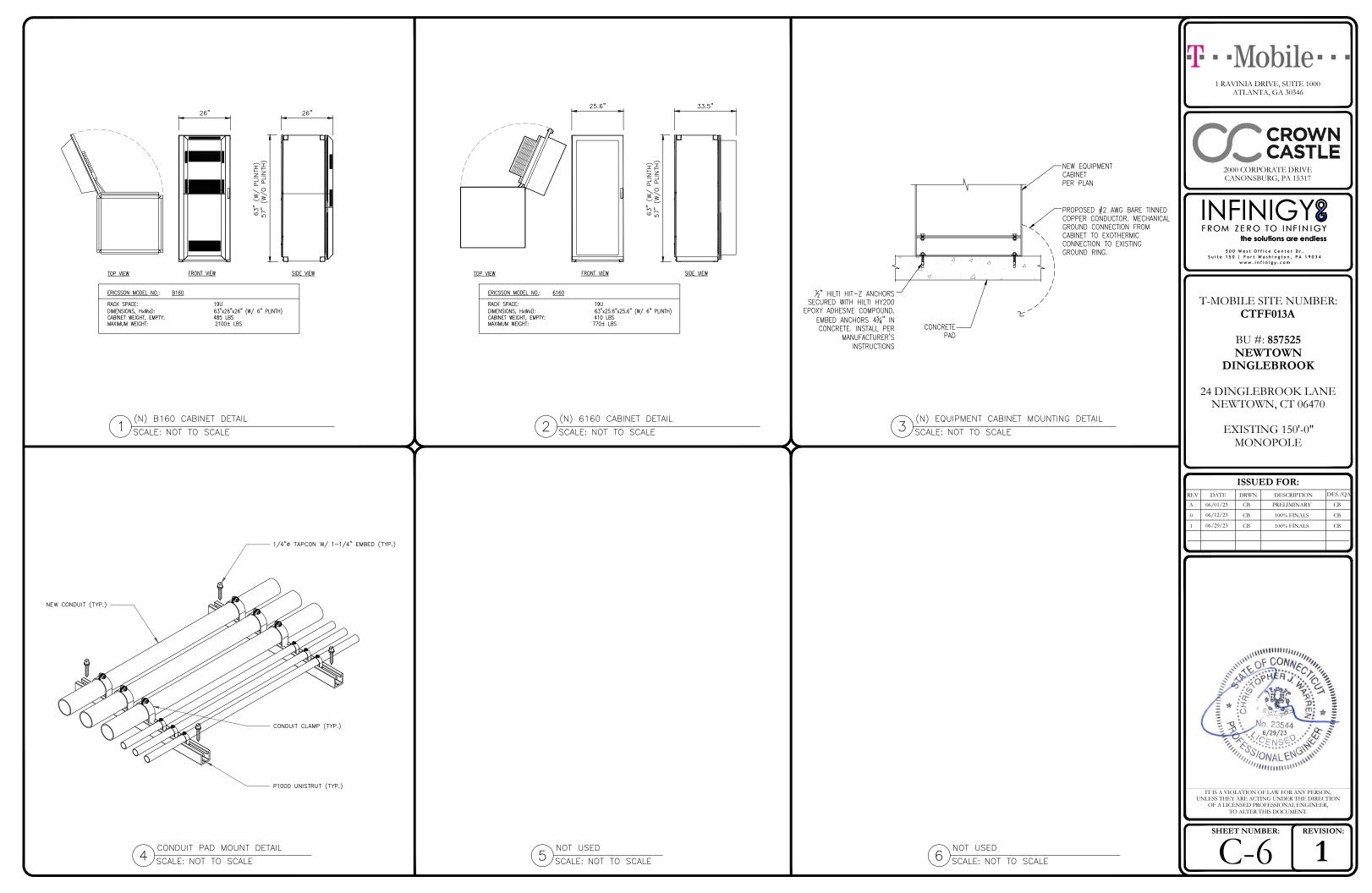
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TO SCALE

NOT USED

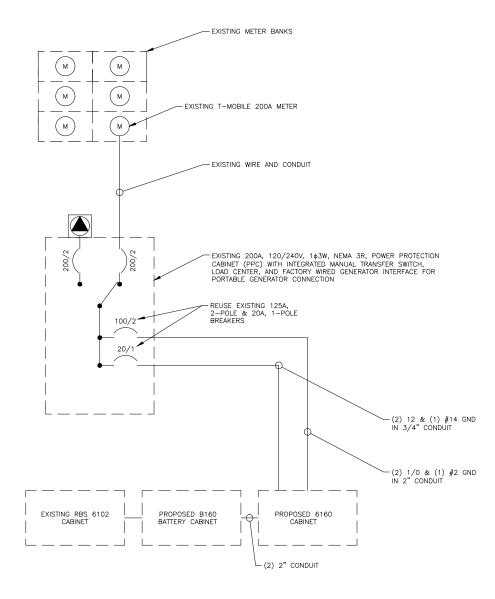
SCALE: NOT TO SCALE



				T-MO	BILE PA	NEL SCH	IEDULE				
MAIN: 200A MAIN BREAKER			VOTAGE/F	PHASE: 120,	/240V, 1-PH	ASE, 3-WII	RE		SHORT CIRCUIT CURRENT RATING:		
MOUNTING: H-FRAME	ENCLOSUE	RE: NEMA 3	R				SURGE PR	OTECTION D	DEVICE: YES		
					PHASE LO	ADS (VA)					
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	Α	В	CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
SURGE SUPPRESSOR			60	1	180		2	20	NC	180	GFCI
SUNGE SUPPRESSUR			00	3		3500	4	125	c	3500	6201
SPARE			20	5	3500		6	123		3500	0201
6160 GFI *	180	NC	20	7		380	8	20	NC	200	LIGHT
				9	3500		10	100	l c	3500	6160
				11		3500	12	100	,	3500	0100
				13	0		14				
				15		0	16				
				17	0		18				
				19		0	20				
				21	0		22				
				23		0	24				
			BASE L	OAD (VA) =	7180	7380	C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD				CONTINUOUS LOAD
25% OF CONTINUOUS LOAD (VA) =					1750	1750					
TOTAL LOAD (VA) = 8930						9130	NEW E	NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS			
TOTAL LOAD (A) = 74 76							EXISTING. CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT				
* BREAKER TO BE REUSED FOR PROPOSED CABINET							CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED				
							VALUES.				

#### NOTES:

- ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
- CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE—LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- ALL GROUNDING AND BONDING PER THE NEC.





1 RAVINIA DRIVE, SUITE 1000 ATLANTA, GA 30346



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BU #: 857525 NEWTOWN DINGLEBROOK

24 DINGLEBROOK LANE NEWTOWN, CT 06470

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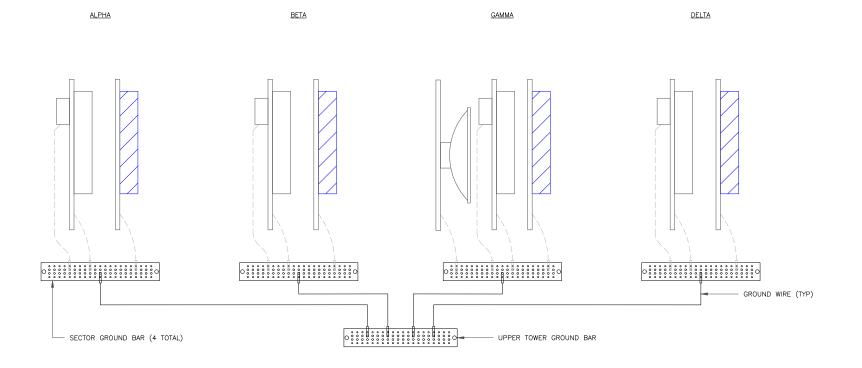


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E-1

1



NOTE:

ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



CROWN CASTLE

2000 CORPORATE DRIVE CANONSBURG, PA 15317

## INFINIGY 8 FROM ZERO TO INFINIGY

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T-MOBILE SITE NUMBER: **CTFF013A** 

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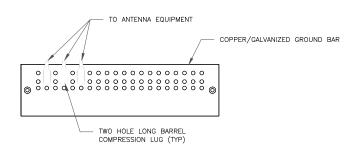


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G-1

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#### NOTES:

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

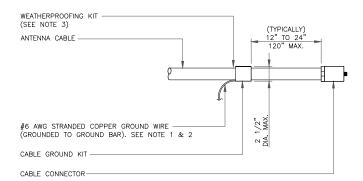
ANTENNA SECTOR GROUND BAR DETAIL (1) SCALE: NOT TO SCALE

TO BASE STATION CABINET & HYBRID CABLES COPPER/GALVANIZED GROUND BAR #2 SOLID TINNED COPPER CONDUCTOR TO TOWER/SHELTER
GROUND RING (2 TYP. FOR
BOTTOM GROUND BAR ONLY) TWO HOLE LONG BARREL COMPRESSION LUG

#### NOTES:

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

TOWER/SHELTER GROUND BAR DETAIL SCALE: NOT TO SCALE



#### NOTES:

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

CABLE GROUND KIT CONNECTION SCALE: NOT TO SCALE





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24 DINGLEBROOK LANE NEWTOWN, CT 06470

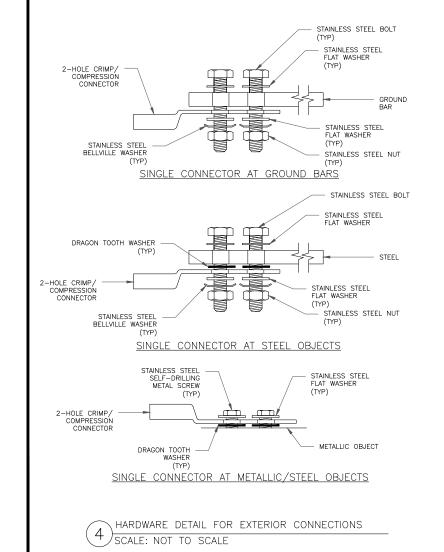
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NOT USED 5) SCALE: NOT TO SCALE

NOT USED SCALE: NOT TO SCALE

#### Barbadora, Jeff

From:

TrackingUpdates@fedex.com

Sent:

Thursday, July 6, 2023 10:15 AM

To:

Barbadora, Jeff

Subject:

FedEx Shipment 772643176406: Your package has been delivered

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# Hi. Your package was delivered Thu, 07/06/2023 at 10:08am.



Delivered to 3 PRIMROSE ST, NEWTOWN, CT 06470 Received by W.ANNA

**OBTAIN PROOF OF DELIVERY** 

## How was your delivery?











TRACKING NUMBER

772643176406

FROM

Crown Castle

1800 West Park Drive

Suite 200

WESTBOROUGH, MA, US, 01581

TO

Town of Newtown

First Selectman Daniel Rosenthal

3 Primrose Street

NEWTOWN, CT, US, 06470

REFERENCE

799001.7680

SHIPPER REFERENCE

799001.7680

SHIP DATE

Wed 7/05/2023 05:42 PM

DELIVERED TO

Receptionist/Front Desk

PACKAGING TYPE

FedEx Envelope

ORIGIN

WESTBOROUGH, MA, US, 01581

DESTINATION

NEWTOWN, CT. US, 06470

NUMBER OF PIECES

TOTAL SHIPMENT WEIGHT

1.00 LB

SERVICE TYPE

FedEx Priority Overnight

#### Barbadora, Jeff

From:

TrackingUpdates@fedex.com

Sent:

Thursday, July 6, 2023 10:17 AM

To:

Barbadora, Jeff

Subject:

FedEx Shipment 772643193383: Your package has been delivered

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# Hi. Your package was delivered Thu, 07/06/2023 at 10:10am.



Delivered to 3 PRIMROSE ST, NEWTOWN, CT 06470 Received by F.DAWN

**OBTAIN PROOF OF DELIVERY** 

## How was your delivery?











TRACKING NUMBER

772643193383

FROM

Crown Castle

1800 West Park Drive

Suite 200

WESTBOROUGH, MA, US, 01581

TO

Town of Newtown

Rob Sibley, Director of Land Use

3 Primrose Street

NEWTOWN, CT, US, 06470

REFERENCE

799001.7680

SHIPPER REFERENCE

799001.7680

SHIP DATE

Wed 7/05/2023 05:42 PM

DELIVERED TO

Receptionist/Front Desk

PACKAGING TYPE

FedEx Envelope

ORIGIN

WESTBOROUGH, MA, US, 01581

DESTINATION

NEWTOWN, CT, US, 06470

NUMBER OF PIECES

TOTAL SHIPMENT WEIGHT

1.00 LB

SERVICE TYPE FedEx Priority Overnight

On-+-mobile-097-2307/1



# Radio Frequency Exposure Analysis Report

June 5, 2023

#### T-Mobile

**Site Name: Newton Dinglebrook** Site Number: CTFF013A Site Address: 24 Dinglebrook Lane, Newtown, CT 06470



Michael Fischer, P.E. Registered Professional Engineer (Electrical) **Connecticut License Number 33928** Expires January 31, 2024

Signed 05 June 2023

## **Site Compliance Summary**

T-Mobile Compliance Status:

Compliant

**Cumulative Calculated Power Density (Ground Level):** 

1.77744 μW/cm<sup>2</sup>

Cumulative General Population % MPE (Ground Level): 0.22414%



June 5, 2023

Centerline Attn: Jessica Meyer, Project Manager 750 W Center St, Suite 301 West Bridgewater, MA 02379

RF Exposure Analysis for Site: Newton Dinglebrook

Centerline was contracted to analyze the proposed T-Mobile facility at **24 Dinglebrook Lane, Newtown, CT 06470** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm²) or microwatts per square centimeter ( $\mu$ W/cm²). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm²) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ( $f_{MHz}/1500$ ). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm² (1000  $\mu$ W/cm²). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR  $\S$  1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.



## **Calculation Methodology**

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

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



### **Data & Results**

The following table details the antennas and operating parameters for the T-Mobile 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 ground level.

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(s) below. The cumulative power density and cumulative % MPE are displayed at the bottom of the table(s) below.



# <u>Maximum Calculated Cumulative Power Density @ Ground Level</u> (Location: approximately 363' NW of site)

3374 J. Apr. 1911		(Eocation: approximate)			Control of the Control	17 303 1444 01 31(0)		Calaulatad	I 6	
Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
T-Mobile A 1	ERICSSON SON_AIR6419	2500	15.55	129.00	1.00	60.00	2153.53	0.01311	1000.00	0.00131
T-Mobile A 1	ERICSSON SON_AIR6419	2500	22.05	129.00	2.00	90.00	28858.42	0.85128	1000.00	0.08513
T-Mobile A 2	RFS APXVAARR24 43-U-NA20	700	13.20	129.00	4.00	40.00	3342.87	0.08330	466.67	0.01785
T-Mobile A 2	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	40.00	3297.01	0.07118	400.00	0.01780
T-Mobile A 2	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	30.00	2472.76	0.05339	400.00	0.01335
T-Mobile A 2	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	2.00	10.00	676.13	0.01084	1000.00	0.00108
T-Mobile A 2	RFS APXVAARR24_43-U-NA20	2100	17.32	129.00	4.00	60.00	12948.25	0.14252	1000.00	0.01425
T-Mobile A 2	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	35.00	4732.91	0.07585	1000.00	0.00759
T-Mobile A 2	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	40.00	5409.04	0.08669	1000.00	0.00867
T-Mobile B 3	ERICSSON SON_AIR6419	2500	15.55	129.00	1.00	60.00	2153.53	0.00086	1000.00	0.00009
T-Mobile B 3	ERICSSON SON_AIR6419	2500	22.05	129.00	2.00	90.00	28858.42	0.05595	1000.00	0.00560
T-Mobile B 4	RFS APXVAARR24 43-U-NA20	700	13.20	129.00	4.00	40.00	3342.87	0.00054	466.67	0.00012
T-Mobile B 4	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	40.00	3297.01	0.00262	400.00	0.00066
T-Mobile B 4	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	30.00	2472.76	0.00197	400.00	0.00049
T-Mobile B 4	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	2.00	10.00	676.13	0.00021	1000.00	0.00002
T-Mobile B 4	RFS APXVAARR24_43-U-NA20	2100	17.32	129.00	4.00	60.00	12948.25	0.00053	1000.00	0.00005
T-Mobile B 4	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	35.00	4732.91	0.00148	1000.00	0.00015
T-Mobile B 4	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	40.00	5409.04	0.00169	1000.00	0.00017
T-Mobile C 5	ERICSSON SON_AIR6419	2500	15.55	129.00	1.00	60.00	2153.53	0.00001	1000.00	0.00000
T-Mobile C 5	ERICSSON SON_AIR6419	2500	22.05	129.00	2.00	90.00	28858.42	0.00087	1000.00	0.00009
T-Mobile C 6	RFS APXVAARR24 43-U-NA20	700	13.20	129.00	4.00	40.00	3342.87	0.00012	466.67	0.00003
T-Mobile C 6	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	160.00	3297.01	0.00000	400.00	0.00000
T-Mobile C 6	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	120.00	2472.76	0.00000	400.00	0.00000
T-Mobile C 6	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	2.00	20.00	676.13	0.00000	1000.00	0.00000
T-Mobile C 6	RFS APXVAARR24_43-U-NA20	2100	17.32	129.00	4.00	240.00	12948.25	0.00002	1000.00	0.00000
T-Mobile C 6	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	140.00	4732.91	0.00000	1000.00	0.00000
T-Mobile C 6	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	160.00	5409.04	0.00001	1000.00	0.00000
T-Mobile D 7	ERICSSON SON_AIR6419	2500	15.55	129.00	1.00	60.00	2153.53	0.00086	1000.00	0.00009
T-Mobile D 7	ERICSSON SON_AIR6419	2500	22.05	129.00	2.00	180.00	28858.42	0.05595	1000.00	0.00560
T-Mobile D 8	RFS APXVAARR24 43-U-NA20	700	13.20	129.00	4.00	160.00	3342.87	0.00088	466.67	0.00019
T-Mobile D 8	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	160.00	3297.01	0.00050	400.00	0.00013
T-Mobile D 8	RFS APXVAARR24 43-U-NA20	600	13.14	129.00	4.00	120.00	2472.76	0.00038	400.00	0.00009
T-Mobile D 8	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	2.00	20.00	676.13	0.00010	1000.00	0.00001
T-Mobile D 8	RFS APXVAARR24_43-U-NA20	2100	17.32	129.00	4.00	240.00	12948.25	0.00061	1000.00	0.00006
T-Mobile D 8	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	140.00	4732.91	0.00069	1000.00	0.00007



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
T-Mobile D 8	RFS APXVAARR24_43-U-NA20	1900	15.29	129.00	4.00	160.00	5409.04	0.00079	1000.00	0.00008
T-Mobile E 9	GENERIC MICROWAVE	11000	38.65	128.00	1.00	0.10	732.82	0.00000	1000.00	0.00000
Verizon A 10	POWERWAVE P90-14-XLH-RR	700	9.55	150.00	4.00	160.00	1442.51	0.07986	466.67	0.01711
Verizon A 10	POWERWAVE P90-14-XLH-RR	850	10.65	150.00	4.00	160.00	1858.32	0.08451	566.67	0.01491
Verizon A 11	KMW AM-X-CD-16-65-00T-RET-	2100	15.35	150.00	4.00	160.00	5484.28	0.07830	1000.00	0.00783
Verizon B 12	POWERWAVE P90-14-XLH-RR	700	9.55	150.00	4.00	160.00	1442.51	0.00192	466.67	0.00041
Verizon B 12	POWERWAVE P90-14-XLH-RR	850	10.65	150.00	4.00	160.00	1858.32	0.00056	566.67	0.00010
Verizon B 13	KMW AM-X-CD-16-65-00T-RET-	2100	15.35	150.00	4.00	160.00	5484.28	0.00007	1000.00	0.00001
Verizon C 14	POWERWAVE P90-14-XLH-RR	700	9.55	150.00	4.00	160.00	1442.51	0.00171	466.67	0.00037
Verizon C 14	POWERWAVE P90-14-XLH-RR	850	10.65	150.00	4.00	160.00	1858.32	0.00085	566.67	0.00015
Verizon C 15	KMW AM-X-CD-16-65-00T-RET-	2100	15.35	150.00	4.00	160.00	5484.28	0.00014	1000.00	0.00001
Newtown, Town Of A 16	GENERIC OMNI	850	2.60	164.00	1.00	100.00	181.97	0.01372	566.67	0.00242
							Cumulative Power Density:	1.77744 μW/cm²	Cumulative % MPE:	0.22414%



### **Summary**

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

Michelle Stone RF EME Technical Writer II Centerline Communications, LLC