App No: 2021081524

Revisions received 9.10.21 - JE
Revisions received 9.1.21 - JE

Application General Infomation

Applicant Name	NB+C	Updated	8/9/2021
Application Type	Minor Modification	Ann. Plan?	Yes
Carrier	T-Mobile	Will site be used to support government telecommunications facilities or other equipment for government use?	No
Solution Type	Macro		
Existing	Existing	Gvt. Use Desc.	

Application Description

T-Mobile proposes to replace (3) antennas, (3) radios, and (2) cabinets at the existing telecommunications facility.

Site Infomation

Site Id	288	Zoning	R-90
Structure Type	~~Tower~~ Monopole	Latitude	39.0676
Street Address	1901 Randolph Rd	Longitude	-77.0397222
County Site Name	JFK High School	Ground Elevation	400
Carrier Site Name	7WAN290A	City	Silver Spring
Site Owner	MCPS	Lease Status	In Process
Structure Owner	MONTGOMERY COUNTY PUBLIC SCH	Does the structure require an antenna structure registration under FCC Title 47	No
Existing Structure Height	127		
Provide the proposed height of the replacement structure without any antenna (New, Replacement Apps Only)		Distance to Residential Property (New, Replacement, Colocation Only)	
		Distance to Commercial Property (New, Replacement, Colocation Only)	

Justification of why this site was selected:

Existing telecommunications facility

NearbySites (New, Replacement Apps Only):

Monday, August 9, 2021

11:08:21 AM

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Screening considerations(New, Colocations, Replacement Apps Only):

Monday, August 9, 2021

11:08:22 AM

App No: 2021081524

6409 Questions

Does this qualify as a 6409 application? (Minor Mod, Colocations Only): Yes

For towers outside the public ROW will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 20 feet, whichever is greater?	No	Will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 6 feet?	No
For towers outside the public ROW will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 20 feet?	No	Will the proposed installation require more the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets?YN	No
Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater?	No	Does the structure or current installation have concealment elements/measures?	No
Will the proposed installation require excavation or expansion outside the current boundaries of the site?	No	If yes, describe how the proposed installation does not defeat the existing concealment.	

Small Wireless Facility Informatio

Small Wireless Facility Questions

		Small Wireless Facility?	No
Is the structure 10% taller than adjacent structures?		Cumulative volume of the proposed wireless equipment(s) exclusive of antennas in cubic feet	49.3
Please list adjacent structure heights			
Tribal Lands?	No	Cumulative volume of the proposed antenna antenna(s) exclusive of equipment	

ROW Information

PROW?	No	Pole Number	
ROW owner			
ROW width			

Monday, August 9, 2021

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Antenna Infomatio

Antenna Compliance	Yes
Compliance Desc	
Antenna Location	No
Antenna Loc. Desc.	
Env. Assessment	
Cat. Excluded?	
Routine Env. Evaluation	checked

Antenna Model	Ericsson AIR6449 B41						
Frequency	Tx/Rx: 2496-2690						
RAD Center	130	Max ERP	~~34144~~ 40,948	Antenna Dimensions	33.1"20.5"x8.5"	Quantity	3

Monday, August 9, 2021

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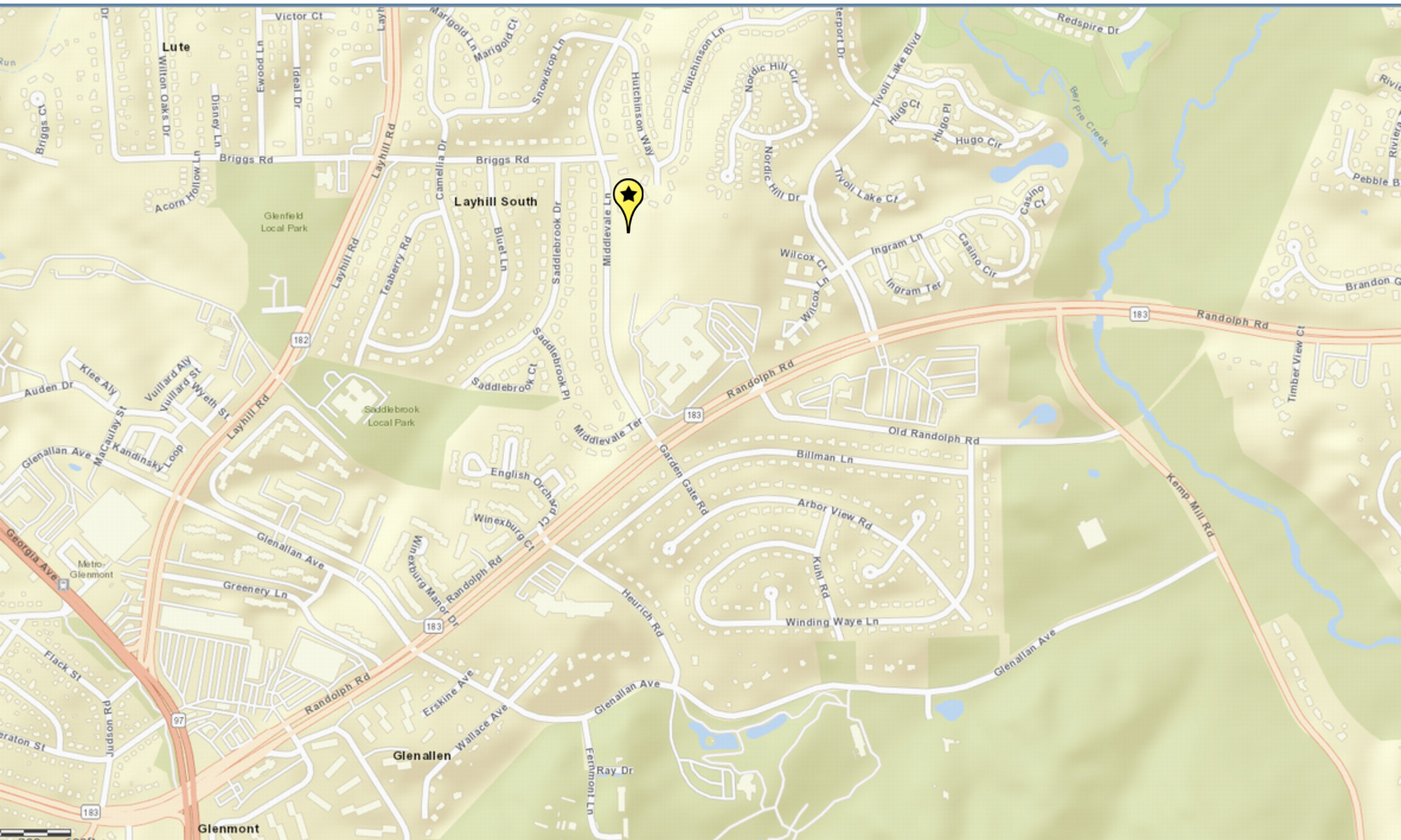
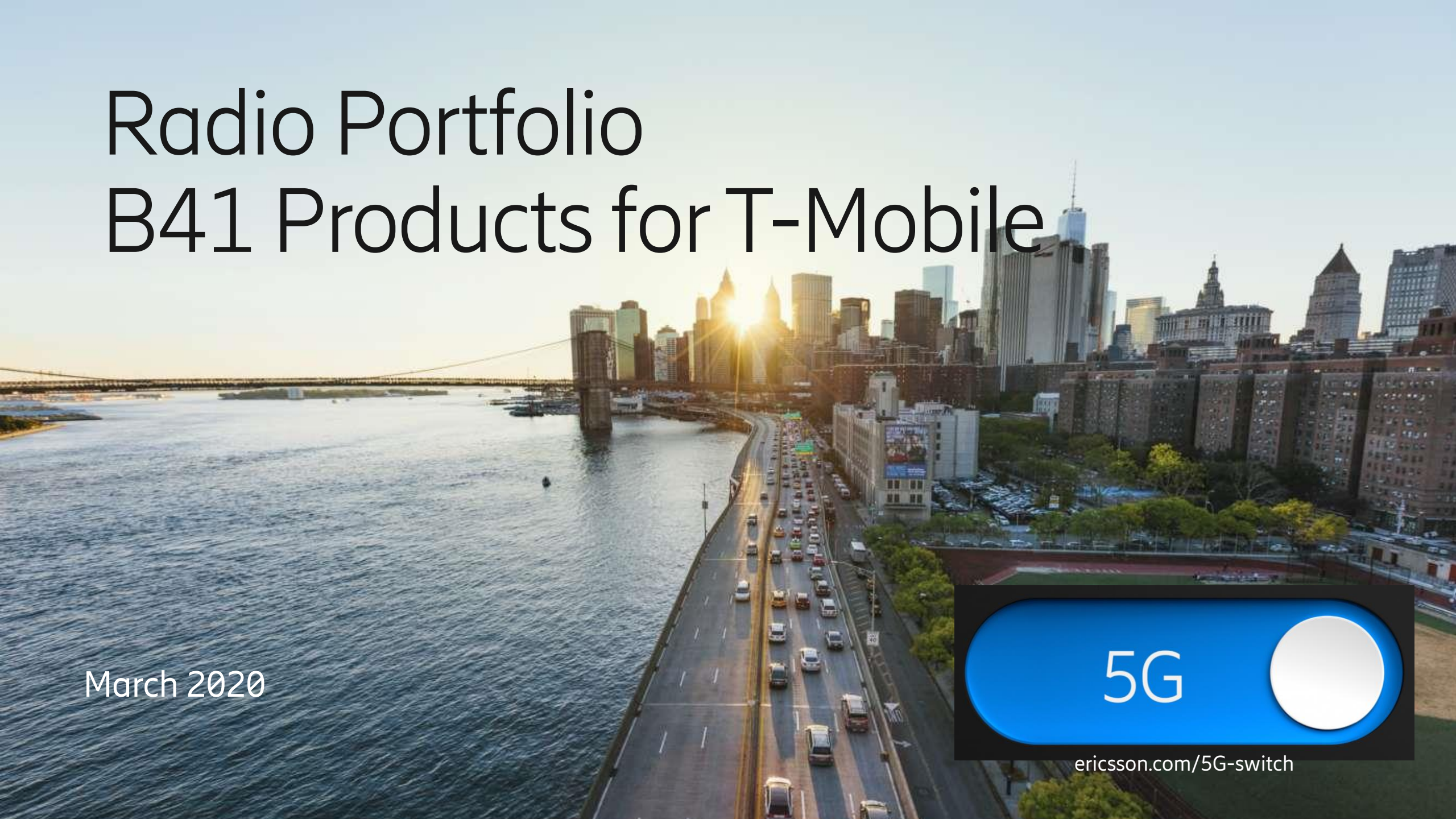

Lute
Victor Ct
Marigold Ln
Marigold Ct
Snowdrop Ln
Hutchinson Ln
Hutchinson Way
Nordic Hill Cir
Nordic Hill Dr
Tivoli Lake Blvd
Tivoli Lake Ct
Hugo Ct
Hugo Pl
Hugo Cir
Redspire Dr
Bear Pee Creek
Briggs Ct
Wilton Oaks Dr
Disney Ln
Ewood Ln
Ideal Dr
Briggs Rd
Acorn Hollow Ln
Layhill Rd
Camellia Dr
Layhill South
Glenfield Local Park
Teaberry Rd
Bluet Ln
Saddlebrook Dr
Saddlebrook Pl
Saddlebrook Ct
Middlevale Ln
Wilcox Ct
Wilcox Ln
Ingram Ln
Ingram Ter
Casino Ct
Casino Cir
Pebble B
Brandon G
182
183
Randolph Rd
Timber View Ct
Auden Dr
Klee Aly
Vuillard Aly
Vuillard St
Wyeth St
MacAulay St
Kandinsky Loop
Saddlebrook Local Park
Middlevale Ter
Garden Gate Rd
Old Randolph Rd
Billman Ln
Glenallan Ave
English Orchard Ct
Winexburg Ct
Winexburg Manor Dr
Arbor View Rd
Kuhl Rd
Winding Waye Ln
Kemp Mill Rd
Georgia Ave
Metro-Glenmont
Greenery Ln
Heurich Rd
Flack St
Judson Rd
Erskine Ave
Wallace Ave
Glenallen
Ray Dr
Fernmont Ln
97
Glenmont

Radio Portfolio
B41 Products for T-Mobile



March 2020

ericsson.com/5G-switch

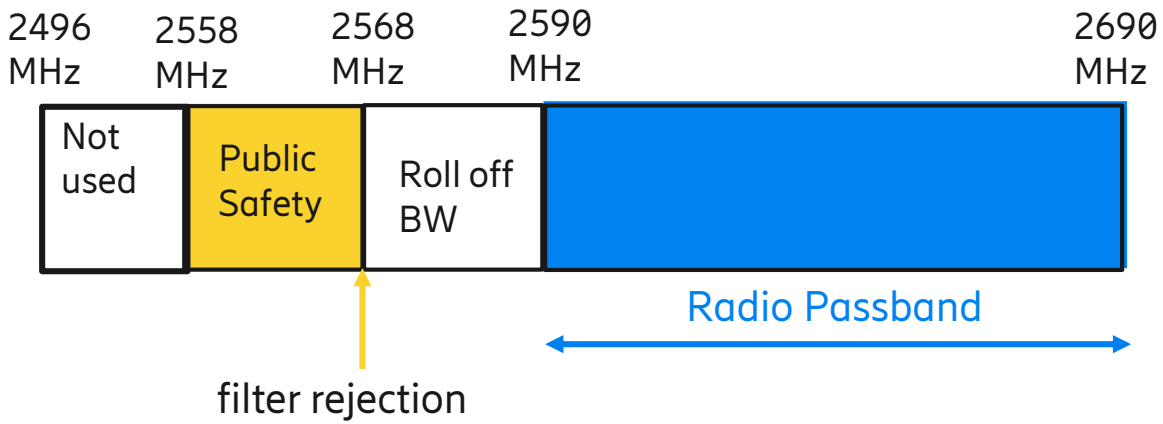
AIR 6488, B41

- Advanced Antenna System (AAS)
- 64TX/64RX with 128 AE
- Support operation frequency range 2496-2690 MHz
- Support output power up to 200W
- Support 100 MHz IBW & CBW
- Support NR and NR+LTE in split mode
- 3 x 10 Gbps eCPRI
- Power consumption < 1290W
- Weight: 58 kg
- Size (H x W x D): 884x520x183 mm
- -48 VDC (3-wire or 2-wire)
- -40 to +55˚C
- Multi-layer MU MIMO
  - DL/UL: 16/8

AIR 6488, B41M

- Advanced Antenna System (AAS)
- 64TX/64RX with 128 AE
- Support operation frequency range 2590-2690 MHz
- Support output power up to 200W
- Support 100 MHz IBW & CBW
- Support NR and NR+LTE in split mode
- 3 x 10 Gbps eCPRI
- Power consumption < 1290W
- Weight: 58 kg
- Size (H x W x D): 884x520x183 mm
- -48 VDC (3-wire or 2-wire)
- -40 to +55˚C
- Multi-layer MU MIMO
  - DL/UL: 16/8

AIR 6488M for New York City Band 41M support

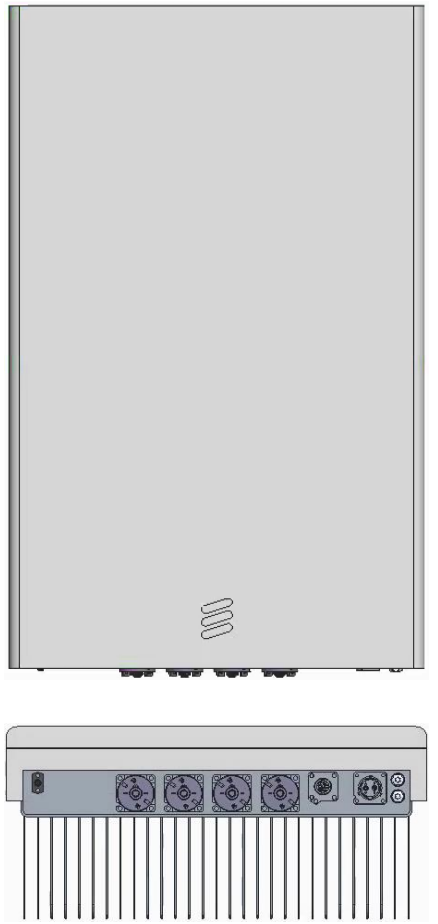


B41 in New York City currently has a UMTS Public Safety Network that requires OOBE interference protection from New T-Mobile Network

AIR 6449

Preliminary

- 192 antenna elements, 3:1 subarray
- Up to 300W
- Up to 200 MHz Operating BW & Carrier BW
- Two 25 Gb/s SFP(C2) and Two 10 Gb/s QSFP(C1FD and C2 backup)
- -48V 45 A Two wire and three wire versions
- APC light connector and Self test push button
- Sensor support but undefined
- Size B41:
  - 841 x 521 x 217 mm (H x W x D)
  - Volume: 95 liter
  - Weight: 47 kg



PRA: July 2020

Radio 8863

Preliminary

- 8TX/8RX
- Support split mode (2 x 4T4R or 4 x 2T2R as multi-sector solution)
- Tx Power 8x40W
- 200MHz IBW TDD
- 2x10.1/25Gbps CPRI
- 21.5 liter, 21kg
- External antenna calibration
- -48 VDC 3-wire
- AISG RET support via RS-485 or RF connectors
- Optional fan for increased site flexibility
- 2 external alarm
- Convectional cooling
- IP 65, -40 to +55˚C

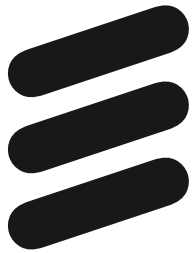
Radio Details: Mid Band TDD (Massive) MIMO (Band 41)

AIR or Radio Type	AIR 6488 (G2) 	AIR 6449 (G4) 	Radio 8863 
RATs supported	L, NR	L, NR	L, NR
Power capability	200W	300W	8x40W
Modulation	256QAM	256QAM	256QAM
Bandwidth (IBW/CBW)	100 MHz or 60L+60N	194 MHz	196 MHz
Tx and Rx Array	64T64R	64T64R	8 CSI-RS ports
MIMO layers (DL/UL)	16 DL / 8 UL	16 DL / 8 UL	16 DL / 8 UL
CPRI ports	3 x 10G	4 x 25G* (2x10G+2x25G)	2 x 25G*
Dimensions (HxWxD)	884mm x 520mm x 183mm (34.8" x 20.5" x 7.2")	840mm x 520mm x 210mm (33.1" x 20.5" x 8.3")	(21.5 ltr)
Weight	58 kg (128 lbs)	47 kg (103 lbs)	Approx. 21 kg (46 lbs)
Cooling	Convection	Convection	Convection
Power	-48VDC	-48VDC	-48VDC
Power Consumption	1290W	<1100W	TBD
Availability	Q2 2019	Q3 2020	Q2 2020

* requires Baseband 6648

Radio 4408 B41

- 4TX/4RX TDD
- 4x5W
- IBW up to 150 MHz CBW
- Up to 6 LTE carriers
- 2x 2.5/5/9.8/10.1Gbps CPRI
- 4 liter, less than 5kg incl bracket and cover
- AC or -48 VDC
- Integrated or external antenna
- 2 external alarm
- IP 65
- -40 to +55˚C



3 Technical Data

This section describes the physical characteristics, environmental data, and the power supply of the enclosure.

3.1 Dimensions

Figure 17 Dimensions of the Enclosure

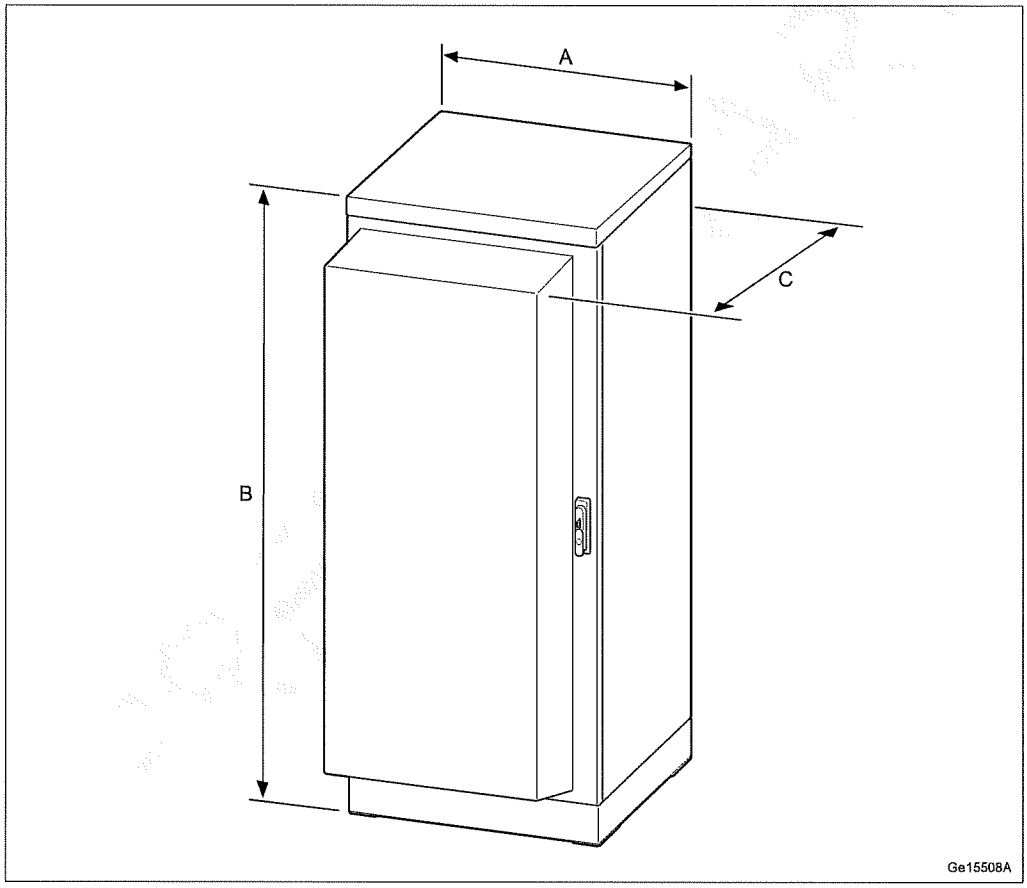


Table 1 Dimensions, Weight, and Color

Dimensions	
Width (A)	650 mm
Height (B)	1450 mm (without base frame) 1600 mm (with base frame)
Depth (C)	850 mm
Weight	
Empty enclosure	176 kg

And for the B160:

Capacity	
VRLA 12v	100Ah / 150Ah / 170Ah / 190Ah / 210Ah
Strings (max)	3
Electrical Specification	
DC output	-48VDC/200A
Battery breakers	2x 125/2p
Alarms	Door open, climate failure, MCB connection
Mechanical Specification	
Weight	295 lbs
Dimensions H x W x D	63" x 26" x 26" (including base frame)
Base frame height	6"
Material	Galvanized steel (180g/m^2)
Color	Powder paint NCS 2002-B
Door	Front access
Locking type	Pad lock / cylinder
Environmental Specification	
Ingress protection	VRLA/Sokium IP44
Relative humidity	15 – 100%
Climate System	
Air conditioner	
- Fan type	DC
- Cooling capacity	500W @L35/L35
Convection cooling	
- Emergency fan	

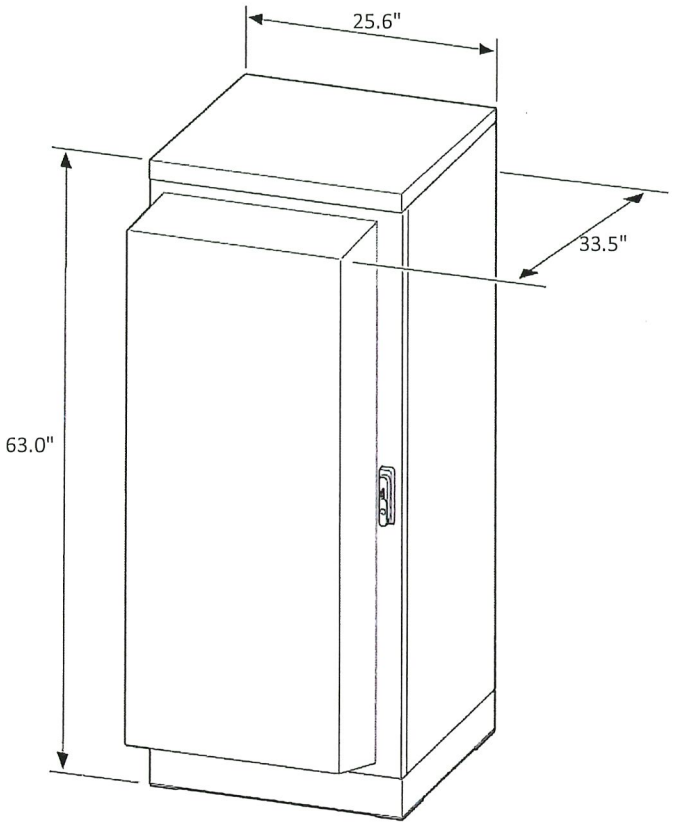


Figure 1

[illegible]
[illegible]
[illegible]
[illegible]
R[illegible] MD [illegible]

R[illegible] **2021081524**

[illegible]

[illegible] Mobile Northeast, LLC (“T[illegible]Mobile”) concerning the above referenced application, [illegible] Coordinating Group (the “County”). In connection with that application, the County has request a full EME [illegible] 58E of the County’s [illegible] that the “… [illegible] R[illegible] R[illegible].”

[illegible] Mobile’s position full EME reports contain sensitive and confidential T[illegible]M[illegible]

[illegible]

[illegible]

Katherine Blackwood for,

[illegible]
D[illegible] M[illegible] D[illegible] M[illegible]

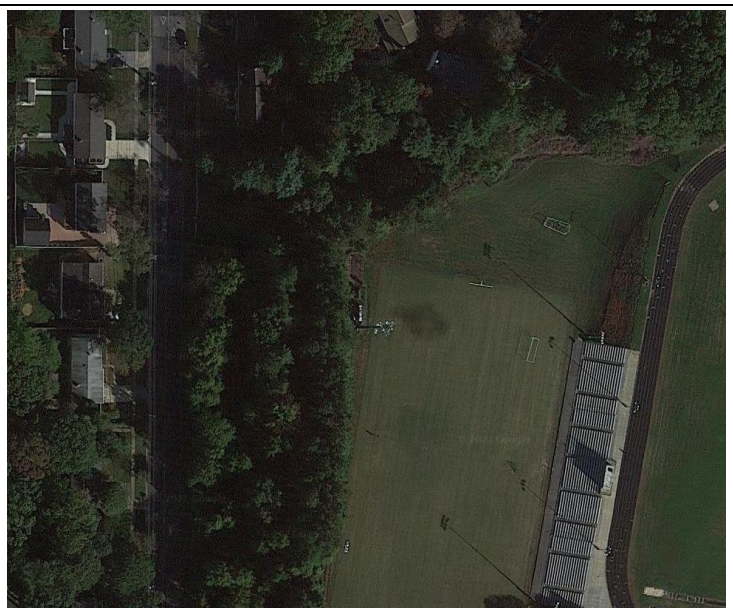
T Mobile

Radio Frequency – Electromagnetic Energy (RF-EME) Compliance Report (Anchor)

T-Mobile Proposed Facility

Site ID: WAN290A
BOE-Kennedy High School
1901 Randolph Road, Silver Spring, Maryland 20902
August 30, 2021

EBI Project Number:
6221004745



Status:	**Compliant**
Remarks: No additional mitigation is required.	

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

1.0 Executive Summary

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by T-Mobile to conduct radio frequency electromagnetic (RF-EME) modeling for T-Mobile Site WAN290A located at 1901 Randolph Road in Silver Spring, Maryland to determine RF-EME exposure levels from proposed T-Mobile wireless communications equipment at this site. As described in detail in Appendix B of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields. This report contains a detailed summary of the RF EME analysis for the site.

This document addresses the compliance of T-Mobile's proposed transmitting facilities independently at the site.

The Maximum Emissions Value is 0.5700% of the FCC's general public limit (0.1140% of the FCC's occupational limit) at the field light level. The proposed site is in compliance with Federal regulations regarding (radio frequency) RF Emissions.

At the nearest walking/working surfaces to the T-Mobile antennas on the field light level, the maximum power density generated by the T-Mobile antennas is approximately 0.5700 percent of the FCC's general public limit (0.1140 percent of the FCC's occupational limit).

Based on worst-case predictive modeling, there are no modeled exposures on any accessible field light level-walking/working surface related to T-Mobile's equipment in the area that exceed the FCC's occupational and/or general public exposure limits at this site.

Signage is not required at the site as presented in Attachment 1. The site is compliant with FCC rules and regulations.

2.0 MPE Calculations

Calculations were completed for the proposed T-Mobile Wireless antenna lmonopole facility located at 1901 Randolph Road in Silver Spring, Maryland using the equipment information listed below. All calculations were performed per the specifications under FCC Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65). Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas in the immediate vicinity of the antennas.

In accordance with T-Mobile's RF Exposure policy, EBI performed theoretical modeling using RoofMaster™ software to estimate the worst-case power density at the site field lights and ground-level resulting from operation of the antennas. Using the computational methods set forth in OET-65, RoofMaster™ calculates power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by T-Mobile and compared the resultant worst-case MPE levels to the FCC's general public/uncontrolled exposure limits outlined in OET Bulletin 65. EBI has performed theoretical worst-case modeling using RoofMaster™ to estimate the maximum potential power density from each proposed antenna based on worst-case assumptions for the number of antennas and power. All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmission paths per carrier prescribed configuration. Modeling for Ericsson AIR 6449 and AIR 6488 antennas is based on worst-case assumptions that include all beams transmitting simultaneously. This is to ensure that all areas of potential concern are taken into consideration. As such, the results are conservative in nature and reflect potentially higher levels of RF emissions compared to actual on-air conditions. It is recommended that areas of concern be confirmed with onsite measurements once the site is active.

The assumptions used in the modeling are based upon information provided by T-Mobile in the supplied drawings.

There are no collocated carriers on the monopole.

The data for all T-Mobile antennas used in this analysis is shown in Section 3.0. Actual antenna gains for each antenna were used per manufacturer's specifications. All calculations were done with respect to the FCC's general public/uncontrolled threshold limits.

Based on information provided by T-Mobile, access to this site is considered uncontrolled. A site visit was not conducted by EBI to confirm controlled, or occupational, access status. Access should be confirmed upon installation of mitigation.

3.0 T-Mobile Antenna Inventory

Sector	Antenna Number	Antenna Make	Antenna Model	Centerline Height (ft) Above Nearest Walking Surface	Azimuth (°)	Technology	Frequency Band	Power Per Channel (W)	Number of Channels	ERP (W)
A	1	ERICSSON	SON_AIR3246B66	70.0	75	LTE	AWS - 2100 MHz	40	4	13776
A	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	75	NR	600 MHz	80	1	1421
A	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	75	LTE	600 MHz	30	1	533
A	2	RFS	APXVAARR24 43-U-NA20 04DT 700	70.0	75	LTE	700 MHz	30	1	555
A	2	RFS	APXVAARR24_43-U-NA20 05DT 1900	70.0	75	LTE/UMTS	PCS - 1900 MHz	90	2	5933
A	3	ERICSSON	SON_AIR6449 2500 NR TB	70.0	75	NR	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 LTE TB	70.0	75	LTE	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	75	NR	2500 MHz	90	1	4833
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	75	LTE	2500 MHz	90	1	4833
B	1	ERICSSON	SON_AIR3246B66	70.0	195	LTE	AWS - 2100 MHz	40	4	13776
B	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	195	NR	600 MHz	80	1	1421
B	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	195	LTE	600 MHz	30	1	533
B	2	RFS	APXVAARR24 43-U-NA20 04DT 700	70.0	195	LTE	700 MHz	30	1	555
B	2	RFS	APXVAARR24_43-U-NA20 05DT 1900	70.0	195	LTE/UMTS	PCS - 1900 MHz	90	2	5933
B	3	ERICSSON	SON_AIR6449 2500 NR TB	70.0	195	NR	2500 MHz	90	1	15461
B	3	ERICSSON	SON_AIR6449 2500 LTE TB	70.0	195	LTE	2500 MHz	90	1	15461
B	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	195	NR	2500 MHz	90	1	4833
B	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	195	LTE	2500 MHz	90	1	4833
C	1	ERICSSON	SON_AIR3246B66	70.0	310	LTE	AWS - 2100 MHz	40	4	13776
C	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	310	NR	600 MHz	80	1	1421
C	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	310	LTE	600 MHz	30	1	533
C	2	RFS	APXVAARR24 43-U-NA20 04DT 700	70.0	310	LTE	700 MHz	30	1	555
C	2	RFS	APXVAARR24_43-U-NA20 05DT 1900	70.0	310	LTE/UMTS	PCS - 1900 MHz	90	2	5933
C	3	ERICSSON	SON_AIR6449 2500 NR TB	70.0	310	NR	2500 MHz	90	1	15461
C	3	ERICSSON	SON_AIR6449 2500 LTE TB	70.0	310	LTE	2500 MHz	90	1	15461
C	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	310	NR	2500 MHz	90	1	4833
C	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	310	LTE	2500 MHz	90	1	4833

• This table contains an inventory of T-Mobile Antennas and Power Values.

4.0 Summary and Conclusions

All calculations performed for this analysis yielded results that were within the allowable limits for exposure to RF Emissions. Based on predictive modeling, there are no modeled exposures on any accessible field light level-walking/working surface related to T-Mobile's equipment in the area that exceed the FCC's occupational and/or general public exposure limits at this site.

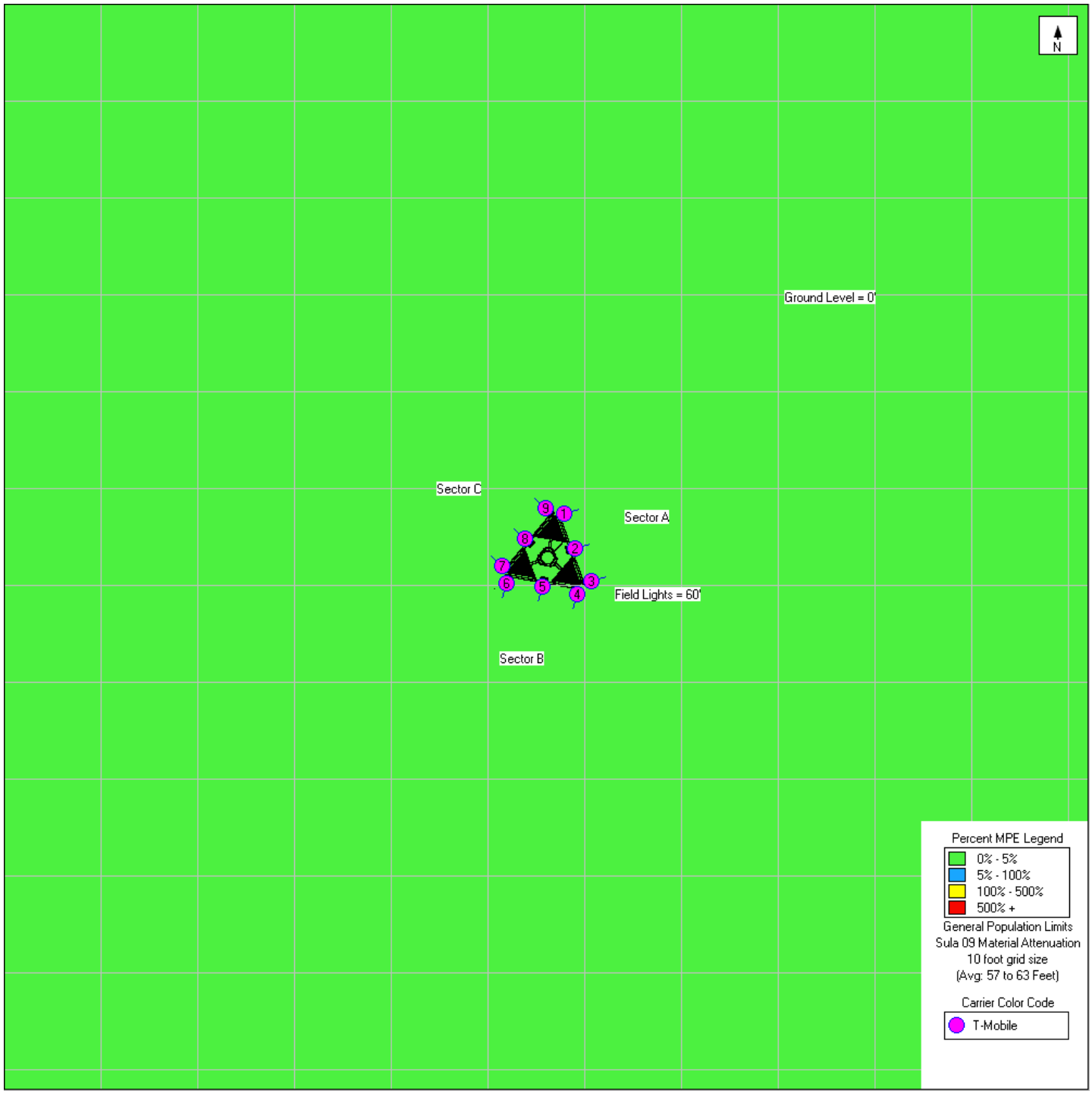
There are no collocated carriers on the monopole.

The anticipated maximum contribution from each sector of the proposed T-Mobile facility is 0.5700% of the allowable FCC established general public limit (0.1140% of the FCC occupational limit). This was determined through calculations along a radial from each sector taking full power values into account as well as actual vertical plane antenna gain values per the manufacturer-supplied specifications for gain. Based on worst-case predictive modeling, there are no areas at ground level related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 0.1700% of the FCC's general public limit (0.0340% of the FCC's occupational limit).

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards. For this facility, the calculated values were within the allowable 100% threshold standard per the federal government.

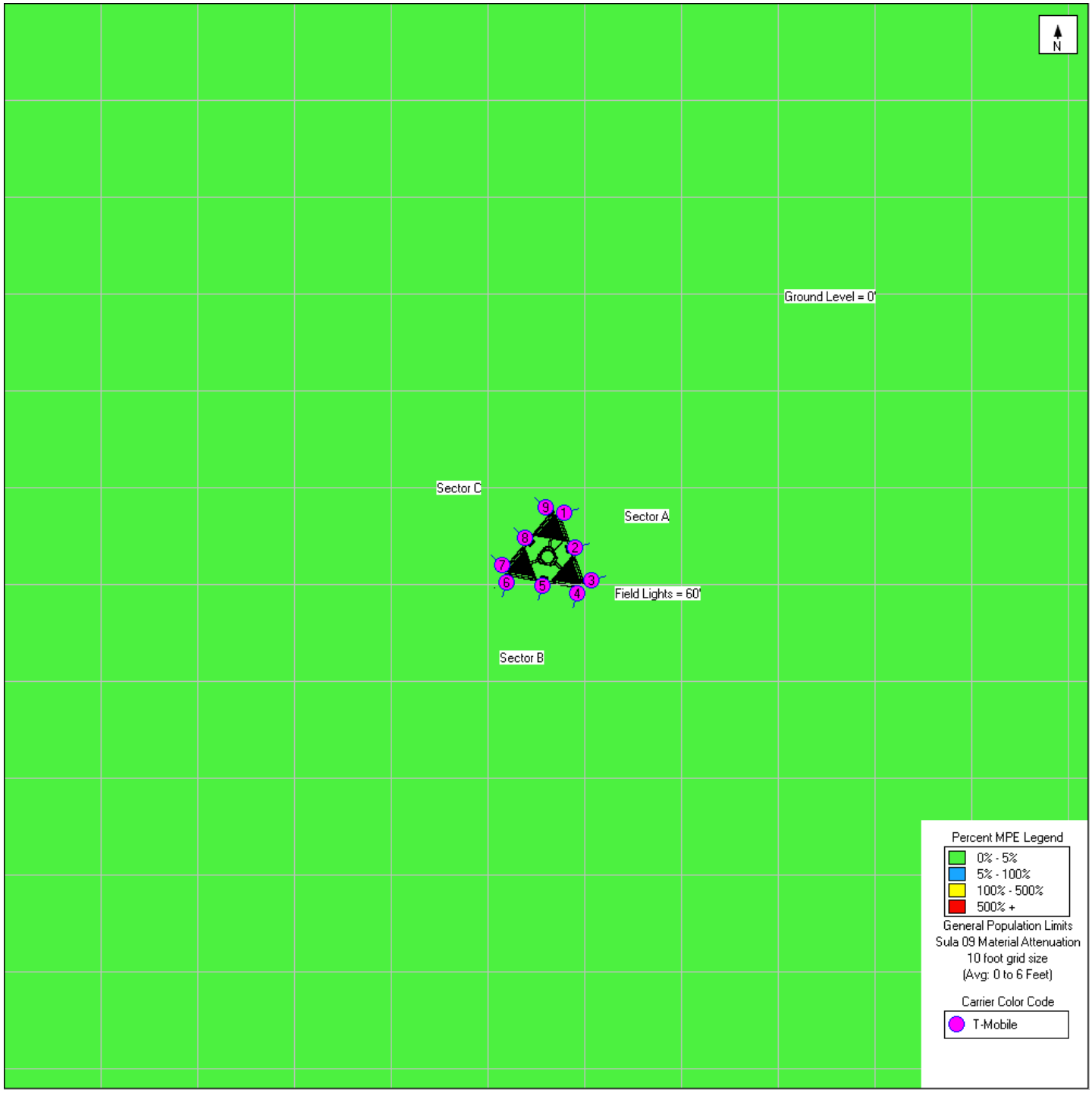
Signage is not required because there is no access within 30 feet of an antenna. To reduce the risk of exposure and/or injury, EBI recommends that access to the monopole or areas associated with the active antenna installation be restricted and secured where possible.

Attachment 1a: MPE Analysis and Recommended Signage (Field Light Level)



Signage is not required because there is no access within 30 feet of an antenna.

Attachment 1b: MPE Analysis and Recommended Signage (Ground Level)



Signage is not required because there is no access within 30 feet of an antenna.

Sign	Sign Count	Description	Posting Instructions
	**N/A**	**Blue Notice Sign** Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.	Signage is not required because there is no access within 30 feet of an antenna.
	**N/A**	**Guidelines** Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Signage is not required because there is no access within 30 feet of an antenna.
	**N/A**	**Yellow Caution Sign** Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.	Signage is not required because there is no access within 30 feet of an antenna.
	**N/A**	**Red Warning Sign** Used to notify individuals that they are entering a hot zone where either the general public or occupational FCC's MPE limit has been exceeded.	Signage is not required because there is no access within 30 feet of an antenna.
Notes:	The actual number of access points may vary based on documentation provided and/or if a survey was conducted. Recommended signage locations, if applicable, are based on T-Mobile's guidance for the worst-case scenario in each sector. The actual signage installation is dependent on accessibility of the facility and antennas. Locations deemed inaccessible due to OSHA safety standards (proximity to unprotected roof edge or slope, etc.) will be compliant upon installation of recommended signage at the closest accessible point.		

Attachment 2: RoofMaster™ Import File

Carrier	Antenna Number	Emitter Number	Caption	Pattern(.ant)	Frequency	Power (W) ERP/EiRP	Length (m)	Azimuth(n)	Mechanical Downtilt	Height(ft)
T-Mobile	1	1	ANT 1	SON_AIR3246B66.ant	2100	22592.48	1.52	75	0	130.0
T-Mobile	2	1	ANT 2	APXVAARR24 43-U-NA20 04DT 600.ant	600	1420.99	2.44	75	0	130.0
T-Mobile	2	2	ANT 2	APXVAARR24 43-U-NA20 04DT 600.ant	600	532.87	2.44	75	0	130.0
T-Mobile	2	3	ANT 2	APXVAARR24 43-U-NA20 04DT 700.ant	700	555.42	2.44	75	0	130.0
T-Mobile	2	4	ANT 2	APXVAARR24_43-U-NA20 05DT 1900.ant	1900	9730.08	2.44	75	0	130.0
T-Mobile	3	1	ANT 3	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	75	0	130.0
T-Mobile	3	2	ANT 3	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	75	0	130.0
T-Mobile	3	3	ANT 3	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	75	0	130.0
T-Mobile	3	4	ANT 3	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	75	0	130.0
T-Mobile	4	1	ANT 4	SON_AIR3246B66.ant	2100	22592.48	1.52	195	0	130.0
T-Mobile	5	1	ANT 5	APXVAARR24 43-U-NA20 04DT 600.ant	600	1420.99	2.44	195	0	130.0
T-Mobile	5	2	ANT 5	APXVAARR24 43-U-NA20 04DT 600.ant	600	532.87	2.44	195	0	130.0
T-Mobile	5	3	ANT 5	APXVAARR24 43-U-NA20 04DT 700.ant	700	555.42	2.44	195	0	130.0
T-Mobile	5	4	ANT 5	APXVAARR24_43-U-NA20 05DT 1900.ant	1900	9730.08	2.44	195	0	130.0
T-Mobile	6	1	ANT 6	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	195	0	130.0
T-Mobile	6	2	ANT 6	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	195	0	130.0
T-Mobile	6	3	ANT 6	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	195	0	130.0
T-Mobile	6	4	ANT 6	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	195	0	130.0
T-Mobile	7	1	ANT 7	SON_AIR3246B66.ant	2100	22592.48	1.52	310	0	130.0
T-Mobile	8	1	ANT 8	APXVAARR24 43-U-NA20 04DT 600.ant	600	1420.99	2.44	310	0	130.0
T-Mobile	8	2	ANT 8	APXVAARR24 43-U-NA20 04DT 600.ant	600	532.87	2.44	310	0	130.0
T-Mobile	8	3	ANT 8	APXVAARR24 43-U-NA20 04DT 700.ant	700	555.42	2.44	310	0	130.0
T-Mobile	8	4	ANT 8	APXVAARR24_43-U-NA20 05DT 1900.ant	1900	9730.08	2.44	310	0	130.0
T-Mobile	9	1	ANT 9	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	310	0	130.0
T-Mobile	9	2	ANT 9	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	310	0	130.0
T-Mobile	9	3	ANT 9	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	310	0	130.0
T-Mobile	9	4	ANT 9	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	310	0	130.0

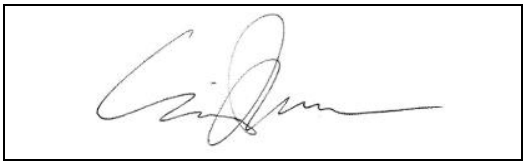
Note that Power (W) ERP/EiRP values are listed respective to the frequency of the antenna. (Values less than 1,000 MHz are listed as ERP and greater than 1,000 MHz are listed as EiRP.)

Appendix A: Certifications

Preparer Certification

I, Erik Johnson, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have been trained on RF-EME modeling using RoofMaster™ modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Appendix B: Federal Communications Commission (FCC) Requirements

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 and 800 MHz Bands is 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

Additional details can be found in FCC OET 65.

NOTE TO GENERAL CONTRACTOR:
REFER TO THE PASSING STRUCTURAL ANALYSIS AND APPLICABLE MOUNT ANALYSIS OF THE EXISTING MONOPOLE CONSIDERING THE EXISTING AND PROPOSED LOADS PERFORMED BY NB+C ES (PROJECT 100595). IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

DESIGN BASED ON RFDS VERSION: 13 DATED: 06/14/21.

T-MOBILE NORTHEAST LLC

SITE NUMBER: 7WAN290A

SITE NAME: BOE-KENNEDY HIGH SCHOOL

T-MOBILE ANCHOR INSTALLATION, DESIGN 67D5A998ME OUTDOOR

1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

SCOPE OF WORK

PROJECT CONSISTS OF:

REMOVING:	(3) EXISTING ANTENNAS (3) EXISTING RADIOS (2) EXISTING CABINETS ALL EXISTING UNUSED TMAS & COAX CABLES
INSTALLING:	(3) PROPOSED ANTENNAS (3) PROPOSED RADIOS (1) PROPOSED 6X24 HYBRID CABLE (2) PROPOSED CABINETS
SPECIAL CHANGES:	*ROTATE EXISTING ANTENNA PLATFORM

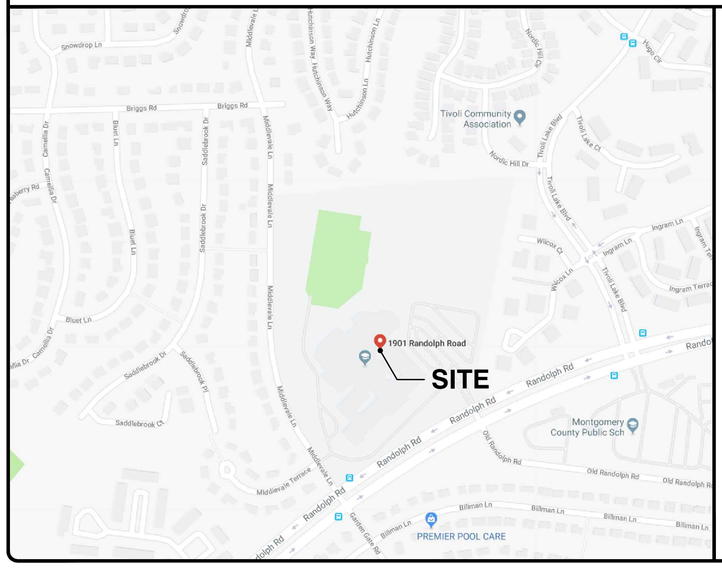
SITE INFORMATION

LATITUDE (NAD 83):	39.06753300°
LONGITUDE (NAD 83):	-77.04019200°
JURISDICTION:	MONTGOMERY COUNTY
ZONING:	R-90
TAX ACCOUNT NUMBER:	13-00954445
PARCEL AREA:	28.24 ± ACRES
PARCEL OWNER:	BOARD OF EDUCATION
ADDRESS:	850 HUNGERFORD DRIVE ROCKVILLE, MD 20805
GROUND ELEVATION:	400.0' (AMSL)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	127.0' (AGL)

PROJECT TEAM

APPLICANT:	T-MOBILE NORTHEAST LLC 12050 BALTIMORE AVENUE BELTSVILLE, MD 20705 OFFICE: (240) 264-8600 FAX: (240) 264-8610
PROJECT MANAGEMENT FIRM:	NETWORK BUILDING + CONSULTING, LLC. 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092
ENGINEERING FIRM:	NB+C ENGINEERING SERVICES, LLC. 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092 MARCO GROTTI MGROTTI@NBCLLC.COM (410) 712-7092 - EXT 1032

VICINITY MAP



TRUE NORTH

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND 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 THE LATEST EDITIONS OF THE FOLLOWING CODES.

- 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2018 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2015 NFPA 101, LIFE SAFETY CODE
- 2015 NFPA 1, FIRE CODE
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- ANSI/TIA-222-H
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELCORDIA GR-1275
- ANSI/T 311

DRAWING INDEX

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 22"X34". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

Know what's below. Call before you dig.

MARYLAND ONE CALL SYSTEM, INC. 1-800-257-7777 STOP! CALL BEFORE YOU DIG!

MARYLAND LAW REQUIRES THREE WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES

APPLICANT

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND · TRENT TRAVIS SNARR · 55491 · PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE: 07/09/2023.

ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING AT EXPOSED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC OR RIGID SCHEDULE 80 PVC FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) (AS PERMITTED BY CODE).
6. ELECTRICAL AND TELCO WIRING AT CONCEALED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING, ELECTRICAL NONMETALLIC TUBING, OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC AS PERMITTED BY CODE).
7. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING, ABOVE GRADE AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS (RGS) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
8. BURIED CONDUIT SHALL BE RIGID NONMETALLIC CONDUIT (RIGID SCHEDULE 40 PVC); DIRECT BURIED IN AREAS OF OCCASIONAL LIGHT TRAFFIC, ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY TRAFFIC.
9. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED INDOORS AND OUTDOORS IN AREAS WHERE VIBRATION OCCURS AND FLEXIBILITY IS NEEDED.
10. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE THHN, THWN–2, OR THIN INSULATION.
11. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
12. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
13. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
14. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTING PROTECTION SHALL BE DONE IN ACCORDANCE WITH T–MOBILE CELL SITE GROUNDING STANDARDS.
15. GROUND CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
16. INSTALL #2 AWG GREEN–INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
17. ALL POWER AND GROUND CONNECTIONS TO BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY HARGER (OR APPROVED EQUAL) RATED FOR OPERATION AT NO LESS THAN 75°C OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
18. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
19. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
20. APPLY OXIDE INHIBITING COMPOUND TO ALL MECHANICAL GROUND CONNECTIONS.
21. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE–OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, CABLE, AND LNA RETURN–LOSS AND DISTANCE–TO–FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
24. THE T–MOBILE ELECTRICAL EQUIPMENT INCLUDING PANEL, SWITCH GEAR AND DISCONNECT ARE TO BE LABELED WITH ENGRAVED BAKELITE LABELS.

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
9. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
10. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
11. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
12. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
13. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
14. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
15. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
16. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
17. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
18. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.

STRUCTURAL NOTES

1. THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.
2. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
   A. AISC – "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC – "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AWS – "D1.1 STRUCTURAL WELDING CODE – STEEL".
3. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 FY = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES A500, GRADE B	A36, FY = 36 KSI STRUCTURAL TUBING FY = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 40 PIPE

4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.
5. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.
6. ALL STEEL TO BE HOT–DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.
7. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
8. ALL BOLTS SHALL BE TIGHTENED USING TURN–OF–THE–NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.
9. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.

APPLICANT

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
07/29/21
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 07/08/2022.

ENGINEER

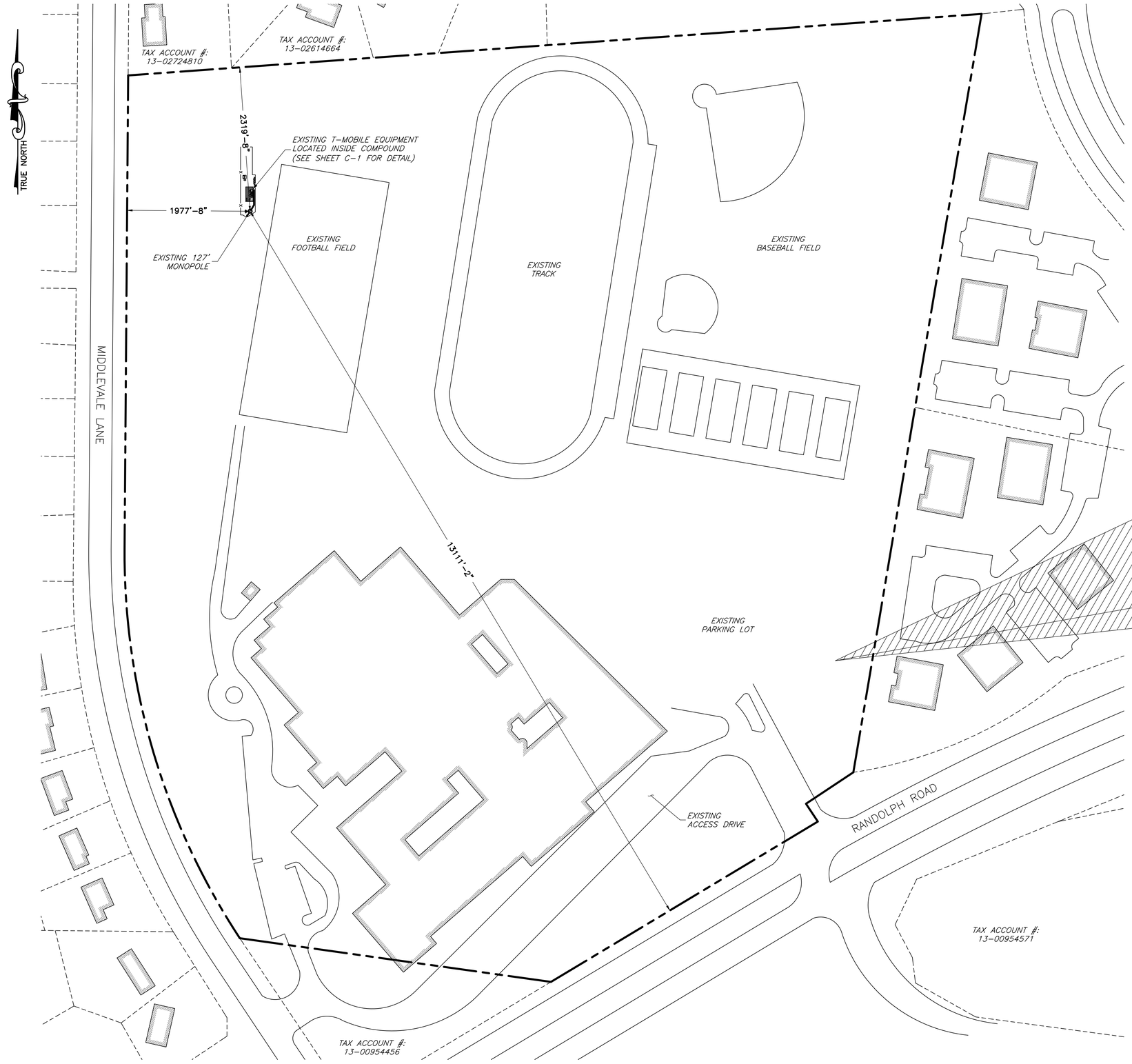
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1



1 SP-1 SITE PLAN
SCALE: 1" = 70' (22X34)
SCALE: 1" = 140' (11X17)

GRAPHIC SCALE
70 0 35 70 140 280
1 INCH = 70 FEET (22X34)
1 INCH = 140 FEET (11X17)

ZONING INFORMATION

JURISDICTION:	MONTGOMERY COUNTY	
ZONING:	R-90	
DIMENSION	EXISTING ±	PROPOSED ±
FRONT YARD SETBACK:	13111'-2"	NO CHANGE
SIDE YARD SETBACK:	1977'-8"	NO CHANGE
REAR YARD SETBACK:	2319'-8"	NO CHANGE
LOT AREA:	28.24 ± ACRES	

(ALL MEASUREMENTS ARE IN FEET ± UNLESS OTHERWISE NOTED)

NOTES:

1) SITE PLAN IS NOT THE RESULT OF A SURVEY. IT IS BASED ON FIELD MEASUREMENTS AND SCALED ASSESSORS MAPS AVAILABLE. ALL INFORMATION SHOWN IS APPROXIMATE ONLY AND SUBJECT TO ANY CONDITION THAT A SURVEY MAY REVEAL.

2) ALL SETBACKS SHOWN ARE FROM EXISTING MONOPOLE TO EXISTING PROPERTY LINES.

LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- PROPERTY LINE – ABUTTERS
- EXISTING FENCE LINE
- EXISTING ROAD
- EXISTING BUILDING

APPLICANT

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

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PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT T. SNARR
55491
PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE: 09/30/2022.

ENGINEER

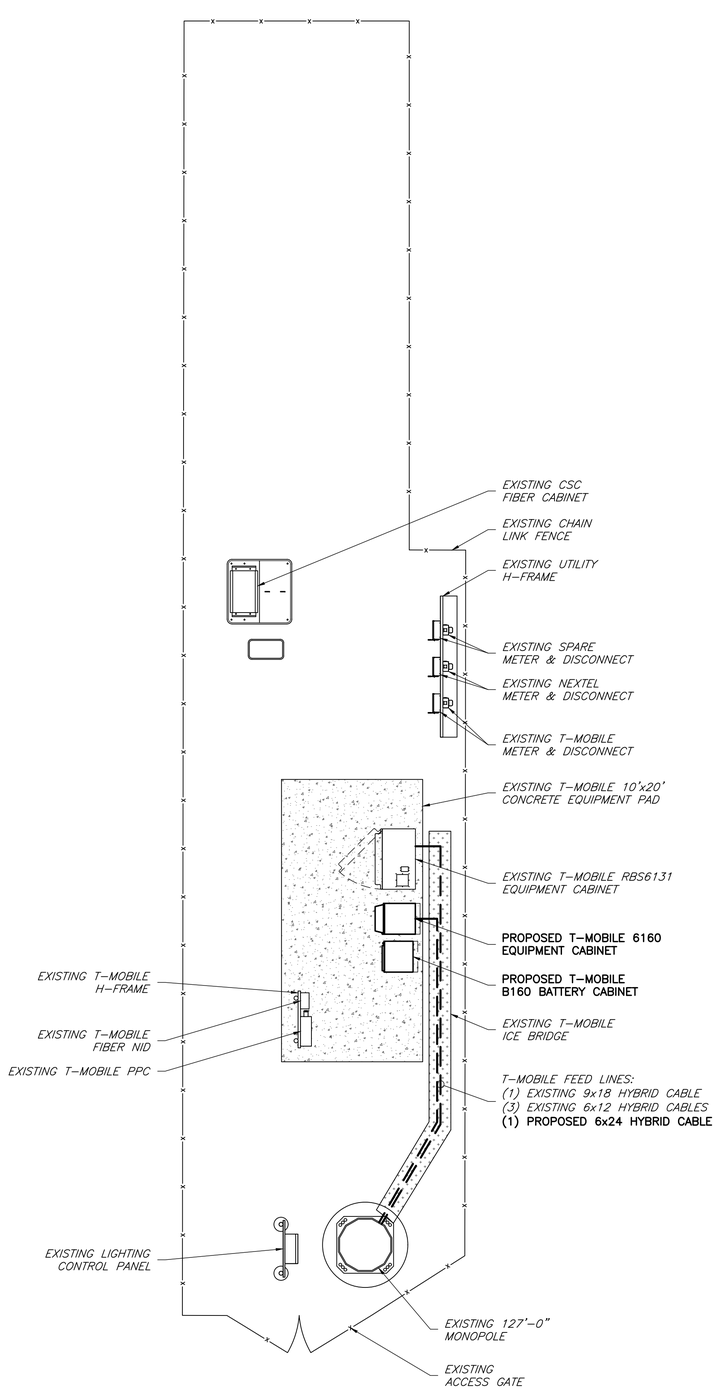
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

SITE PLAN

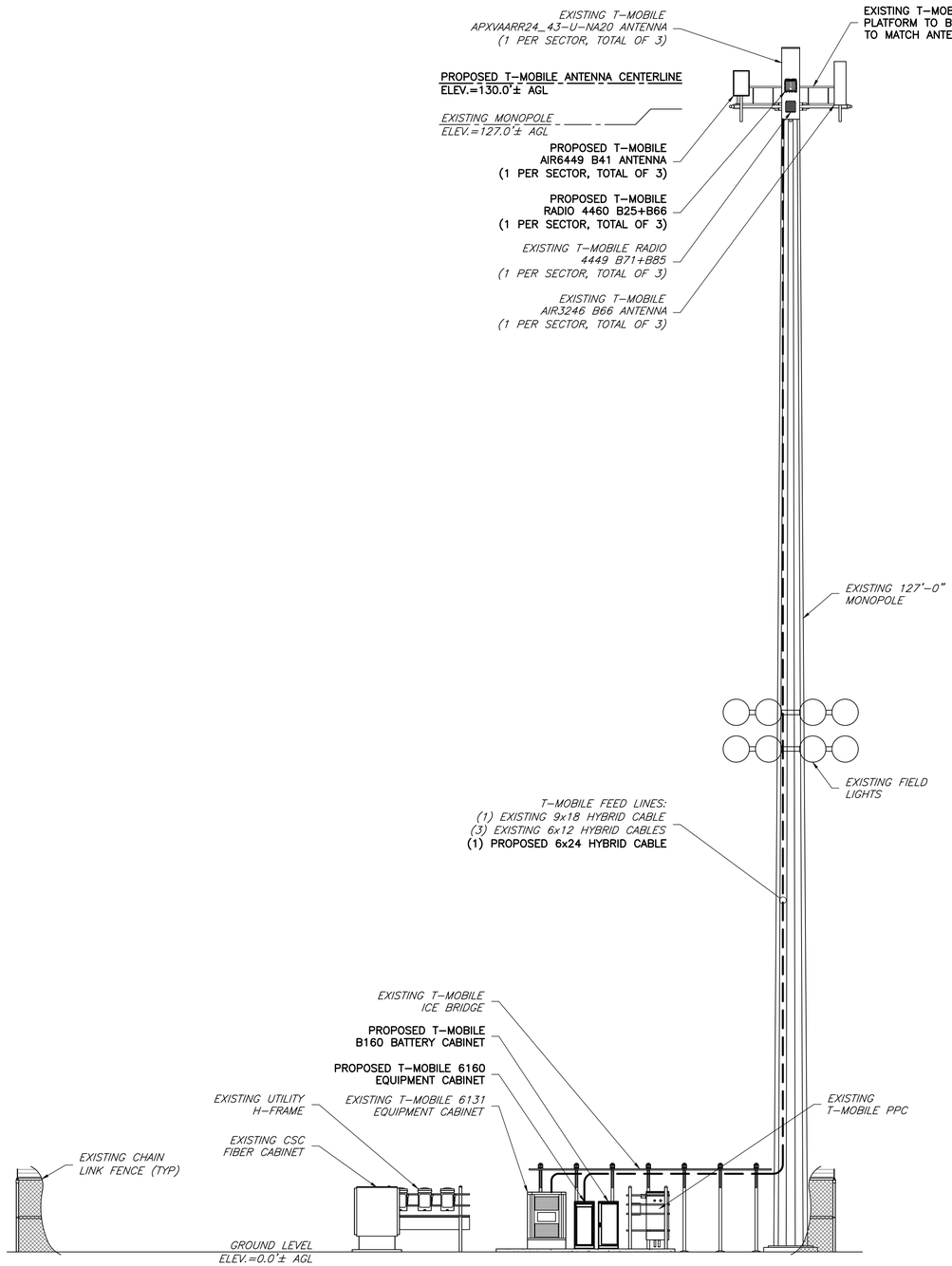
SHEET NUMBER

SP-1



1 / C-1 COMPOUND PLAN
SCALE: 3/16" = 1' (22X34)
SCALE: 3/32" = 1' (11X17)

GRAPHIC SCALE
8 4 0 1 2 4 8
3/16 INCH = 1 FOOT (22X34)
3/32 INCH = 1 FOOT (11X17)



2 / C-1 ELEVATION
SCALE: 1/8" = 1' (22X34)
SCALE: 1/16" = 1' (11X17)

GRAPHIC SCALE
16 8 0 1 2 4 8 16
1/8 INCH = 1 FOOT (22X34)
1/16 INCH = 1 FOOT (11X17)

APPLICANT

T-Mobile

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
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OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

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6095 MARSHALEE DRIVE, SUITE 300
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SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
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ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

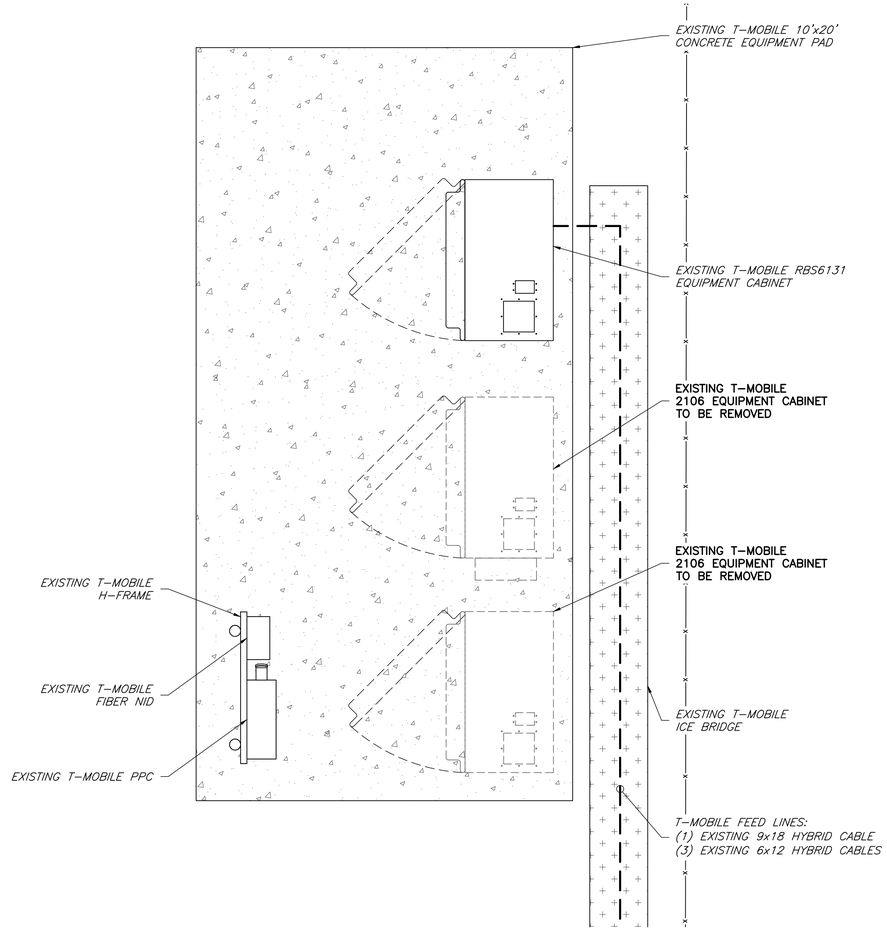
SHEET TITLE

COMPOUND PLAN & ELEVATION

SHEET NUMBER

C-1

TRUE NORTH



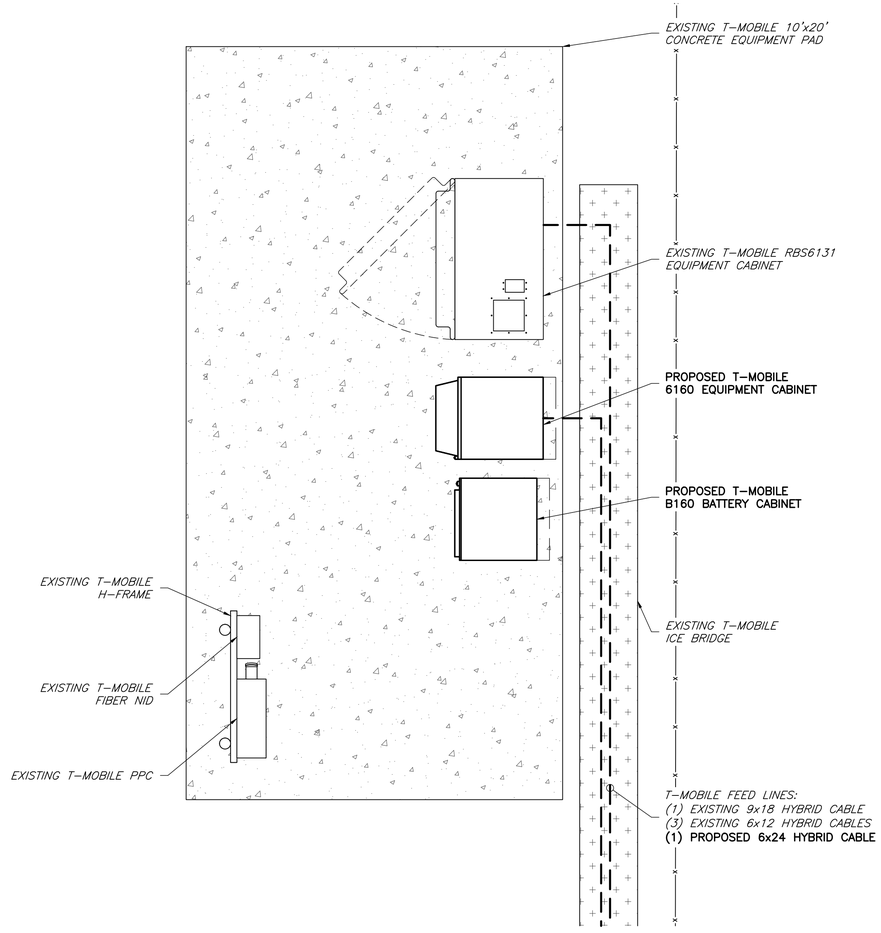
1 / C-2 EXISTING EQUIPMENT PLAN

SCALE: 3/8" = 1' (22X34)
SCALE: 3/16" = 1' (11X17)

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)



2 / C-2 PROPOSED EQUIPMENT PLAN

SCALE: 3/8" = 1' (22X34)
SCALE: 3/16" = 1' (11X17)

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)

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LICENSE #55491

SHEET TITLE

EQUIPMENT PLANS

SHEET NUMBER

C-2

ANTENNA SCHEDULE

SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA DIMENSIONS (HxWxD)	RAD CENTER	AZIMUTH	ELEC DOWNTILT	MECH DOWNTILT	RRU QUANTITY & MODEL	TMA/DIPLEXER QUANTITY & MODEL	CABLE QUANTITY & TYPE	CABLE LENGTH
A1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*75°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE* *(1) EXISTING 9x18 HYBRID CABLE* (1) PROPOSED 6x24 HYBRID CABLE	180.00'
A2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*75°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
A3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	75°	4°/4°	0°	–	–		
A3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	75°	4°/4°	0°	–	–		
B1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*195°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE*	*180.00'*
B2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*195°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
B3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	195°	4°/4°	0°	–	–		
B3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	195°	4°/4°	0°	–	–		
C1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*310°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE*	*180.00'*
C2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*310°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
C3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	310°	4°/4°	0°	–	–		
C3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	310°	4°/4°	0°	–	–		

NOTES:
1. CONTRACTOR TO VERIFY PROPOSED ANTENNA INFORMATION IS THE MOST CURRENT DATA AT TIME OF CONSTRUCTION.
2. CONTRACTOR TO CONFIRM CABLE LENGTHS PRIOR TO CONSTRUCTION.

1 / A-1 ANTENNA CONFIGURATION SCHEDULE
NOT TO SCALE

NOTE:
ALL EXISTING/UNUSED TMA'S & COAX ARE TO BE REMOVED.

APPLICANT

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MONTGOMERY COUNTY

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PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT T. SNARR
55491
PROFESSIONAL ENGINEER
07/29/21

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ENGINEER

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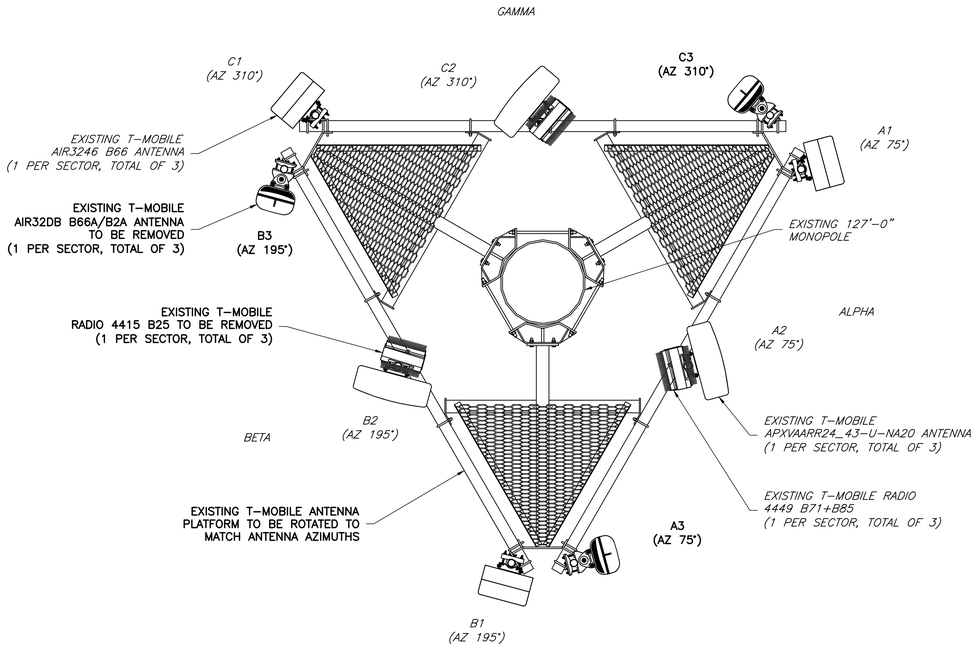
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

ANTENNA SCHEDULE

SHEET NUMBER

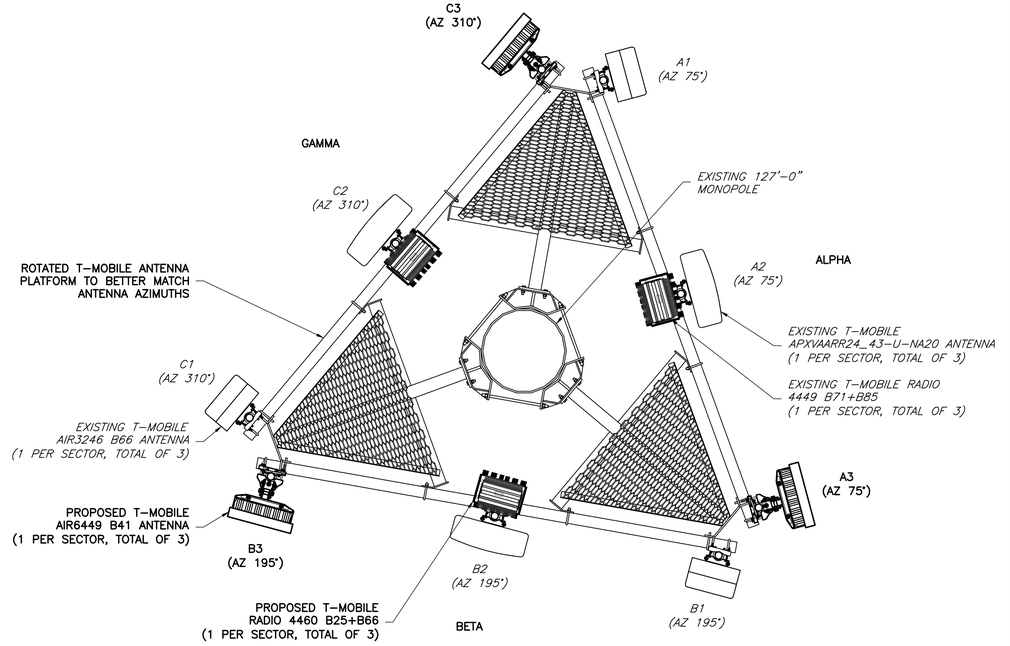
A-1



1 A-2 EXISTING ANTENNA ORIENTATION PLAN

NOT TO SCALE

APPROX TRUE NORTH



2 A-2 PROPOSED ANTENNA ORIENTATION PLAN

NOT TO SCALE

APPROX TRUE NORTH

APPLICANT

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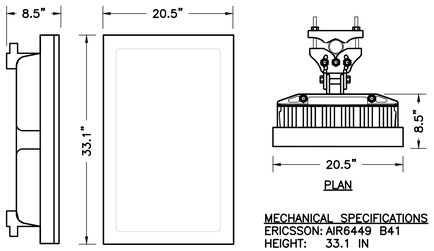
LICENSE #55491

SHEET TITLE

ANTENNA ORIENTATION PLANS

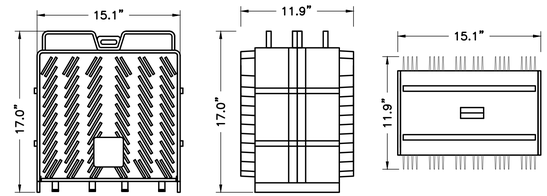
SHEET NUMBER

A-2



MECHANICAL SPECIFICATIONS
ERICSSON: AIR6449 B41
HEIGHT: 33.1 IN
LENGTH: 20.5 IN
WIDTH: 8.5 IN
WEIGHT: 101.6 LBS
MOUNTING KIT: SXK 109 2065/1
WEIGHT: 13.0 LBS

1 / A-3 ERICSSON PANEL ANTENNA
NOT TO SCALE



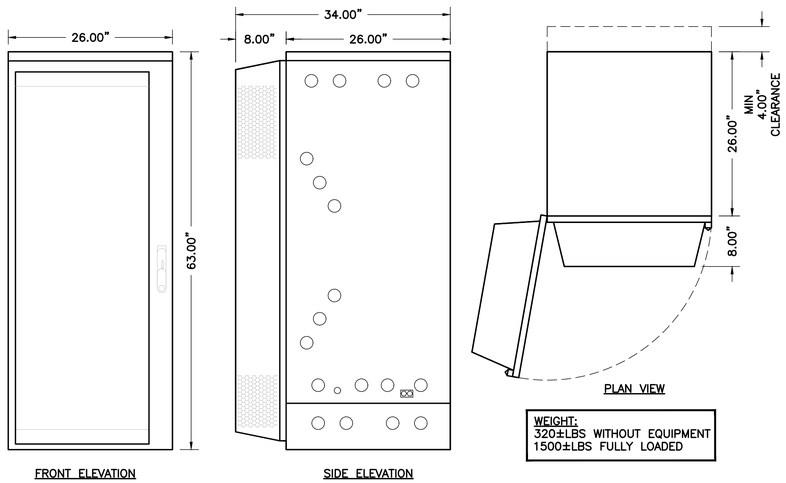
SIZE AND WEIGHT TABLE

RRU	HEIGHT	WIDTH	DEPTH	WEIGHT W/O BRACKET
RADIO 4460 B25+B66	17.0"	15.1"	11.9"	~109.0 LBS.

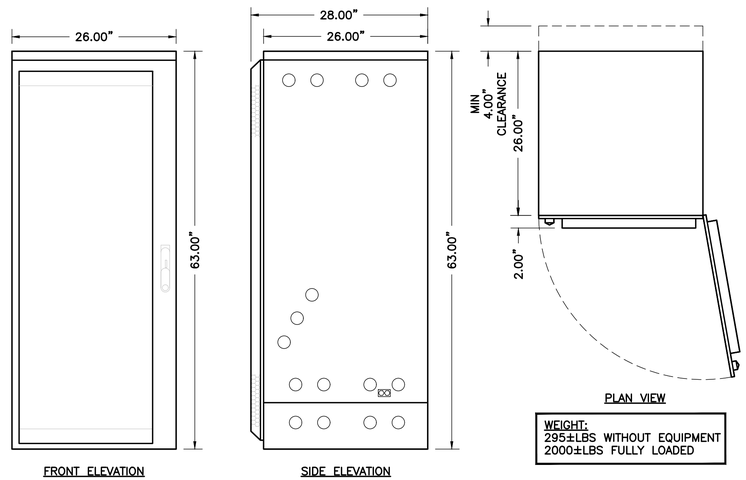
NOTES:

1. DO NOT PAINT THE RRU. RRU SOLAR SHIELD CAN BE PAINTED PER MANUFACTURER'S METHOD OF PROCEDURE.

2 / A-3 ERICSSON REMOTE RADIO UNIT (RRU)
NTS



3 / A-3 6160 ENCLOSURE CABINET
NOT TO SCALE



4 / A-3 B160 BATTERY CABINET
NOT TO SCALE

APPLICANT

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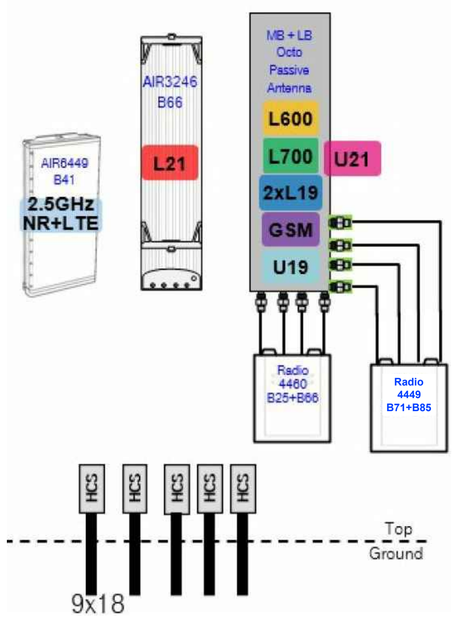
LICENSE #55491

SHEET TITLE

EQUIPMENT SPECIFICATIONS & DETAILS

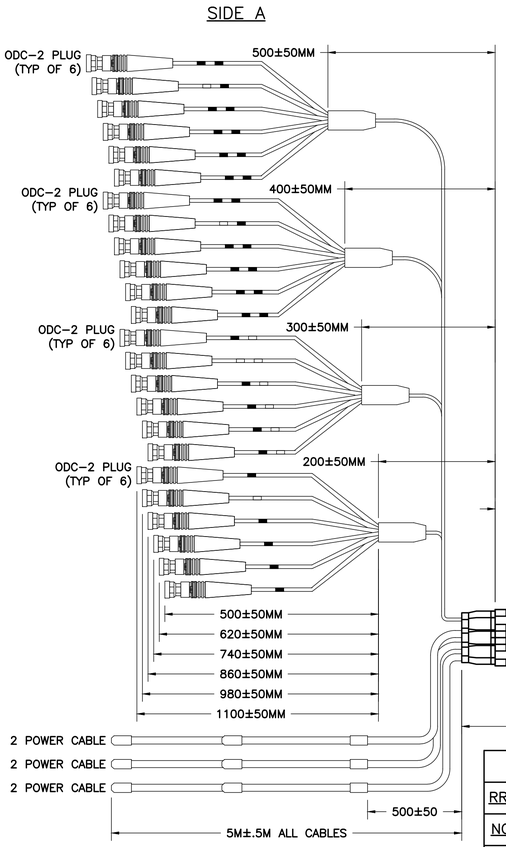
SHEET NUMBER

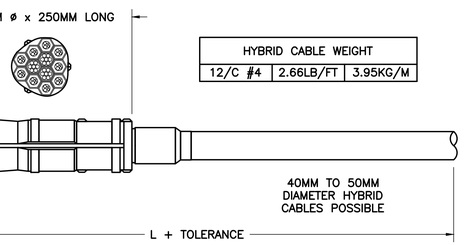
A-3



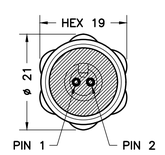
1 / A-4 67D5A998ME OUTDOOR RF DESIGN SCHEMATIC

NOT TO SCALE





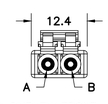
HYBRID CABLE WEIGHT		
12/C #4	2.66LB/FT	3.95KG/M



ODC–2 PLUG FRONT VIEW

TOLERANCE	ASSEMBLY LENGTH
+80	L < 5M
+2%	L ≥ 5M

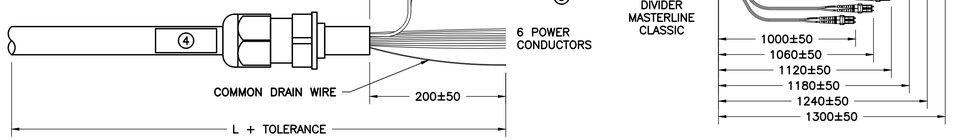
POWER	
LENGTH	DIAMETER
L ≤ 60M	6MM²(10AWG)
L ≥ 60M	10MM²(8AWG)



LC DUPLEX FRONT VIEW

③ STANDARD LABEL 84002345

④ ATTENTION DO NOT TWIST PULLING TUBE — STANDARD LABEL 84087128



FIBER OPTIC						
RRH NO.	SIDE A ODC PLUG	SIDE A PIN	SIDE B PIN	SIDE B COLOR LCD BOOTS	SIDE B LENGTH	SIDE B RUBBER GROMMETS
1	ODC–2 RED	1	B	RED (SHORT BREAKOUT)	1000 ± 50	1
		2	A			
2	ODC–2 GREEN	1	B	GREEN	1060 ± 50	
		2	A			
3	ODC–2 BLUE	1	B	BLUE	1120 ± 50	1
		2	A			
4	ODC–2 YELLOW	1	B	YELLOW	1180 ± 50	
		2	A			
5	ODC–2 WHITE	1	B	WHITE	1240 ± 50	1
		2	A			
6	ODC–2 BLACK	1	B	BLACK	1300 ± 50	
		2	A			

POWER				
RRH NO.	REF HOOK UP	SIDE A WIRE COLOR	SIDE A CABLE DESIGNATOR	SIDE B WIRE COLOR
1	–48V	BLACK	RED	RED
	0V	GREY		BLACK
	GROUND	DRAIN		COMMON DRAIN
2	–48V	BLACK	GREEN	GREEN
	0V	GREY		WHITE
	GROUND	DRAIN		COMMON DRAIN
3	–48V	BLACK	BLUE	BLUE
	0V	GREY		ORANGE
	GROUND	DRAIN		COMMON DRAIN

POWER				
RRH NO.	REF HOOK UP	SIDE A WIRE COLOR	SIDE A CABLE DESIGNATOR	SIDE B WIRE COLOR
4	–48V	BLACK	YELLOW	RED
	0V	GREY		BLACK
	GROUND	DRAIN		COMMON DRAIN
5	–48V	BLACK	WHITE	GREEN
	0V	GREY		WHITE
	GROUND	DRAIN		COMMON DRAIN
6	–48V	BLACK	BLACK	BLUE
	0V	GREY		ORANGE
	GROUND	DRAIN		COMMON DRAIN

2 / A-4 MLE HYBRID CABLE (6 POWER/24 FIBER)

NOT TO SCALE

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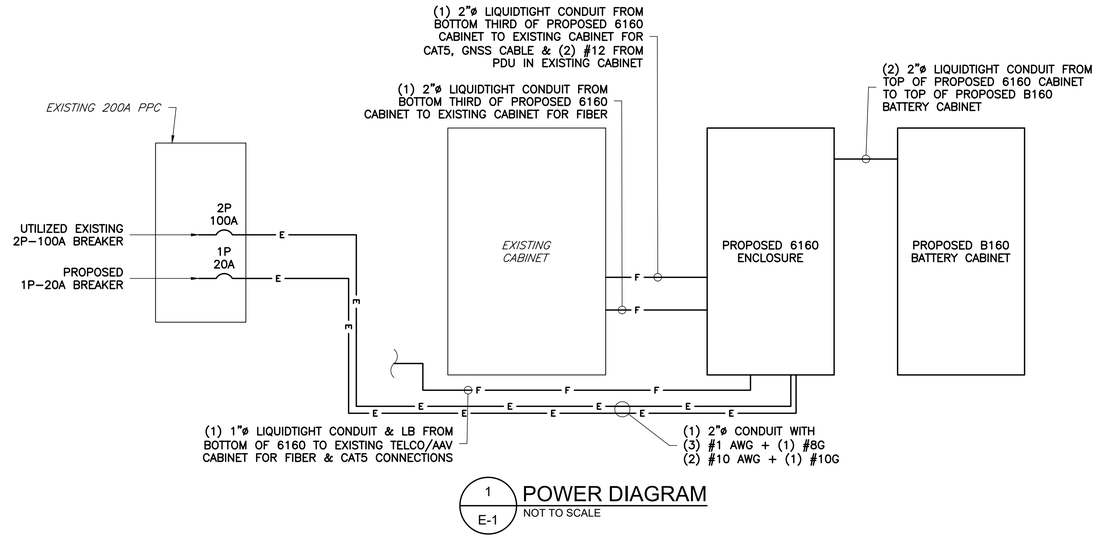
LICENSE #55491

SHEET TITLE

CABLING DETAILS & RF PLUMBING DIAGRAM

SHEET NUMBER

A-4



1 / E-1 POWER DIAGRAM
NOT TO SCALE

PPC PANEL

MAIN BREAKER RATING (A): 200 | SYSTEM VOLTAGE (V): 240 | PHASE: 1 WIRE: 3 BRANCH CB: 24

CKT	CIRCUIT DESCRIPTION	WATTAGE C	WATTAGE NC	POLE	BRK	LOAD PER PHASE A	LOAD PER PHASE B	BRK	POLE	WATTAGE NC	WATTAGE C	CIRCUIT DESCRIPTION	CKT
1	SURGE SUPPRESSOR	0	0	2	60	240		20	1	240	0	LIGHT	2
3		0	0				360	20	1	360	0	RECEPTACLE	4
5		0	0			0		40	2	0	0	***BTS #2 (TURN OFF)	6
7	*6160 GFCI	0	360	1	20		360			0	0		8
9	**6160 EQUIPMENT CABINET	0	7000	2	100	7780		30	1	780	0	CSC CABINET	10
11		0	7000				14200	150	2	7200	0	6131 CABINET	12
13	MCP BETA	0	680	2	20	7880				7200	0		14
15		0	680				7880			7200	0		16
17		0	0			7200				7200	0		18
19		0	0				0			0	0		20
21		0	0			0				0	0		22
23		0	0				0			0	0		24
						TOTAL LOADS PER PHASE							
						23100	22800						

NOTES

*INSTALL (1) NEW 1P-20A BREAKER FOR 6160 GFCI TO REPLACE (1) EXISTING 2P-40A BREAKER FOR BTS #1.
**UTILIZE (1) EXISTING 2P-100A BREAKER FOR 6160 EQUIPMENT CABINET.
***TURN OFF (1) EXISTING 2P-40 BREAKER FOR BTS #2.

SUBTOTAL CONTINUOUS	0
SUBTOTAL NON-CONTINUOUS	45900
125% TOTAL CONTINUOUS (VA)	0
100% TOTAL NON-CONTINUOUS (VA)	45900
TOTAL AMPS	191.25
TOTAL CONNECTED LOAD (KVA)	45.90
SPARE CAPACITY (A)	8.75

2 / E-1 PANEL SCHEDULE
NOT TO SCALE

APPLICANT

T-Mobile

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C TOTALLY COMMITTED.™

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND · TRENT TRAVIS SNARR · 55491 · PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE: 11/30/2022.

ENGINEER

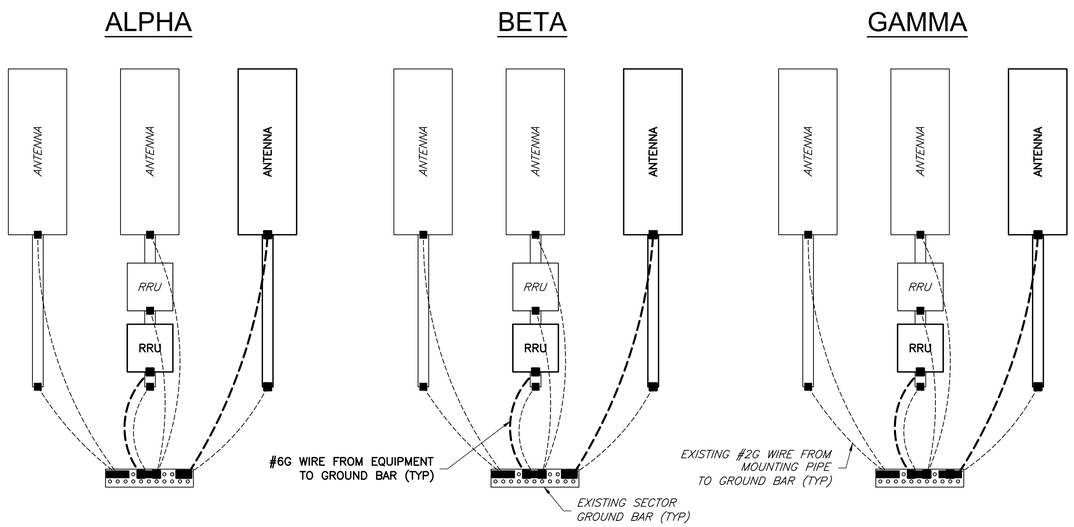
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

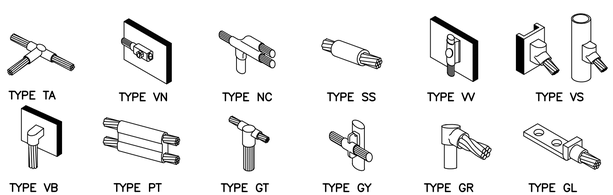
ELECTRICAL DETAILS

SHEET NUMBER

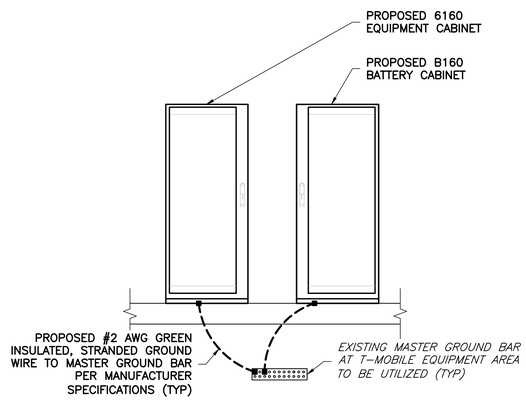
E-1



1 / G-1 ANTENNA GROUNDING DETAIL
NTS



2 / G-1 GROUNDING CONNECTION DETAILS
NOT TO SCALE



3 / G-1 CABINET GROUNDING DIAGRAM
NOT TO SCALE

GROUNDING LEGEND

- MECHANICAL COMPRESSION CONNECTION
- CADWELD CONNECTION
- EXOTHERMIC WELD CONNECTION
- PROPOSED GROUND WIRING
- EXISTING GROUND WIRING

APPLICANT

T-MOBILE NORTHEAST LLC

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0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
PROFESSIONAL ENGINEER
07/29/21

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ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

G-1

STRUCTURAL NOTES

STRUCTURAL DESIGN CRITERIA:

STRUCTURAL DESIGN IS BASED ON THE 2018 INTERNATIONAL BUILDING CODE & 2018 INTERNATIONAL EXISTING BUILDING CODE.

LOCATION: MONTGOMERY COUNTY, MD

CONSTRUCTION MATERIAL SELF WEIGHT PER ASCE 7-16

ULTIMATE WIND SPEED:	115 MPH
OCCUPANCY CATEGORY:	II
EXPOSURE CATEGORY:	B
TOPOGRAPHIC CATEGORY:	1

1. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
   A. AISC – "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC – "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AWS – "D1.1 STRUCTURAL WELDING CODE – STEEL".

2. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 Fy = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES	A36 Fy = 36 KSI
STRUCTURAL TUBING	A500, GRADE B Fy = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 40 PIPE

3. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.

4. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.

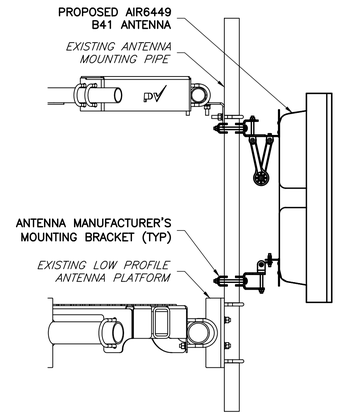
5. ALL STEEL TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.

6. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

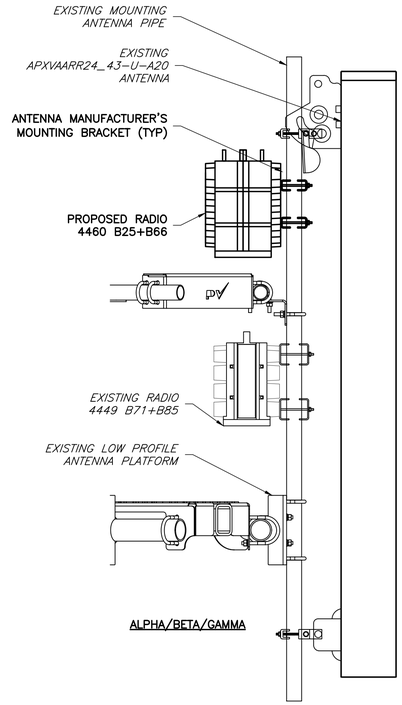
7. ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.

8. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.

10. THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER, AND OBTAIN APPROVAL PRIOR TO FABRICATING ANY STRUCTURAL STEEL. SHOP DRAWINGS SHALL CONFORM TO AISC "DETAILING FOR STEEL CONSTRUCTION".



1 ST-1 AIR6449 B41 MOUNTING DETAIL
NTS



2 ST-1 RADIO MOUNTING DETAIL
NTS

APPLICANT

T-Mobile

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ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

ANTENNA MOUNTING DETAILS

SHEET NUMBER

ST-1

App No: 2021081524

Revisions received 9.1.21 - JE

Application General Infomation

Applicant Name	NB+C	Updated	8/9/2021
Application Type	Minor Modification	Ann. Plan?	Yes
Carrier	T-Mobile	Will site be used to support government telecommunications facilities or other equipment for government use?	No
Solution Type	Macro		
Existing	Existing	Gvt. Use Desc.	

Application Description

T-Mobile proposes to replace (3) antennas, (3) radios, and (2) cabinets at the existing telecommunications facility.

Site Infomation

Site Id	288	Zoning	R-90
Structure Type	~~Tower~~ Monopole	Latitude	39.0676
Street Address	1901 Randolph Rd	Longitude	-77.0397222
County Site Name	JFK High School	Ground Elevation	400
Carrier Site Name	7WAN290A	City	Silver Spring
Site Owner	MCPS	Lease Status	In Process
Structure Owner	MONTGOMERY COUNTY PUBLIC SCH	Does the structure require an antenna structure registration under FCC Title 47	No
Existing Structure Height	127		
Provide the proposed height of the replacement structure without any antenna (New, Replacement Apps Only)		Distance to Residential Property (New, Replacement, Colocation Only)	
		Distance to Commercial Property (New, Replacement, Colocation Only)	

Justification of why this site was selected:

Existing telecommunications facility

NearbySites (New, Replacement Apps Only):

Monday, August 9, 2021

11:08:21 AM

App No: 2021081524

Screening considerations(New, Colocations, Replacement Apps Only):

Monday, August 9, 2021

11:08:22 AM

App No: 2021081524

6409 Questions

Does this qualify as a 6409 application? (Minor Mod, Colocations Only): Yes

For towers outside the public ROW will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 20 feet, whichever is greater?	No	Will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 6 feet?	No
For towers outside the public ROW will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 20 feet?	No	Will the proposed installation require more the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets?YN	No
Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater?	No	Does the structure or current installation have concealment elements/measures?	No
Will the proposed installation require excavation or expansion outside the current boundaries of the site?	No	If yes, describe how the proposed installation does not defeat the existing concealment.	

Small Wireless Facility Informatio

Small Wireless Facility Questions

		Small Wireless Facility?	No
Is the structure 10% taller than adjacent structures?		Cumulative volume of the proposed wireless equipment(s) exclusive of antennas in cubic feet	49.3
Please list adjacent structure heights			
Tribal Lands?	No	Cumulative volume of the proposed antenna antenna(s) exclusive of equipment	

ROW Information

PROW?	No	Pole Number	
ROW owner			
ROW width			

Monday, August 9, 2021

11:08:22 AM

App No: 2021081524

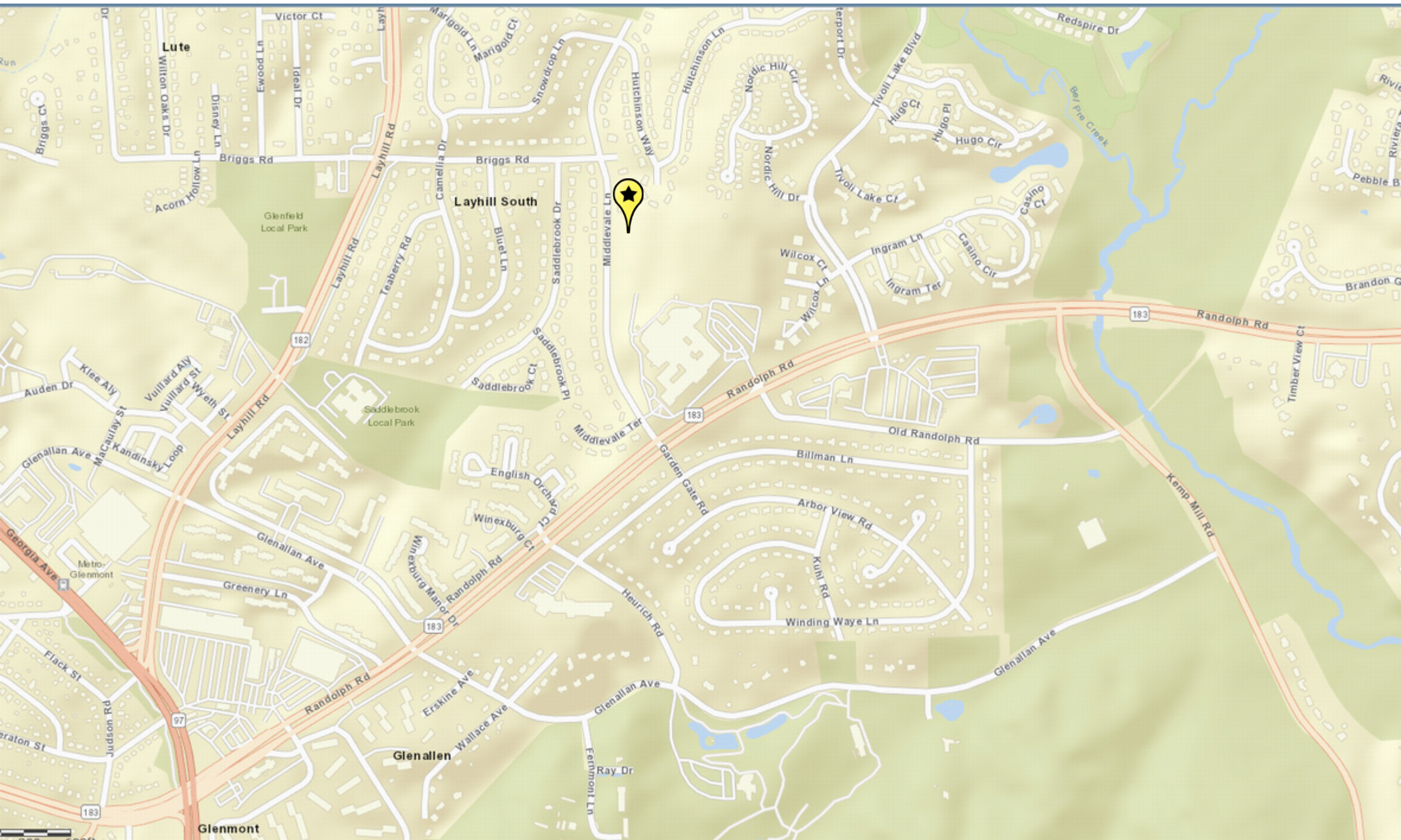
Antenna Infomatio

Antenna Compliance	Yes
Compliance Desc	
Antenna Location	No
Antenna Loc. Desc.	
Env. Assessment	
Cat. Excluded?	
Routine Env. Evaluation	checked

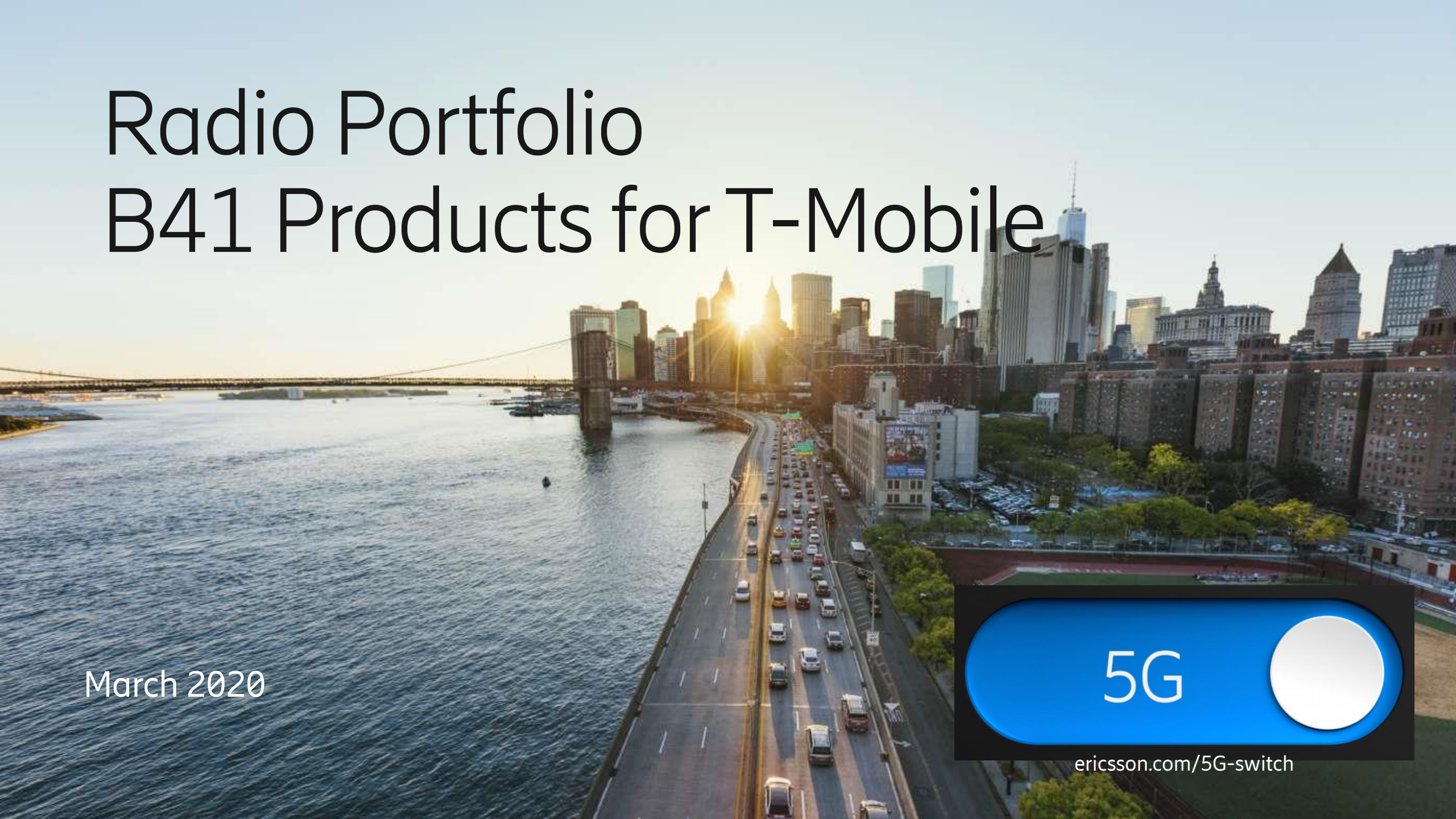
Antenna Model	Ericsson AIR6449 B41						
Frequency	Tx/Rx: 2496-2690						
RAD Center	130	Max ERP	34144	Antenna Dimensions	33.1"20.5"x8.5"	Quantity	3

Monday, August 9, 2021

11:08:22 AM


Lute
Victor Ct
Marigold Ln
Marigold Ct
Snowdrop Ln
Hutchinson Ln
Hutchinson Way
Nordic Hill Cir
Nordic Hill Dr
Tivoli Lake Blvd
Tivoli Lake Ct
Hugo Ct
Hugo Pl
Hugo Cir
Redspire Dr
Bear Pee Creek
Briggs Ct
Wilton Oaks Dr
Disney Ln
Ewood Ln
Ideal Dr
Briggs Rd
Acorn Hollow Ln
Layhill Rd
Camellia Dr
Layhill South
Glenfield Local Park
Teaberry Rd
Bluet Ln
Saddlebrook Dr
Saddlebrook Pl
Saddlebrook Ct
Middlevale Ln
Wilcox Ct
Wilcox Ln
Ingram Ln
Ingram Ter
Casino Ct
Casino Cir
Pebble B
Brandon G
182
183
Randolph Rd
Timber View Ct
Auden Dr
Klee Aly
Vuillard Aly
Vuillard St
Wyeth St
MacAulay St
Kandinsky Loop
Saddlebrook Local Park
Middlevale Ter
Garden Gate Rd
Old Randolph Rd
Billman Ln
Glenallan Ave
English Orchard Ct
Winexburg Ct
Winexburg Manor Dr
Arbor View Rd
Kuhl Rd
Winding Waye Ln
Kemp Mill Rd
Georgia Ave
Metro-Glenmont
Greenery Ln
Heurich Rd
Flack St
Judson Rd
Erskine Ave
Wallace Ave
Glenallen
Ray Dr
Fernmont Ln
97
Glenmont

Radio Portfolio
B41 Products for T-Mobile



March 2020

ericsson.com/5G-switch

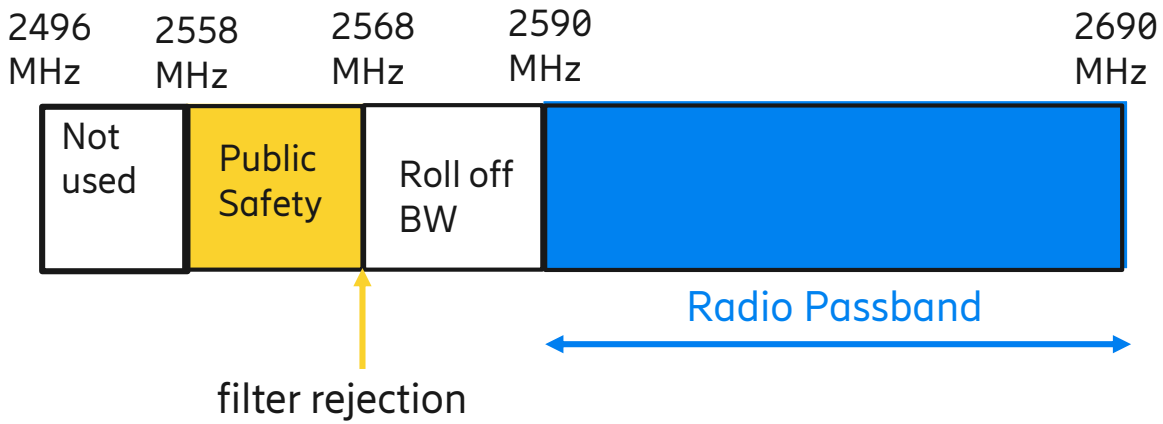
AIR 6488, B41

- Advanced Antenna System (AAS)
- 64TX/64RX with 128 AE
- Support operation frequency range 2496-2690 MHz
- Support output power up to 200W
- Support 100 MHz IBW & CBW
- Support NR and NR+LTE in split mode
- 3 x 10 Gbps eCPRI
- Power consumption < 1290W
- Weight: 58 kg
- Size (H x W x D): 884x520x183 mm
- -48 VDC (3-wire or 2-wire)
- -40 to +55˚C
- Multi-layer MU MIMO
  - DL/UL: 16/8

AIR 6488, B41M

- Advanced Antenna System (AAS)
- 64TX/64RX with 128 AE
- Support operation frequency range 2590-2690 MHz
- Support output power up to 200W
- Support 100 MHz IBW & CBW
- Support NR and NR+LTE in split mode
- 3 x 10 Gbps eCPRI
- Power consumption < 1290W
- Weight: 58 kg
- Size (H x W x D): 884x520x183 mm
- -48 VDC (3-wire or 2-wire)
- -40 to +55˚C
- Multi-layer MU MIMO
  - DL/UL: 16/8

AIR 6488M for New York City Band 41M support

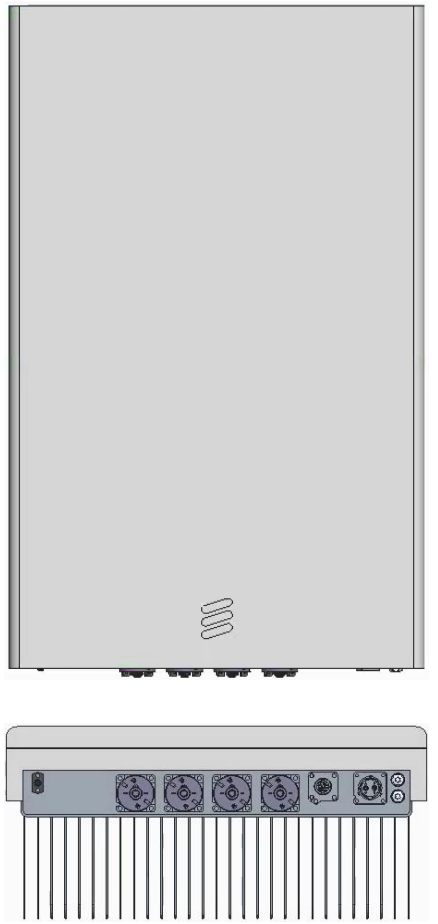


B41 in New York City currently has a UMTS Public Safety Network that requires OOBE interference protection from New T-Mobile Network

AIR 6449

Preliminary

- 192 antenna elements, 3:1 subarray
- Up to 300W
- Up to 200 MHz Operating BW & Carrier BW
- Two 25 Gb/s SFP(C2) and Two 10 Gb/s QSFP(C1FD and C2 backup)
- -48V 45 A Two wire and three wire versions
- APC light connector and Self test push button
- Sensor support but undefined
- Size B41:
  - 841 x 521 x 217 mm (H x W x D)
  - Volume: 95 liter
  - Weight: 47 kg



PRA: July 2020

Radio 8863

Preliminary

- 8TX/8RX
- Support split mode (2 x 4T4R or 4 x 2T2R as multi-sector solution)
- Tx Power 8x40W
- 200MHz IBW TDD
- 2x10.1/25Gbps CPRI
- 21.5 liter, 21kg
- External antenna calibration
- -48 VDC 3-wire
- AISG RET support via RS-485 or RF connectors
- Optional fan for increased site flexibility
- 2 external alarm
- Convectional cooling
- IP 65, -40 to +55˚C

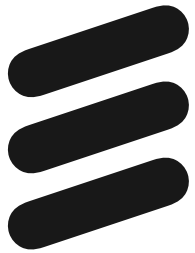
Radio Details: Mid Band TDD (Massive) MIMO (Band 41)

AIR or Radio Type	AIR 6488 (G2) 	AIR 6449 (G4) 	Radio 8863 
RATs supported	L, NR	L, NR	L, NR
Power capability	200W	300W	8x40W
Modulation	256QAM	256QAM	256QAM
Bandwidth (IBW/CBW)	100 MHz or 60L+60N	194 MHz	196 MHz
Tx and Rx Array	64T64R	64T64R	8 CSI-RS ports
MIMO layers (DL/UL)	16 DL / 8 UL	16 DL / 8 UL	16 DL / 8 UL
CPRI ports	3 x 10G	4 x 25G* (2x10G+2x25G)	2 x 25G*
Dimensions (HxWxD)	884mm x 520mm x 183mm (34.8" x 20.5" x 7.2")	840mm x 520mm x 210mm (33.1" x 20.5" x 8.3")	(21.5 ltr)
Weight	58 kg (128 lbs)	47 kg (103 lbs)	Approx. 21 kg (46 lbs)
Cooling	Convection	Convection	Convection
Power	-48VDC	-48VDC	-48VDC
Power Consumption	1290W	<1100W	TBD
Availability	Q2 2019	Q3 2020	Q2 2020

* requires Baseband 6648

Radio 4408 B41

- 4TX/4RX TDD
- 4x5W
- IBW up to 150 MHz CBW
- Up to 6 LTE carriers
- 2x 2.5/5/9.8/10.1Gbps CPRI
- 4 liter, less than 5kg incl bracket and cover
- AC or -48 VDC
- Integrated or external antenna
- 2 external alarm
- IP 65
- -40 to +55˚C



3 Technical Data

This section describes the physical characteristics, environmental data, and the power supply of the enclosure.

3.1 Dimensions

Figure 17 Dimensions of the Enclosure

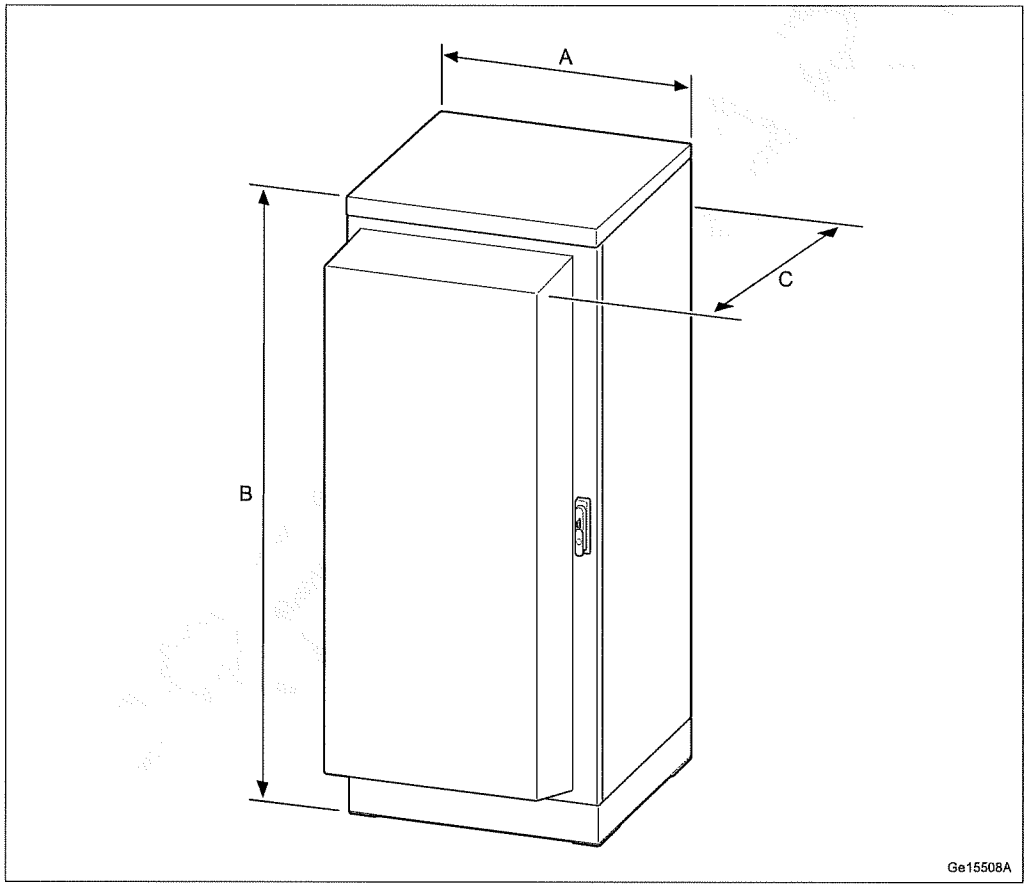


Table 1 Dimensions, Weight, and Color

Dimensions	
Width (A)	650 mm
Height (B)	1450 mm (without base frame) 1600 mm (with base frame)
Depth (C)	850 mm
Weight	
Empty enclosure	176 kg

And for the B160:

Capacity	
VRLA 12v	100Ah / 150Ah / 170Ah / 190Ah / 210Ah
Strings (max)	3
Electrical Specification	
DC output	-48VDC/200A
Battery breakers	2x 125/2p
Alarms	Door open, climate failure, MCB connection
Mechanical Specification	
Weight	295 lbs
Dimensions H x W x D	63" x 26" x 26" (including base frame)
Base frame height	6"
Material	Galvanized steel (180g/m^2)
Color	Powder paint NCS 2002-B
Door	Front access
Locking type	Pad lock / cylinder
Environmental Specification	
Ingress protection	VRLA/Sokium IP44
Relative humidity	15 – 100%
Climate System	
Air conditioner	
- Fan type	DC
- Cooling capacity	500W @L35/L35
Convection cooling	
- Emergency fan	

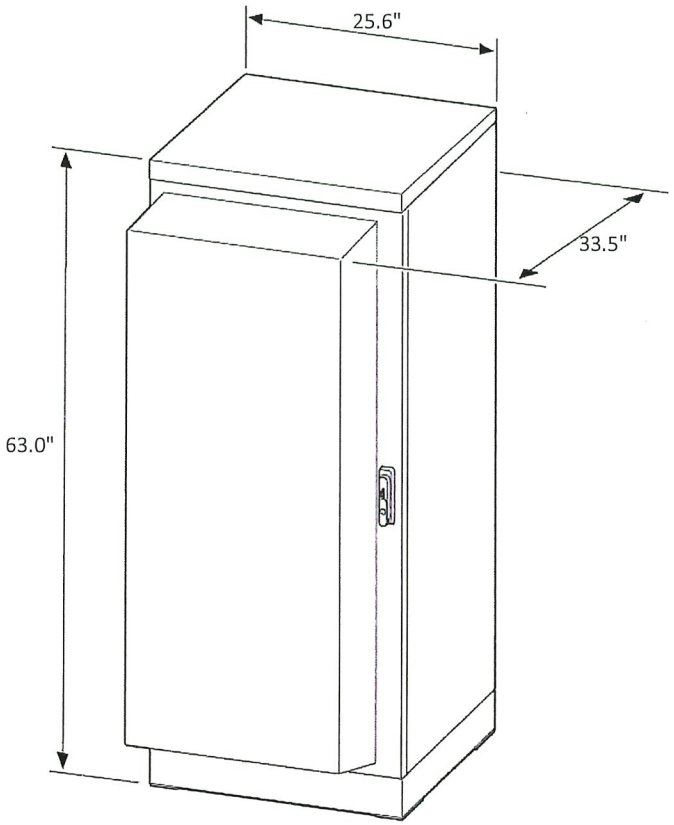


Figure 1

NOTE TO GENERAL CONTRACTOR:
REFER TO THE PASSING STRUCTURAL ANALYSIS AND APPLICABLE MOUNT ANALYSIS OF THE EXISTING MONOPOLE CONSIDERING THE EXISTING AND PROPOSED LOADS PERFORMED BY NB+C ES (PROJECT 100595). IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

DESIGN BASED ON RFDS VERSION: 13 DATED: 06/14/21.

T-MOBILE NORTHEAST LLC

SITE NUMBER: 7WAN290A

SITE NAME: BOE-KENNEDY HIGH SCHOOL

T-MOBILE ANCHOR INSTALLATION, DESIGN 67D5A998ME OUTDOOR

1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

SCOPE OF WORK

PROJECT CONSISTS OF:

REMOVING:	(3) EXISTING ANTENNAS (3) EXISTING RADIOS (2) EXISTING CABINETS ALL EXISTING UNUSED TMAS & COAX CABLES
INSTALLING:	(3) PROPOSED ANTENNAS (3) PROPOSED RADIOS (1) PROPOSED 6X24 HYBRID CABLE (2) PROPOSED CABINETS
SPECIAL CHANGES:	*ROTATE EXISTING ANTENNA PLATFORM

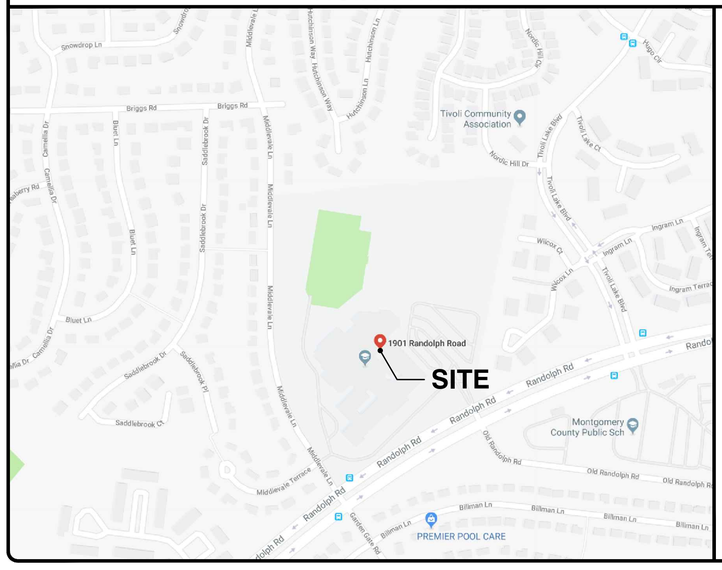
SITE INFORMATION

LATITUDE (NAD 83):	39.06753300°
LONGITUDE (NAD 83):	-77.04019200°
JURISDICTION:	MONTGOMERY COUNTY
ZONING:	R-90
TAX ACCOUNT NUMBER:	13-00954445
PARCEL AREA:	28.24 ± ACRES
PARCEL OWNER:	BOARD OF EDUCATION
ADDRESS:	850 HUNGERFORD DRIVE ROCKVILLE, MD 20805
GROUND ELEVATION:	400.0' (AMSL)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	127.0' (AGL)

PROJECT TEAM

APPLICANT:	T-MOBILE NORTHEAST LLC 12050 BALTIMORE AVENUE BELTSVILLE, MD 20705 OFFICE: (240) 264-8600 FAX: (240) 264-8610
PROJECT MANAGEMENT FIRM:	NETWORK BUILDING + CONSULTING, LLC. 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092
ENGINEERING FIRM:	NB+C ENGINEERING SERVICES, LLC. 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092 MARCO GROTTI MGROTTI@NBCLLC.COM (410) 712-7092 - EXT 1032

VICINITY MAP



TRUE NORTH

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND 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 THE LATEST EDITIONS OF THE FOLLOWING CODES.

- 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2018 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2015 NFPA 101, LIFE SAFETY CODE
- 2015 NFPA 1, FIRE CODE
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- ANSI/TIA-222-H
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELCORDIA GR-1275
- ANSI/T 311

DRAWING INDEX

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 22"X34". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

Know what's below. Call before you dig.

MARYLAND ONE CALL SYSTEM, INC. 1-800-257-7777 STOP! CALL BEFORE YOU DIG!

MARYLAND LAW REQUIRES THREE WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES

APPLICANT

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
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FAX: (240) 264-8610

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ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND · TRENT TRAVIS SNARR · 55491 · PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE: 07/09/2023.

ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING AT EXPOSED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC OR RIGID SCHEDULE 80 PVC FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) (AS PERMITTED BY CODE).
6. ELECTRICAL AND TELCO WIRING AT CONCEALED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING, ELECTRICAL NONMETALLIC TUBING, OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC AS PERMITTED BY CODE).
7. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING, ABOVE GRADE AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS (RGS) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
8. BURIED CONDUIT SHALL BE RIGID NONMETALLIC CONDUIT (RIGID SCHEDULE 40 PVC); DIRECT BURIED IN AREAS OF OCCASIONAL LIGHT TRAFFIC, ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY TRAFFIC.
9. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED INDOORS AND OUTDOORS IN AREAS WHERE VIBRATION OCCURS AND FLEXIBILITY IS NEEDED.
10. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE THHN, THWN–2, OR THIN INSULATION.
11. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
12. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
13. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
14. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTING PROTECTION SHALL BE DONE IN ACCORDANCE WITH T–MOBILE CELL SITE GROUNDING STANDARDS.
15. GROUND CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
16. INSTALL #2 AWG GREEN–INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
17. ALL POWER AND GROUND CONNECTIONS TO BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY HARGER (OR APPROVED EQUAL) RATED FOR OPERATION AT NO LESS THAN 75°C OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
18. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
19. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
20. APPLY OXIDE INHIBITING COMPOUND TO ALL MECHANICAL GROUND CONNECTIONS.
21. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE–OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, CABLE, AND LNA RETURN–LOSS AND DISTANCE–TO–FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
24. THE T–MOBILE ELECTRICAL EQUIPMENT INCLUDING PANEL, SWITCH GEAR AND DISCONNECT ARE TO BE LABELED WITH ENGRAVED BAKELITE LABELS.

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
9. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
10. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
11. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
12. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
13. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
14. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
15. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
16. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
17. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
18. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.

STRUCTURAL NOTES

1. THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.
2. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
   A. AISC – "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC – "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AWS – "D1.1 STRUCTURAL WELDING CODE – STEEL".
3. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 FY = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES A500, GRADE B	A36, FY = 36 KSI STRUCTURAL TUBING FY = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 40 PIPE

4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.
5. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.
6. ALL STEEL TO BE HOT–DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.
7. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
8. ALL BOLTS SHALL BE TIGHTENED USING TURN–OF–THE–NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.
9. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.

APPLICANT

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

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SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

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0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
07/29/21
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 07/08/2022.

ENGINEER

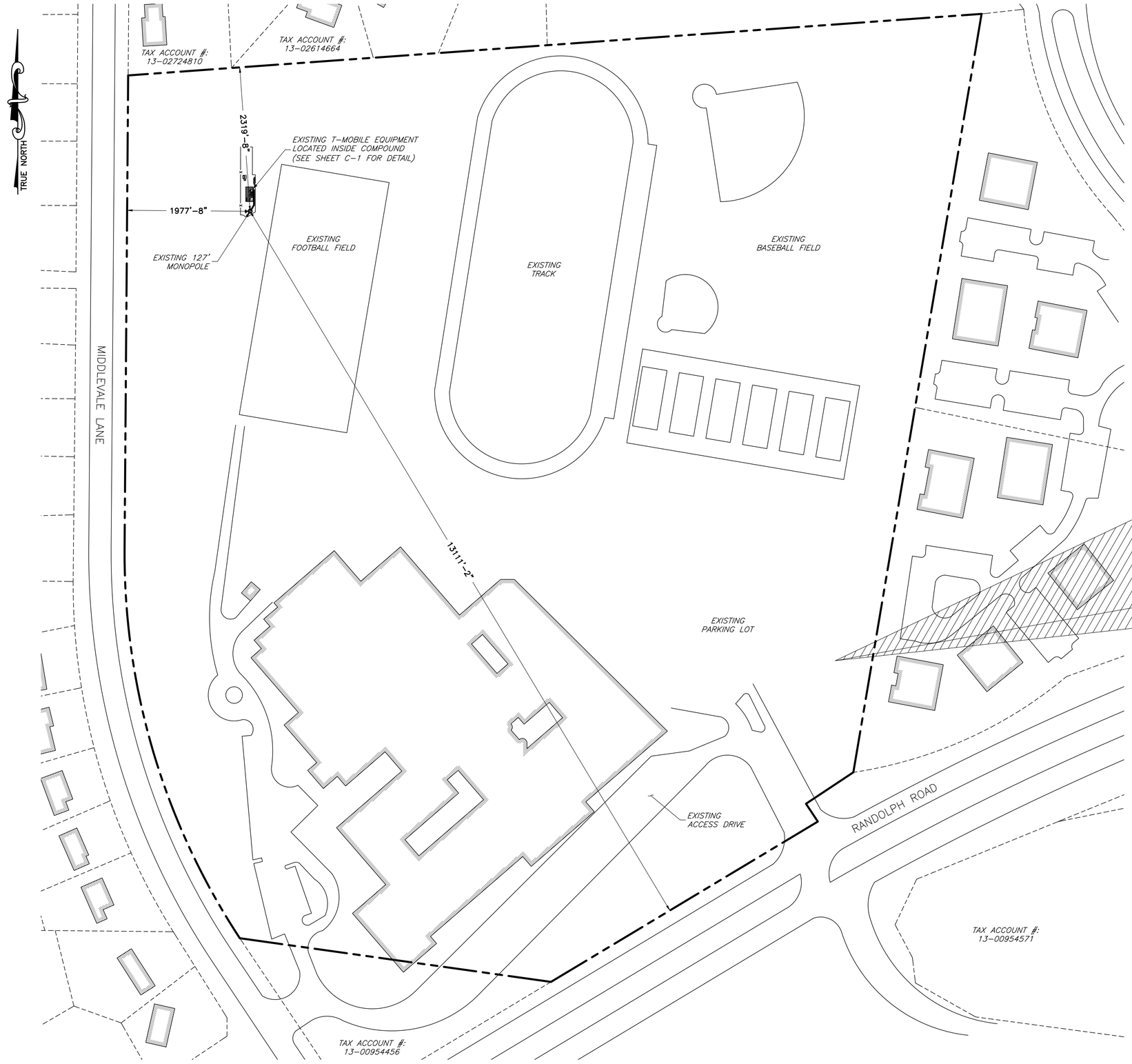
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1



1 SP-1 SITE PLAN
SCALE: 1" = 70' (22X34)
SCALE: 1" = 140' (11X17)

GRAPHIC SCALE
70 0 35 70 140 280
1 INCH = 70 FEET (22X34)
1 INCH = 140 FEET (11X17)

ZONING INFORMATION

JURISDICTION:	MONTGOMERY COUNTY	
ZONING:	R-90	
DIMENSION	EXISTING ±	PROPOSED ±
FRONT YARD SETBACK:	13111'-2"	NO CHANGE
SIDE YARD SETBACK:	1977'-8"	NO CHANGE
REAR YARD SETBACK:	2319'-8"	NO CHANGE
LOT AREA:	28.24 ± ACRES	

(ALL MEASUREMENTS ARE IN FEET ± UNLESS OTHERWISE NOTED)

NOTES:

1) SITE PLAN IS NOT THE RESULT OF A SURVEY. IT IS BASED ON FIELD MEASUREMENTS AND SCALED ASSESSORS MAPS AVAILABLE. ALL INFORMATION SHOWN IS APPROXIMATE ONLY AND SUBJECT TO ANY CONDITION THAT A SURVEY MAY REVEAL.

2) ALL SETBACKS SHOWN ARE FROM EXISTING MONOPOLE TO EXISTING PROPERTY LINES.

LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- PROPERTY LINE – ABUTTERS
- EXISTING FENCE LINE
- EXISTING ROAD
- EXISTING BUILDING

APPLICANT

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STATE OF MARYLAND
TRENT T. SNARR
55491
PROFESSIONAL ENGINEER
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ENGINEER

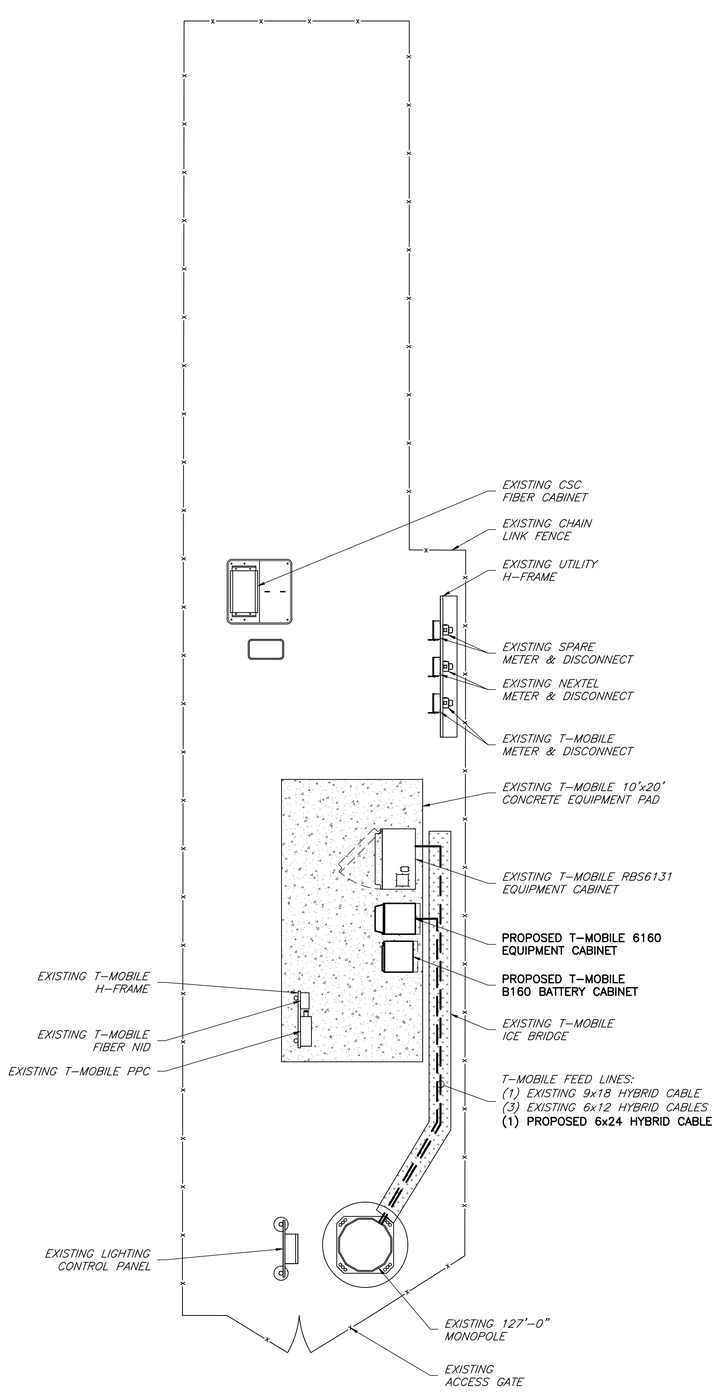
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

SITE PLAN

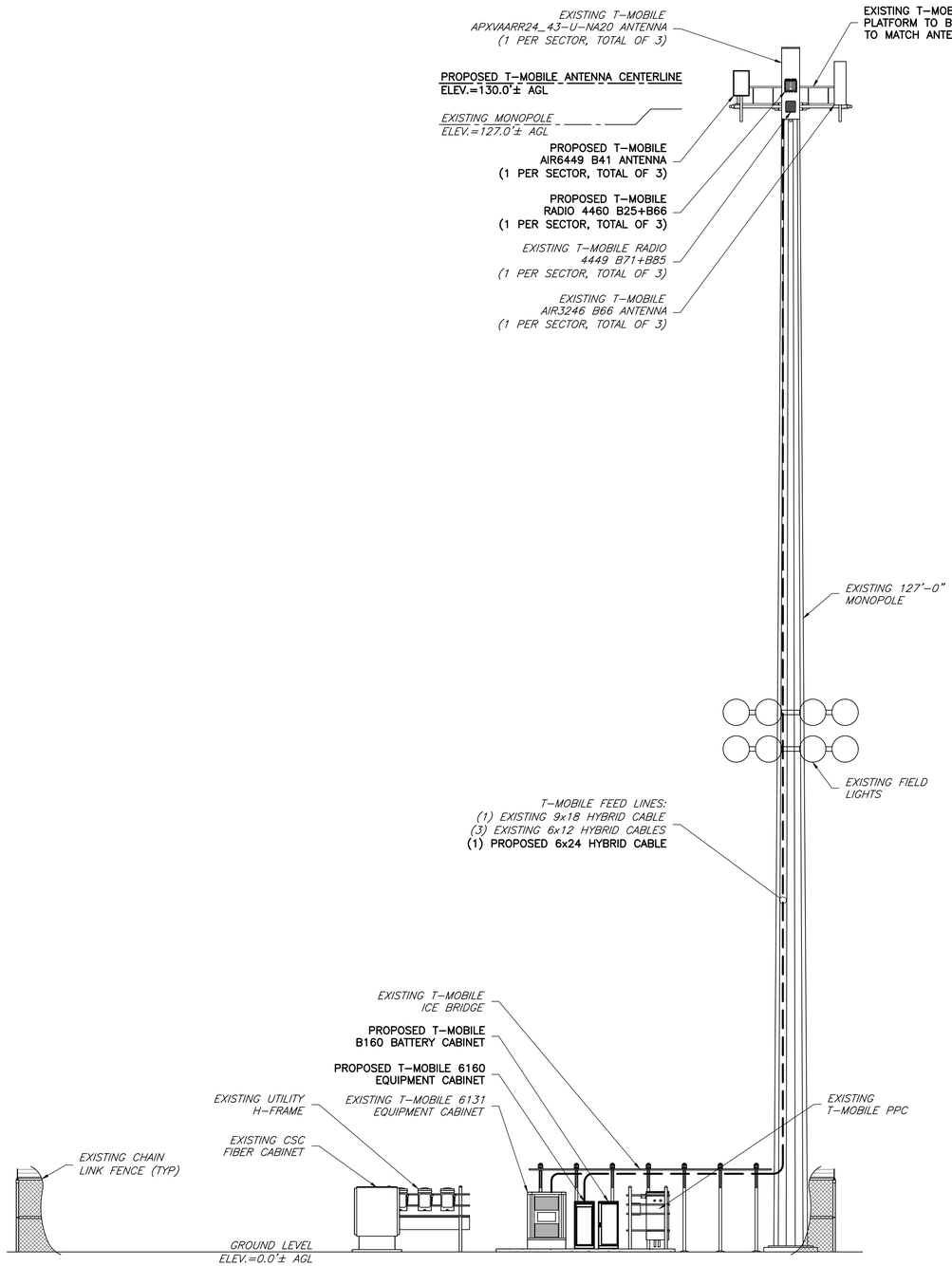
SHEET NUMBER

SP-1



1 / C-1 COMPOUND PLAN
SCALE: 3/16" = 1' (22X34)
SCALE: 3/32" = 1' (11X17)

GRAPHIC SCALE
8 4 0 1 2 4 8
3/16 INCH = 1 FOOT (22X34)
3/32 INCH = 1 FOOT (11X17)



2 / C-1 ELEVATION
SCALE: 1/8" = 1' (22X34)
SCALE: 1/16" = 1' (11X17)

GRAPHIC SCALE
16 8 0 1 2 4 8 16
1/8 INCH = 1 FOOT (22X34)
1/16 INCH = 1 FOOT (11X17)

APPLICANT

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LICENSE #55491

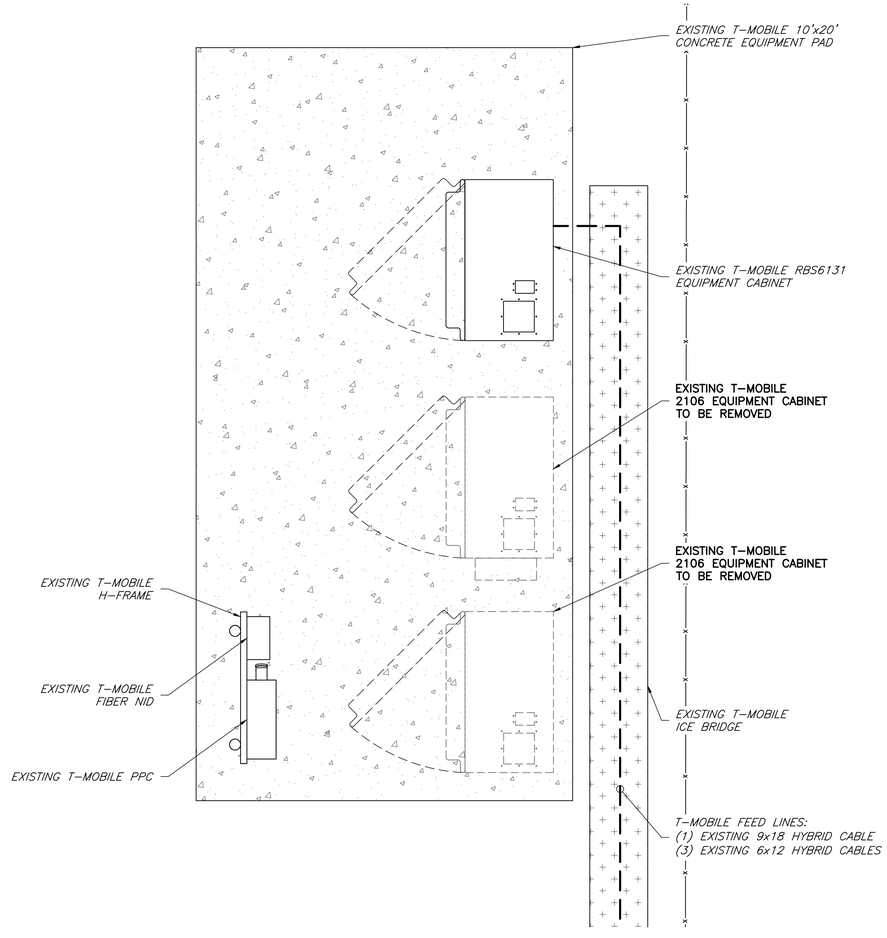
SHEET TITLE

COMPOUND PLAN & ELEVATION

SHEET NUMBER

C-1

TRUE NORTH



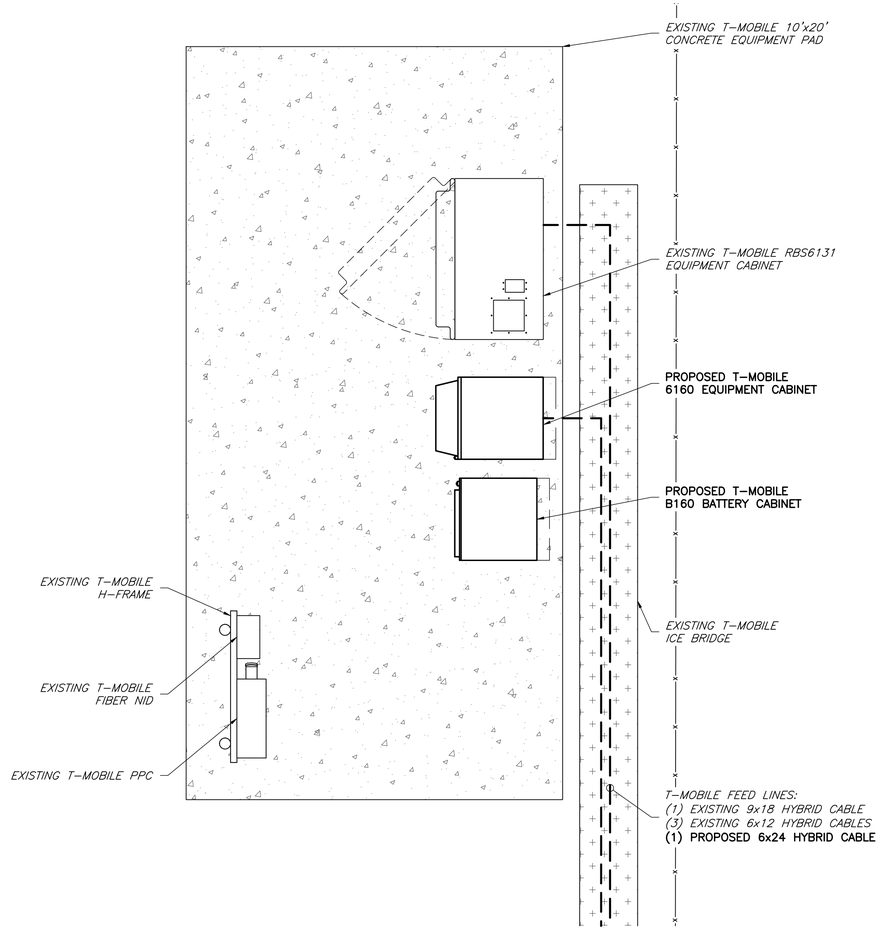
1 / C-2 EXISTING EQUIPMENT PLAN

SCALE: 3/8" = 1' (22X34)
SCALE: 3/16" = 1' (11X17)

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)



2 / C-2 PROPOSED EQUIPMENT PLAN

SCALE: 3/8" = 1' (22X34)
SCALE: 3/16" = 1' (11X17)

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)

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MARYLAND PROFESSIONAL ENGINEER
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SHEET TITLE

EQUIPMENT PLANS

SHEET NUMBER

C-2

ANTENNA SCHEDULE

SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA DIMENSIONS (HxWxD)	RAD CENTER	AZIMUTH	ELEC DOWNTILT	MECH DOWNTILT	RRU QUANTITY & MODEL	TMA/DIPLEXER QUANTITY & MODEL	CABLE QUANTITY & TYPE	CABLE LENGTH
A1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*75°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE* *(1) EXISTING 9x18 HYBRID CABLE* (1) PROPOSED 6x24 HYBRID CABLE	180.00'
A2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*75°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
A3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	75°	4°/4°	0°	–	–		
A3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	75°	4°/4°	0°	–	–		
B1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*195°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE*	*180.00'*
B2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*195°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
B3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	195°	4°/4°	0°	–	–		
B3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	195°	4°/4°	0°	–	–		
C1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*310°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE*	*180.00'*
C2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*310°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
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C3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	310°	4°/4°	0°	–	–		

NOTES:
1. CONTRACTOR TO VERIFY PROPOSED ANTENNA INFORMATION IS THE MOST CURRENT DATA AT TIME OF CONSTRUCTION.
2. CONTRACTOR TO CONFIRM CABLE LENGTHS PRIOR TO CONSTRUCTION.

1 / A-1 ANTENNA CONFIGURATION SCHEDULE
NOT TO SCALE

NOTE:
ALL EXISTING/UNUSED TMA'S & COAX ARE TO BE REMOVED.

APPLICANT

T-Mobile

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
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ENGINEER

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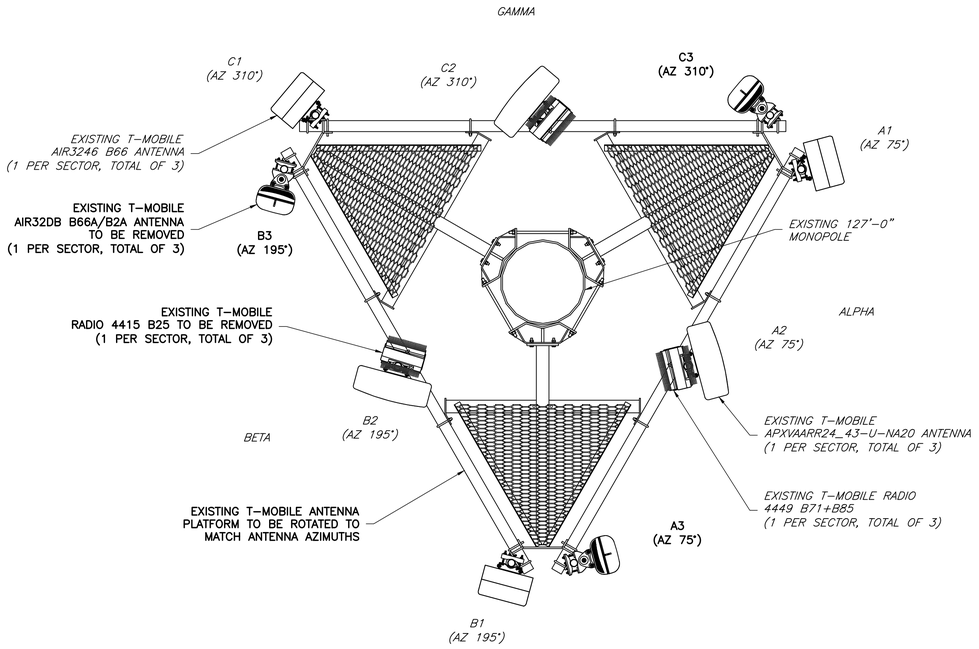
SHEET TITLE

ANTENNA SCHEDULE

SHEET NUMBER

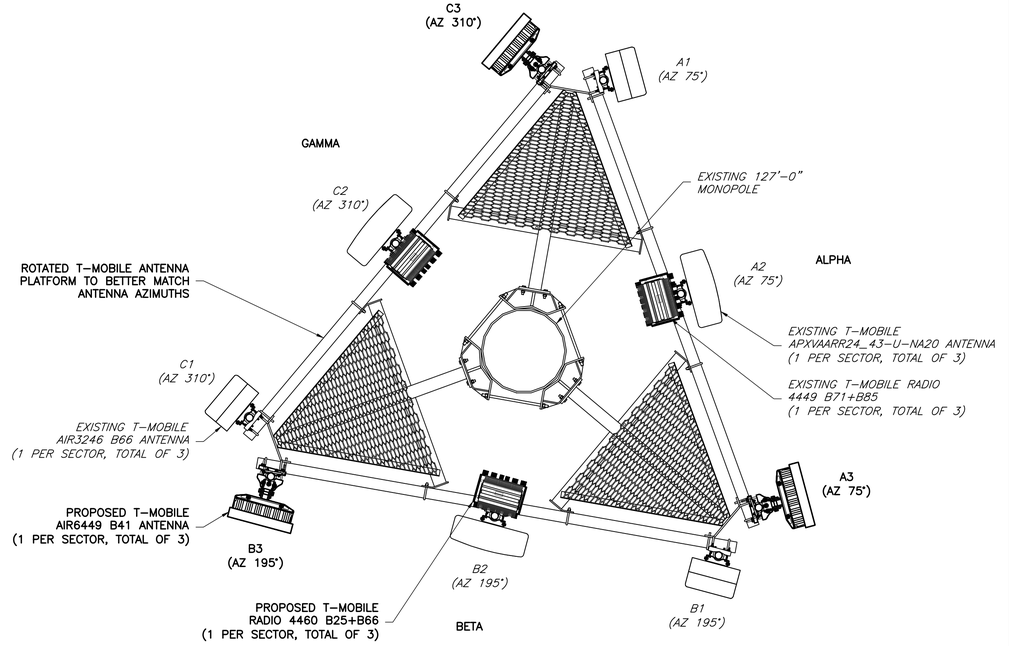
A-1



1 A-2 EXISTING ANTENNA ORIENTATION PLAN

NOT TO SCALE

APPROX TRUE NORTH



2 A-2 PROPOSED ANTENNA ORIENTATION PLAN

NOT TO SCALE

APPROX TRUE NORTH

APPLICANT

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901 RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
55491
PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE: 11/9/2022.

ENGINEER

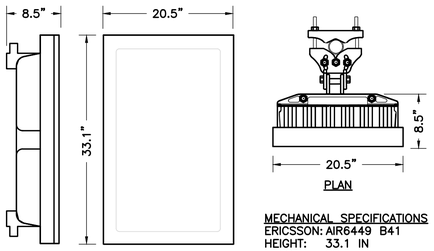
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

ANTENNA ORIENTATION PLANS

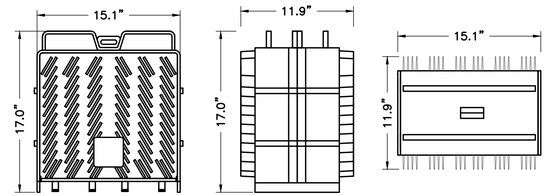
SHEET NUMBER

A-2



MECHANICAL SPECIFICATIONS
ERICSSON: AIR6449 B41
HEIGHT: 33.1 IN
LENGTH: 20.5 IN
WIDTH: 8.5 IN
WEIGHT: 101.6 LBS
MOUNTING KIT: SXK 109 2065/1
WEIGHT: 13.0 LBS

1 / A-3 ERICSSON PANEL ANTENNA
NOT TO SCALE



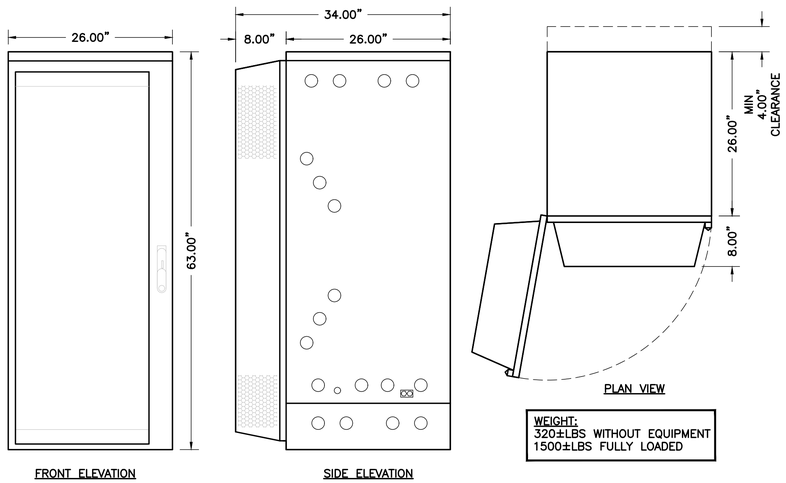
SIZE AND WEIGHT TABLE

RRU	HEIGHT	WIDTH	DEPTH	WEIGHT W/O BRACKET
RADIO 4460 B25+B66	17.0"	15.1"	11.9"	~109.0 LBS.

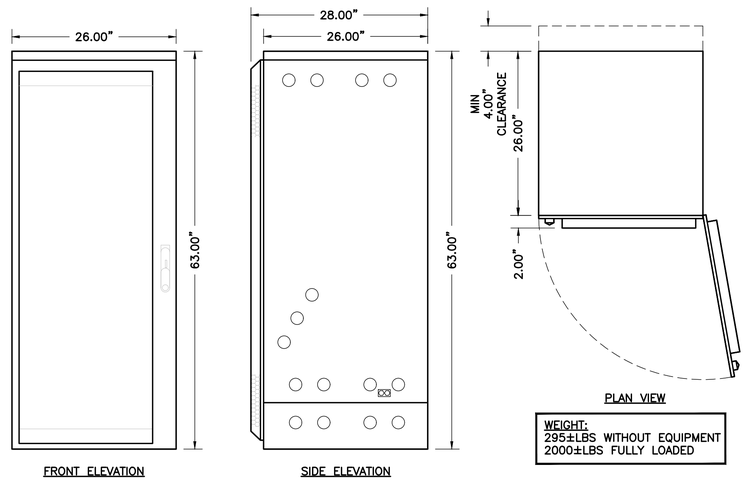
NOTES:

1. DO NOT PAINT THE RRU. RRU SOLAR SHIELD CAN BE PAINTED PER MANUFACTURER'S METHOD OF PROCEDURE.

2 / A-3 ERICSSON REMOTE RADIO UNIT (RRU)
NTS



3 / A-3 6160 ENCLOSURE CABINET
NOT TO SCALE



4 / A-3 B160 BATTERY CABINET
NOT TO SCALE

APPLICANT

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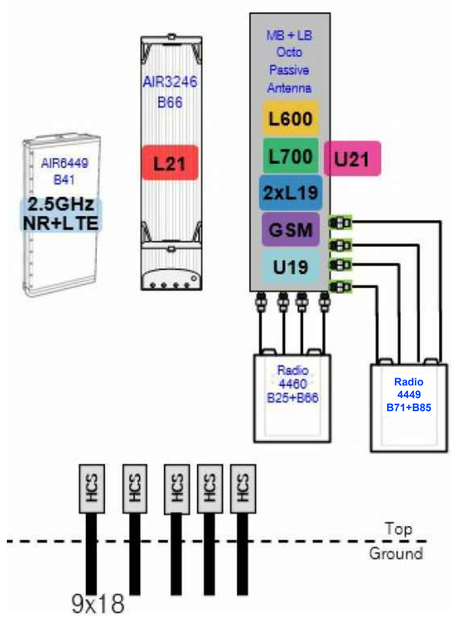
LICENSE #55491

SHEET TITLE

EQUIPMENT SPECIFICATIONS & DETAILS

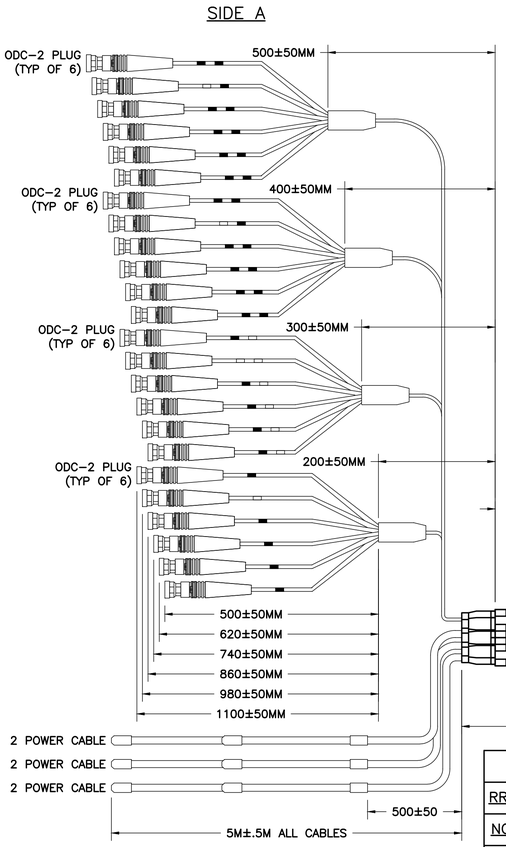
SHEET NUMBER

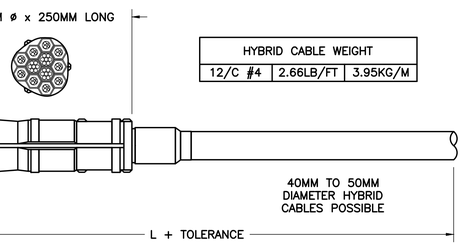
A-3



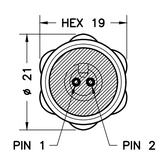
1 / A-4 67D5A998ME OUTDOOR RF DESIGN SCHEMATIC

NOT TO SCALE





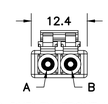
HYBRID CABLE WEIGHT		
12/C #4	2.66LB/FT	3.95KG/M



ODC–2 PLUG FRONT VIEW

TOLERANCE	ASSEMBLY LENGTH
+80	L < 5M
+2%	L ≥ 5M

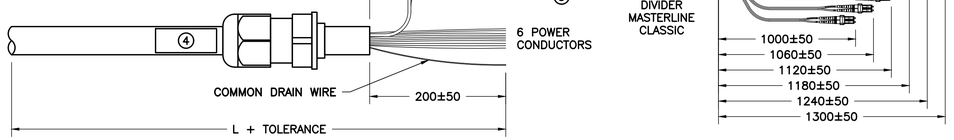
POWER	
LENGTH	DIAMETER
L ≤ 60M	6MM²(10AWG)
L ≥ 60M	10MM²(8AWG)



LC DUPLEX FRONT VIEW

③ STANDARD LABEL 84002345

④ ATTENTION DO NOT TWIST PULLING TUBE — STANDARD LABEL 84087128



FIBER OPTIC						
RRH NO.	SIDE A ODC PLUG	SIDE A PIN	SIDE B PIN	SIDE B COLOR LCD BOOTS	SIDE B LENGTH	SIDE B RUBBER GROMMETS
1	ODC–2 RED	1	B	RED (SHORT BREAKOUT)	1000 ± 50	1
		2	A			
2	ODC–2 GREEN	1	B	GREEN	1060 ± 50	
		2	A			
3	ODC–2 BLUE	1	B	BLUE	1120 ± 50	1
		2	A			
4	ODC–2 YELLOW	1	B	YELLOW	1180 ± 50	
		2	A			
5	ODC–2 WHITE	1	B	WHITE	1240 ± 50	1
		2	A			
6	ODC–2 BLACK	1	B	BLACK	1300 ± 50	
		2	A			

POWER				
RRH NO.	REF HOOK UP	SIDE A WIRE COLOR	SIDE A CABLE DESIGNATOR	SIDE B WIRE COLOR
1	–48V	BLACK	RED	RED
	0V	GREY		BLACK
	GROUND	DRAIN		COMMON DRAIN
2	–48V	BLACK	GREEN	GREEN
	0V	GREY		WHITE
	GROUND	DRAIN		COMMON DRAIN
3	–48V	BLACK	BLUE	BLUE
	0V	GREY		ORANGE
	GROUND	DRAIN		COMMON DRAIN

POWER				
RRH NO.	REF HOOK UP	SIDE A WIRE COLOR	SIDE A CABLE DESIGNATOR	SIDE B WIRE COLOR
4	–48V	BLACK	YELLOW	RED
	0V	GREY		BLACK
	GROUND	DRAIN		COMMON DRAIN
5	–48V	BLACK	WHITE	GREEN
	0V	GREY		WHITE
	GROUND	DRAIN		COMMON DRAIN
6	–48V	BLACK	BLACK	BLUE
	0V	GREY		ORANGE
	GROUND	DRAIN		COMMON DRAIN

2 / A-4 MLE HYBRID CABLE (6 POWER/24 FIBER)

NOT TO SCALE

APPLICANT

T-MOBILE NORTHEAST LLC

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ENGINEER

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SITE INFORMATION

7WAN290A
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MONTGOMERY COUNTY

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STATE OF MARYLAND
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PROFESSIONAL ENGINEER
07/29/21

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ENGINEER

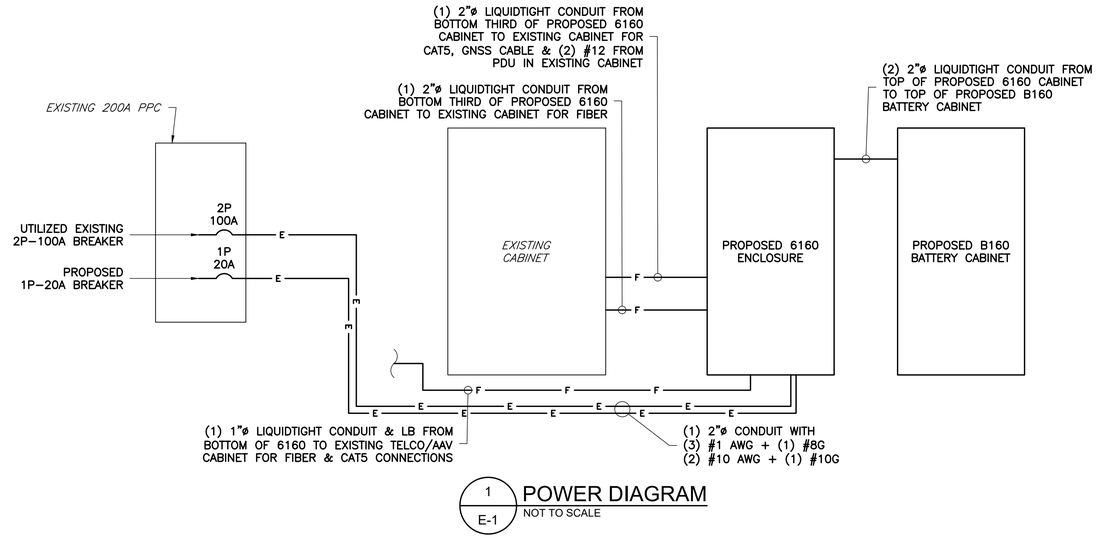
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

CABLING DETAILS & RF PLUMBING DIAGRAM

SHEET NUMBER

A-4



1 / E-1 POWER DIAGRAM
NOT TO SCALE

PPC PANEL

MAIN BREAKER RATING (A): 200 | SYSTEM VOLTAGE (V): 240 | PHASE: 1 WIRE: 3 BRANCH CB: 24

CKT	CIRCUIT DESCRIPTION	WATTAGE C	WATTAGE NC	POLE	BRK	LOAD PER PHASE A	LOAD PER PHASE B	BRK	POLE	WATTAGE NC	WATTAGE C	CIRCUIT DESCRIPTION	CKT
1	SURGE SUPPRESSOR	0	0	2	60	240		20	1	240	0	LIGHT	2
3		0	0				360	20	1	360	0	RECEPTACLE	4
5		0	0			0		40	2	0	0	***BTS #2 (TURN OFF)	6
7	*6160 GFCI	0	360	1	20		360			0	0		8
9	**6160 EQUIPMENT CABINET	0	7000	2	100	7780		30	1	780	0	CSC CABINET	10
11		0	7000				14200	150	2	7200	0	6131 CABINET	12
13	MCP BETA	0	680	2	20	7880				7200	0		14
15		0	680				7880			7200	0		16
17		0	0			7200				7200	0		18
19		0	0				0			0	0		20
21		0	0			0				0	0		22
23		0	0				0			0	0		24
						TOTAL LOADS PER PHASE							
						23100	22800						

NOTES

*INSTALL (1) NEW 1P-20A BREAKER FOR 6160 GFCI TO REPLACE (1) EXISTING 2P-40A BREAKER FOR BTS #1.
**UTILIZE (1) EXISTING 2P-100A BREAKER FOR 6160 EQUIPMENT CABINET.
***TURN OFF (1) EXISTING 2P-40 BREAKER FOR BTS #2.

SUBTOTAL CONTINUOUS	0
SUBTOTAL NON-CONTINUOUS	45900
125% TOTAL CONTINUOUS (VA)	0
100% TOTAL NON-CONTINUOUS (VA)	45900
TOTAL AMPS	191.25
TOTAL CONNECTED LOAD (KVA)	45.90
SPARE CAPACITY (A)	8.75

2 / E-1 PANEL SCHEDULE
NOT TO SCALE

APPLICANT

T-Mobile

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C TOTALLY COMMITTED.™

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
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SILVER SPRING, MD 20902
MONTGOMERY COUNTY

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STATE OF MARYLAND · TRENT TRAVIS SNARR · 55491 · PROFESSIONAL ENGINEER
07/29/21

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ENGINEER

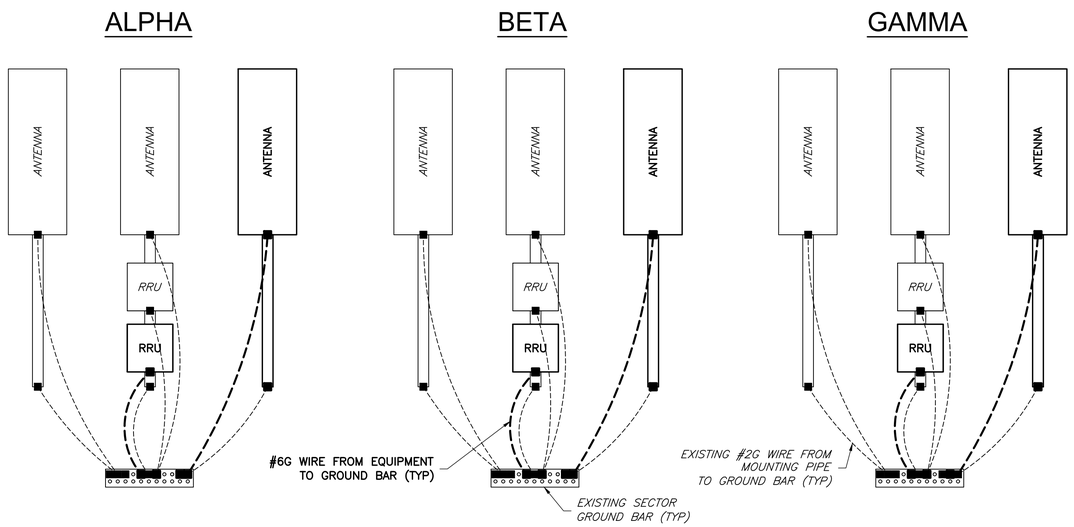
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

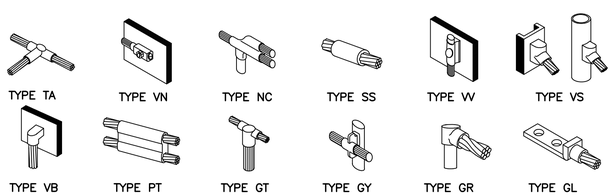
ELECTRICAL DETAILS

SHEET NUMBER

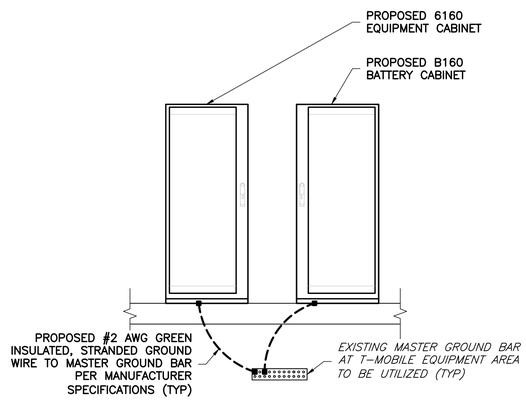
E-1



1 / G-1 ANTENNA GROUNDING DETAIL
NTS



2 / G-1 GROUNDING CONNECTION DETAILS
NOT TO SCALE



3 / G-1 CABINET GROUNDING DIAGRAM
NOT TO SCALE

GROUNDING LEGEND

- MECHANICAL COMPRESSION CONNECTION
- CADWELD CONNECTION
- EXOTHERMIC WELD CONNECTION
- PROPOSED GROUND WIRING
- EXISTING GROUND WIRING

APPLICANT

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
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MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

G-1

STRUCTURAL NOTES

STRUCTURAL DESIGN CRITERIA:

STRUCTURAL DESIGN IS BASED ON THE 2018 INTERNATIONAL BUILDING CODE & 2018 INTERNATIONAL EXISTING BUILDING CODE.

LOCATION: MONTGOMERY COUNTY, MD

CONSTRUCTION MATERIAL SELF WEIGHT PER ASCE 7-16

ULTIMATE WIND SPEED:	115 MPH
OCCUPANCY CATEGORY:	II
EXPOSURE CATEGORY:	B
TOPOGRAPHIC CATEGORY:	1

1. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
   A. AISC – "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC – "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AWS – "D1.1 STRUCTURAL WELDING CODE – STEEL".

2. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 Fy = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES	A36 Fy = 36 KSI
STRUCTURAL TUBING	A500, GRADE B Fy = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 40 PIPE

3. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.

4. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.

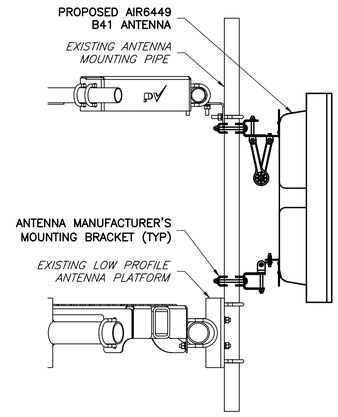
5. ALL STEEL TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.

6. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

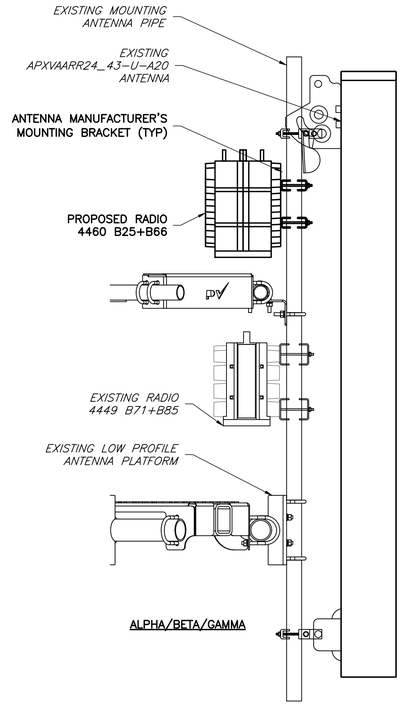
7. ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.

8. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.

10. THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER, AND OBTAIN APPROVAL PRIOR TO FABRICATING ANY STRUCTURAL STEEL. SHOP DRAWINGS SHALL CONFORM TO AISC "DETAILING FOR STEEL CONSTRUCTION".



1 ST-1 AIR6449 B41 MOUNTING DETAIL
NTS



2 ST-1 RADIO MOUNTING DETAIL
NTS

APPLICANT

T-Mobile

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
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ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

ANTENNA MOUNTING DETAILS

SHEET NUMBER

ST-1

[illegible]

[illegible] 2021081524

[illegible]

[illegible] Mobile Northeast, LLC (“T-Mobile”) concerning the above referenced application, [illegible] Coordinating Group (the “County”). In connection with that application, the County has request a full EME [illegible] 58E of the County’s [illegible] that the “… [illegible].”

[illegible] Mobile’s position full EME reports contain sensitive and confidential T-M[illegible]

[illegible]

[illegible]

Katherine Blackwood for,

[illegible]

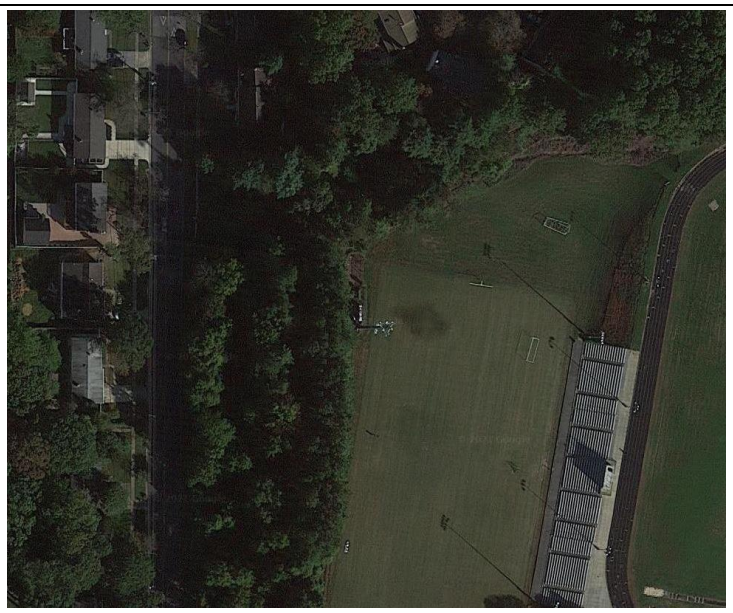
Radio Frequency – Electromagnetic Energy (RF-EME) Compliance Report (Anchor)

T-Mobile Proposed Facility

Site ID: WAN290A
BOE-Kennedy High School
1901-A Randolph Road, Silver Spring, Maryland 20902

August 30, 2021

EBI Project Number:
6221004745



Status:	**Compliant**

Remarks: No additional mitigation is required.

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

1.0 Executive Summary

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by T-Mobile to conduct radio frequency electromagnetic (RF-EME) modeling for T-Mobile Site WAN290A located at 1901-A Randolph Road in Silver Spring, Maryland to determine RF-EME exposure levels from proposed T-Mobile wireless communications equipment at this site. As described in detail in Appendix B of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields. This report contains a detailed summary of the RF EME analysis for the site.

This document addresses the compliance of T-Mobile's proposed transmitting facilities independently at the site.

The Maximum Emissions Value is 0.5700% of the FCC's general public limit (0.1140% of the FCC's occupational limit) at the field light level. The proposed site is in compliance with Federal regulations regarding (radio frequency) RF Emissions.

At the nearest walking/working surfaces to the T-Mobile antennas on the field light level, the maximum power density generated by the T-Mobile antennas is approximately 0.5700 percent of the FCC's general public limit (0.1140 percent of the FCC's occupational limit).

Based on worst-case predictive modeling, there are no modeled exposures on any accessible field light level-walking/working surface related to T-Mobile's equipment in the area that exceed the FCC's occupational and/or general public exposure limits at this site.

Signage is not required at the site as presented in Attachment 1. The site is compliant with FCC rules and regulations.

2.0 MPE Calculations

Calculations were completed for the proposed T-Mobile Wireless antenna light pole facility located at 1901-A Randolph Road in Silver Spring, Maryland using the equipment information listed below. All calculations were performed per the specifications under FCC Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65). Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas in the immediate vicinity of the antennas.

In accordance with T-Mobile's RF Exposure policy, EBI performed theoretical modeling using RoofMaster™ software to estimate the worst-case power density at the site field lights and ground-level resulting from operation of the antennas. Using the computational methods set forth in OET-65, RoofMaster™ calculates power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by T-Mobile and compared the resultant worst-case MPE levels to the FCC's general public/uncontrolled exposure limits outlined in OET Bulletin 65. EBI has performed theoretical worst-case modeling using RoofMaster™ to estimate the maximum potential power density from each proposed antenna based on worst-case assumptions for the number of antennas and power. All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmission paths per carrier prescribed configuration. Modeling for Ericsson AIR 6449 and AIR 6488 antennas is based on worst-case assumptions that include all beams transmitting simultaneously. This is to ensure that all areas of potential concern are taken into consideration. As such, the results are conservative in nature and reflect potentially higher levels of RF emissions compared to actual on-air conditions. It is recommended that areas of concern be confirmed with onsite measurements once the site is active.

The assumptions used in the modeling are based upon information provided by T-Mobile in the supplied drawings.

There are no collocated carriers on the light pole.

The data for all T-Mobile antennas used in this analysis is shown in Section 3.0. Actual antenna gains for each antenna were used per manufacturer's specifications. All calculations were done with respect to the FCC's general public/uncontrolled threshold limits.

Based on information provided by T-Mobile, access to this site is considered uncontrolled. A site visit was not conducted by EBI to confirm controlled, or occupational, access status. Access should be confirmed upon installation of mitigation.

3.0 T-Mobile Antenna Inventory

Sector	Antenna Number	Antenna Make	Antenna Model	Centerline Height (ft) Above Nearest Walking Surface	Azimuth (°)	Technology	Frequency Band	Power Per Channel (W)	Number of Channels	ERP (W)
A	1	ERICSSON	SON_AIR3246B66	70.0	75	LTE	AWS - 2100 MHz	40	4	13776
A	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	75	NR	600 MHz	80	1	1421
A	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	75	LTE	600 MHz	30	1	533
A	2	RFS	APXVAARR24 43-U-NA20 04DT 700	70.0	75	LTE	700 MHz	30	1	555
A	2	RFS	APXVAARR24_43-U-NA20 05DT 1900	70.0	75	LTE/UMTS	PCS - 1900 MHz	90	2	5933
A	3	ERICSSON	SON_AIR6449 2500 NR TB	70.0	75	NR	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 LTE TB	70.0	75	LTE	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	75	NR	2500 MHz	90	1	4833
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	75	LTE	2500 MHz	90	1	4833
B	1	ERICSSON	SON_AIR3246B66	70.0	195	LTE	AWS - 2100 MHz	40	4	13776
B	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	195	NR	600 MHz	80	1	1421
B	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	195	LTE	600 MHz	30	1	533
B	2	RFS	APXVAARR24 43-U-NA20 04DT 700	70.0	195	LTE	700 MHz	30	1	555
B	2	RFS	APXVAARR24_43-U-NA20 05DT 1900	70.0	195	LTE/UMTS	PCS - 1900 MHz	90	2	5933
B	3	ERICSSON	SON_AIR6449 2500 NR TB	70.0	195	NR	2500 MHz	90	1	15461
B	3	ERICSSON	SON_AIR6449 2500 LTE TB	70.0	195	LTE	2500 MHz	90	1	15461
B	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	195	NR	2500 MHz	90	1	4833
B	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	195	LTE	2500 MHz	90	1	4833
C	1	ERICSSON	SON_AIR3246B66	70.0	310	LTE	AWS - 2100 MHz	40	4	13776
C	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	310	NR	600 MHz	80	1	1421
C	2	RFS	APXVAARR24 43-U-NA20 04DT 600	70.0	310	LTE	600 MHz	30	1	533
C	2	RFS	APXVAARR24 43-U-NA20 04DT 700	70.0	310	LTE	700 MHz	30	1	555
C	2	RFS	APXVAARR24_43-U-NA20 05DT 1900	70.0	310	LTE/UMTS	PCS - 1900 MHz	90	2	5933
C	3	ERICSSON	SON_AIR6449 2500 NR TB	70.0	310	NR	2500 MHz	90	1	15461
C	3	ERICSSON	SON_AIR6449 2500 LTE TB	70.0	310	LTE	2500 MHz	90	1	15461
C	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	310	NR	2500 MHz	90	1	4833
C	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	70.0	310	LTE	2500 MHz	90	1	4833

• This table contains an inventory of T-Mobile Antennas and Power Values.

4.0 Summary and Conclusions

All calculations performed for this analysis yielded results that were within the allowable limits for exposure to RF Emissions. Based on predictive modeling, there are no modeled exposures on any accessible field light level-walking/working surface related to T-Mobile's equipment in the area that exceed the FCC's occupational and/or general public exposure limits at this site.

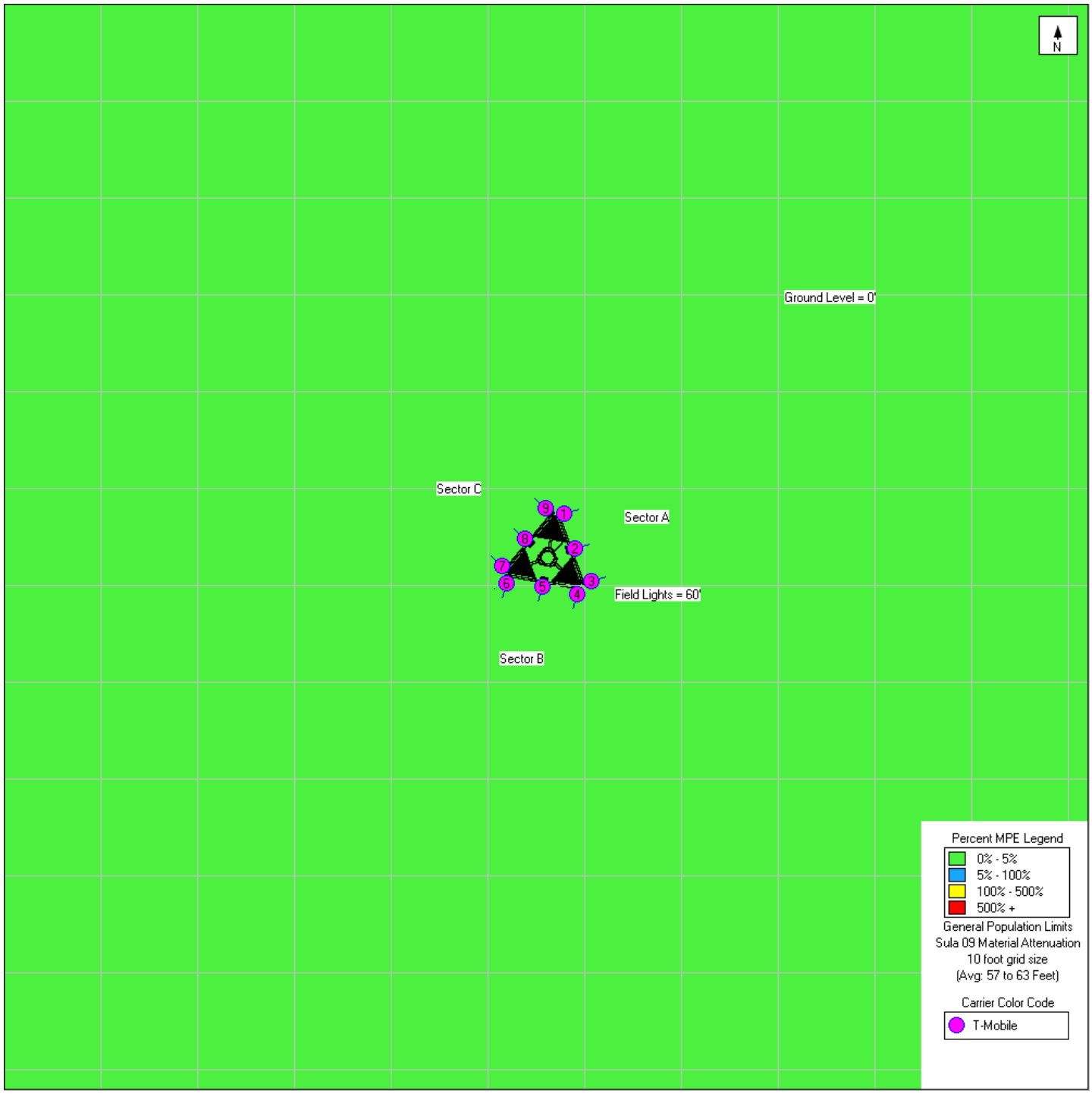
There are no collocated carriers on the light pole.

The anticipated maximum contribution from each sector of the proposed T-Mobile facility is 0.5700% of the allowable FCC established general public limit (0.1140% of the FCC occupational limit). This was determined through calculations along a radial from each sector taking full power values into account as well as actual vertical plane antenna gain values per the manufacturer-supplied specifications for gain. Based on worst-case predictive modeling, there are no areas at ground level related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 0.1700% of the FCC's general public limit (0.0340% of the FCC's occupational limit).

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards. For this facility, the calculated values were within the allowable 100% threshold standard per the federal government.

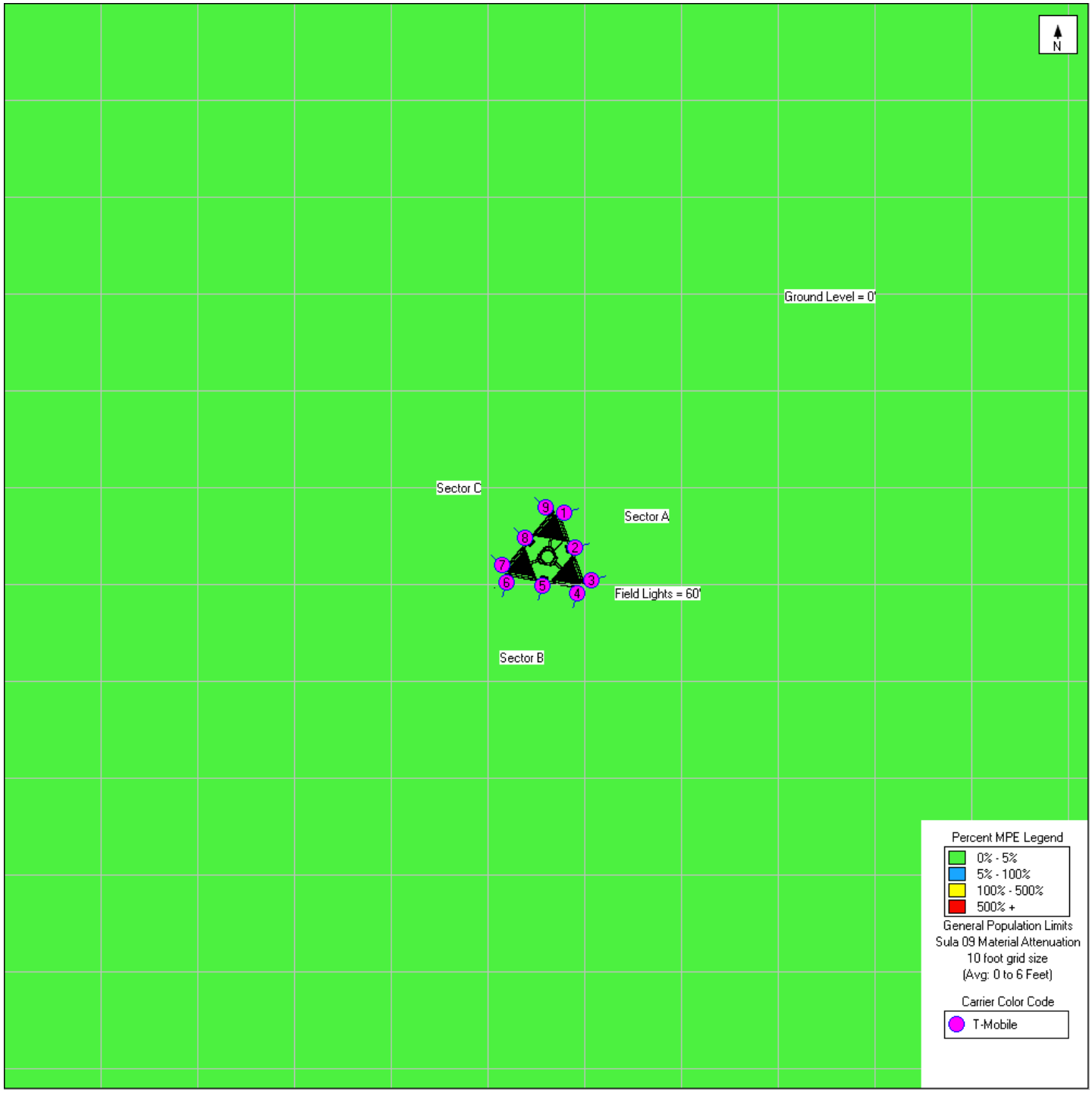
Signage is not required because there is no access within 30 feet of an antenna. To reduce the risk of exposure and/or injury, EBI recommends that access to the light pole or areas associated with the active antenna installation be restricted and secured where possible.

Attachment 1a: MPE Analysis and Recommended Signage (Field Light Level)



Signage is not required because there is no access within 30 feet of an antenna.

Attachment 1b: MPE Analysis and Recommended Signage (Ground Level)



Signage is not required because there is no access within 30 feet of an antenna.

Sign	Sign Count	Description	Posting Instructions
	**N/A**	**Blue Notice Sign** Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.	Signage is not required because there is no access within 30 feet of an antenna.
	**N/A**	**Guidelines** Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Signage is not required because there is no access within 30 feet of an antenna.
	**N/A**	**Yellow Caution Sign** Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.	Signage is not required because there is no access within 30 feet of an antenna.
	**N/A**	**Red Warning Sign** Used to notify individuals that they are entering a hot zone where either the general public or occupational FCC's MPE limit has been exceeded.	Signage is not required because there is no access within 30 feet of an antenna.
Notes:	The actual number of access points may vary based on documentation provided and/or if a survey was conducted. Recommended signage locations, if applicable, are based on T-Mobile's guidance for the worst-case scenario in each sector. The actual signage installation is dependent on accessibility of the facility and antennas. Locations deemed inaccessible due to OSHA safety standards (proximity to unprotected roof edge or slope, etc.) will be compliant upon installation of recommended signage at the closest accessible point.		

Attachment 2: RoofMaster™ Import File

Carrier	Antenna Number	Emitter Number	Caption	Pattern(.ant)	Frequency	Power (W) ERP/EiRP	Length (m)	Azimuth(n)	Mechanical Downtilt	Height(ft)
T-Mobile	1	1	ANT 1	SON_AIR3246B66.ant	2100	22592.48	1.52	75	0	130.0
T-Mobile	2	1	ANT 2	APXVAARR24 43-U-NA20 04DT 600.ant	600	1420.99	2.44	75	0	130.0
T-Mobile	2	2	ANT 2	APXVAARR24 43-U-NA20 04DT 600.ant	600	532.87	2.44	75	0	130.0
T-Mobile	2	3	ANT 2	APXVAARR24 43-U-NA20 04DT 700.ant	700	555.42	2.44	75	0	130.0
T-Mobile	2	4	ANT 2	APXVAARR24_43-U-NA20 05DT 1900.ant	1900	9730.08	2.44	75	0	130.0
T-Mobile	3	1	ANT 3	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	75	0	130.0
T-Mobile	3	2	ANT 3	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	75	0	130.0
T-Mobile	3	3	ANT 3	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	75	0	130.0
T-Mobile	3	4	ANT 3	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	75	0	130.0
T-Mobile	4	1	ANT 4	SON_AIR3246B66.ant	2100	22592.48	1.52	195	0	130.0
T-Mobile	5	1	ANT 5	APXVAARR24 43-U-NA20 04DT 600.ant	600	1420.99	2.44	195	0	130.0
T-Mobile	5	2	ANT 5	APXVAARR24 43-U-NA20 04DT 600.ant	600	532.87	2.44	195	0	130.0
T-Mobile	5	3	ANT 5	APXVAARR24 43-U-NA20 04DT 700.ant	700	555.42	2.44	195	0	130.0
T-Mobile	5	4	ANT 5	APXVAARR24_43-U-NA20 05DT 1900.ant	1900	9730.08	2.44	195	0	130.0
T-Mobile	6	1	ANT 6	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	195	0	130.0
T-Mobile	6	2	ANT 6	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	195	0	130.0
T-Mobile	6	3	ANT 6	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	195	0	130.0
T-Mobile	6	4	ANT 6	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	195	0	130.0
T-Mobile	7	1	ANT 7	SON_AIR3246B66.ant	2100	22592.48	1.52	310	0	130.0
T-Mobile	8	1	ANT 8	APXVAARR24 43-U-NA20 04DT 600.ant	600	1420.99	2.44	310	0	130.0
T-Mobile	8	2	ANT 8	APXVAARR24 43-U-NA20 04DT 600.ant	600	532.87	2.44	310	0	130.0
T-Mobile	8	3	ANT 8	APXVAARR24 43-U-NA20 04DT 700.ant	700	555.42	2.44	310	0	130.0
T-Mobile	8	4	ANT 8	APXVAARR24_43-U-NA20 05DT 1900.ant	1900	9730.08	2.44	310	0	130.0
T-Mobile	9	1	ANT 9	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	310	0	130.0
T-Mobile	9	2	ANT 9	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	310	0	130.0
T-Mobile	9	3	ANT 9	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	310	0	130.0
T-Mobile	9	4	ANT 9	SON_AIR6449 2500 LTE MACRO.ant	2500	7926.59	0.84	310	0	130.0

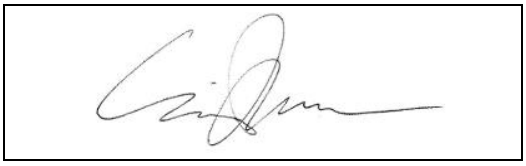
Note that Power (W) ERP/EiRP values are listed respective to the frequency of the antenna. (Values less than 1,000 MHz are listed as ERP and greater than 1,000 MHz are listed as EiRP.)

Appendix A: Certifications

Preparer Certification

I, Erik Johnson, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have been trained on RF-EME modeling using RoofMaster™ modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Appendix B: Federal Communications Commission (FCC) Requirements

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 and 800 MHz Bands is 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

Additional details can be found in FCC OET 65.

App No: 2021081524

Application General Infomation

Applicant Name	NB+C	Updated	8/9/2021
Application Type	Minor Modification	Ann. Plan?	Yes
Carrier	T-Mobile	Will site be used to support government telecommunications facilities or other equipment for government use?	No
Solution Type	Macro		
Existing	Existing	Gvt. Use Desc.	

Application Description

T-Mobile proposes to replace (3) antennas, (3) radios, and (2) cabinets at the existing telecommunications facility.

Site Infomation

Site Id	288	Zoning	R-90
Structure Type	Tower	Latitude	39.0676
Street Address	1901 Randolph Rd	Longitude	-77.0397222
County Site Name	JFK High School	Ground Elevation	400
Carrier Site Name	7WAN290A	City	Silver Spring
Site Owner	MCPS	Lease Status	In Process
Structure Owner	MONTGOMERY COUNTY PUBLIC SCH	Does the structure require an antenna structure registration under FCC Title 47	No
Existing Structure Height	127		
Provide the proposed height of the replacement structure without any antenna (New, Replacement Apps Only)		Distance to Residential Property (New, Replacement, Colocation Only)	
		Distance to Commercial Property (New, Replacement, Colocation Only)	

Justification of why this site was selected:

Existing telecommunications facility

NearbySites (New, Replacement Apps Only):

Monday, August 9, 2021

11:08:21 AM

App No: 2021081524

Screening considerations(New, Colocations, Replacement Apps Only):

Monday, August 9, 2021

11:08:22 AM

App No: 2021081524

6409 Questions

Does this qualify as a 6409 application? (Minor Mod, Colocations Only): Yes

For towers outside the public ROW will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 20 feet, whichever is greater? No

Will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 6 feet? No

For towers outside the public ROW will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 20 feet? No

Will the proposed installation require more the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets?YN No

Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater? No

Does the structure or current installation have concealment elements/measures? No

Will the proposed installation require excavation or expansion outside the current boundaries of the site? No

If yes, describe how the proposed installation does not defeat the existing concealment.

Small Wireless Facility Informatio

Small Wireless Facility Questions

Small Wireless Facility? No

Is the structure 10% taller than adjacent structures?

Cumulative volume of the proposed wireless equipment(s) exclusive of antennas in cubic feet 0

Please list adjacent structure heights

Tribal Lands? No

Cumulative volume of the proposed antenna antenna(s) exclusive of equipment

ROW Information

PROW? No

Pole Number

ROW owner

ROW width

Monday, August 9, 2021

11:08:22 AM

App No: 2021081524

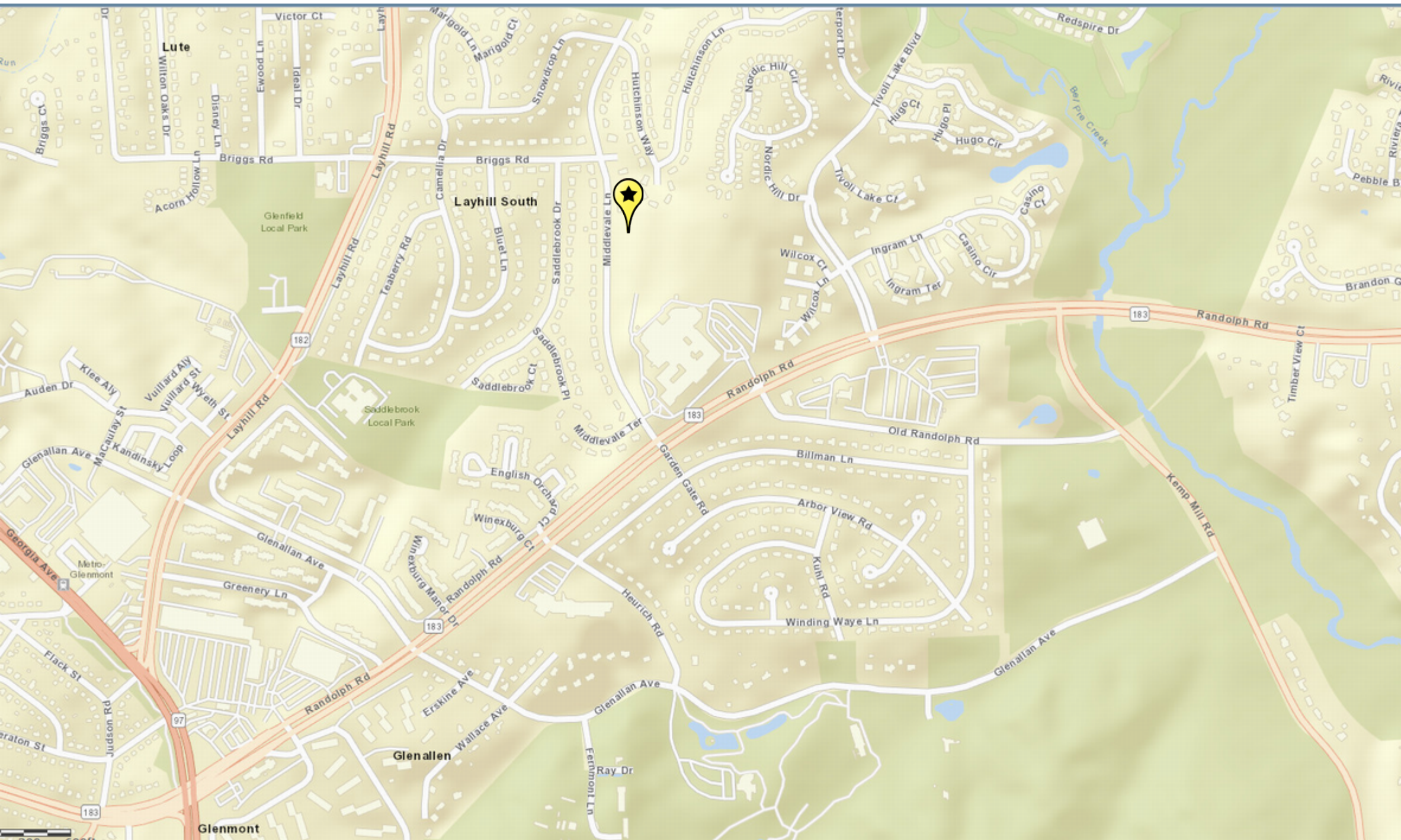
Antenna Infomatio

Antenna Compliance	Yes
Compliance Desc	
Antenna Location	No
Antenna Loc. Desc.	
Env. Assessment	
Cat. Excluded?	
Routine Env. Evaluation	checked

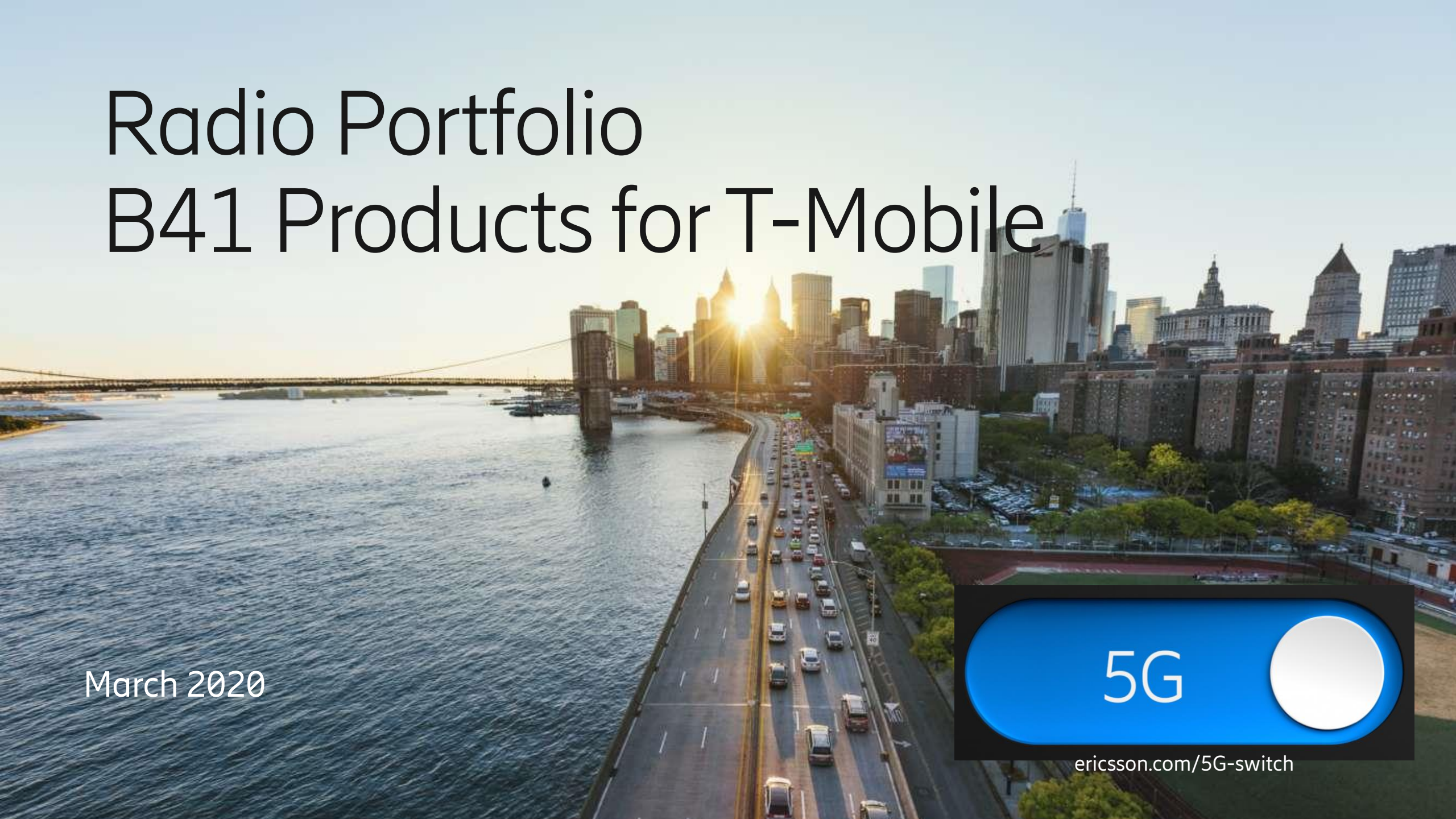
Antenna Model	Ericsson AIR6449 B41						
Frequency	Tx/Rx: 2496-2690						
RAD Center	130	Max ERP	34144	Antenna Dimensions	33.1"20.5"x8.5"	Quantity	3

Monday, August 9, 2021

11:08:22 AM


Lute
Victor Ct
Marigold Ln
Marigold Ct
Snowdrop Ln
Hutchinson Ln
Hutchinson Way
Nordic Hill Cir
Nordic Hill Dr
Tivoli Lake Blvd
Tivoli Lake Ct
Hugo Ct
Hugo Pl
Hugo Cir
Redspire Dr
Bear Pee Creek
Briggs Ct
Wilton Oaks Dr
Disney Ln
Ewood Ln
Ideal Dr
Briggs Rd
Acorn Hollow Ln
Layhill Rd
Camellia Dr
Layhill South
Glenfield Local Park
Teaberry Rd
Bluet Ln
Saddlebrook Dr
Saddlebrook Pl
Saddlebrook Ct
Middlevale Ln
Wilcox Ct
Wilcox Ln
Ingram Ln
Ingram Ter
Casino Ct
Casino Cir
Pebble B
Brandon G
182
183
Randolph Rd
Timber View Ct
Auden Dr
Klee Aly
Vuillard Aly
Vuillard St
Wyeth St
MacAulay St
Kandinsky Loop
Saddlebrook Local Park
Middlevale Ter
Garden Gate Rd
Old Randolph Rd
Billman Ln
Glenallan Ave
English Orchard Ct
Winexburg Ct
Winexburg Manor Dr
Arbor View Rd
Kuhl Rd
Winding Waye Ln
Kemp Mill Rd
Georgia Ave
Metro-Glenmont
Greenery Ln
Heurich Rd
Flack St
Judson Rd
Erskine Ave
Wallace Ave
Glenallen
Ray Dr
Fernmont Ln
97
Glenmont

Radio Portfolio
B41 Products for T-Mobile



March 2020

ericsson.com/5G-switch

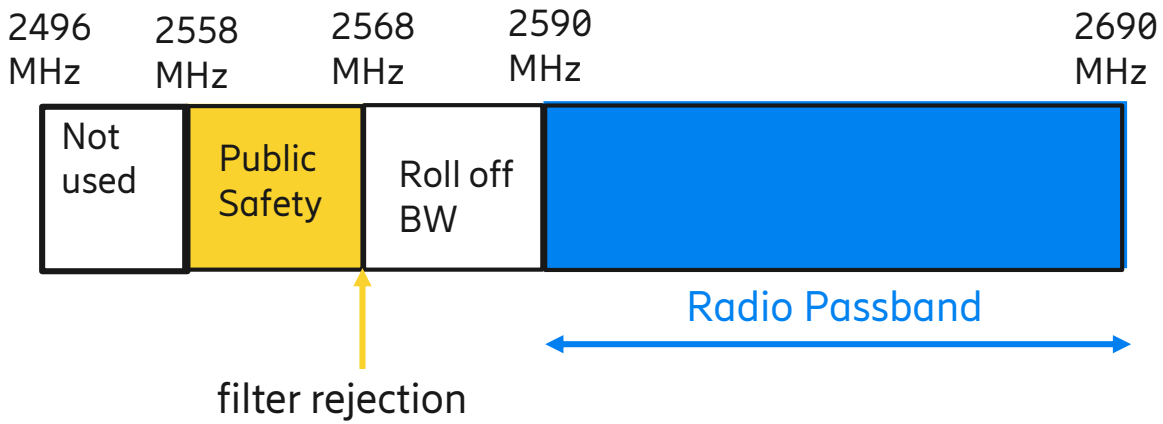
AIR 6488, B41

- Advanced Antenna System (AAS)
- 64TX/64RX with 128 AE
- Support operation frequency range 2496-2690 MHz
- Support output power up to 200W
- Support 100 MHz IBW & CBW
- Support NR and NR+LTE in split mode
- 3 x 10 Gbps eCPRI
- Power consumption < 1290W
- Weight: 58 kg
- Size (H x W x D): 884x520x183 mm
- -48 VDC (3-wire or 2-wire)
- -40 to +55˚C
- Multi-layer MU MIMO
  - DL/UL: 16/8

AIR 6488, B41M

- Advanced Antenna System (AAS)
- 64TX/64RX with 128 AE
- Support operation frequency range 2590-2690 MHz
- Support output power up to 200W
- Support 100 MHz IBW & CBW
- Support NR and NR+LTE in split mode
- 3 x 10 Gbps eCPRI
- Power consumption < 1290W
- Weight: 58 kg
- Size (H x W x D): 884x520x183 mm
- -48 VDC (3-wire or 2-wire)
- -40 to +55˚C
- Multi-layer MU MIMO
  - DL/UL: 16/8

AIR 6488M for New York City Band 41M support

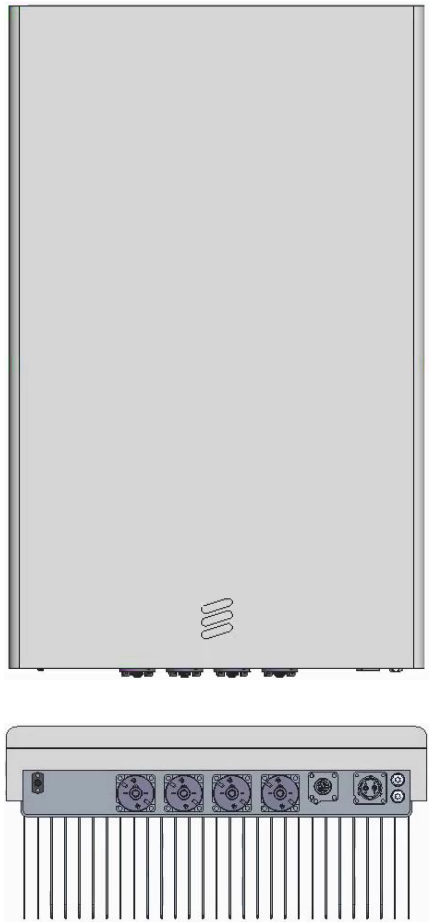


B41 in New York City currently has a UMTS Public Safety Network that requires OOBE interference protection from New T-Mobile Network

AIR 6449

Preliminary

- 192 antenna elements, 3:1 subarray
- Up to 300W
- Up to 200 MHz Operating BW & Carrier BW
- Two 25 Gb/s SFP(C2) and Two 10 Gb/s QSFP(C1FD and C2 backup)
- -48V 45 A Two wire and three wire versions
- APC light connector and Self test push button
- Sensor support but undefined
- Size B41:
  - 841 x 521 x 217 mm (H x W x D)
  - Volume: 95 liter
  - Weight: 47 kg



PRA: July 2020

Radio 8863

Preliminary

- 8TX/8RX
- Support split mode (2 x 4T4R or 4 x 2T2R as multi-sector solution)
- Tx Power 8x40W
- 200MHz IBW TDD
- 2x10.1/25Gbps CPRI
- 21.5 liter, 21kg
- External antenna calibration
- -48 VDC 3-wire
- AISG RET support via RS-485 or RF connectors
- Optional fan for increased site flexibility
- 2 external alarm
- Convectional cooling
- IP 65, -40 to +55˚C

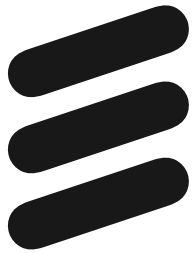
Radio Details: Mid Band TDD (Massive) MIMO (Band 41)

AIR or Radio Type	AIR 6488 (G2) 	AIR 6449 (G4) 	Radio 8863 
RATs supported	L, NR	L, NR	L, NR
Power capability	200W	300W	8x40W
Modulation	256QAM	256QAM	256QAM
Bandwidth (IBW/CBW)	100 MHz or 60L+60N	194 MHz	196 MHz
Tx and Rx Array	64T64R	64T64R	8 CSI-RS ports
MIMO layers (DL/UL)	16 DL / 8 UL	16 DL / 8 UL	16 DL / 8 UL
CPRI ports	3 x 10G	4 x 25G* (2x10G+2x25G)	2 x 25G*
Dimensions (HxWxD)	884mm x 520mm x 183mm (34.8" x 20.5" x 7.2")	840mm x 520mm x 210mm (33.1" x 20.5" x 8.3")	(21.5 ltr)
Weight	58 kg (128 lbs)	47 kg (103 lbs)	Approx. 21 kg (46 lbs)
Cooling	Convection	Convection	Convection
Power	-48VDC	-48VDC	-48VDC
Power Consumption	1290W	<1100W	TBD
Availability	Q2 2019	Q3 2020	Q2 2020

* requires Baseband 6648

Radio 4408 B41

- 4TX/4RX TDD
- 4x5W
- IBW up to 150 MHz CBW
- Up to 6 LTE carriers
- 2x 2.5/5/9.8/10.1Gbps CPRI
- 4 liter, less than 5kg incl bracket and cover
- AC or -48 VDC
- Integrated or external antenna
- 2 external alarm
- IP 65
- -40 to +55˚C



3 Technical Data

This section describes the physical characteristics, environmental data, and the power supply of the enclosure.

3.1 Dimensions

Figure 17 Dimensions of the Enclosure

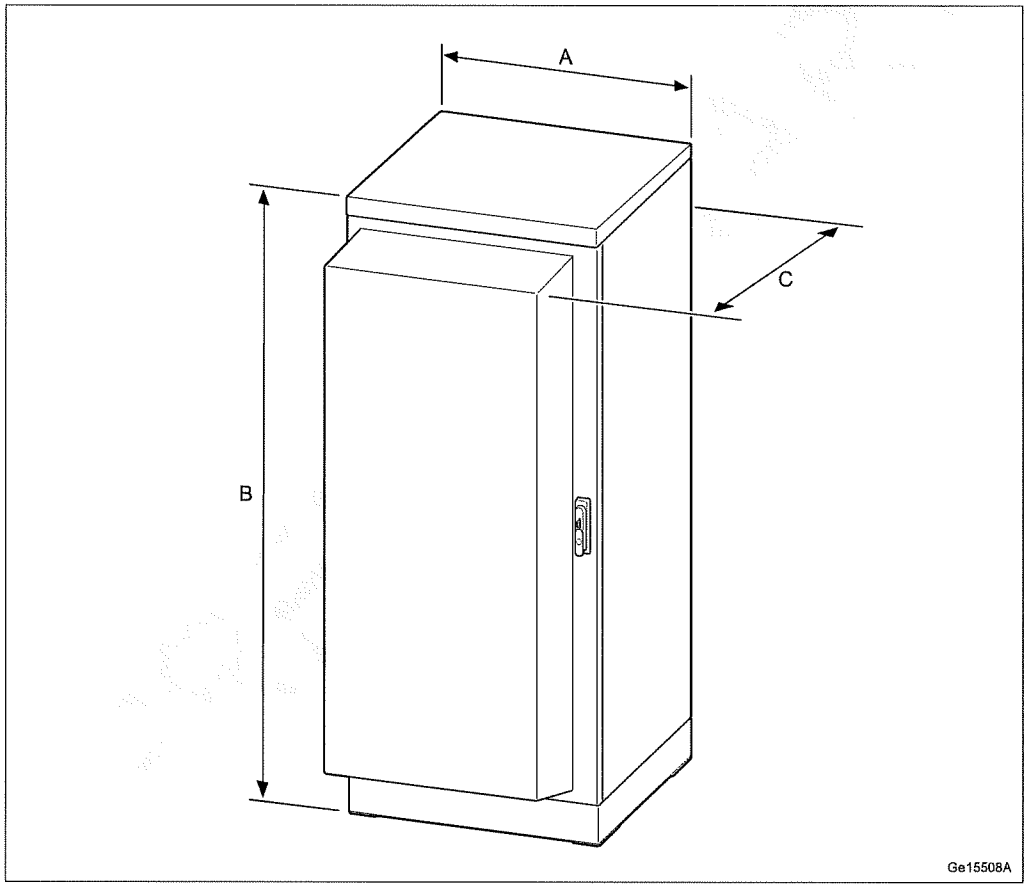


Table 1 Dimensions, Weight, and Color

Dimensions	
Width (A)	650 mm
Height (B)	1450 mm (without base frame) 1600 mm (with base frame)
Depth (C)	850 mm
Weight	
Empty enclosure	176 kg

And for the B160:

Capacity	
VRLA 12v	100Ah / 150Ah / 170Ah / 190Ah / 210Ah
Strings (max)	3
Electrical Specification	
DC output	-48VDC/200A
Battery breakers	2x 125/2p
Alarms	Door open, climate failure, MCB connection
Mechanical Specification	
Weight	295 lbs
Dimensions H x W x D	63" x 26" x 26" (including base frame)
Base frame height	6"
Material	Galvanized steel (180g/m^2)
Color	Powder paint NCS 2002-B
Door	Front access
Locking type	Pad lock / cylinder
Environmental Specification	
Ingress protection	VRLA/Sokium IP44
Relative humidity	15 – 100%
Climate System	
Air conditioner	
- Fan type	DC
- Cooling capacity	500W @L35/L35
Convection cooling	
- Emergency fan	

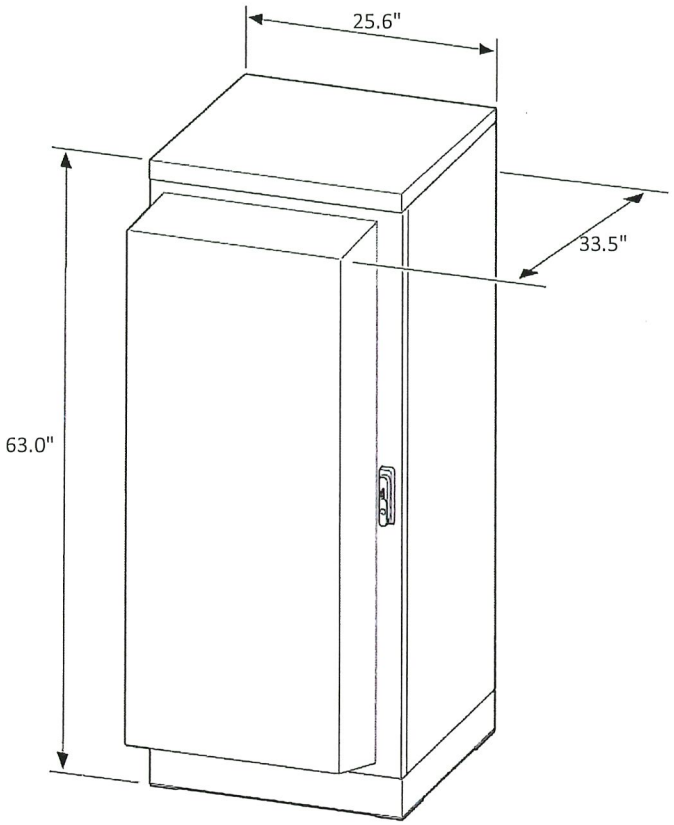


Figure 1

NOTE TO GENERAL CONTRACTOR:
REFER TO THE PASSING STRUCTURAL ANALYSIS AND APPLICABLE MOUNT ANALYSIS OF THE EXISTING MONOPOLE CONSIDERING THE EXISTING AND PROPOSED LOADS PERFORMED BY NB+C ES (PROJECT 100595). IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

DESIGN BASED ON RFDS VERSION: 13 DATED: 06/14/21.

T-MOBILE NORTHEAST LLC

SITE NUMBER: 7WAN290A

SITE NAME: BOE-KENNEDY HIGH SCHOOL

T-MOBILE ANCHOR INSTALLATION, DESIGN 67D5A998ME OUTDOOR

1901-A RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

SCOPE OF WORK

PROJECT CONSISTS OF:

REMOVING:	(3) EXISTING ANTENNAS (3) EXISTING RADIOS (2) EXISTING CABINETS ALL EXISTING UNUSED TMAS & COAX CABLES
INSTALLING:	(3) PROPOSED ANTENNAS (3) PROPOSED RADIOS (1) PROPOSED 6X24 HYBRID CABLE (2) PROPOSED CABINETS
SPECIAL CHANGES:	*ROTATE EXISTING ANTENNA PLATFORM

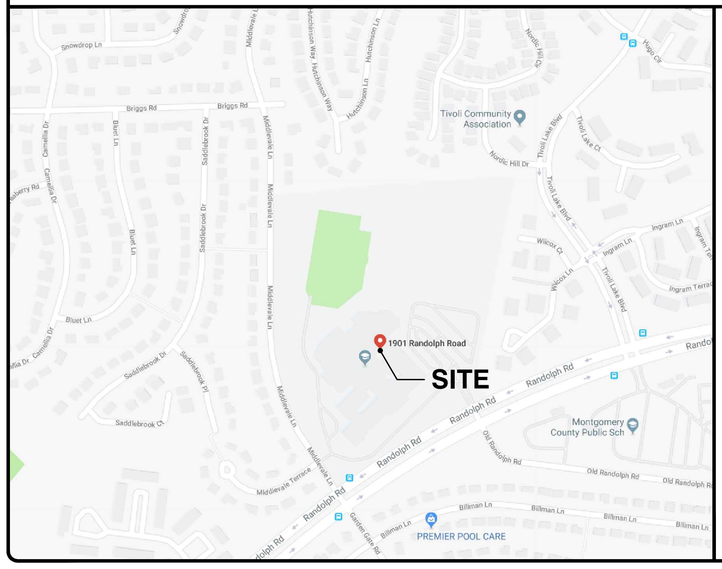
SITE INFORMATION

LATITUDE (NAD 83):	39.06753300°
LONGITUDE (NAD 83):	-77.04019200°
JURISDICTION:	MONTGOMERY COUNTY
ZONING:	R-90
TAX ACCOUNT NUMBER:	13-00954445
PARCEL AREA:	28.24 ± ACRES
PARCEL OWNER:	BOARD OF EDUCATION
ADDRESS:	850 HUNGERFORD DRIVE ROCKVILLE, MD 20805
GROUND ELEVATION:	400.0' (AMSL)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	127.0' (AGL)

PROJECT TEAM

APPLICANT:	T-MOBILE NORTHEAST LLC 12050 BALTIMORE AVENUE BELTSVILLE, MD 20705 OFFICE: (240) 264-8600 FAX: (240) 264-8610
PROJECT MANAGEMENT FIRM:	NETWORK BUILDING + CONSULTING, LLC. 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092
ENGINEERING FIRM:	NB+C ENGINEERING SERVICES, LLC. 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092 MARCO GROTTI MGROTTI@NBCLLC.COM (410) 712-7092 - EXT 1032

VICINITY MAP



CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND 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 THE LATEST EDITIONS OF THE FOLLOWING CODES.

- 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2018 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRICAL CODE
- 2015 NFPA 101, LIFE SAFETY CODE
- 2015 NFPA 1, FIRE CODE
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- ANSI/TIA-222-H
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELCORDIA GR-1275
- ANSI/T 311

DRAWING INDEX

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 22"X34". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

Know what's below. Call before you dig.

MARYLAND ONE CALL SYSTEM, INC. 1-800-257-7777 STOP! CALL BEFORE YOU DIG!

MARYLAND LAW REQUIRES THREE WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES

APPLICANT

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901-A RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND · TRENT TRAVIS SNARR · 55491 · PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 11/09/2022.

ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING AT EXPOSED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC OR RIGID SCHEDULE 80 PVC FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) (AS PERMITTED BY CODE).
6. ELECTRICAL AND TELCO WIRING AT CONCEALED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING, ELECTRICAL NONMETALLIC TUBING, OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC AS PERMITTED BY CODE).
7. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING, ABOVE GRADE AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS (RGS) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
8. BURIED CONDUIT SHALL BE RIGID NONMETALLIC CONDUIT (RIGID SCHEDULE 40 PVC); DIRECT BURIED IN AREAS OF OCCASIONAL LIGHT TRAFFIC, ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY TRAFFIC.
9. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED INDOORS AND OUTDOORS IN AREAS WHERE VIBRATION OCCURS AND FLEXIBILITY IS NEEDED.
10. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE THHN, THWN–2, OR THIN INSULATION.
11. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
12. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
13. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
14. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTING PROTECTION SHALL BE DONE IN ACCORDANCE WITH T–MOBILE CELL SITE GROUNDING STANDARDS.
15. GROUND CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
16. INSTALL #2 AWG GREEN–INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
17. ALL POWER AND GROUND CONNECTIONS TO BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY HARGER (OR APPROVED EQUAL) RATED FOR OPERATION AT NO LESS THAN 75°C OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
18. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
19. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
20. APPLY OXIDE INHIBITING COMPOUND TO ALL MECHANICAL GROUND CONNECTIONS.
21. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE–OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, CABLE, AND LNA RETURN–LOSS AND DISTANCE–TO–FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
24. THE T–MOBILE ELECTRICAL EQUIPMENT INCLUDING PANEL, SWITCH GEAR AND DISCONNECT ARE TO BE LABELED WITH ENGRAVED BAKELITE LABELS.

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
9. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
10. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
11. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
12. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
13. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
14. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
15. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
16. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
17. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
18. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.

STRUCTURAL NOTES

1. THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT ETC. PRIOR TO START OF STEEL ERECTION.
2. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
   A. AISC – "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC – "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AWS – "D1.1 STRUCTURAL WELDING CODE – STEEL".
3. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 FY = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES A500, GRADE B	A36, FY = 36 KSI STRUCTURAL TUBING FY = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 40 PIPE

4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.
5. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.
6. ALL STEEL TO BE HOT–DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.
7. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
8. ALL BOLTS SHALL BE TIGHTENED USING TURN–OF–THE–NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.
9. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.

APPLICANT

T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901-A RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
07/29/21
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 07/08/2022.

ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1

TRUE NORTH

MIDDLEVALE LANE

TAX ACCOUNT #:
13-02724810

TAX ACCOUNT #:
13-02614664

2319'-8"

EXISTING T-MOBILE EQUIPMENT
LOCATED INSIDE COMPOUND
(SEE SHEET C-1 FOR DETAIL)

1977'-8"

EXISTING 127'
MONOPOLE

EXISTING
FOOTBALL FIELD

EXISTING
TRACK

EXISTING
BASEBALL FIELD

13111'-2"

EXISTING
PARKING LOT

EXISTING
ACCESS DRIVE

RANDOLPH ROAD

TAX ACCOUNT #:
13-00954571

TAX ACCOUNT #:
13-00954456

BOARD OF EDUCATION
850 HUNGERFORD DRIVE
ROCKVILLE, MD 20805
TAX ACCOUNT #: 13-00954445
ZONING: R-90
AREA: 28.24 ± ACRES

1 SP-1 SITE PLAN
SCALE: 1" = 70' (22X34)
SCALE: 1" = 140' (11X17)

GRAPHIC SCALE
70 0 35 70 140 280
1 INCH = 70 FEET (22X34)
1 INCH = 140 FEET (11X17)

ZONING INFORMATION

JURISDICTION:	MONTGOMERY COUNTY	
ZONING:	R-90	
DIMENSION	EXISTING ±	PROPOSED ±
FRONT YARD SETBACK:	13111'-2"	NO CHANGE
SIDE YARD SETBACK:	1977'-8"	NO CHANGE
REAR YARD SETBACK:	2319'-8"	NO CHANGE
LOT AREA:	28.24 ± ACRES	

(ALL MEASUREMENTS ARE IN FEET ± UNLESS OTHERWISE NOTED)

NOTES:

1) SITE PLAN IS NOT THE RESULT OF A SURVEY. IT IS BASED ON FIELD MEASUREMENTS AND SCALED ASSESSORS MAPS AVAILABLE. ALL INFORMATION SHOWN IS APPROXIMATE ONLY AND SUBJECT TO ANY CONDITION THAT A SURVEY MAY REVEAL.

2) ALL SETBACKS SHOWN ARE FROM EXISTING MONOPOLE TO EXISTING PROPERTY LINES.

LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- PROPERTY LINE – ABUTTERS
- EXISTING FENCE LINE
- EXISTING ROAD
- EXISTING BUILDING

APPLICANT

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

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0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
55491
PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE: 09/30/2022.

ENGINEER

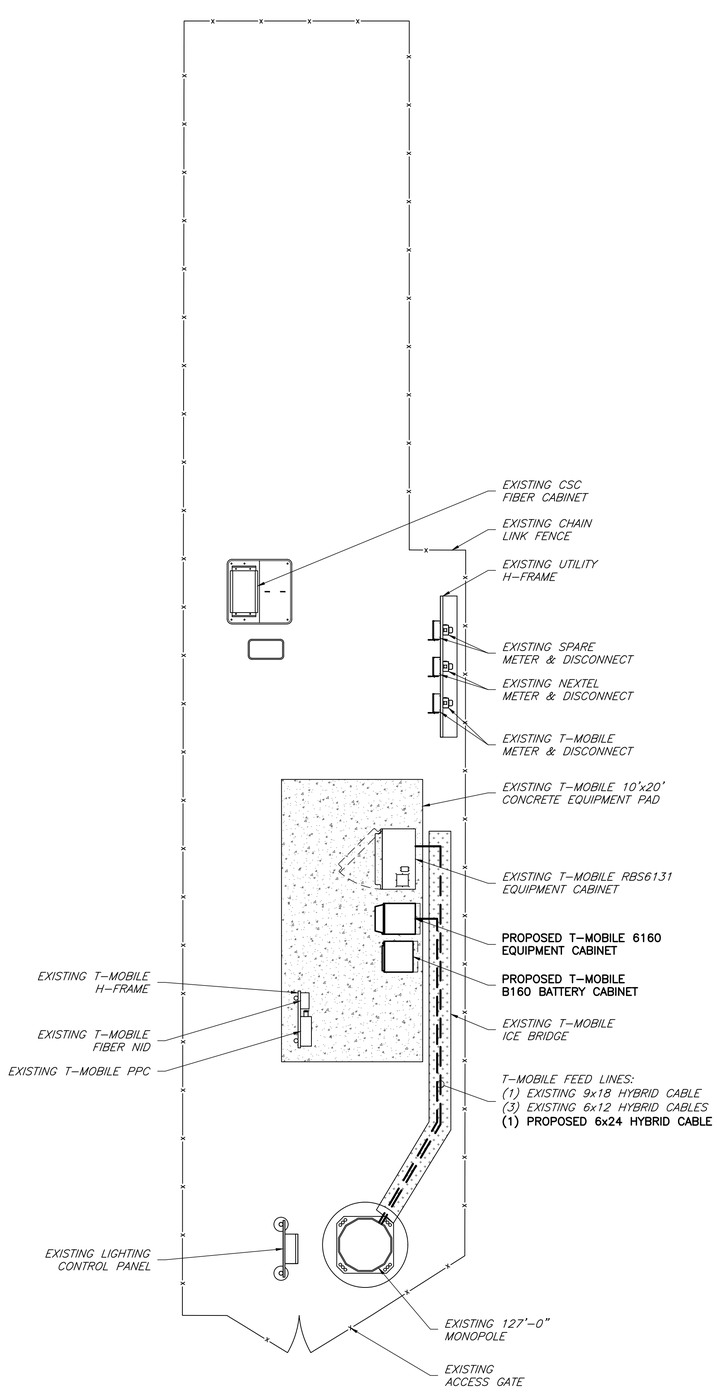
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

SITE PLAN

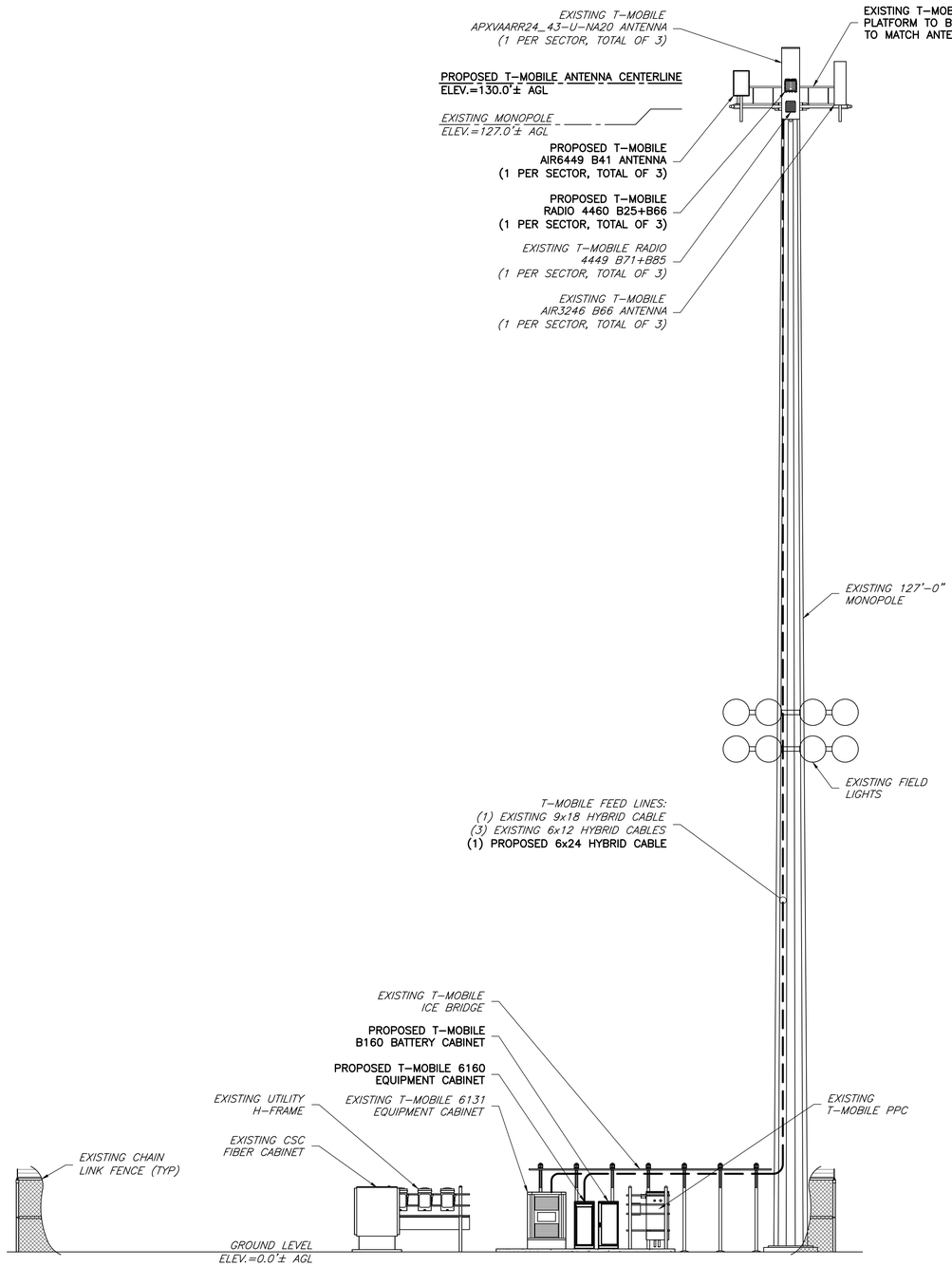
SHEET NUMBER

SP-1



1 / C-1 COMPOUND PLAN
SCALE: 3/16" = 1' (22X34)
SCALE: 3/32" = 1' (11X17)

GRAPHIC SCALE
8 4 0 1 2 4 8
3/16 INCH = 1 FOOT (22X34)
3/32 INCH = 1 FOOT (11X17)



2 / C-1 ELEVATION
SCALE: 1/8" = 1' (22X34)
SCALE: 1/16" = 1' (11X17)

GRAPHIC SCALE
16 8 0 1 2 4 8 16
1/8 INCH = 1 FOOT (22X34)
1/16 INCH = 1 FOOT (11X17)

APPLICANT

T-Mobile

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C™ TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

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PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
55491
PROFESSIONAL ENGINEER
07/29/21

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ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

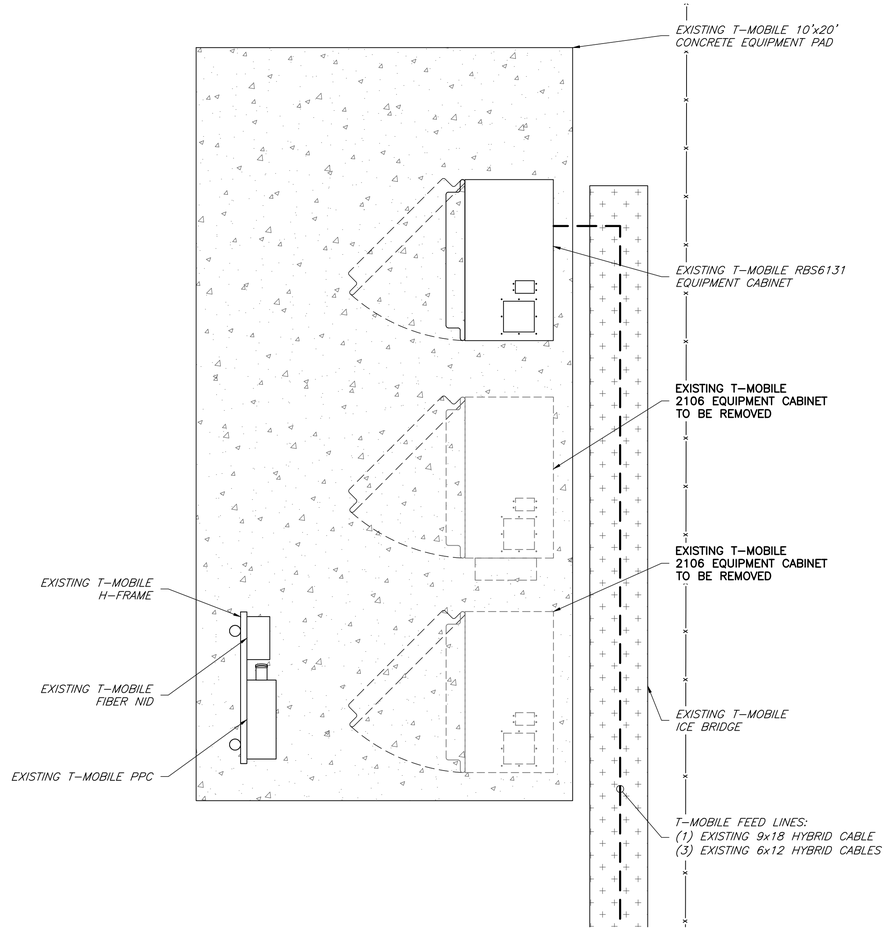
SHEET TITLE

COMPOUND PLAN & ELEVATION

SHEET NUMBER

C-1

TRUE NORTH



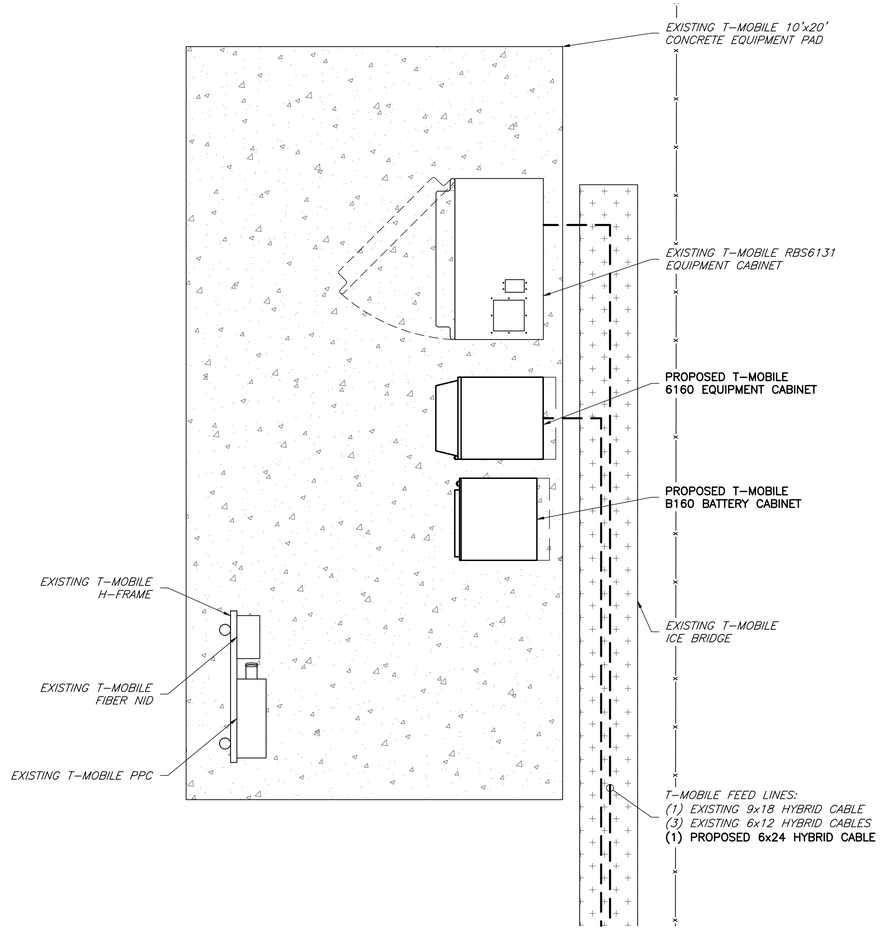
1 C-2 EXISTING EQUIPMENT PLAN

SCALE: 3/8" = 1' (22X34)
SCALE: 3/16" = 1' (11X17)

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)



2 C-2 PROPOSED EQUIPMENT PLAN

SCALE: 3/8" = 1' (22X34)
SCALE: 3/16" = 1' (11X17)

GRAPHIC SCALE

4 0 1 2 4 8

3/8 INCH = 1 FOOT (22X34)
3/16 INCH = 1 FOOT (11X17)

APPLICANT

T-Mobile

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901-A RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
55491
PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 7/1/2022.

ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

EQUIPMENT PLANS

SHEET NUMBER

C-2

ANTENNA SCHEDULE

SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA DIMENSIONS (HxWxD)	RAD CENTER	AZIMUTH	ELEC DOWNTILT	MECH DOWNTILT	RRU QUANTITY & MODEL	TMA/DIPLEXER QUANTITY & MODEL	CABLE QUANTITY & TYPE	CABLE LENGTH
A1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*75°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE* *(1) EXISTING 9x18 HYBRID CABLE* (1) PROPOSED 6x24 HYBRID CABLE	180.00'
A2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*75°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
A3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	75°	4°/4°	0°	–	–		
A3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	75°	4°/4°	0°	–	–		
B1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*195°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE*	*180.00'*
B2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*195°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
B3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	195°	4°/4°	0°	–	–		
B3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	195°	4°/4°	0°	–	–		
C1	*EXISTING*	*ERICSSON*	*AIR3246_B66*	*58.10"x15.70"x9.40"*	*130.00'*	*310°*	*5°/5°/5°/5°*	*0°*	–	–	*(1) EXISTING 6x12 HYBRID CABLE*	*180.00'*
C2	*EXISTING*	*RFS*	*APXVAARR24_43-U-NA20*	*95.90"x24.00"x8.50"*	*130.00'*	*310°*	*4°/4°/5°/5°*	*0°*	*(1) EXISTING RADIO 4449 B71+B85* (1) EXISTING RADIO 4415 B25 TO BE REMOVED (1) PROPOSED RADIO 4460 B25+B66	–		
C3	EXISTING TO BE REMOVED	ERICSSON	AIR32DB B2A/B66A	56.60"x12.90"x8.70"	130.00'	310°	4°/4°	0°	–	–		
C3	PROPOSED	ERICSSON	AIR6449 B41	33.1"x20.5"x8.5"	130.00'	310°	4°/4°	0°	–	–		

NOTES:
1. CONTRACTOR TO VERIFY PROPOSED ANTENNA INFORMATION IS THE MOST CURRENT DATA AT TIME OF CONSTRUCTION.
2. CONTRACTOR TO CONFIRM CABLE LENGTHS PRIOR TO CONSTRUCTION.

1 / A-1 ANTENNA CONFIGURATION SCHEDULE
NOT TO SCALE

NOTE:
ALL EXISTING/UNUSED TMA'S & COAX ARE TO BE REMOVED.

APPLICANT

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T-MOBILE NORTHEAST LLC

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STATE OF MARYLAND
TRENT T. SNARR
07/29/21
55491
PROFESSIONAL ENGINEER

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ENGINEER

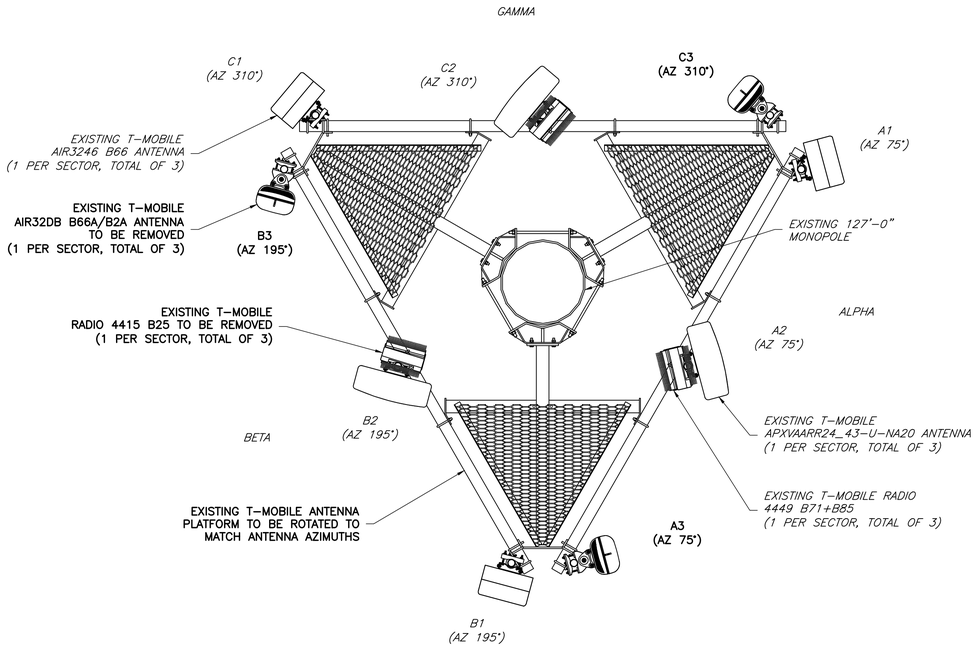
TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

ANTENNA SCHEDULE

SHEET NUMBER

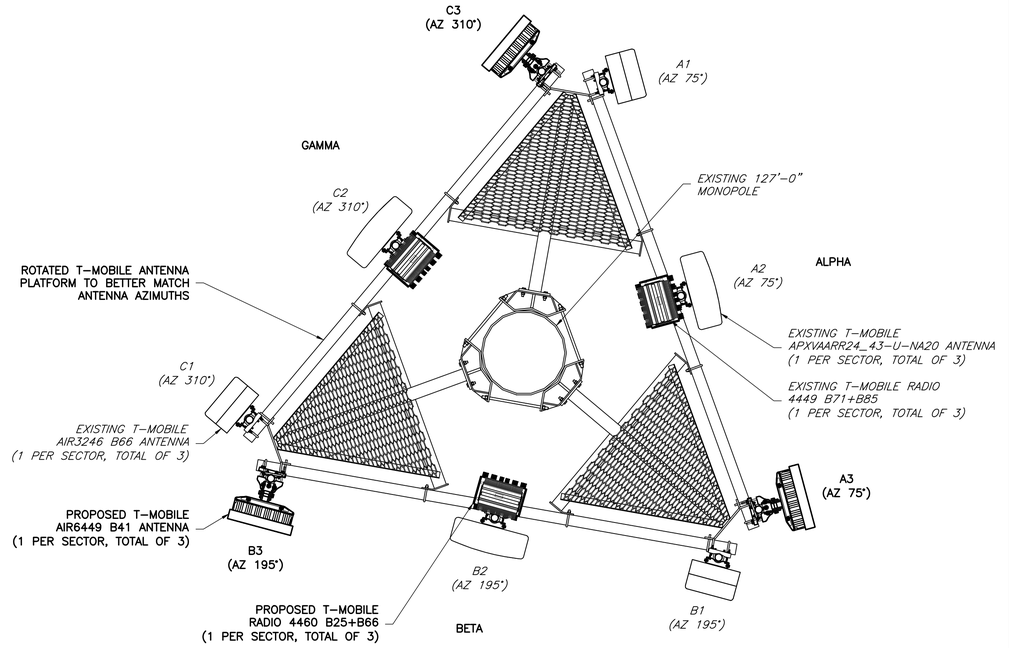
A-1



1 A-2 EXISTING ANTENNA ORIENTATION PLAN

NOT TO SCALE

APPROX TRUE NORTH



2 A-2 PROPOSED ANTENNA ORIENTATION PLAN

NOT TO SCALE

APPROX TRUE NORTH

APPLICANT

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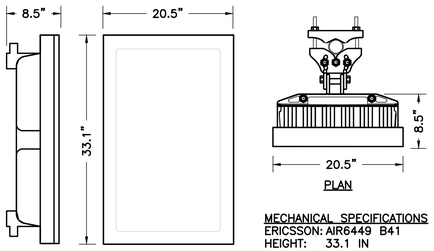
LICENSE #55491

SHEET TITLE

ANTENNA ORIENTATION PLANS

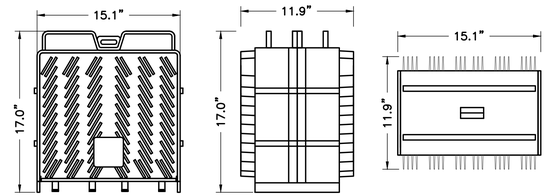
SHEET NUMBER

A-2



MECHANICAL SPECIFICATIONS
ERICSSON: AIR6449 B41
HEIGHT: 33.1 IN
LENGTH: 20.5 IN
WIDTH: 8.5 IN
WEIGHT: 101.6 LBS
MOUNTING KIT: SXK 109 2065/1
WEIGHT: 13.0 LBS

1 / A-3 ERICSSON PANEL ANTENNA
NOT TO SCALE



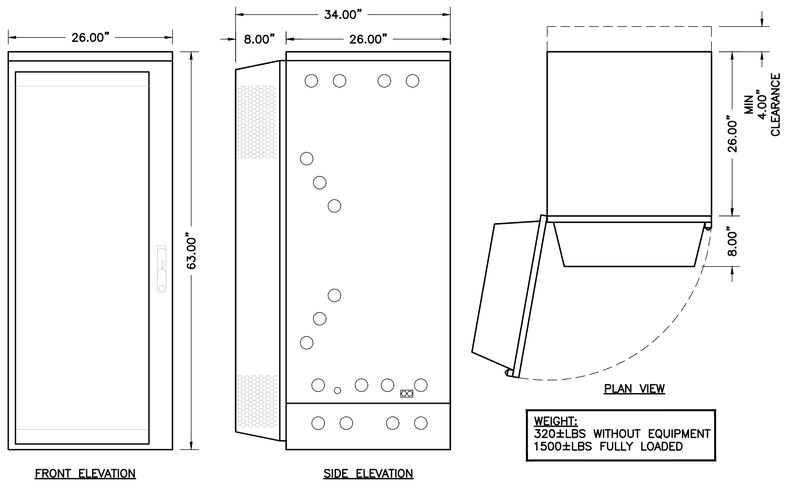
SIZE AND WEIGHT TABLE

RRU	HEIGHT	WIDTH	DEPTH	WEIGHT W/O BRACKET
RADIO 4460 B25+B66	17.0"	15.1"	11.9"	~109.0 LBS.

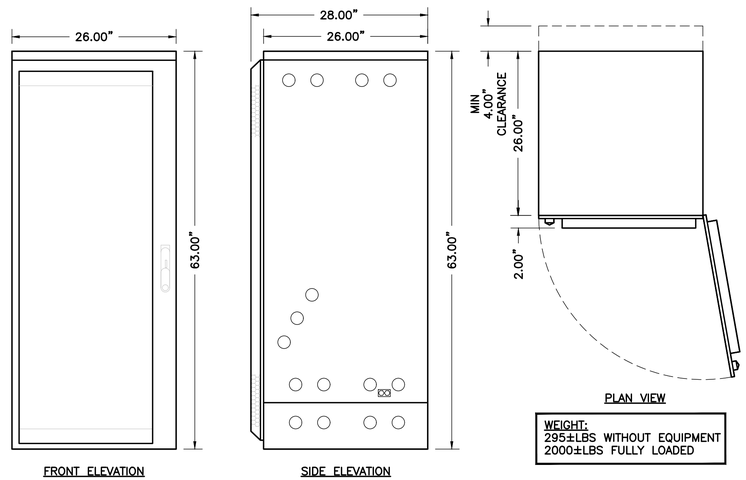
NOTES:

1. DO NOT PAINT THE RRU. RRU SOLAR SHIELD CAN BE PAINTED PER MANUFACTURER'S METHOD OF PROCEDURE.

2 / A-3 ERICSSON REMOTE RADIO UNIT (RRU)
NTS



3 / A-3 6160 ENCLOSURE CABINET
NOT TO SCALE



4 / A-3 B160 BATTERY CABINET
NOT TO SCALE

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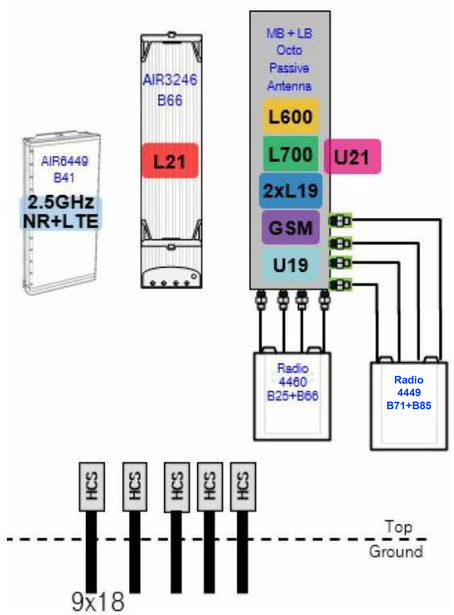
SHEET TITLE

EQUIPMENT SPECIFICATIONS & DETAILS

SHEET NUMBER

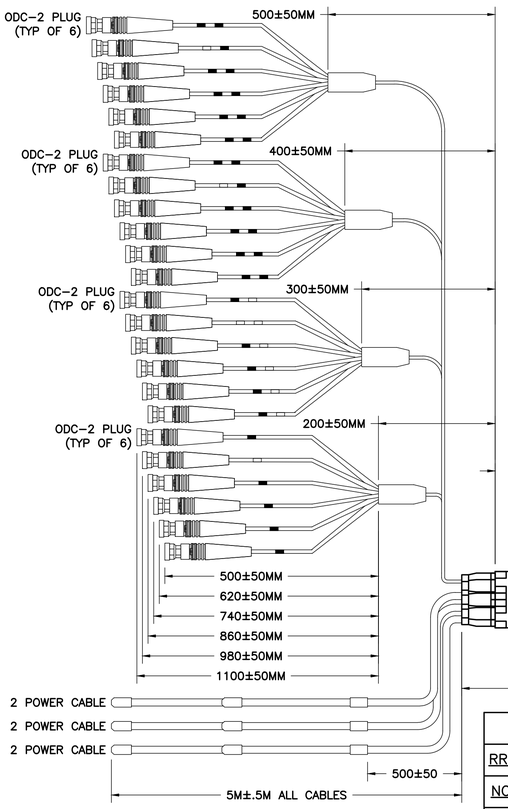
A-3

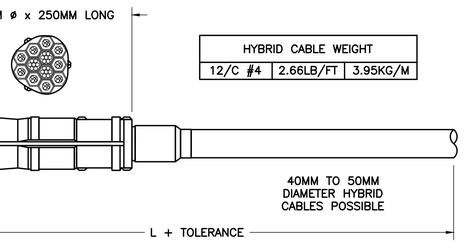


1 / A-4 67D5A998ME OUTDOOR RF DESIGN SCHEMATIC

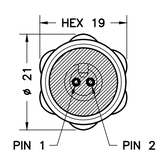
NOT TO SCALE

SIDE A





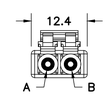
HYBRID CABLE WEIGHT		
12/C #4	2.66LB/FT	3.95KG/M



ODC–2 PLUG FRONT VIEW

TOLERANCE	ASSEMBLY LENGTH
+80	L < 5M
+2%	L ≥ 5M

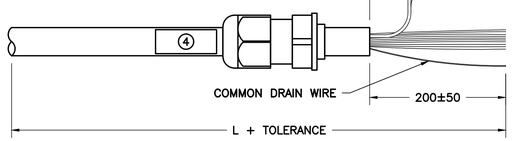
POWER	
LENGTH	DIAMETER
L ≤ 60M	6MM²(10AWG)
L ≥ 60M	10MM²(8AWG)



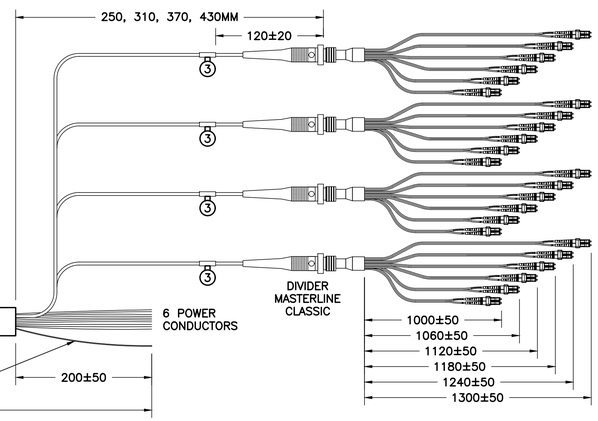
LC DUPLEX FRONT VIEW

③ STANDARD LABEL 84002345

④ ATTENTION DO NOT TWIST PULLING TUBE — STANDARD LABEL 84087128



SIDE B



FIBER OPTIC						
RRH NO.	SIDE A ODC PLUG	SIDE A PIN	SIDE B PIN	SIDE B COLOR LCD BOOTS	SIDE B LENGTH	SIDE B RUBBER GROMMETS
1	ODC–2 RED	1	B	RED (SHORT BREAKOUT)	1000 ± 50	1
		2	A			
2	ODC–2 GREEN	1	B	GREEN	1060 ± 50	
		2	A			
3	ODC–2 BLUE	1	B	BLUE	1120 ± 50	1
		2	A			
4	ODC–2 YELLOW	1	B	YELLOW	1180 ± 50	
		2	A			
5	ODC–2 WHITE	1	B	WHITE	1240 ± 50	1
		2	A			
6	ODC–2 BLACK	1	B	BLACK	1300 ± 50	
		2	A			

POWER				
RRH NO.	REF HOOK UP	SIDE A WIRE COLOR	SIDE A CABLE DESIGNATOR	SIDE B WIRE COLOR
1	–48V	BLACK	RED	RED
	0V	GREY		BLACK
	GROUND	DRAIN		COMMON DRAIN
2	–48V	BLACK	GREEN	GREEN
	0V	GREY		WHITE
	GROUND	DRAIN		COMMON DRAIN
3	–48V	BLACK	BLUE	BLUE
	0V	GREY		ORANGE
	GROUND	DRAIN		COMMON DRAIN

POWER				
RRH NO.	REF HOOK UP	SIDE A WIRE COLOR	SIDE A CABLE DESIGNATOR	SIDE B WIRE COLOR
4	–48V	BLACK	YELLOW	RED
	0V	GREY		BLACK
	GROUND	DRAIN		COMMON DRAIN
5	–48V	BLACK	WHITE	GREEN
	0V	GREY		WHITE
	GROUND	DRAIN		COMMON DRAIN
6	–48V	BLACK	BLACK	BLUE
	0V	GREY		ORANGE
	GROUND	DRAIN		COMMON DRAIN

2 / A-4 MLE HYBRID CABLE (6 POWER/24 FIBER)

NOT TO SCALE

APPLICANT

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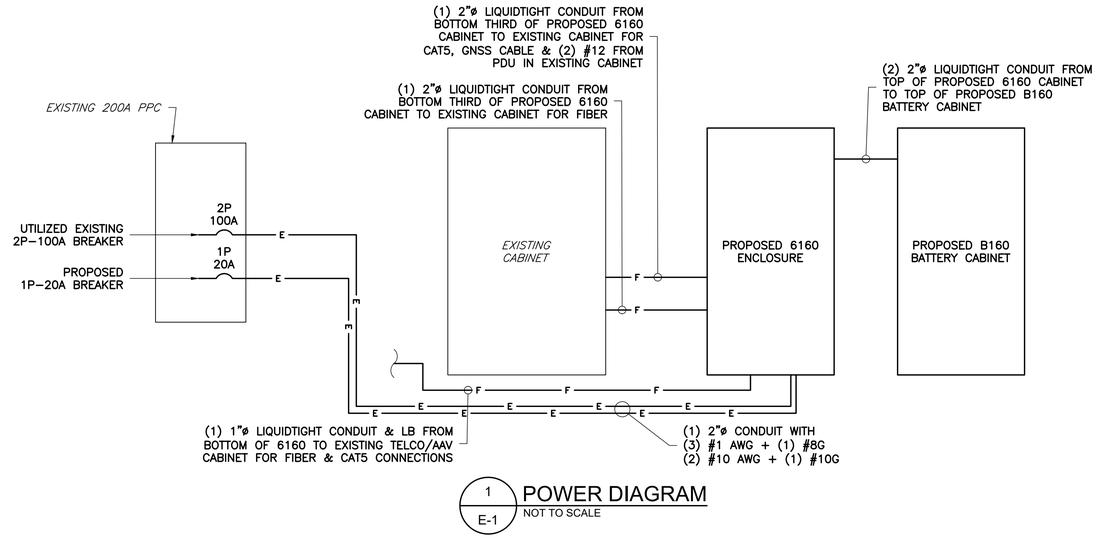
LICENSE #55491

SHEET TITLE

CABLING DETAILS & RF PLUMBING DIAGRAM

SHEET NUMBER

A-4



1 / E-1 POWER DIAGRAM
NOT TO SCALE

PPC PANEL

MAIN BREAKER RATING (A): 200 | SYSTEM VOLTAGE (V): 240 | PHASE: 1 WIRE: 3 BRANCH CB: 24

CKT	CIRCUIT DESCRIPTION	WATTAGE C	WATTAGE NC	POLE	BRK	LOAD PER PHASE A	LOAD PER PHASE B	BRK	POLE	WATTAGE NC	WATTAGE C	CIRCUIT DESCRIPTION	CKT
1	SURGE SUPPRESSOR	0	0	2	60	240		20	1	240	0	LIGHT	2
3		0	0				360	20	1	360	0	RECEPTACLE	4
5		0	0			0		**40**	**2**	**0**	**0**	***BTS #2 (TURN OFF)	6
7	***6160 GFCI**	**0**	**360**	**1**	**20**		360			**0**	**0**		8
9	****6160 EQUIPMENT CABINET**	**0**	**7000**	**2**	**100**	7780		30	1	780	0	CSC CABINET	10
11		**0**	**7000**				14200	150	2	7200	0	6131 CABINET	12
13	MCP BETA	0	680	2	20	7880				7200	0		14
15		0	680				7880			7200	0		16
17		0	0			7200				7200	0		18
19		0	0				0			0	0		20
21		0	0			0				0	0		22
23		0	0				0			0	0		24
						TOTAL LOADS PER PHASE							
						23100	22800						

NOTES

***INSTALL (1) NEW 1P-20A BREAKER FOR 6160 GFCI TO REPLACE (1) EXISTING 2P-40A BREAKER FOR BTS #1.**
****UTILIZE (1) EXISTING 2P-100A BREAKER FOR 6160 EQUIPMENT CABINET.**
*****TURN OFF (1) EXISTING 2P-40 BREAKER FOR BTS #2.**

SUBTOTAL CONTINUOUS	0
SUBTOTAL NON-CONTINUOUS	45900
125% TOTAL CONTINUOUS (VA)	0
100% TOTAL NON-CONTINUOUS (VA)	45900
TOTAL AMPS	191.25
TOTAL CONNECTED LOAD (KVA)	45.90
SPARE CAPACITY (A)	8.75

2 / E-1 PANEL SCHEDULE
NOT TO SCALE

APPLICANT

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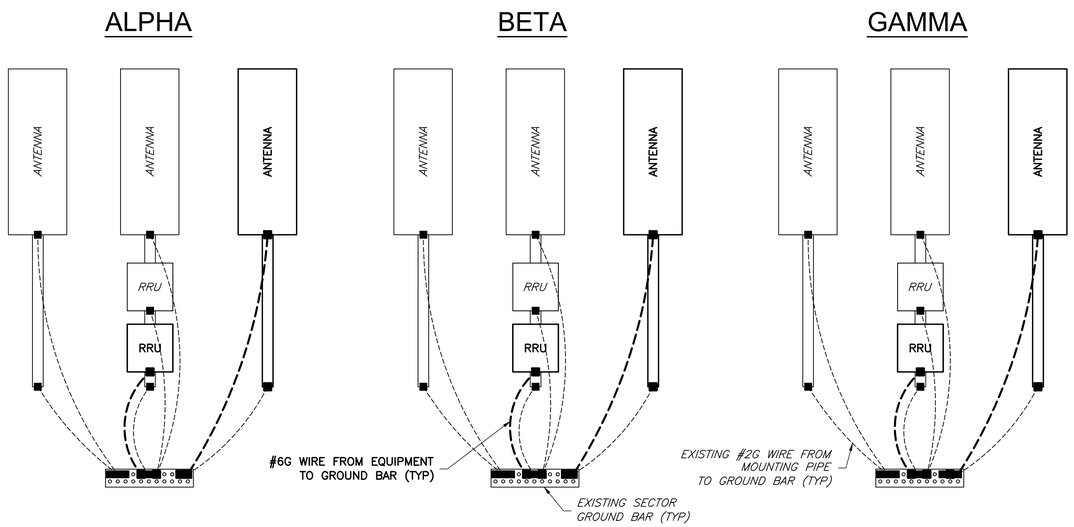
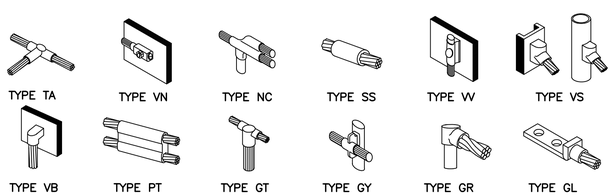
ELECTRICAL DETAILS

SHEET NUMBER

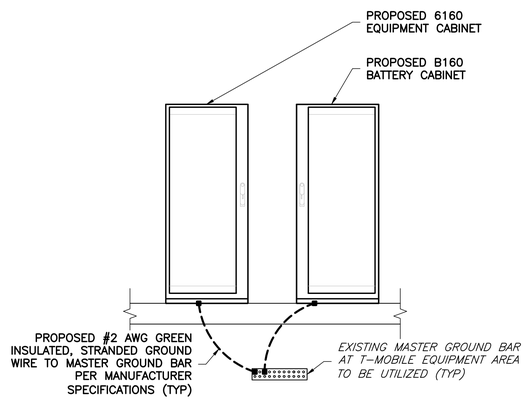
E-1



1 / G-1 ANTENNA GROUNDING DETAIL
NTS



2 / G-1 GROUNDING CONNECTION DETAILS
NOT TO SCALE



3 / G-1 CABINET GROUNDING DIAGRAM
NOT TO SCALE

GROUNDING LEGEND

- MECHANICAL COMPRESSION CONNECTION
- CADWELD CONNECTION
- EXOTHERMIC WELD CONNECTION
- PROPOSED GROUND WIRING
- EXISTING GROUND WIRING

APPLICANT

T-MOBILE NORTHEAST LLC

12050 BALTIMORE AVENUE
BELTSVILLE, MD 20705
OFFICE: (240) 264-8600
FAX: (240) 264-8610

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

SITE INFORMATION

7WAN290A
BOE - KENNEDY HIGH SCHOOL
1901-A RANDOLPH ROAD
SILVER SPRING, MD 20902
MONTGOMERY COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
0	07/29/21	FINAL	JNW

PROFESSIONAL STAMP

STATE OF MARYLAND
TRENT TRAVIS SNARR
PROFESSIONAL ENGINEER
07/29/21

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE OF 08/2022.

ENGINEER

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

G-1

STRUCTURAL NOTES

STRUCTURAL DESIGN CRITERIA:

STRUCTURAL DESIGN IS BASED ON THE 2018 INTERNATIONAL BUILDING CODE & 2018 INTERNATIONAL EXISTING BUILDING CODE.

LOCATION: MONTGOMERY COUNTY, MD

CONSTRUCTION MATERIAL SELF WEIGHT PER ASCE 7-16

ULTIMATE WIND SPEED:	115 MPH
OCCUPANCY CATEGORY:	II
EXPOSURE CATEGORY:	B
TOPOGRAPHIC CATEGORY:	1

1. THE LATEST EDITION OF THE FOLLOWING SPECIFICATIONS SHALL GOVERN:
   A. AISC – "ALLOWABLE STRESS DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
   B. AISC – "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
   C. AWS – "D1.1 STRUCTURAL WELDING CODE – STEEL".

2. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

STRUCTURAL WIDE FLANGE & M SHAPES	A992 OR A572 Fy = 50KSI
OTHER STRUCTURAL SHAPES AND PLATES	A36 Fy = 36 KSI
STRUCTURAL TUBING	A500, GRADE B Fy = 46 KSI
HIGH STRENGTH BOLTS	A325
THREADED RODS	A354, GRADE BC
ANCHOR BOLTS	A325 OR A354 BC
PIPE (HANDRAIL)	SCH 40 PIPE

3. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES. UNLESS OTHERWISE NOTED PROVIDE CONTINUOUS MINIMUM SIZED FILLET WELDS PER AISC REQUIREMENTS.

4. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED. ALL HOLES IN BEARING PLATES SHALL BE DRILLED.

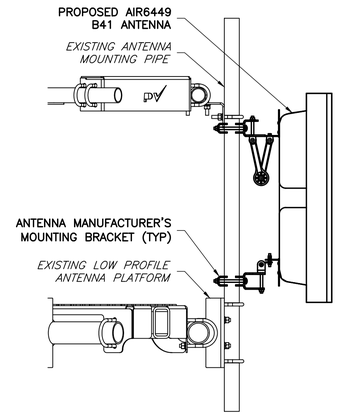
5. ALL STEEL TO BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123.

6. EPOXY ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

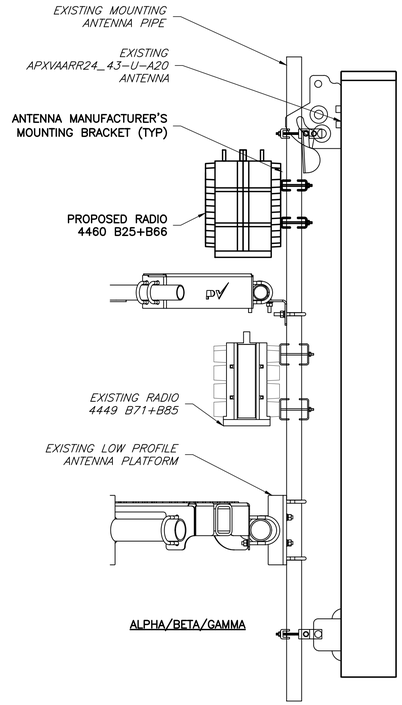
7. ALL BOLTS SHALL BE TIGHTENED USING TURN-OF-THE-NUT METHOD PER AISC SPECIFICATIONS USING STANDARD HOLES.

8. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND FIT PRIOR TO FABRICATION.

10. THE FABRICATOR SHALL FURNISH CHECKED SHOP AND ERECTION DRAWINGS TO THE ENGINEER, AND OBTAIN APPROVAL PRIOR TO FABRICATING ANY STRUCTURAL STEEL. SHOP DRAWINGS SHALL CONFORM TO AISC "DETAILING FOR STEEL CONSTRUCTION".



1 ST-1 AIR6449 B41 MOUNTING DETAIL
NTS



2 ST-1 RADIO MOUNTING DETAIL
NTS

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LICENSE #55491

SHEET TITLE

ANTENNA MOUNTING DETAILS

SHEET NUMBER

ST-1