

App No:

2021071498

Revisions received 7.23.21 - JE

Application General Information

Applicant Name	SMARTLINK GROUP / T-MOBILE	Updated	7/8/2021
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 remove (6) existing panel antennas; Install (9) new panel antennas; remove (3) existing RRUs; install (6) new RRUs; install (1) new electrical panel board at an existing telecommunications facility.

T-Mobile will also install (2) new equipment cabinets on a new steel platform located at the existing equipment compound on the ground level.

Site Information

Site Id	567	Zoning	R-10
Structure Type	Building	Latitude	38.995619
Street Address	820 University Blvd East	Longitude	-76.992603
County Site Name	University Manor Apartments	Ground Elevation	251
Carrier Site Name	7WAS565A	City	Silver Spring
Site Owner	University Manor Apartments	Lease Status	Leased
Structure Owner	UNIVERSITY MANOR APTS LTD PART	Does the structure require an antenna structure registration under FCC Title 47	No
Existing Structure Height	35	Distance to Residential Property (New, Replacement, Colocation Only)	
Provide the proposed height of the replacement structure without any antenna (New, Replacement Apps Only)		Distance to Commercial Property (New, Replacement, Colocation Only)	

Justification of why this site was selected:

SITE IS AN EXISTING TELECOMMUNICATIONS FACILITY

Nearby Sites (New, Replacement Apps Only):

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11:09:19 AM

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

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6409 Questions

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

No

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?

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?

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?

Will the proposed installation require more the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets?YN

Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater?

Does the structure or current installation have concealment elements/measures?

Yes

Will the proposed installation require excavation or expansion outside the current boundaries of the site?

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

The concealment will not be modified

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

49.2

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

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Antenna Infomatio

Antenna Compliance

Compliance Desc

Antenna Location

Antenna Loc. Desc.

Env. Assessment

Cat. Excluded?

Routine Env. Evaluation

Antenna Model

Frequency

RAD Center Max ERP Antenna Dimensions Quantity

Antenna Model

Frequency

RAD Center Max ERP Antenna Dimensions Quantity

Antenna Model

Frequency

RAD Center Max ERP Antenna Dimensions Quantity

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▼ Search

Boulevard East, Silver Spring, MD

ex: 37.407229, -122.107162

[Get Directions](#) [History](#)

 820 University Blvd E

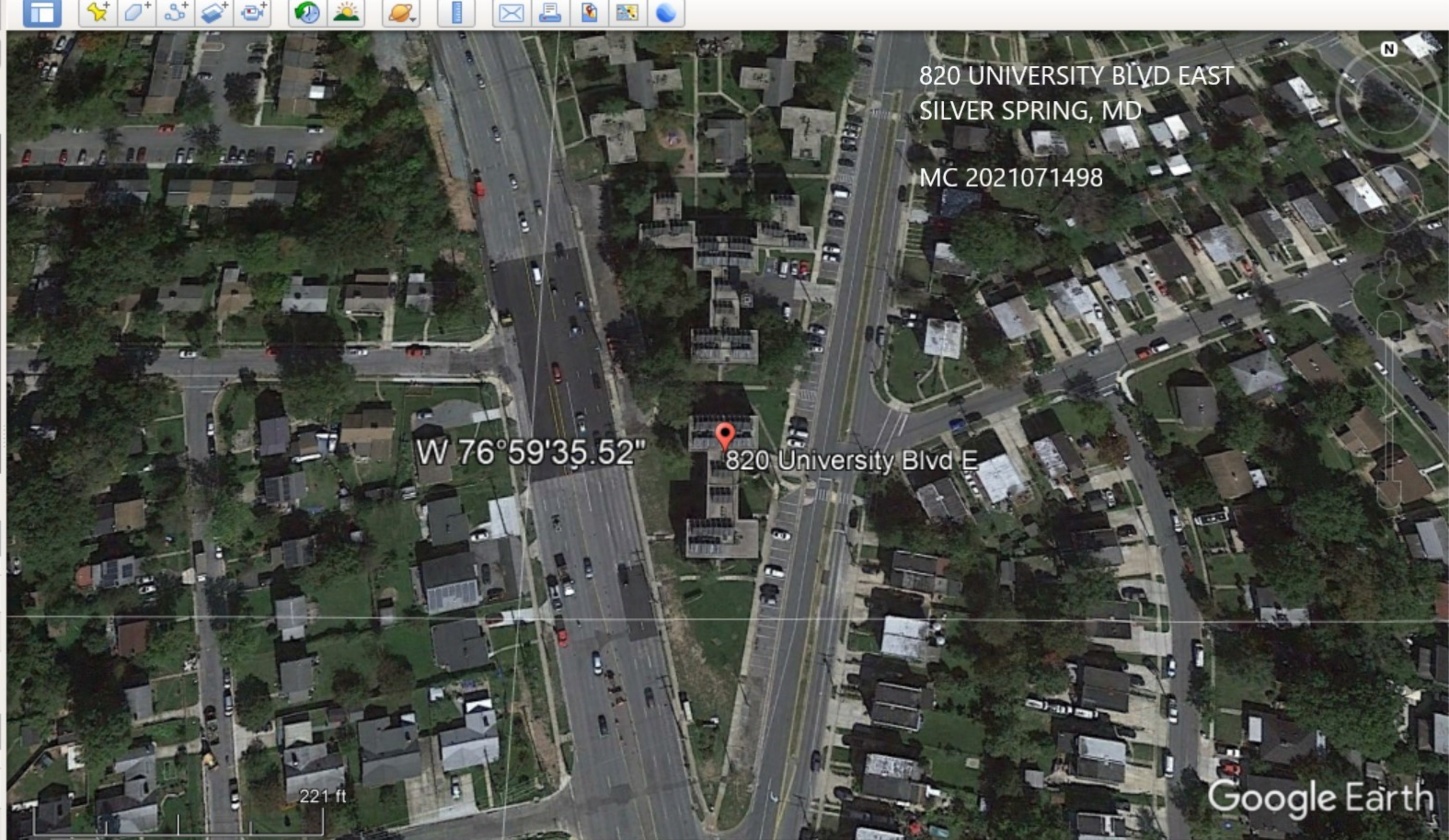
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▼ Layers

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- ☐  Announcements
- ☐  Photos
- ☒  3D Buildings



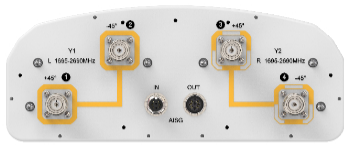
Radio Specs: AIR6488 vs. AIR6449

Use a larger antenna envelope for entitlement so you can easily switch to the newer version

	AIR6488 B41	AIR6449 B41
Availability	Q1 2019	June 2020
Antenna Branches	64T64R	64T64R
Antenna Elements	8 columns x 8 rows, subarray size 1x2, so in total 128 AE (or 64 X-pol)	8 columns x 8 rows, subarray size 1x3, so in total 192 AE (or 96 X-pol)
Operation band	2496 – 2690 MHz	2496 – 2690 MHz
IBW	100 MHz	Full IBW (194 MHz)
Output Power	200W	300W
NR+LTE Support	Split mode and Mixed mode (4Q19)	Mixed mode
Dimensions (H x W x D) w/o protruding	884 x 520 x 183 mm 34.8 x 20.5 x 7.2 inches	840 x 520 x 210mm 33.1 x 20.5 x 8.3 inches
Weight	58 kg 128 lbs	47 kg 104 lbs
CPRI	3 x 10 Gbps eCPRI	4 x 25G eCPRI
Multi-layer MU MIMO	DL/UL 16/8	DL/UL 16/8

VV-65A-R1

CommScope-Proprietary and Confidential. Preliminary specifications are for illustrative purposes only and will be updated prior to publication.



4-port sector antenna, 4x 1695–2690 MHz, 65° HPBW, 1x RET, The two high band arrays utilize a common tilt.

- The RET interface comprises one pair of AISG input/output ports

General Specifications

Antenna Type	Sector
Band	Single band
Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Performance Note	Outdoor usage
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, Low band	4
RF Connector Quantity, Total	4

Remote Electrical Tilt (RET) Information

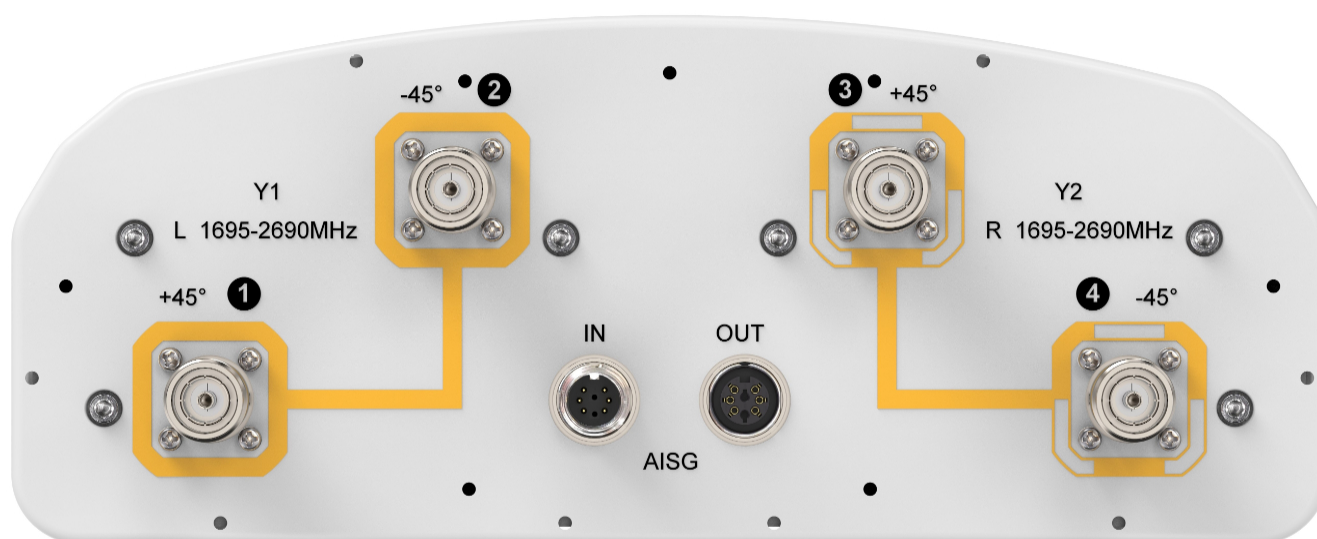
Protocol	3GPP/AISG 2.0
Power Consumption, idle state, maximum	1 W
Power Consumption, normal conditions, maximum	10 W
Input Voltage	10–30 Vdc
Internal RET, High band	1
RET Hardware	CommRET v2
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	1 Male 1 Female

Dimensions

Length	1390 mm 54.7 in
Width	305 mm 12.0 in
Depth	118 mm 4.6 in

VV-65A-R1

Port Configuration



Electrical Specifications

Operating Frequency Band	1695 – 2690 MHz
Total Input Power, maximum	450 W
Impedance	50 ohm
Polarization	±45°

VV-65A-R1

Electrical Specifications

RF Ports	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4
Array	Y1,Y2	Y1,Y2	Y1,Y2	Y1,Y2
Frequency Band,MHz	1695-1990	1920-2200	2300-2500	2490-2690
Gain, dBi	17.7	18.2	18.5	18.6
Beamwidth, Horizontal, degrees	66	66	63	62
Beamwidth, Vertical, degrees	6.7	6.1	5.4	5.2
Beam Tilt, degrees	0-12	0-12	0-12	0-12
USLS (First Lobe), dB	17	19	22	22
Front-to-Back Total Power at 180° ± 30°, dB	26	27	26	26
Front-to-Back Ratio at 180°, dB	31	32	29	31
Isolation, Cross Polarization, dB	30	30	30	30
Isolation, Inter-band, dB	28	28	28	28
VSWR Return loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153
Input Power per Port, maximum, watts	300	300	300	250
Input Power per port, Maximum (at elevated temp 50°C), Watt	250	250	250	200
CPR at Boresight, dB	17	19	21	20
CPR at Sector, dB	15	14	8	9

Electrical Specifications, BASTA

RF Ports	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4
Array	Y1,Y2	Y1,Y2	Y1,Y2	Y1,Y2
Frequency Band,MHz	1695-1990	1920-2200	2300-2500	2490-2690
Gain by all Beam Tilts, average, dBi	17.4	17.9	18.3	18.2
Gain by all Beam Tilts Tolerance, dBi	±0.5	±0.4	±0.4	±0.5
Gain by Beam Tilt, average, Min Tilt, dBi	17.3	17.9	18	18.3
Gain by Beam Tilt, average, Mid Tilt, dBi	17.5	18	18.4	18.4
Gain by Beam Tilt, average, Max Tilt, dBi	17.3	17.7	18.1	17.7
Beamwidth, Horizontal Tolerance, degrees	±2.6	±1.9	±2.1	±2.8
Beamwidth, Vertical Tolerance, degrees	±0.4	±0.5	±0.2	±0.3
USLS, beampeak to 20° above beampeak, dB	17	17	19	17
Front-to-Back Total Power at 180° ± 30°, dB	26	27	26	26
CPR at Boresight, dB	17	19	21	20
CPR at Sector, dB	15	14	8	9

Material Specifications

Radome Material	PVC, UV resistant
Reflector Material	Aluminum

VV-65A-R1

Mechanical Specifications

Wind Loading at Velocity, frontal	494 N @ 150 km/h 111.1 lbf @ 150 km/h
Wind Loading at Velocity, lateral	102 N @ 150 km/h 22.9 lbf @ 150 km/h
Wind Loading at Velocity, rear	598 N @ 150 km/h 134.4 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Packaging and Weights

Length, packed	1525 mm 60.0 in
Width, packed	413 mm 16.3 in
Depth, packed	249 mm 9.8 in
Net Weight, without mounting kit	11.2 kg 24.7 lb
Weight, gross	19.5 kg 43.0 lb

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
CHINA-ROHS	Above maximum concentration value
ROHS	Compliant/Exempted



Included Products

600899A-2 — Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance
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Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

FEATURES / BENEFITS

This antenna provides a 8 Port multi-band flexible platform for advanced use for flexible use in deployment scenarios for encompassing 600MHz, 700MHz, AWS & PCS applications.



- ➔ 24 Inch Width For Easier Zoning
- ➔ Field Replaceable (Integrated) AISG RET platform for reduced environmental exposure and long lasting quality
- ➔ Superior elevation pattern performance across the entire electrical down tilt range
- ➔ Includes three AISG RET motors - Includes 0.5m AISG jumper for optional daisy chain of two high band RET motors for one single AISG point of high band tilt control.
- ➔ Low band arrays driven by a single RET motor

Technical Features

LOW BAND LEFT ARRAY (617-746 MHZ) [R1]

Frequency Band	MHz	617-698	698-746
Gain Over All Tilts	dBi	15.1 +/- .3	15.5 +/- .3
Horizontal Beamwidth @3dB	Deg	65 +/- 4	62 +/- 2
Vertical Beamwidth @3dB	Deg	11.4 +/- .7	10.4 +/- .5
Electrical Downtilt Range	Deg	0-12	0-12
Upper Side Lobe Suppression 0 to +20	dB	19	20
Front-to-Back, at +/-30°, Copolar	dB	25	24
Cross Polar Discrimination (XPD) @ Boresight	dB	19	19
Cross Polar Discrimination (XPD) @ +/-60	dB	5	3
3rd Order PIM 2 x 43dBm	dBc		-153
VSWR	-	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25
Maximum Effective Power per Port	Watt	250	250

LOW BAND RIGHT ARRAY (617-746 MHZ) [R2]

Frequency Band	MHz	617-698	698-746
Gain Over All Tilts	dBi	14.8 +/- .2	15.1 +/- .2
Horizontal Beamwidth @3dB	Deg	65 +/- 4	62 +/- 2
Vertical Beamwidth @3dB	Deg	11.4 +/- .8	10.3 +/- .5
Electrical Downtilt Range	Deg	0-12	0-12
Upper Side Lobe Suppression 0 to +20	dB	19	20
Front-to-Back, at +/-30°, Copolar	dB	25	23
Cross Polar Discrimination (XPD) @ Boresight	dB	19	19
Cross Polar Discrimination (XPD) @ +/-60	dB	5	3
3rd Order PIM 2 x 43dBm	dBc		-153
VSWR	-	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25
Maximum Effective Power per Port	Watt	250	250



Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

HIGH BAND LEFT ARRAY (1695-2200 MHZ) [B1]

Frequency Band	MHz	1695-1880	1850-1990	1920-2200
Gain Over All Tilts	dBi	17.3 +/- .7	17.8 +/- .4	18.5 +/- 1
Horizontal Beamwidth @3dB	Deg	66 +/- 7	59 +/- 4	59 +/- 6
Vertical Beamwidth @3dB	Deg	5.3 +/- .4	4.7 +/- .4	4.3 +/- .3
Electrical Downtilt Range	Deg	2-12	2-12	2-12
Upper Side Lobe Suppression 0 to +20	dB	15	15	15
Front-to-Back, at +/-30°, Copolar	dB	25	25	25
Cross Polar Discrimination (XPD) @ Boresight	dB	19	17	16
Cross Polar Discrimination (XPD) @ +/-60	dB	4	6	4
3rd Order PIM 2 x 43dBm	dBc	-153	-153	-153
VSWR	-	1.5:1	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25	25
Maximum Effective Power per Port	Watt	250	250	250

HIGH BAND RIGHT ARRAY (1695-2200 MHZ) [B2]

Frequency Band	MHz	1695-1880	1850-1990	1920-2200
Gain Over All Tilts	dBi	17.1 +/- .7	17.8 +/- .4	18.5 +/- 1
Horizontal Beamwidth @3dB	Deg	66 +/- 7	59 +/- 4	59 +/- 5
Vertical Beamwidth @3dB	Deg	5.2 +/- .4	4.7 +/- .4	4.3 +/- .3
Electrical Downtilt Range	Deg	2-12	2-12	2-12
Upper Side Lobe Suppression 0 to +20	dB	15	15	15
Front-to-Back, at +/-30°, Copolar	dB	25	24	25
Cross Polar Discrimination (XPD) @ Boresight	dB	20	17	16
Cross Polar Discrimination (XPD) @ +/-60	dB	4	6	5
3rd Order PIM 2 x 43dBm	dBc	-153	-153	-153
VSWR	-	1.5:1	1.5:1	1.5:1
Cross Polar Isolation	dB	25	25	25
Maximum Effective Power per Port	Watt	250	250	250



Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

ELECTRICAL SPECIFICATIONS

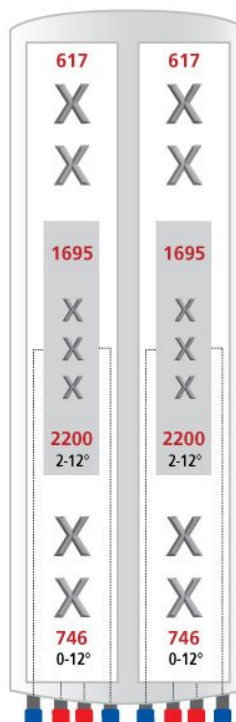
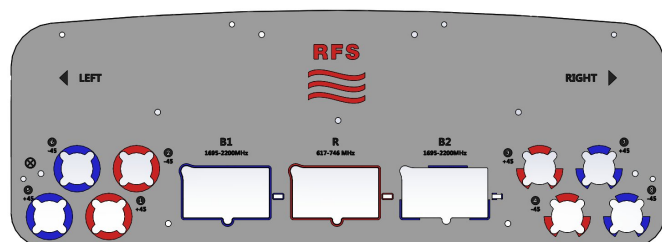
Impedance	Ohm	50.0
Polarization	Deg	±45°

MECHANICAL SPECIFICATIONS

Dimensions - H x W x D	mm (in)	2436 x 609 x 222 (95.9 x 24 x 8.7)
Weight (Antenna Only)	kg (lb)	58 (128)
Weight (Mounting Hardware only)	kg (lb)	11.5 (25.3)
Shipping Weight	kg (lb)	80 (176)
Connector type		8 x 4.3-10 female at bottom + 6 AISG connectors (3 male, 3 female)
Adjustment mechanism		Integrated RET solution AISG compliant (Field Replaceable) + Manual Override + External Tilt Indicator
Mounting Hardware Material		Galvanized steel
Radome Material / Color		Fiber Glass / Light Grey RAL7035

TESTING AND ENVIRONMENTAL

Temperature Range	°C (°F)	-40 to 60 (-40 to 140)
Lightning protection		IEC 61000-4-5
Survival/Rated Wind Velocity	km/h	241 (150)
Environmental		ETSI 300-019-2-4 Class 4.1E



ORDERING INFORMATION

Order No.	Configuration	Mounting Hardware	Mounting pipe Diameter	Shipping Weight
APXVAARR24_43-U-NA20	Field Replace RET included (3)	APM40-5E Beam tilt kit (included)	60-120mm	80 Kg



Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 15/15/18/18dBi, 2.4m (8ft), VET, RET, 0-12°/0-12°/2-12°/2-12°

External Document Links

APM40_Series_Installation_Instructions
Manual_Overdrive_Instructions
Global RFS Website

Notes

All electrical parameters are compliant with BASTA NGMN 9.6 requirements.

Available Configurations

APXVAARR24_43-U-NA20 -- External ACU is included -- shipping weight 80kg.

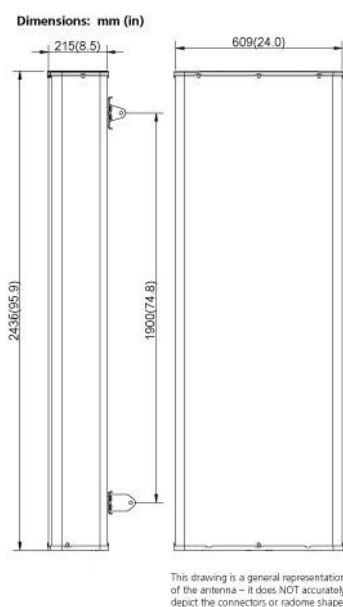
For additional mounting information please click "External Document Links".

This data is provisional and subject to changes.

External Link Reference

Global RFS Website

<http://www.rfsworld.com>



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

T-Mobile Proposed Facility

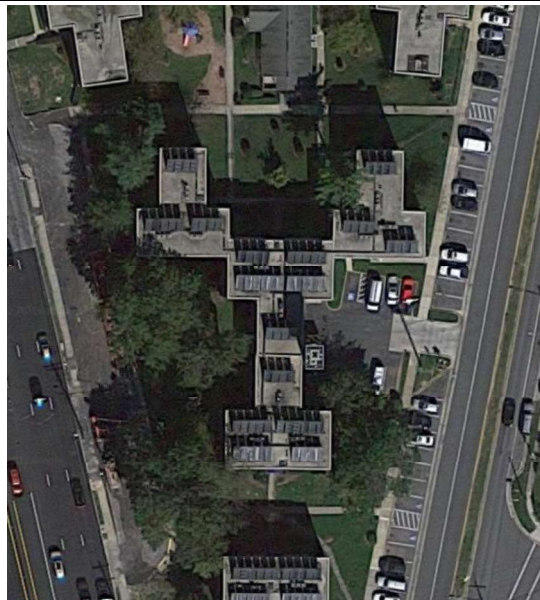
Site ID: 7VWAS565A

University Manor Smokestack

820 E University Boulevard, Silver Spring, Maryland 20903

June 23, 2021

EBI Project Number:
6221003030



Status:

The proposed site will be compliant with the installation of the mitigation measures described in Attachment I.

Remarks: See signage plan for mitigation measures to be installed upon upgrade/installation of the site to comply with FCC and T-Mobile standards.

Prepared by:



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I.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 7WAS565A located at 820 E University Boulevard 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 19.5400% of the FCC's general public limit (3.9080% of the FCC's occupational limit) at the main roof 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 main roof level, the maximum power density generated by the T-Mobile antennas is approximately 19.5400 percent of the FCC's general public limit (3.9080 percent of the FCC's occupational limit).

Based on worst-case predictive modeling, there are no modeled exposures on any accessible main roof 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 recommended at the site as presented in Attachment I. Posting of the signage brings the site into compliance with FCC rules and regulations.

2.0 MPE Calculations

Calculations were completed for the proposed T-Mobile Wireless antenna rooftop facility located at 820 E University Boulevard 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-sight 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 rooftop 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 rooftop.

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.

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	2	COMMSCOPE	VV-65A-R1B 03DT 2100	26.8	60	LTE	AWS - 2100 MHz	60	2	4076
A	2	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	60	LTE	PCS - 1900 MHz	60	2	3501
A	2	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	60	UMTS	PCS - 1900 MHz	30	2	1750
A	3	ERICSSON	SON_AIR6449 2500 LTE TB	28.8	60	LTE	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 NR TB	28.8	60	NR	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	60	LTE	2500 MHz	30	1	1611
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	60	NR	2500 MHz	30	1	1611
A	4	RFS	APXVAALL24 43-U-NA20 05DT 700	26.8	60	LTE	700 MHz	30	1	608
A	4	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	60	LTE	600 MHz	30	1	529
A	4	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	60	NR	600 MHz	80	1	1411
A	4	RFS	APXVAALL24 43-U-NA20 03DT 1900	26.8	60	UMTS/LTE	PCS - 1900 MHz	90	2	4878
B	1	COMMSCOPE	VV-65A-R1B 03DT 2100	26.8	140	LTE	AWS - 2100 MHz	60	2	4076
B	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	140	LTE	PCS - 1900 MHz	60	2	3501
B	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	140	UMTS	PCS - 1900 MHz	30	2	1750
B	2	ERICSSON	SON_AIR6449 2500 LTE TB	28.8	140	LTE	2500 MHz	90	1	15461
B	2	ERICSSON	SON_AIR6449 2500 NR TB	28.8	140	NR	2500 MHz	90	1	15461
B	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	140	LTE	2500 MHz	30	1	1611
B	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	140	NR	2500 MHz	30	1	1611
B	3	RFS	APXVAALL24 43-U-NA20 05DT 700	26.8	140	LTE	700 MHz	30	1	608
B	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	140	LTE	600 MHz	30	1	529
B	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	140	NR	600 MHz	80	1	1411
B	3	RFS	APXVAALL24 43-U-NA20 03DT 1900	26.8	140	UMTS/LTE	PCS - 1900 MHz	90	2	4878
C	1	COMMSCOPE	VV-65A-R1B 03DT 2100	26.8	270	LTE	AWS - 2100 MHz	60	2	4076
C	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	270	LTE	PCS - 1900 MHz	60	2	3501
C	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	270	UMTS	PCS - 1900 MHz	30	2	1750
C	2	ERICSSON	SON_AIR6449 2500 LTE TB	28.8	270	LTE	2500 MHz	90	1	15461
C	2	ERICSSON	SON_AIR6449 2500 NR TB	28.8	270	NR	2500 MHz	90	1	15461
C	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	270	LTE	2500 MHz	30	1	1611
C	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	270	NR	2500 MHz	30	1	1611
C	3	RFS	APXVAALL24 43-U-NA20 05DT 700	26.8	270	LTE	700 MHz	30	1	608
C	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	270	LTE	600 MHz	30	1	529
C	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	270	NR	600 MHz	80	1	1411
C	3	RFS	APXVAALL24 43-U-NA20 03DT 1900	26.8	270	UMTS/LTE	PCS - 1900 MHz	90	2	4878

• 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 main roof 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 rooftop.

The anticipated maximum contribution from each sector of the proposed T-Mobile facility is 19.5400% of the allowable FCC established general public limit (3.9080% 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 0.8000% of the FCC's general public limit (0.1600% 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.

EBI's modeling indicates that there are no areas on the walking/working surfaces at the rooftop and/or ground level in front of the T-Mobile antennas that may exceed the FCC standards for general population and/or occupational exposure. To reduce the risk of exposure and/or injury, EBI recommends that access to the rooftop or areas associated with the active antenna installation be restricted and secured where possible. In order to alert any workers potentially accessing the site, a blue Notice sign and a yellow Guidelines sign are recommended for installation at the access to the rooftop as depicted on the Signage Plan – Attachment I.

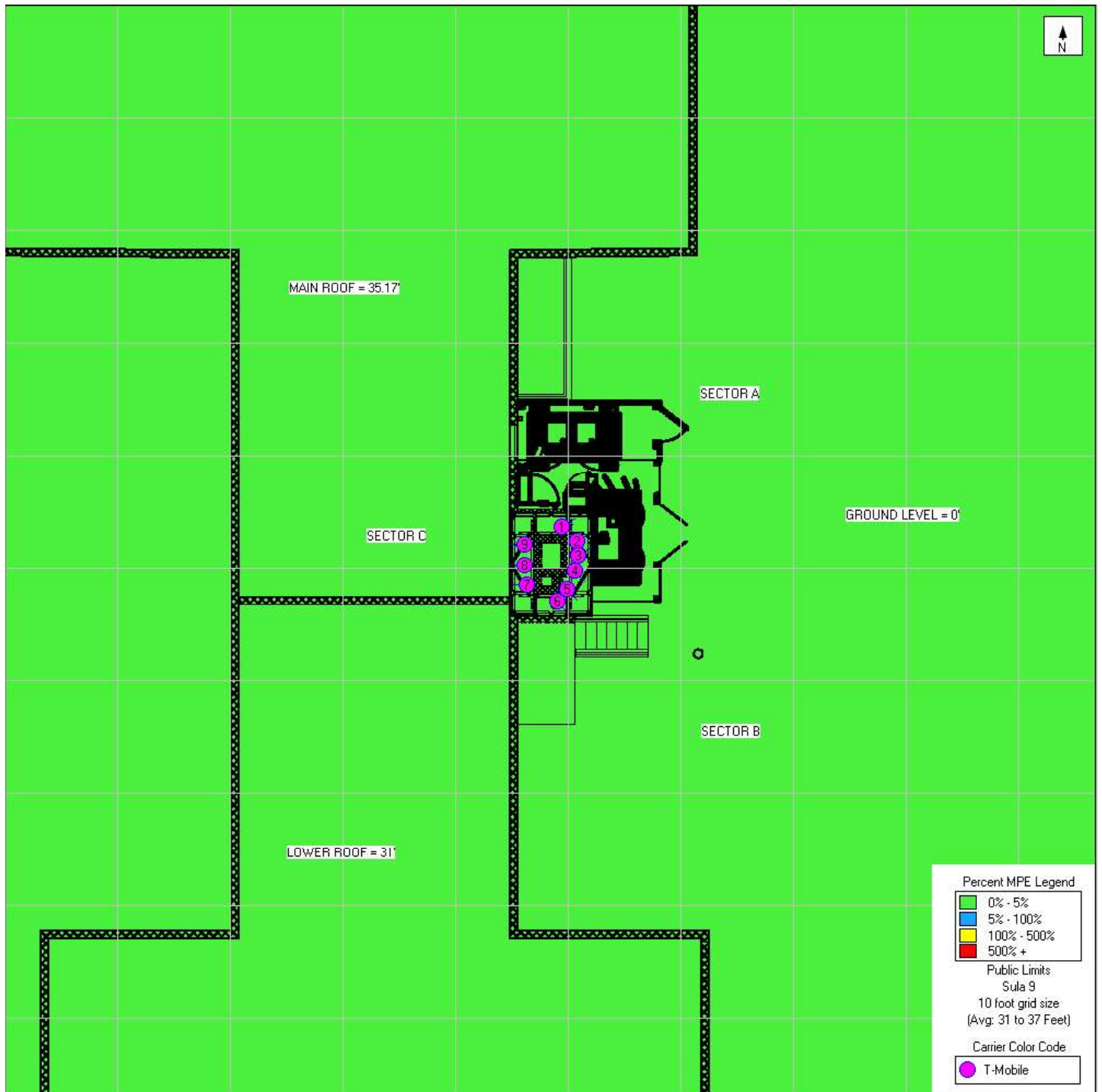
Attachment 1a: MPE Analysis and Recommended Signage (Main Roof Level)



Post at Roof Access Points



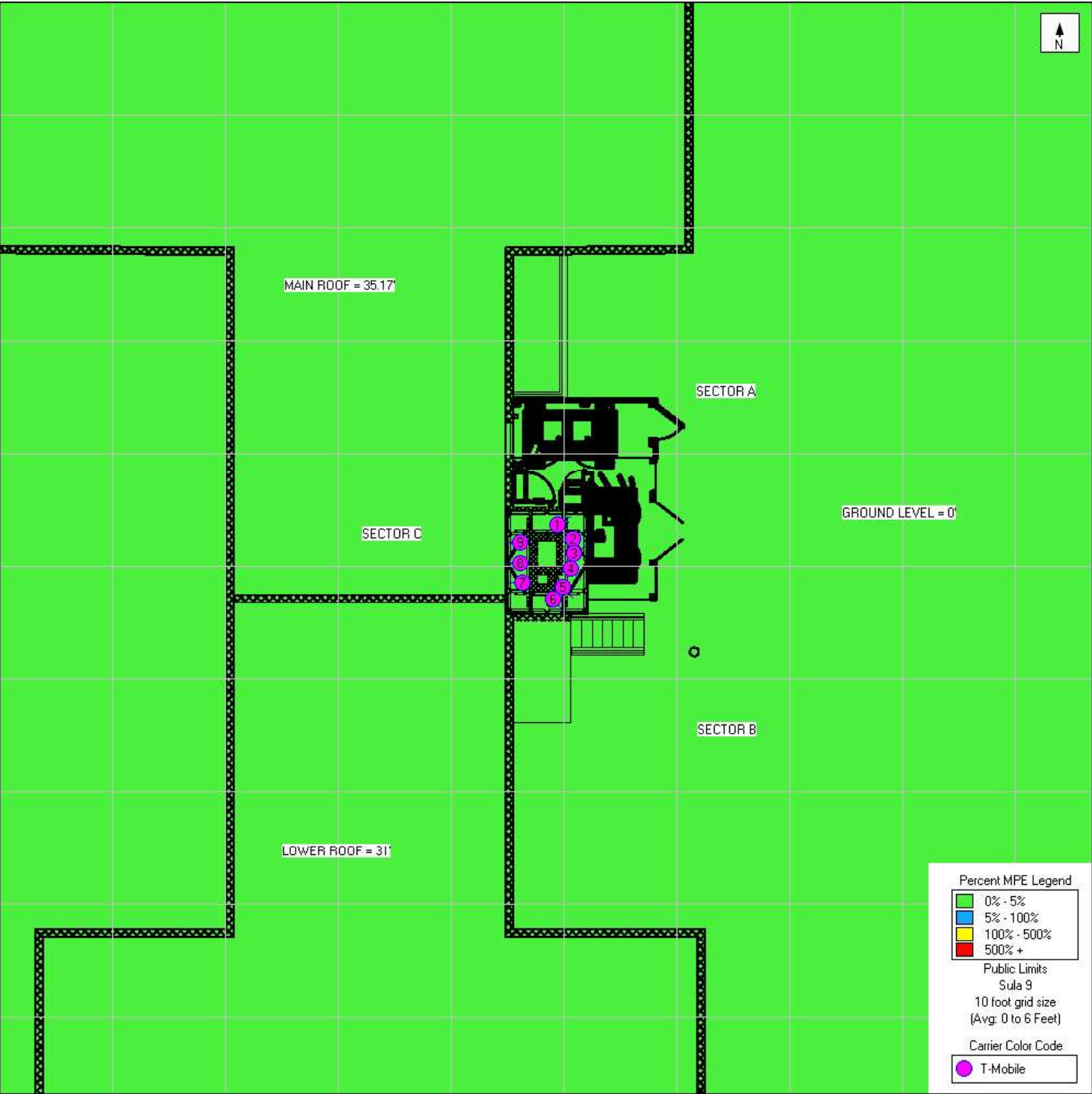
Attachment 1b: MPE Analysis and Recommended Signage (Lower Roof Level)



Post at Roof
Access Points



Attachment 1c: MPE Analysis (Ground Level)



Sign	Sign Count	Description	Posting Instructions
	I +	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.	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	I +	Guidelines Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	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 not required.
	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 not required.
Notes:	The proposed site will be compliant with the installation of the mitigation measures. 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	VV-65A-R1B 03DT 2100.ant	2100	6683.83	1.39	60	0	62.0
T-Mobile	1	2	ANT 1	VV-65A-R1B 03DT 1900.ant	1900	5741.50	1.39	60	0	62.0
T-Mobile	1	3	ANT 1	VV-65A-R1B 03DT 1900.ant	1900	2870.75	1.39	60	0	62.0
T-Mobile	2	1	ANT 2	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	60	0	64.0
T-Mobile	2	2	ANT 2	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	60	0	64.0
T-Mobile	2	3	ANT 2	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	60	0	64.0
T-Mobile	2	4	ANT 2	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	60	0	64.0
T-Mobile	3	1	ANT 3	APXVAALL24 43-U-NA20 05DT 700.ant	700	607.60	2.44	60	0	62.0
T-Mobile	3	2	ANT 3	APXVAALL24 43-U-NA20 05DT 600.ant	600	529.20	2.44	60	0	62.0
T-Mobile	3	3	ANT 3	APXVAALL24 43-U-NA20 05DT 600.ant	600	1411.20	2.44	60	0	62.0
T-Mobile	3	4	ANT 3	APXVAALL24 43-U-NA20 03DT 1900.ant	1900	8000.49	2.44	60	0	62.0
T-Mobile	4	1	ANT 4	VV-65A-R1B 03DT 2100.ant	2100	6683.83	1.39	140	0	62.0
T-Mobile	4	2	ANT 4	VV-65A-R1B 03DT 1900.ant	1900	5741.50	1.39	140	0	62.0
T-Mobile	4	3	ANT 4	VV-65A-R1B 03DT 1900.ant	1900	2870.75	1.39	140	0	62.0
T-Mobile	5	1	ANT 5	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	140	0	64.0
T-Mobile	5	2	ANT 5	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	140	0	64.0
T-Mobile	5	3	ANT 5	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	140	0	64.0
T-Mobile	5	4	ANT 5	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	140	0	64.0
T-Mobile	6	1	ANT 6	APXVAALL24 43-U-NA20 05DT 700.ant	700	607.60	2.44	140	0	62.0
T-Mobile	6	2	ANT 6	APXVAALL24 43-U-NA20 05DT 600.ant	600	529.20	2.44	140	0	62.0
T-Mobile	6	3	ANT 6	APXVAALL24 43-U-NA20 05DT 600.ant	600	1411.20	2.44	140	0	62.0
T-Mobile	6	4	ANT 6	APXVAALL24 43-U-NA20 03DT 1900.ant	1900	8000.49	2.44	140	0	62.0
T-Mobile	7	1	ANT 7	VV-65A-R1B 03DT 2100.ant	2100	6683.83	1.39	270	0	62.0
T-Mobile	7	2	ANT 7	VV-65A-R1B 03DT 1900.ant	1900	5741.50	1.39	270	0	62.0
T-Mobile	7	3	ANT 7	VV-65A-R1B 03DT 1900.ant	1900	2870.75	1.39	270	0	62.0
T-Mobile	8	1	ANT 8	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	270	0	64.0
T-Mobile	8	2	ANT 8	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	270	0	64.0
T-Mobile	8	3	ANT 8	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	270	0	64.0
T-Mobile	8	4	ANT 8	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	270	0	64.0
T-Mobile	9	1	ANT 9	APXVAALL24 43-U-NA20 05DT 700.ant	700	607.60	2.44	270	0	62.0
T-Mobile	9	2	ANT 9	APXVAALL24 43-U-NA20 05DT 600.ant	600	529.20	2.44	270	0	62.0
T-Mobile	9	3	ANT 9	APXVAALL24 43-U-NA20 05DT 600.ant	600	1411.20	2.44	270	0	62.0
T-Mobile	9	4	ANT 9	APXVAALL24 43-U-NA20 03DT 1900.ant	1900	8000.49	2.44	270	0	62.0

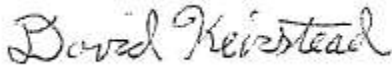
Note that Power (W) ERP/EiRP values are listed respective to the frequency of the antenna. (Values less than 1,000 MHz are listed as ERP and greater than 1,000 MHz are listed as EiRP.)

Appendix A: Certifications

Preparer Certification

I, David Keirstead, 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.

A rectangular box containing a handwritten signature in cursive script that reads "David Keirstead".

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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 and 800 MHz Bands is $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively, and the general population exposure limit for the PCS and AWS bands is $1000 \mu\text{W}/\text{cm}^2$. 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.



T-MOBILE NORTHEAST LLC

SITE ID: 7WAS565A
SITE NAME: UNIVERSITY MANOR SMOKESTACK
PROJECT: ANCHOR_PHASE 3_L600_CMP5

820 UNIVERSITY BLVD EAST
SILVER SPRING, MD 20903
67D97DB MUAC



SITE ID: 7WAS565A

**UNIVERSITY MANOR
SMOKESTACK**

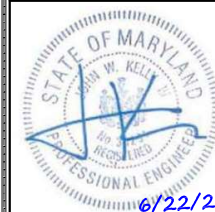
820 N UNIVERSITY BLVDE.
SILVER SPRING, MD 20903

EXISTING SMOKESTACK

PROJECT NO:	136043.004.01
CHECKED BY:	FWP

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	5/14/21	STH	FOR REVIEW
B	5/21/21	JJD	FOR REVIEW
D	5/27/21	JJD	FOR CONSTRUCTION
1	6/7/21	JJD	FOR CONSTRUCTION
2	6/22/21	JJD	FOR CONSTRUCTION

B&T ENGINEERING, INC.
07-48491
Expires 1/19/22



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

SHEET NUMBER: T-1	REVISION 2
-----------------------------	----------------------

PROJECT SUMMARY

PARCEL OWNER: UNIVERSITY MANOR APTS LTD PRNSHP
3 BETHESDA METRO CTR, STE 110
BETHESDA, MD 20814

JURISDICTION: MONTGOMERY COUNTY

NAD83

LATITUDE: 38° 59' 45.66" N
LONGITUDE: 76° 59' 33.16" W
GROUND ELEV: 251' AMSL

OCCUPANCY TYPE: UNMANNED

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

CONTACT INFORMATION

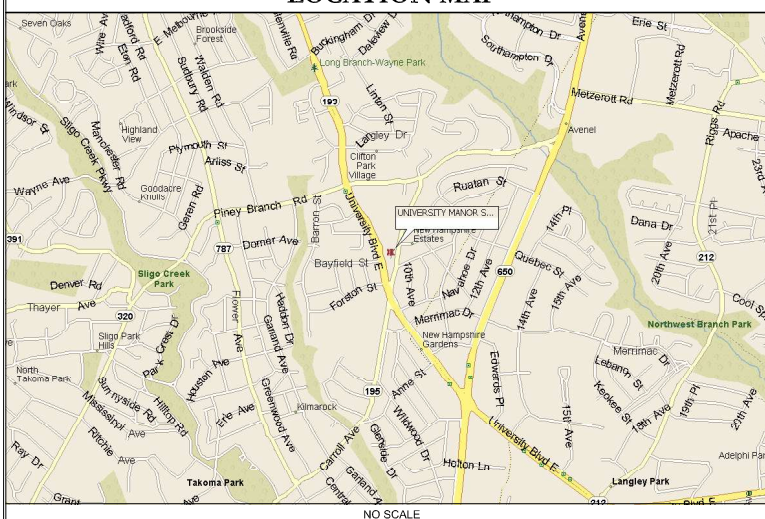
CUSTOMER/ APPLICANT:	T-MOBILE 12050 BALTIMORE AVE. BELTSVILLE, MD 20705
PHONE:	(301) 264-8600
A&E FIRM:	B&T ENGINEERING, INC. 1717 S. BOULDER, STE. 300 TULSA, OK 74119
CONTACT:	MIKE OAKES
PHONE:	(918) 587-4630
PRJ. MNGMT:	SMARTLINK LLC 1362 MELLON RD, SUITE 140 HANOVER, MD 21076
PHONE:	(410) 582-8043

CODE COMPLIANCE

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

<u>CODE TYPE</u>	<u>CODE</u>
BUILDING/DWELLING	IBC 2015
STRUCTURAL	IBC 2015
MECHANICAL	IMC 2015
ELECTRICAL	NEC 2014

LOCATION MAP



PROJECT DESCRIPTION

- REMOVE (6) EXISTING ANTENNAS.
- REMOVE (3) EXISTING RRU's.
- REMOVE (2) DUS41s AND (1) XMU.
- REMOVE (2) EXISTING HYBRIDS
- INSTALL (9) NEW ANTENNAS
- INSTALL (6) NEW RRU's
- INSTALL (2) BB6630s
- INSTALL (4) 6x12 6AWG HCS CABLE
- INSTALL (1) NEW ELECTRICAL PANEL BOARD & UPGRADE CONDUITS AND WIRES PER NEC REQUIREMENTS.
- RECONFIGURE NEW & EXISTING CABLE CONNECTIONS TO NEW ANTENNAS AND EXISTING EQUIPMENT CABINETS.

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN
ARE FORMATTED FOR 11X17.
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING
DIMENSIONS AND CONDITIONS ON THE JOB SITE AND
SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING
OF ANY DISCREPANCIES BEFORE PROCEEDING WITH
THE WORK OR BE RESPONSIBLE FOR SAME.

SEE SHEETS GN-1 FOR ADDITIONAL CONSTRUCTION NOTES

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T-1	TITLE SHEET	2
GN-1	GENERAL NOTES	2
A-1	SITE PLANS & BUILDING ELEVATION	2
A-1.1	BUILDING ELEVATIONS	2
A-2	RF SYSTEM SCHEDULE & CABLING DIAGRAM	2
A-3	ANTENNA AZIMUTH DIAGRAM	2
A-4	ANTENNA DETAILS	2
G-1	GROUNDING DETAILS AND PANEL SCHEDULE	2
E-1	PANEL SCHEDULE AND ONE-LINE DIAGRAM	2
	STEALTH DETAILS	B

APPROVALS

TITLE	SIGNATURE	DATE
OWNER REP:		
SITE ACQ.:		
CONSTRUCTION MANAGER.:		
ZONING:		
RF ENGINEER:		

ACCEPTANCE DOES NOT CONSTITUTE APPROVAL OF DESIGN, CALCULATIONS,
ANALYSIS, TEST METHODS OF MATERIALS DEVELOPED OR SELECTED BY THE
SUBCONTRACTOR AND DOES NOT RELIEVE SUBCONTRACTOR FROM FULL
COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.



CALL MARYLAND ONE CALL
(800) 282-8555
CALL 3 WORKING DAYS
BEFORE YOU DIG!



STRUCTURAL NOTES:

1. THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BLOT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT, ETC. PRIOR TO STEEL ERECTION.
2. THE LATEST EDITION OF 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 A36, F Y = 36KSI
STRUCTURAL TUBING A500, GRADE B, FY = 46KSI
HIGH STRENGTH BOLTS A325
THREADS A325
ANCHOR BOLTS A325 OR A304 1/4
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. THE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED BY FIELD MEASUREMENT. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH CONSTRUCTION.
10. THE GENERAL CONTRACTOR AND HIS SUB CONSULTANTS SHALL BE RESPONSIBLE FOR OBTAINING ALL BUILDING AND OR TRADE PERMITS AND INSPECTIONS THAT MAY BE REQUIRED FOR THE WORK.
11. STRUCTURAL THREADED FASTENERS FOR STEEL ANTENNA MOUNTING ASSEMBLIES SHALL CONFORM TO ASTM A307 OR ASTM A36. STRUCTURAL FASTENERS FOR STEEL ANTENNA STEEL FRAMING SHALL CONFORM TO ASTM A325. STRUCTURAL FASTENERS SHALL BE 5/8" DIAMETER BEARING TYPE CONNECTIONS WITH THE THREADS EXCLUDED FROM THE SHEAR PLANE FOR ANCHORS. STRUCTURAL FASTENERS SHALL BE 3/4" DIAMETER BEARING TYPE CONNECTIONS WITH THE THREADS EXCLUDED FROM THE SHEAR PLANE FOR ALL OTHER STRUCTURAL SHAPES. ALL EXPOSED STRUCTURAL FASTENERS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED UNLESS OTHERWISE NOTED.
12. EXPANSION ANCHORS INSTALLED IN CONCRETE SHALL BE MULTI STAINLESS STEEL ANCHORS AS SPECIFIED ON THE PLANS. THE EXPANSIONS ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS DIRECTIONS.
13. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY NORTH AND INFORM ARCHITECT/ENGINEER OF ANY DISCREPANCY BEFORE STARTING CONSTRUCTION.
14. ROOF PROTECTION PADS UNDER THE CABLE BRIDGE SLEEPERS AND ROOF PWNERS SHALL BE 0.30" THICK RUBBER FRESTONE PROTECTION PADS. THE ROOF PROTECTION PADS SHALL EXTEND A MINIMUM OF 2" BEYOND THE PERIMETER OF THE OF THE SLEEPERS. PROVIDE A 28 LB FELT SEPARATOR SHEET 2" LARGER THAN THE ROOF PROTECTION PAD DIRECTLY ON THE ROOF. REMOVE ALL LOOSE STONES PRIOR TO PLACING THE SEPARATOR SHEET. ROOF PROTECTION PADS SHALL NOT BE PLACED WITH IN 6" OF AN ADJACENT PAD OR OTHER ROOF OBSTRUCTION TO FACILITATE DRAINAGE.
15. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE BUILDING OWNER'S ROOF CONTRACTOR WHO WILL COMPLETE ALL WORK ASSOCIATED WITH THE ROOF. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE BUILDING OWNER'S ROOF CONTRACTOR BEFORE INSTALLATION OF ANY ROOF MOUNTED EQUIPMENT.
16. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301, AND SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 3000 psi (U.O.N). CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL, UNLESS OTHERWISE NOTED. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE 3 INCHES UNLESS OTHERWISE NOTED.
17. CONCRETE SHALL BE 4 TO 6% AIR ENTRAINED.
18. ALL REINFORCING STEEL SHALL CONFORM TO ASTM 615 GRADE 60. DEFORMED BILLET STEEL BARS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
19. FENCED AREA SHALL BE CLEARED AND GRUBBED. REMOVE UNSUITABLE LOOSE OR SOFT SOIL, ORGANIC MATERIAL OR RUBBLE, TO FIRM SUBGRADE. FILL UNDER CUT AND COMPACT UP TO 6" BELOW FINISH GRADE. PLACE A MIN 4" SOIL STABILIZATION FABRIC ON SUBGRADE. FILL WITH 4" OF ASHTRIO 57 STONE TO FINISH GRADE.
20. WHERE FILL IS REQUIRED, FILL IN LAYERS WHICH DO NOT EXCEED 8" BEFORE COMPACTION. SPREAD LAYER UNIFORMLY AND EVENLY. BLADE MIX EACH LAYER TO ENSURE MATERIAL UNIFORMITY. FILL MATERIAL SHALL NOT CONTAIN MATERIAL MORE THAN 3" IN DIAMETER. COMPACT EACH LAYER NOT LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 MODIFIED PROCTOR TEST OR (ASTM D698 STANDARD PROCTOR TEST). USE FILL MATERIAL WITH MOISTURE

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY 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. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANS/EA/ITIA 222-G REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
13. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
14. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
15. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
16. NO SIGNIFICANT NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY.
17. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
18. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
19. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER UNLESS OTHERWISE NOTED IN THIS DRAWING SET.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH ARTICAL 250 OF THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
3. ALL WIRES SHALL BE AWG THIN/THIN COPPER UNLESS NOTED OTHERWISE.
4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, BUILDING GROUND AND FENCE POSTS SHALL BE EXOTHERMIC ("CAWOLDS") UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL WHERE GROUND WIRES ARE CAWOLDED TO GALVANIZED SURFACE. SPRAY CAWOLDED WITH GALVANIZING PAINT.
5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
6. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
7. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
8. INSTALL 2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND 2 BARE TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
9. REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CAWOLDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTION TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
10. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"x8"-0" COPPER CLAD STEEL INTERCONNECTED WITH 2 BARE TINNED COPPER WIRE BURNED 30" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 8' APART.
11. IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45°.
12. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLEIN A-AT.
13. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE T-MOBILE CONSTRUCTION MANAGER.
14. GROUND RING & CONNECTIONS TO IT SHALL BE 2 AWG SOLID BARE TINNED COPPER WIRE. EQUIPMENT GROUND CONNECTIONS TO MGS SHALL BE 2 AWG STRANDED TO WIRE.
15. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
16. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A T-MOBILE REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
17. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICON MATERIAL.
18. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTIONS, APPLY APPROPRIATE ANTI-OXIDATION PAINT.
19. ANY SITE WHERE THE EQUIPMENT (ETS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF 2 BARE TINNED COPPER WIRE.
20. BUILDING GROUND BUS BAR REQUIRES (2) SOLID LEADS CADWELD TO THE BUS BAR.
21. MAIN EQUIPMENT BUS BAR REQUIRES (2) SOLID LEADS CADWELD TO IT AND TO THE GROUND RING.
22. ALL SOLID LEADS TERMINATED TO EITHER A BUS BAR OR EQUIPMENT SHALL BE PROTECTED WITH CARFLEX.

ELECTRICAL NOTES:

1. SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING AND IF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. VERIFY HEIGHT WITH PROJECT MANAGER PRIOR TO INSTALLATION.
4. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
5. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONALLY CIRCUMSTANCES SURROUNDING THE PROJECT.
6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
7. ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND IN PERCENT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "U" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NFPA. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.
8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.
9. ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE. ALL WORK, MATERIAL AND EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE-STOPPS WHERE PENETRATIONS ARE MADE THROUGH FIRE-RATED ASSEMBLIES. WATER-TIGHT USING SILICONE SEALANT.
11. LOCATE ALL PENETRATIONS SUCH THAT ALL REINFORCEMENT CONTAINED WITHIN THE EXISTING BUILDING CONSTRUCTION REMAINS INTACT AND UNDISTURBED. SUBMIT LOCATION METHOD TO PROJECT MANAGER FOR APPROVAL PRIOR TO EXECUTION.
12. DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT. AFFIX MAINTENANCE LABELS TO MECHANICAL EQUIPMENT.
13. ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE 12 AWG, UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THHW, RATED IN ACCORDANCE WITH NEC 110-14(C).
14. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.
15. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDING IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE; ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.
16. CONDUIT: ALL ABOVE GRADE CONDUITS SHALL BE RIGID & LTM TO 6" AS STATED BELOW:
 - A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
 - B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
 - C. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE, ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.
 - D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.
 - E. PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUIT IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.
17. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PHENOLIC PLASTIC NAMEPLATES. PPC, METER, DISCONNECT, RAC353, PBC05, AND HF JUNCTION BOX. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.
18. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO T-MOBILE PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE T-MOBILE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
19. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAUNED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.
20. COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.
21. VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.
22. RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO THE T-MOBILE CONSTRUCTION MANAGER.



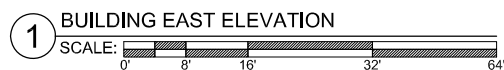
SITE ID: 7WAS65A
**UNIVERSITY MANOR
SMOKESTACK**
820 J UNIVERSITY BLVD.E.
SILVER SPRING, MD 20905
EXISTING SMOKESTACK

PROJECT NO: 136043.004.01
CHECKED BY: FWP

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	5/14/21	STH	FOR REVIEW
B	5/21/21	JUD	FOR REVIEW
0	5/27/21	JUD	FOR CONSTRUCTION
1	6/7/21	JUD	FOR CONSTRUCTION
2	6/22/21	JUD	FOR CONSTRUCTION

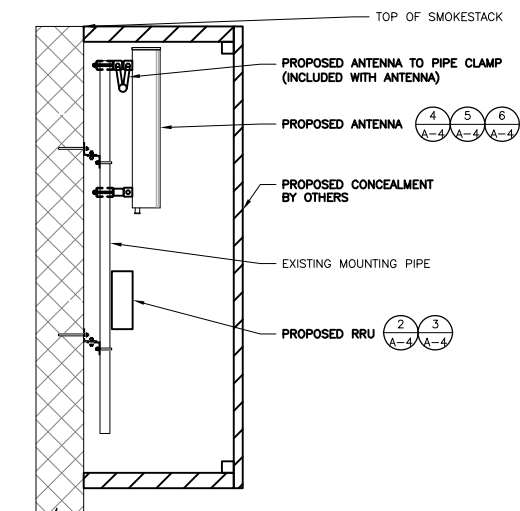


SHEET NUMBER: GN-1
REVISION: 2

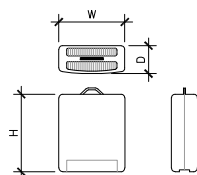


1 ANTENNA, RF & CABLING SCHEMATIC DIAGRAM
SCALE: N.T.S.



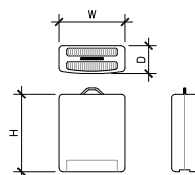


1 ANTENNA MOUNT DETAIL
SCALE: N.T.S.



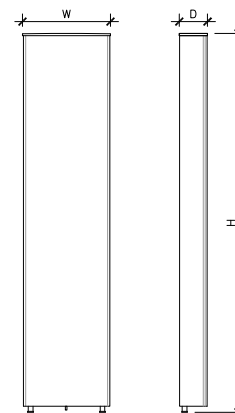
RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	4480 B71+B85
WIDTH	13.2"
DEPTH	5.4"
HEIGHT	14.9"
WEIGHT	46.3 LBS

2 REMOTE RADIO UNIT (RRU)
SCALE: N.T.S.



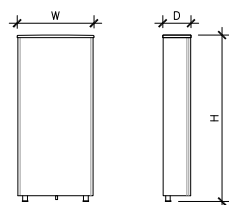
RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	4460 B25+B66
WIDTH	12.87"
DEPTH	6.5"
HEIGHT	26.57"
WEIGHT	72.75 LBS

③ REMOTE RADIO UNIT (RRU)
SCALE: N.T.S.



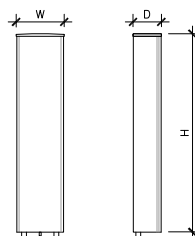
ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APXVAALL24_43-U-NA20
WIDTH	24"
DEPTH	8.5"
HEIGHT	96"
WEIGHT	56 LBS

4 ANTENNA DETAIL
SCALE: N.T.S.



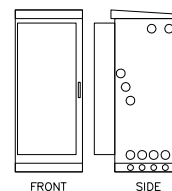
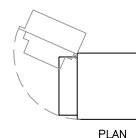
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.5"
DEPTH	8.3"
HEIGHT	33.1"
WEIGHT	10.3 LBS

5 ANTENNA DETAIL
SCALE: N.T.S.



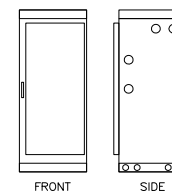
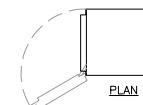
ANTENNA SPECS	
MANUFACTURER	ANDREW
MODEL #	W-65A-R1
WIDTH	12.0"
DEPTH	4.6"
HEIGHT	54.7"
WEIGHT	24.7 LBS

6 ANTENNA DETAIL
SCALE: N.T.S.



ENCLOSURE SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	6160
WIDTH	25.6"
DEPTH	33.5"
HEIGHT	63"
WEIGHT	673 lbs

7 ENCLOSURE DETAIL
SCALE: N.T.S.



ENCLOSURE SPECIFICATIONS:	
MANUFACTURER	ERICSSON
MODEL #	B160
WIDTH	26"
DEPTH	26"
HEIGHT	63"
WEIGHT	1800 lbs

8 ENCLOSURE DETAIL
SCALE: N.T.S.



SITE ID: 7WAS565A

**UNIVERSITY MANOR
SMOKESTACK**

820 W UNIVERSITY BLVD.
SILVER SPRING, MD 20903

EXISTING SMOKESTACK

PROJECT NO:	136043.004.01
CHECKED BY:	FWP

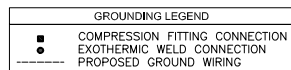
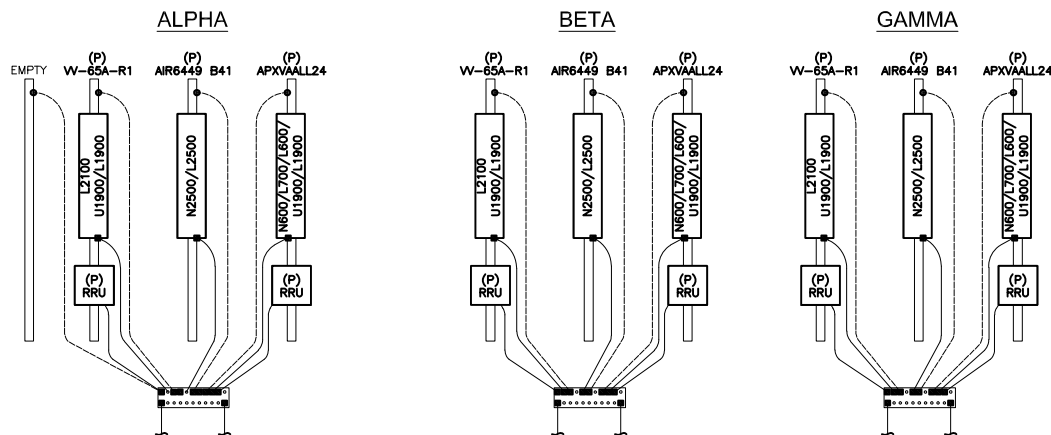
ISSUED FOR:			
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D	5/27/21	JJD	FOR CONSTRUCTION
1	6/7/21	JJD	FOR CONSTRUCTION
2	6/22/21	JJD	FOR CONSTRUCTION

B&T ENGINEERING, INC.
07-48491
Expires 1/19/22

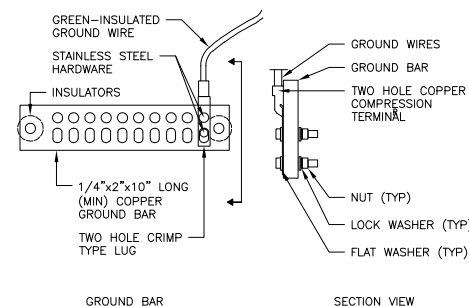


IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT

SHEET NUMBER: A-4	REVISION 2
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NOTES:
1. ALL GROUND WIRES SHALL BE #2AWG GREEN INSULATED, UNLESS NOTED OTHERWISE

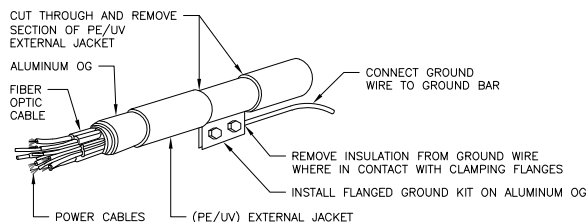


1 ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

2 GROUND BAR AND CONNECTIONS

SCALE: N.T.S.



- NOTES:
1. CLAMP #6AWG GROUND WIRE BETWEEN FLANGES AND FORM BOND WITH COMPRESSION HARDWARE PROVIDED WITH KIT.
 2. FOLLOWING INSTALLATION OF GROUND KIT, WATERPROOF ASSEMBLY WITH WATERPROOFING KIT AND TAPE.

3 HYBRID GROUNDING KIT DETAIL

SCALE: N.T.S.



SITE ID: 7WAS565A
**UNIVERSITY MANOR
SMOKESTACK**
820 J. UNIVERSITY BLVD. E.
SILVER SPRING, MD 20903
EXISTING SMOKESTACK

PROJECT NO: 136043.004.01
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SHEET NUMBER: **G-1** REVISION: **2**

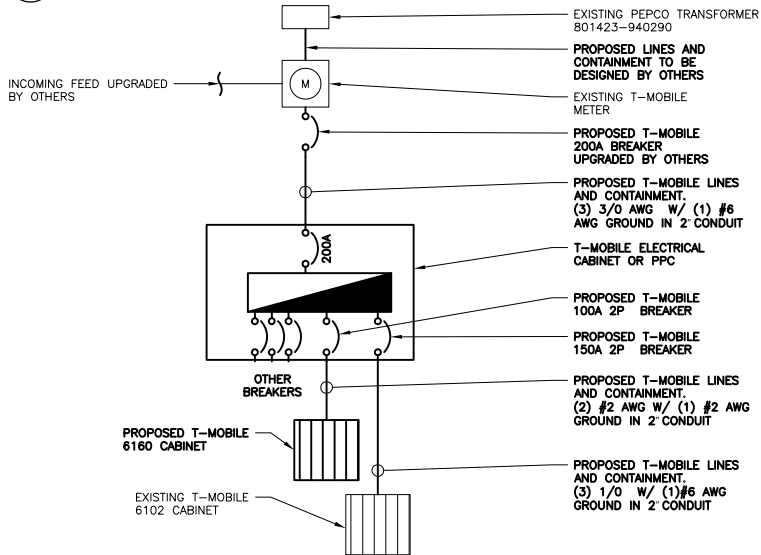
FINAL PANEL SCHEDULE									
LOAD	POLES	AMPS	BUS		AMPS	POLES	LOAD		
			L1	L2					
RBS 6102	2	150	1	2	100	2	6160		
SURGE PROTECT	2	30	3	4	15	1	LIGHT		
			5	6					
			7	8	20	1	GFI		
			9	10					
			11	12					
			13	14					
			15	16					
			17	18					
			19	20					
			21	22					
			23	24					

RATED VOLTAGE: ☐ 120/240 ☐ 1 PHASE, 3 WIRE
 RATED AMPS: ☐ 100 ☐ 225 ☐ 400
☐ MAIN LUGS ONLY ☐ MAIN 200 AMPS ☐ BREAKER ☐ FUSED SWITCH
☐ FUSED ☐ CIRCUIT BREAKER ☐ BRANCH DEVICES
 ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL

BRANCH POLES: ☐ 12 ☐ 24 ☐ 30 ☐ 42
 CABINET: ☐ SURFACE ☐ FLUSH
☐ HINGED DOOR
 APPROVED MF'RS
 NEMA ☐ 1 ☐ 3R ☐ 4X
☐ KEYS DOOR LATCH
 FULL NEUTRAL BUS
 GROUND BAR

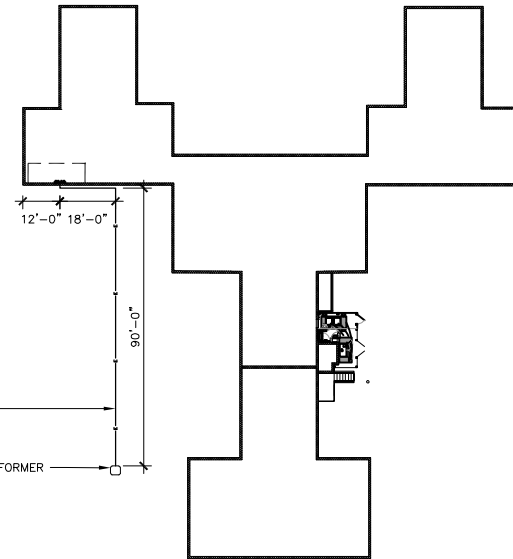
1 FINAL T-MOBILE PANEL DETAIL

SCALE: N.T.S.



2 ONE-LINE DIAGRAM

SCALE: N.T.S.



3 BASEMENT ELECTRICAL & UTILITY PLAN

SCALE: N.T.S.

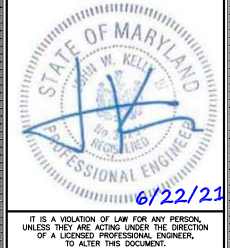


SITE ID: 7WAS565A
UNIVERSITY MANOR
SMOKESTACK
820 T UNIVERSITY BLVD E.
SILVER SPRING, MD 20903
EXISTING SMOKESTACK

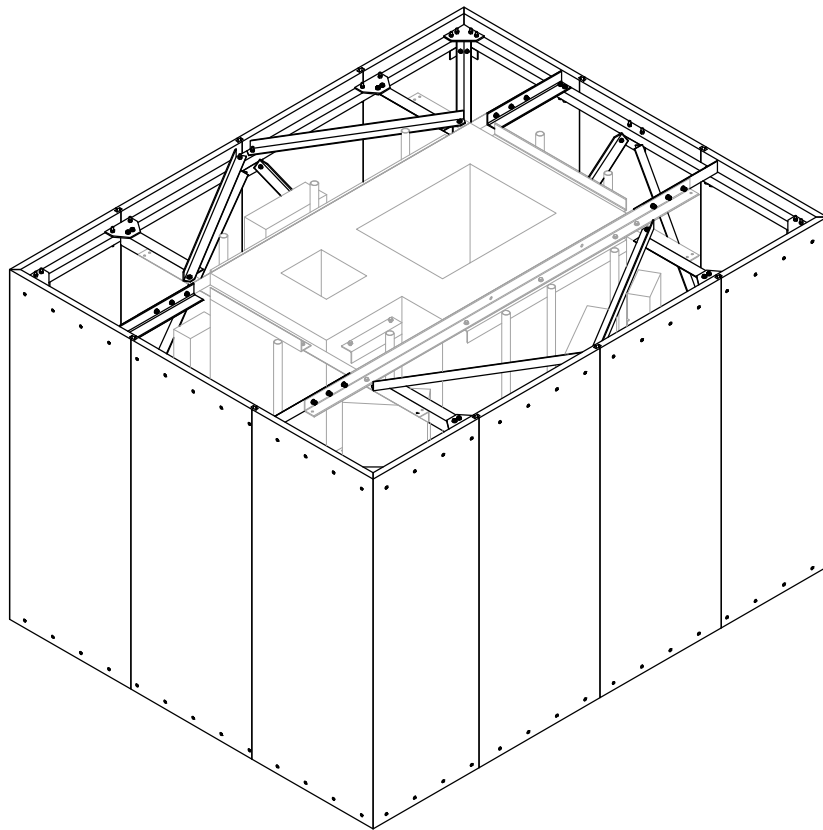
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B&T ENGINEERING, INC.
07-48491
Expires 1/19/22



SHEET NUMBER: E-1
REVISION: 2



NB+C ENGINEERING SERVICES, LLC.
8095 MARSHVILLE DRIVE, SUITE 100
ELK RIDGE, MD 21075
410-712-7082



7555-A PALMETTO COMMERCE PARKWAY
NORTH CHARLESTON, SC 29420 USA
P: (800)-755-0689 / F: (843)-207-0207
WWW.STEALTHCONCEALMENT.COM
PROJECT MANAGER: DYLAN RUMPH ; 843-377-2687

FINAL ENGINEERING

SMARTLINK LLC
7WAS565A
820 UNIVERSITY BLVD
EAST SILVER SPRING, MD 20903

JOB #: TM21-00760W-17R0

DRAWING INDEX

T1	TITLE SHEET
N1-N2	NOTES & SPECIFICATIONS
S1-S3	ASSEMBLY - ELEVATIONS



T1

REVISION
C

05-27-2021

GENERAL

1. THIS PRODUCT IS SOLD PURSUANT TO RAYCAP|STEALTH TERMS AND CONDITIONS, WHICH ARE INCORPORATED HEREIN BY REFERENCE.
2. THESE SHALL APPLY FOR ALL CASES UNLESS NOTED OTHERWISE (U.N.O.).
3. ANY ITEMS REFERENCED AS BEING ON "HOLD" ARE TO BE INCLUDED IN THE WORK AS SHOWN, HOWEVER, CONSTRUCTION OR FABRICATION IS NOT TO BEGIN UNTIL THE "HOLD" REFERENCE IS REMOVED.
4. IN THE CASE WHERE DIMENSIONS CONTAINED WITHIN ARE LABELED TO BE VERIFIED IN FIELD (V.I.F.), THEY MUST BE FIELD VERIFIED AND/OR CUSTOMER APPROVED PRIOR TO FABRICATION OF MATERIALS.
5. IN THE CASE THAT THE PROPOSED IS TO BE PLACED ON AN EXISTING STRUCTURE, THE MODIFICATIONS DEPICTED IN THESE DRAWINGS ARE INTENDED TO PROVIDE STRUCTURAL SUPPORT FOR THE ADDITION OF THE TELECOM STRUCTURE OUTLINED WITHIN. THE EXISTING STRUCTURE, WHETHER IT BE A FOUNDATION, POLE, OR BUILDING (IF APPLICABLE) SHALL BE ANALYZED AND RETROFITTED AS REQUIRED, BY OTHERS, TO WITHSTAND THE LOADS IMPOSED BY THE NEW RAYCAP STRUCTURE SHOWN ON THE DRAWINGS.
6. TELECOM PRODUCTS SHALL BE INSTALLED BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK. CARE SHALL BE TAKEN IN THE INSTALLATION OF ANY AND ALL MEMBERS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS AND PROCEDURES. ALL APPLICABLE OSHA SAFETY GUIDELINES ARE TO BE FOLLOWED. RAYCAP IS NOT PROVIDING FIELD INSTALLATION SUPERVISION.
7. NOTES FOR CONTRACTOR/INSTALLER: ALL BIDS FOR THE INSTALLATION/ERECTION OF THIS PRODUCT SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING MINIMUM REQUIRED TRADES: RIGGING, STEEL ERECTION, STEEL FABRICATION/MODIFICATION, WELDING, ELECTRICAL, CONCRETE, EXCAVATION AND WATERPROOFING. CONTRACTOR MAY, IN CONTRACTOR'S SOLE AND ABSOLUTE DISCRETION, DETERMINE ADDITIONAL TRADES ARE NECESSARY TO INSTALL/ERECT THE PRODUCT.
8. THESE DRAWINGS INDICATE THE MAJOR OPERATIONS TO BE PERFORMED, BUT DO NOT SHOW EVERY FIELD CONDITION THAT MAY BE ENCOUNTERED. THEREFORE, PRIOR TO BEGINNING OF WORK THE CONTRACTOR SHOULD SURVEY THE JOB SITE THOROUGHLY TO MINIMIZE FIELD PROBLEMS.
9. PROTECTION OF EXISTING STRUCTURES DURING THE COURSE OF THE CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
10. THE STRUCTURAL INTEGRITY OF THIS STRUCTURE IS DESIGNED TO BE ATTAINED IN ITS COMPLETED STATE. WHILE UNDER CONSTRUCTION ANY TEMPORARY BRACING OR SHORING WHICH MAY BE REQUIRED TO MAINTAIN STABILITY PRIOR TO COMPLETION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
11. THE PLANS AND DETAILS WITHIN DO NOT INCLUDE DETAILS OR DESIGN FOR DRAINAGE FROM OR WATERPROOFING OF EXTERIOR OR INTERIOR SURFACES OF THE STRUCTURE, THESE DETAILS MUST BE COMPLETED BY OTHERS.
12. CONTRACTOR TO SHIM BASE PLATES AND MATING FLANGES AS REQUIRED TO ENSURE LEVEL SURFACE.

STRUCTURAL STEEL AND ALUMINUM

1. STEEL FABRICATION AND INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL AND SPECIFICATIONS.
2. STEEL I-SHAPE, ANGLE, CHANNEL, AND MISCELLANEOUS MEMBERS SHALL CONFORM TO ASTM A36 (36 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS, U.N.O.
3. STEEL PLATE MEMBERS SHALL CONFORM TO MINIMUM ASTM A36 (36 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS U.N.O.
4. STEEL PIPE AND ROUND TUBE MEMBERS SHALL CONFORM TO ASTM A500 GRADE B (42 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS, U.N.O.
5. STEEL RECTANGULAR AND SQUARE TUBE MEMBERS SHALL CONFORM TO ASTM A500 GRADE B (46 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS, U.N.O.
6. STEEL WIDEFLANGE MEMBERS SHALL CONFORM TO ASTM A992 (50 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS U.N.O.
7. STEEL TAPERED POLES SHALL CONFORM TO ASTM A572 GR50 FOR 11 GA AND ASTM A572 GR65 FOR .188" and .25" WALL THICKNESS.
8. ALUMINUM PLATE MEMBERS SHALL BE GRADE 5052. EXCEPTION FOR 3/8" OR THICKER UNBENT MEMBERS TO BE GRADE 6061.
9. ALUMINUM PIPE TO BE GRADE 6061.
10. ALUMINUM TAPERED POLES TO BE GRADE 6063.
11. ALL STRUCTURAL BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL CONFORM TO ASTM F3125 GRADE A325 SPECIFICATIONS, U.N.O. A325N AND A325X ALLOWED. ALL BOLTS ARE RECOMMENDED TO BE ORIENTED WITH THREADS UP AND OUT UNLESS SITE SPECIFIC CONDITIONS WARRANT OTHERWISE.
12. STRUCTURAL BOLTS SHALL BE TIGHTENED TO A MINIMUM "SNUG TIGHT" CONDITION U.N.O. IN THE CASE "TURN OF THE NUT" METHOD IS REQUIRED, REFERENCE TABLE N1.1.
13. STRUCTURAL BOLT HOLE EDGE DISTANCES SHALL BE PER AISC SECTION J3
14. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND PROCEDURES OF THE AMERICAN WELDING SOCIETY (AWS) BY CERTIFIED WELDERS PER AWS D1.1 FOR STEEL, AWS D1.2 FOR ALUMINUM AND AWS D1.6 FOR STAINLESS STEEL. STEEL WELDS SHALL BE BY E70XX, LOW HYDROGEN ELECTRODE.
15. UNCOATED STEEL SHALL BE HOT DIP GALVANIZED PER ASTM A123 SPECIFICATIONS AFTER FABRICATION OR PAINTED WITH RUST INHIBITIVE PRIMER.
16. STEEL HARDWARE SHALL BE HOT DIP GALVANIZED PER ASTM F2329, U.N.O.
17. AFTER ANY FIELD HOLE PUNCHING / DRILLING OR CUTTING HAS BEEN COMPLETED, OR FOR ANY DAMAGED STRUCTURAL MEMBER, THE GALVANIZING MUST BE REPAIRED ACCORDING TO ASTM A780.
18. ALL WELDED STEEL ASSEMBLIES AND INDIVIDUAL STEEL PARTS SHOULD HAVE THE PART NUMBER WELDED OR TAGGED ONTO THE PART OR ASSEMBLY. IF WELDED, THE PART NUMBERS SHOULD BE LOCATED CONSISTENTLY AND AWAY FROM ANY CONNECTION POINT TO AVOID ANY INTERFERENCE ISSUES WITH THE WELD.

STEALTHSKIN PANELS

1. FASTENER HOLES IN STEALTHSKIN FOAM COMPOSITE PANELS ARE NOT FACTORY DRILLED AND MUST BE DRILLED IN THE FIELD.
2. PANEL FASTENERS TO BE SPACED 12" O.C. MAX. AND LOCATED 6" MAX. HORIZONTALLY FROM EACH EDGE AT TOP AND BOTTOM OF PANEL, UNLESS NOTED OTHERWISE. MAINTAIN 1 1/2" MIN. EDGE DISTANCE FROM ALL EDGES. 4" WIDE PANELS REQUIRE (4) FASTENERS TOP AND BOTTOM. 5" WIDE PANELS REQUIRE (5) FASTENERS TOP AND BOTTOM.
3. WHEN FASTENER BOLT HEAD OR NUT BEARS DIRECTLY ON SURFACE OF STEALTHSKIN PANEL, TIGHTEN PANEL BOLTS ONLY 1/2 TURN PAST SNUG. APPLY THREAD LOCK COMPOUND TO THE THREADS OF METAL BOLTS. USE THIN BEAD OF EPOXY TO LOCK THE NUTS OF FRP BOLTS AND STEALTH® STAINLESS STEEL PANEL BOLTS. USE WASHER OR FLANGED HEAD BOLT, OR FASTENER WITH LARGE BEARING SURFACE.
4. PANELS WILL EXPAND AND CONTRACT DUE TO TEMPERATURE. WHEN INSTALLING PANELS IN COLD TEMPERATURES, EVENLY SPACE PANELS ALONG LENGTH OF SCREEN WALL WITH EQUAL GAPS BETWEEN PANELS TO ALLOW FOR EXPANSION DURING WARM TEMPERATURES.
5. ADJACENT FLAT PANELS ARE JOINED BY A VERTICAL FOAM SPLINE THAT IS INSERTED INTO GROOVES CUT INTO THE SIDE OF EACH PANEL, DO NOT LIFT PANELS BY GROOVES, PANELS MUST BE LIFTED WITH FORCE DIRECTED ONTO PANEL SURFACE.
6. ADJACENT RADIUS PANELS ARE JOINED BY A VERTICAL H-CHANNEL. INSERT PANELS INTO EACH SIDE OF H-CHANNEL.
7. RADIUS PANELS MUST BE EVENLY SPACED ALONG RADIUS SUPPORT. CONTRACTOR TO MEASURE LENGTH OF RADIUS SUPPORT AND DIVIDE BY THE NUMBER OF RADIUS PANELS TO DETERMINE PROPER SPACING. H-CHANNEL CONNECTORS ARE USED TO COVER THE GAP BETWEEN PANELS AND TO ALLOW FOR PANEL EXPANSION AND CONTRACTION.
8. SURFACES OF PANELS SHALL BE COATED WITH SUITABLE PAINT FOR UV PROTECTION. TOP EDGE OF PANEL MUST BE COVERED TO PREVENT WATER TRAVEL BETWEEN PANELS. USE SHERWIN WILLIAMS "COROTHANE 11" OR PRE-APPROVED EQUIVALENT.
9. EXPOSED TOP AND SIDE FOAM EDGES OF PANELS MUST BE COVERED OR COATED FOR UV PROTECTION. RAYCAP, INC. WILL PROVIDE PANEL EDGE CAPS (VERTICAL AND HORIZONTAL) TO BE FIELD APPLIED FOR THIS PURPOSE FOR MOST APPLICATIONS. HORIZONTAL AND VERTICAL PANEL EDGE CAPS TO BE SECURED TO THE EXPOSED EDGES OF THE PANELS WITH PROVIDED TEK SCREWS INSTALLED @ 12" MAXIMUM SPACING ON THE INSIDE FACE OF THE PANEL. IN RF SENSITIVE LOCATIONS, CONTRACTOR WILL APPLY (2) BEADS OF ADHESIVE TO EACH INSIDE CORNER OF THE EDGE CAP AND SECURE CAP TO PANEL WITH TAPE WHILE ADHESIVE CURES.
10. AT CORNER APPLICATIONS, VERTICAL PANEL EDGE CAPS ARE TO BE USED TO CAP BOTH EXPOSED EDGES (1 PER CUT EDGE OF PANELS). THESE EDGE CAPS ARE TO BE CUT 1" SHORTER THAN THE PANEL AND LEAVE 1" GAP AT THE TOP TO ALLOW ROOM FOR THE THE HORIZONTAL PANEL EDGE CAP AT THE TOP. CONTRACTOR TO APPLY (2) BEADS OF ADHESIVE TO EACH EDGE CAP (INSIDE CORNERS OF CAP), AND SECURE WITH TAPE AND/OR PROVIDED SCREWS (16 TOTAL PER CORNER) WHILE THE ADHESIVE CURES. IF CORNERS ARE IN NON-RF AREAS, EDGE CAP SCREWS CAN BE LEFT IN PLACE.
11. AT CORNER APPLICATIONS WITH SSV PANEL ONLY, CORNER CHANNELS ARE TO BE USED TO JOIN PANELS TOGETHER. BOTH ADJOINING PANELS WILL BE INSERTED INTO THE CORNER CHANNEL AND SECURED USING PROVIDED NYLON PUSHPINS. THE PUSHPINS ARE TO BE PLACED ON THE INSIDE OF ONE OF THE PANELS ONLY @ 12" MAXIMUM SPACING.

BALLASTED CONCEALMENTS

1. ROOF MUST BE CLEAN AND FREE OF DEBRIS.
2. THE BALLAST FRAME IS TO BEAR ON A NEOPRENE PAD PROVIDED BY OTHERS, PLACED BETWEEN THE NEW BALLAST FRAME AND ROOF.
3. DESIGN ASSUMES CONTRACTOR IS RESPONSIBLE FOR LEVELING THE PLATFORM ON ROOF AND PROVIDING APPROPRIATE SHIM METHOD IF ROOF IS SLOPED.

FRP STRUCTURAL MEMBERS

1. FRP STRUCTURAL SHAPES SHALL BE BEDFORD FRP SERIES 1525, MANUFACTURED USING THE PULTRUSION PROCESS.
2. IF PREFABRICATED MEMBERS DO NOT ASSEMBLE PER PLAN, CONTACT RAYCAP, INC. BEFORE CUTTING OR ALTERING FABRICATED MEMBERS.
3. FRP STRUCTURAL MEMBERS SHALL BE FABRICATED AND ASSEMBLED AS INDICATED ON THE DRAWINGS.
4. THE CONTRACTOR SHALL PROTECT THE FRP STRUCTURAL MEMBERS FROM ABUSE TO PREVENT BREAKAGE, NICKS, GOUGES, ETC. DURING FABRICATION, HANDLING, AND INSTALLATION.
5. FRP BOLTS SHOULD BE TIGHTENED 1/2 TURN PAST SNUG AND LOCKED WITH EPOXY.

DESIGN NOTES:

STRUCTURAL DESIGN IS BASED ON THE 2018 IBC & THE ASCE 7-16 STANDARD

SITE LOCATION:

EAST SILVER SPRING, MD

DESIGN LOADS:

WIND:

ULTIMATE WIND SPEED: 113 MPH (3-SEC GUST)

RISK CATEGORY: II

EXPOSURE: C

SEISMIC:

IMPORTANCE FACTOR: 1.0

RISK CATEGORY: II

SITE CLASS: D

MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_v = 0.133g S₁ = 0.43g

SEISMIC DESIGN CATEGORY: B

SPECTRAL RESPONSE COEFFICIENTS: S_{ds} = 0.142g S_{d1} = 0.069g

REACTIONS:

SHEAR REACTION: V= 550 lbs

AXIAL REACTION: R= 700 lbs



DRAWN	DSP	Raycap STEALTH 7555-A PALMETTO COMMERCE PARKWAY NORTH CHARLESTON, SC 29420 USA		
DESIGNED	VG			
REVISED	NB+C			
DRAWING <u>NOT</u> TO SCALE. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED		SMARTLINK LLC 7WAS565A 820 UNIVERSITY BLVD EAST SILVER SPRING, MD 20903		
<u>TOLERANCES</u> FRACTIONAL: X/X ± 1/16 DECIMAL: .X ± 0.1 .XX ±0.03 .XXX ±0.01 ANGLES ±.5° ALL BENDING TOLERANCES: ± 1.0°		NOTES & SPECIFICATIONS	SHEET #	REVISION
			N1	C
JOB #TM21-00760W-17R0		DATE: 05-27-2021		
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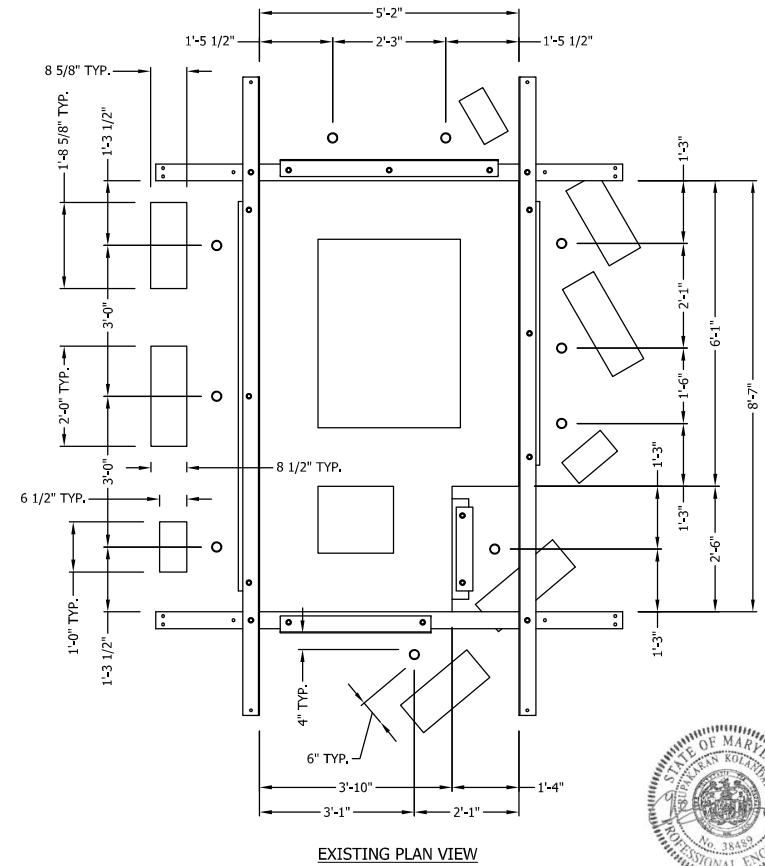
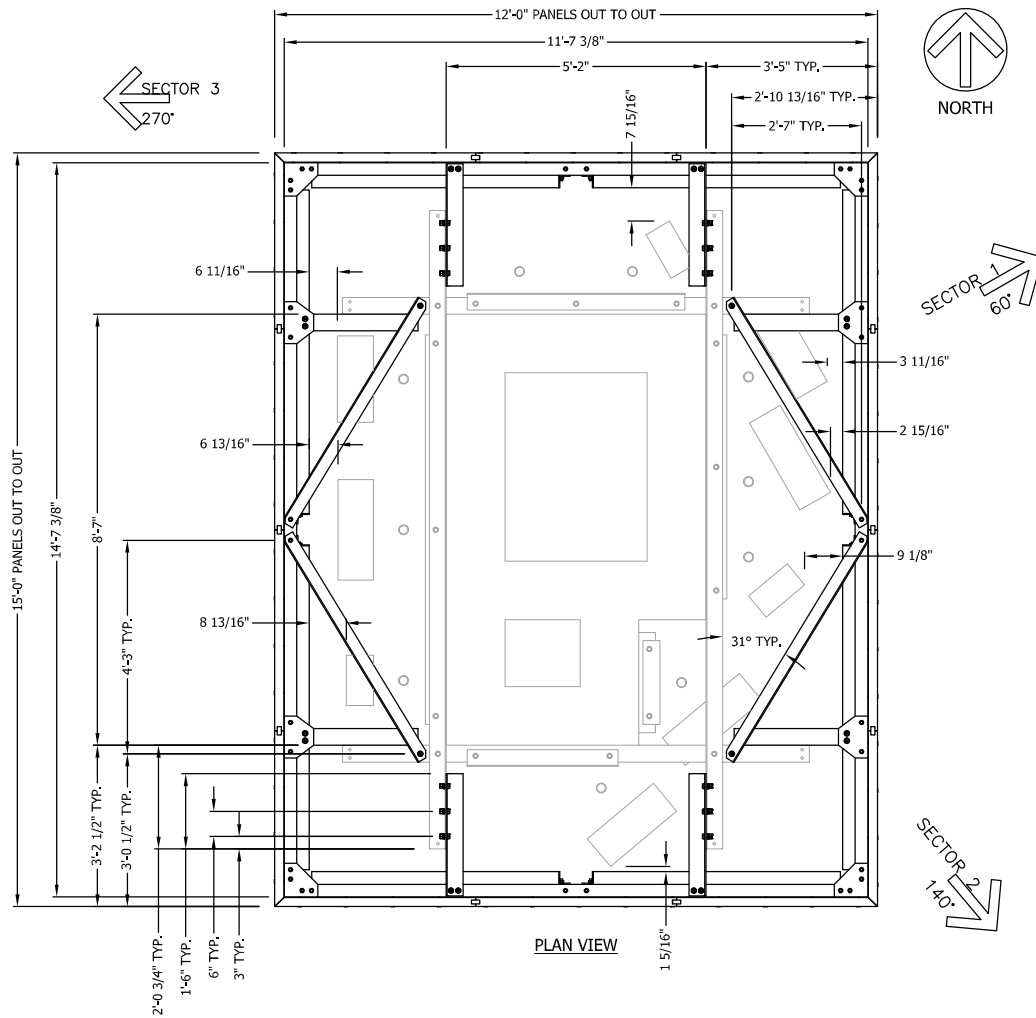


NB+C ENGINEERING SERVICES, LLC.
4000 KENNEDY DRIVE, SUITE 100
ELLSBURG, MD 21110
(410) 326-7000

REVISION TABLE			
REVISION	DESIGNER	DATE	SCOPE OF REVISION
A	SH	05-10-21	PRELIMINARY DESIGN
B	SH	05-21-21	REVISED PER NEW RFDS DATED 05-19-21
C	NB+C	05-27-2021	FINAL ENGINEERING



DRAWN	DSP	Raycap STEALTH 7555-A PALMETTO COMMERCE PARKWAY NORTH CHARLESTON, SC 29420 USA		
DESIGNED	VG			
REVISED	NB+C			
DRAWING NOT TO SCALE, ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED		SMARTLINK LLC 7WAS565A 820 UNIVERSITY BLVD EAST SILVER SPRING, MD 20903		
<u>TOLERANCES</u> FRACTIONAL: X/X ± 1/16 DECIMAL: .X ± 0.1 .XX ±0.03 .XXX ±0.01 ANGLES ±.5° ALL BENDING TOLERANCES: ± 1.0°				
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		JOB #TM21-00760W-17R0		N2
		DATE: 05-27-2021		REVISION
				C

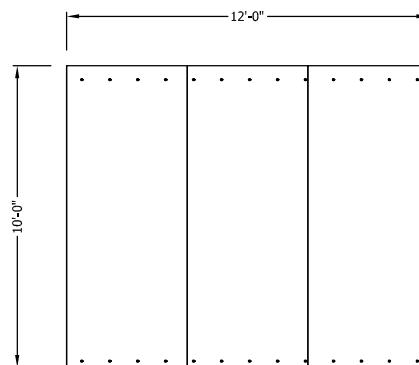
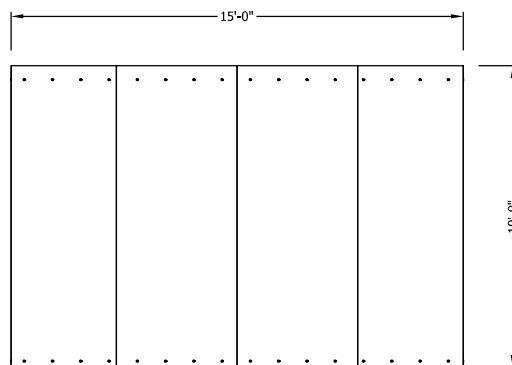
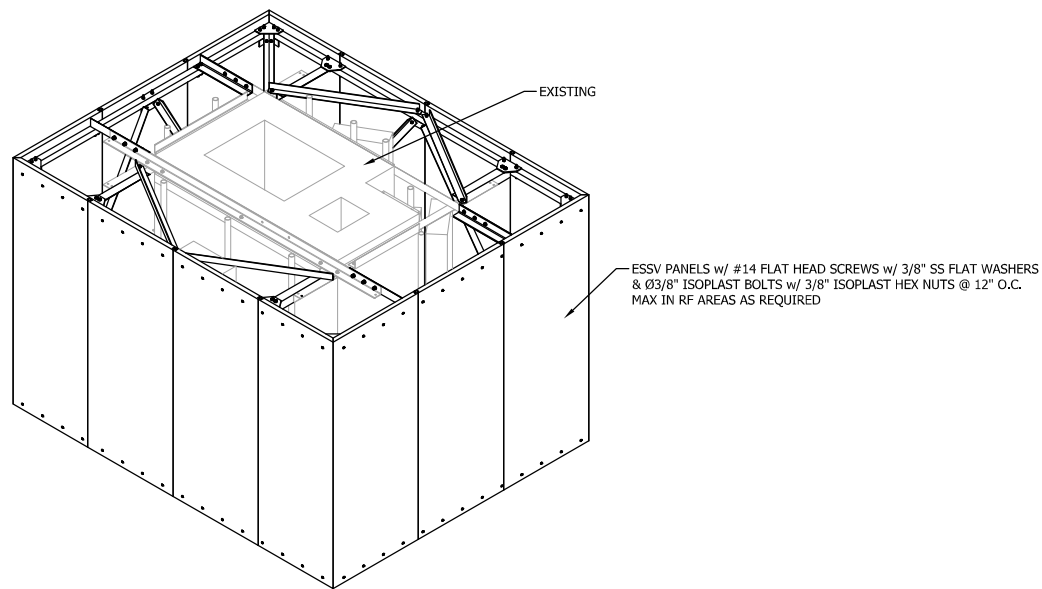


NOTES:

- 1.) THE INTEGRITY OF THE EXISTING STRUCTURE MUST BE VERIFIED BY OTHERS.
- 2.) DIMENSIONS OF THE EXISTING STRUCTURE ARE BASED UPON DRAWINGS BY (STEALTH) DATED 04-27-17 AND HAVE NOT BEEN PHYSICALLY VERIFIED BY RAYCAP. VERIFICATION OF THESE DIMENSIONS IS THE RESPONSIBILITY OF THE CUSTOMER.
- 3.) THE ATTACHMENT TO EXISTING (DESIGN AND FASTENERS) MUST BE PROVIDED BY OTHERS. RAYCAP WILL ONLY SUPPLY FASTENER SIZE AND QUANTITY REQUIRED, FOR ATTACHMENT TO EXISTING.
- 4.) THE PANELS ARE TO BE PAINTED / TEXTURED ACCORDING TO THE CUSTOMER APPROVED SAMPLE(S).
- 5.) THIS CONCEALMENT WAS DESIGNED TO ACCEPT THE FOLLOWING ANTENNA (ERICSSON AIR32 KRD901146-1_B66A_B2A, ERICSSON AIR6449 B41, & RFS APXVAALL24_43-U-NA20). IT IS THE CUSTOMERS RESPONSIBILITY TO ENSURE THE FIT OF THE ANTENNA AND COAX WITH THEIR SPECIFIC MOUNTING EQUIPMENT.
- 6.) IT IS STRONGLY RECOMMENDED THAT THE CUSTOMER REVIEWS THE RF CONSIDERATIONS IN THIS DESIGN.

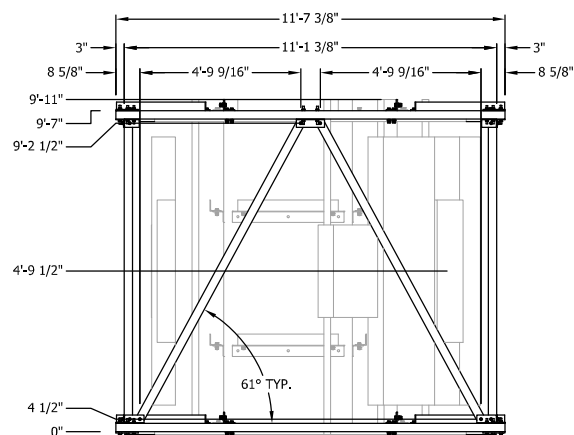
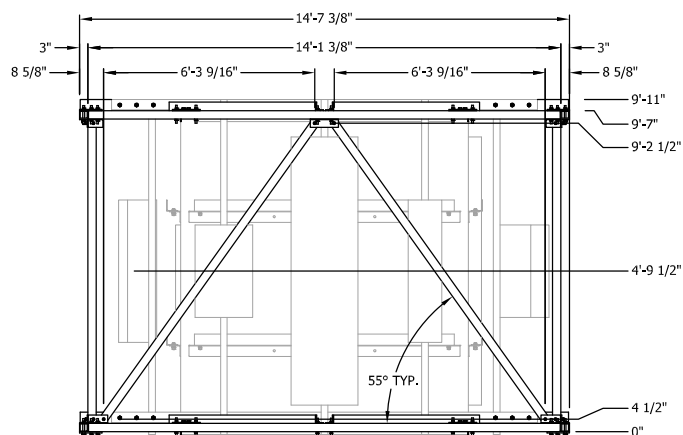
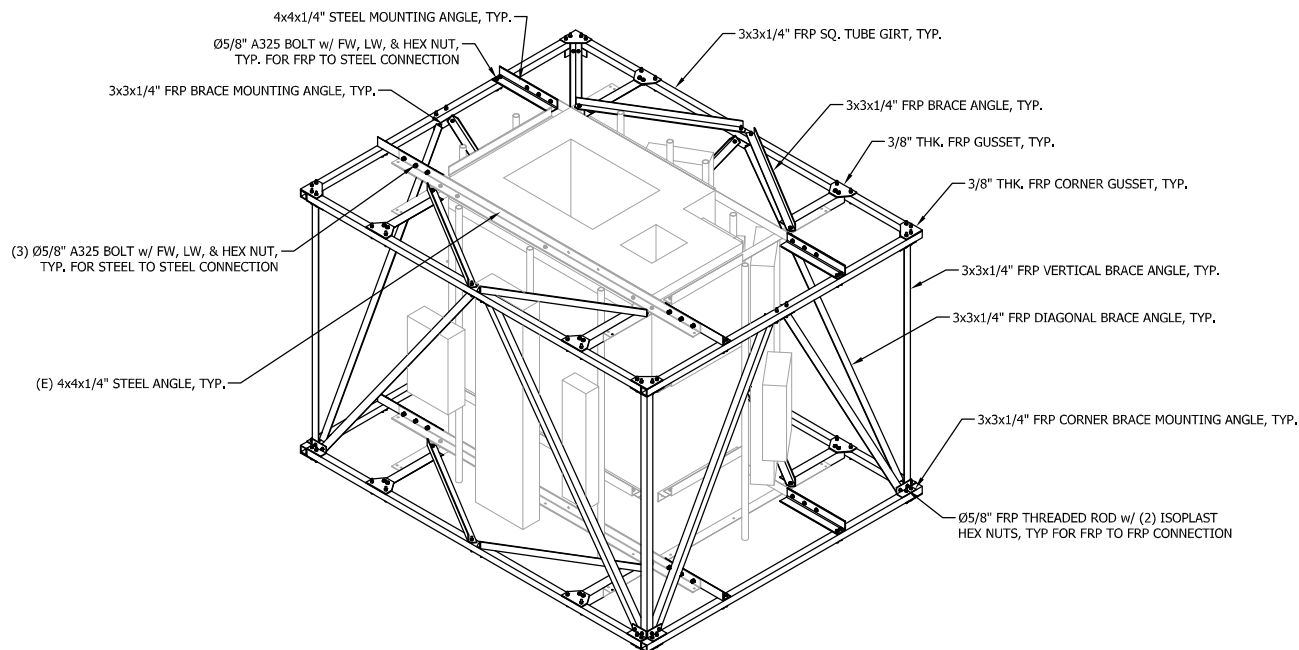


DRAWN	DSP	Raycap STEALTH 7555-A PALMETTO COMMERCE PARKWAY NORTH CHARLESTON, SC 29420 USA	
DESIGNED	VG		
REVISED	NB+C		
DRAWING NOT TO SCALE. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED		SMARTLINK LLC 7WAS565A 820 UNIVERSITY BLVD EAST SILVER SPRING, MD 20903	
<u>TOLERANCES</u>			
FRACTIONAL: X/X ± 1/16			
DECIMAL: X ± 0.1 .XX ± 0.03 .XXX ± 0.01 ANGLES ±.5°		SHEET #	REVISION
		S1	C
ALL BENDING TOLERANCES: ± 1.0°		JOB # TM21-00760W-17R0	DATE: 05-27-2021
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DESIGNED	VG			
REVISED	NB+C			
DRAWING NOT TO SCALE. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED <u>TOLERANCES</u> FRACTIONAL: X/X ± 1/16 DECIMAL: .X ± 0.1 .XX ± 0.03 .XXX ± 0.01 ANGLES ±.5° ALL BENDING TOLERANCES: ± 1.0°		SMARTLINK LLC 7WAS565A 820 UNIVERSITY BLVD EAST SILVER SPRING, MD 20903		
ASSEMBLY - ELEVATIONS		JOB #TM21-00760W-17R0		DATE: 05-27-2021
		SHEET #		REVISION
		S2		C

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DESIGNED	VG		
REVISED	NB+C		
DRAWING NOT TO SCALE. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED		SMARTLINK LLC 7WAS565A 820 UNIVERSITY BLVD EAST SILVER SPRING, MD 20903	
TOLERANCES FRACTIONAL: X/X ± 1/16 DECIMAL: .X ± 0.1 .XX ± 0.03 .XXX ± 0.01 ANGLES ± 5° ALL BENDING TOLERANCES: ± 1.0°		ASSEMBLY - ELEVATIONS	SHEET # S3
JOB #TM21-00760W-17R0		DATE: 05-27-2021	REVISION C
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App No:

2021071498

Application General Information

Applicant Name SMARTLINK GROUP / T-MOBILE

Updated

7/8/2021

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 remove (6) existing panel antennas; Install (9) new panel antennas; remove (3) existing RRUs; install (6) new RRUs; install (1) new electrical panel board at an existing telecommunications facility.

Site Information

Site Id 567

Zoning

R-10

Structure Type Building

Latitude

38.995619

Street Address 820 University Blvd East

Longitude

-76.992603

County Site Name University Manor Apartments

Ground Elevation

251

Carrier Site Name 7WAS565A

City

Silver Spring

Site Owner University Manor Apartments

Lease Status

Leased

Structure Owner UNIVERSITY MANOR APTS LTD PART

Does the structure require an antenna structure registration under FCC Title 47

No

Existing Structure Height 35

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:

SITE IS AN EXISTING TELECOMMUNICATIONS FACILITY

Nearby Sites (New, Replacement Apps Only):

Friday, July 9, 2021

11:09:19 AM

App No:

2021071498

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

App No:

2021071498

6409 Questions

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

No

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?

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?

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?

Will the proposed installation require more the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets?YN

Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater?

Does the structure or current installation have concealment elements/measures?

Yes

Will the proposed installation require excavation or expansion outside the current boundaries of the site?

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

The concealment will not be modified

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

Friday, July 9, 2021

11:09:19 AM

App No:

2021071498

Antenna Infomatio

Antenna Compliance

Compliance Desc

Antenna Location

Antenna Loc. Desc.

Env. Assessment

Cat. Excluded?

Routine Env. Evaluation

Antenna Model

Frequency

RAD Center Max ERP Antenna Dimensions Quantity

Antenna Model

Frequency

RAD Center Max ERP Antenna Dimensions Quantity

Antenna Model

Frequency

RAD Center Max ERP Antenna Dimensions Quantity

Friday, July 9, 2021

11:09:19 AM

820 University Boulevard East, Silver Spring, MD

Search

Get Directions History

820 University Blvd E

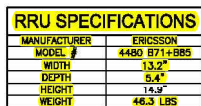
Places

- My Places
- Sightseeing Tour
 - Start tour here
 - The Eiffel Tower
 - Located in Paris, France
 - Christ the Redeemer
 - Located in Rio, Brazil
 - The Grand Canyon
 - Located in Arizona, USA
 - Sydney
 - New South Wales, Australia
 - St. Peter's Basilica
 - Located in Vatican City

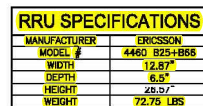
Layers

- Primary Database
- Announcements
- Boundaries and Labels
- Places
- Photos
- Roads
- 3D Buildings
- Weather
- Gallery
- More
- Terrain





2 REMOTE RADIO UNIT (RRU)
SCALE: N.T.S.



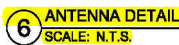
3 REMOTE RADIO UNIT (RRU)
SCALE: N.T.S.



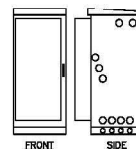
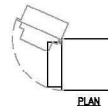
ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APXVAAL24 43-U-NA20
WIDTH	24"
DEPTH	8.5"
HEIGHT	96"
WEIGHT	56 LBS



ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.5"
DEPTH	8.3"
HEIGHT	33.1"
WEIGHT	103 LBS

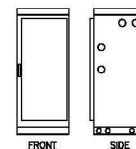
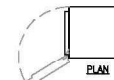


ANTENNA SPECS	
MANUFACTURER	ANDREW
MODEL	W-65A-R1
WIDTH	12.0"
DEPTH	4.6"
HEIGHT	54.7"
WEIGHT	24.7 LBS



7 ENCLOSURE DETAIL
SCALE: N.T.S.

ENCLOSURE SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	6160
WIDTH	25.6"
DEPTH	33.5"
HEIGHT	63"
WEIGHT	673 lbs



8 ENCLOSURE DETAIL
SCALE: N.T.S.

ENCLOSURE SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	B160
WIDTH	26"
DEPTH	26"
HEIGHT	63"
WEIGHT	1800 lbs



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

T-Mobile Proposed Facility

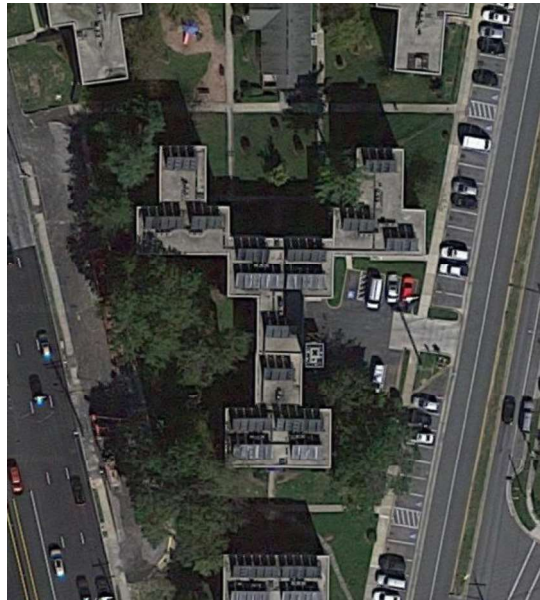
Site ID: 7VWAS565A

University Manor Smokestack

820 E University Boulevard, Silver Spring, Maryland 20903

June 23, 2021

EBI Project Number:
6221003030



Status:

The proposed site will be compliant with the installation of the mitigation measures described in Attachment I.

Remarks: See signage plan for mitigation measures to be installed upon upgrade/installation of the site to comply with FCC and T-Mobile standards.

Prepared by:



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I.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 7WAS565A located at 820 E University Boulevard 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 19.5400% of the FCC's general public limit (3.9080% of the FCC's occupational limit) at the main roof 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 main roof level, the maximum power density generated by the T-Mobile antennas is approximately 19.5400 percent of the FCC's general public limit (3.9080 percent of the FCC's occupational limit).

Based on worst-case predictive modeling, there are no modeled exposures on any accessible main roof 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 recommended at the site as presented in Attachment I. Posting of the signage brings the site into compliance with FCC rules and regulations.

2.0 MPE Calculations

Calculations were completed for the proposed T-Mobile Wireless antenna rooftop facility located at 820 E University Boulevard 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-sight 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 rooftop 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 rooftop.

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.

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	2	COMMSCOPE	VV-65A-R1B 03DT 2100	26.8	60	LTE	AWS - 2100 MHz	60	2	4076
A	2	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	60	LTE	PCS - 1900 MHz	60	2	3501
A	2	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	60	UMTS	PCS - 1900 MHz	30	2	1750
A	3	ERICSSON	SON_AIR6449 2500 LTE TB	28.8	60	LTE	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 NR TB	28.8	60	NR	2500 MHz	90	1	15461
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	60	LTE	2500 MHz	30	1	1611
A	3	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	60	NR	2500 MHz	30	1	1611
A	4	RFS	APXVAALL24 43-U-NA20 05DT 700	26.8	60	LTE	700 MHz	30	1	608
A	4	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	60	LTE	600 MHz	30	1	529
A	4	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	60	NR	600 MHz	80	1	1411
A	4	RFS	APXVAALL24 43-U-NA20 03DT 1900	26.8	60	UMTS/LTE	PCS - 1900 MHz	90	2	4878
B	1	COMMSCOPE	VV-65A-R1B 03DT 2100	26.8	140	LTE	AWS - 2100 MHz	60	2	4076
B	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	140	LTE	PCS - 1900 MHz	60	2	3501
B	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	140	UMTS	PCS - 1900 MHz	30	2	1750
B	2	ERICSSON	SON_AIR6449 2500 LTE TB	28.8	140	LTE	2500 MHz	90	1	15461
B	2	ERICSSON	SON_AIR6449 2500 NR TB	28.8	140	NR	2500 MHz	90	1	15461
B	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	140	LTE	2500 MHz	30	1	1611
B	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	140	NR	2500 MHz	30	1	1611
B	3	RFS	APXVAALL24 43-U-NA20 05DT 700	26.8	140	LTE	700 MHz	30	1	608
B	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	140	LTE	600 MHz	30	1	529
B	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	140	NR	600 MHz	80	1	1411
B	3	RFS	APXVAALL24 43-U-NA20 03DT 1900	26.8	140	UMTS/LTE	PCS - 1900 MHz	90	2	4878
C	1	COMMSCOPE	VV-65A-R1B 03DT 2100	26.8	270	LTE	AWS - 2100 MHz	60	2	4076
C	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	270	LTE	PCS - 1900 MHz	60	2	3501
C	1	COMMSCOPE	VV-65A-R1B 03DT 1900	26.8	270	UMTS	PCS - 1900 MHz	30	2	1750
C	2	ERICSSON	SON_AIR6449 2500 LTE TB	28.8	270	LTE	2500 MHz	90	1	15461
C	2	ERICSSON	SON_AIR6449 2500 NR TB	28.8	270	NR	2500 MHz	90	1	15461
C	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	270	LTE	2500 MHz	30	1	1611
C	2	ERICSSON	SON_AIR6449 2500 LTE MACRO	28.8	270	NR	2500 MHz	30	1	1611
C	3	RFS	APXVAALL24 43-U-NA20 05DT 700	26.8	270	LTE	700 MHz	30	1	608
C	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	270	LTE	600 MHz	30	1	529
C	3	RFS	APXVAALL24 43-U-NA20 05DT 600	26.8	270	NR	600 MHz	80	1	1411
C	3	RFS	APXVAALL24 43-U-NA20 03DT 1900	26.8	270	UMTS/LTE	PCS - 1900 MHz	90	2	4878

• 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 main roof 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.

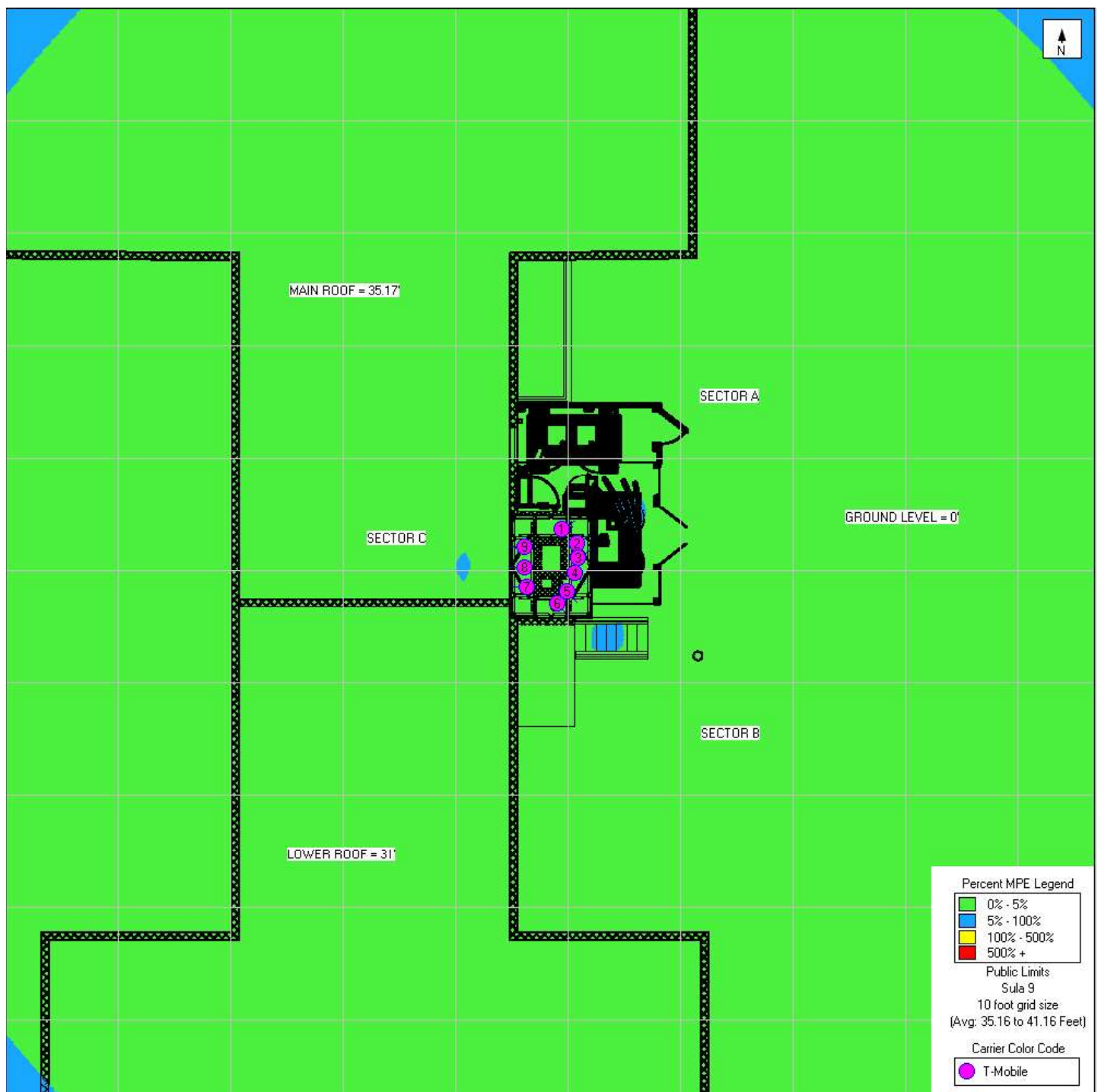
There are no collocated carriers on the rooftop.

The anticipated maximum contribution from each sector of the proposed T-Mobile facility is 19.5400% of the allowable FCC established general public limit (3.9080% 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 0.8000% of the FCC's general public limit (0.1600% 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.

EBI's modeling indicates that there are no areas on the walking/working surfaces at the rooftop and/or ground level in front of the T-Mobile antennas that may exceed the FCC standards for general population and/or occupational exposure. To reduce the risk of exposure and/or injury, EBI recommends that access to the rooftop or areas associated with the active antenna installation be restricted and secured where possible. In order to alert any workers potentially accessing the site, a blue Notice sign and a yellow Guidelines sign are recommended for installation at the access to the rooftop as depicted on the Signage Plan – Attachment I.

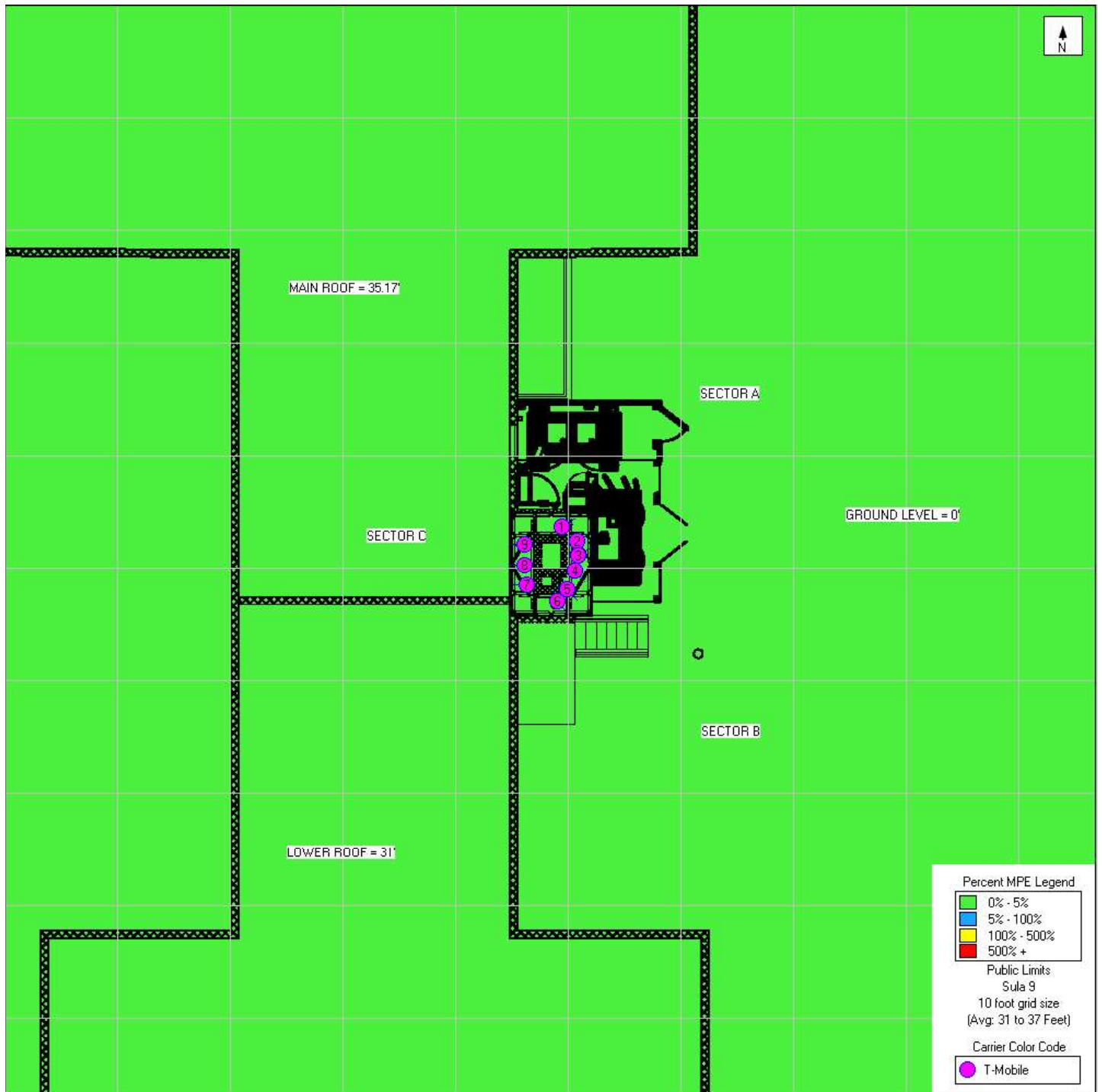
Attachment 1a: MPE Analysis and Recommended Signage (Main Roof Level)



Post at Roof Access Points



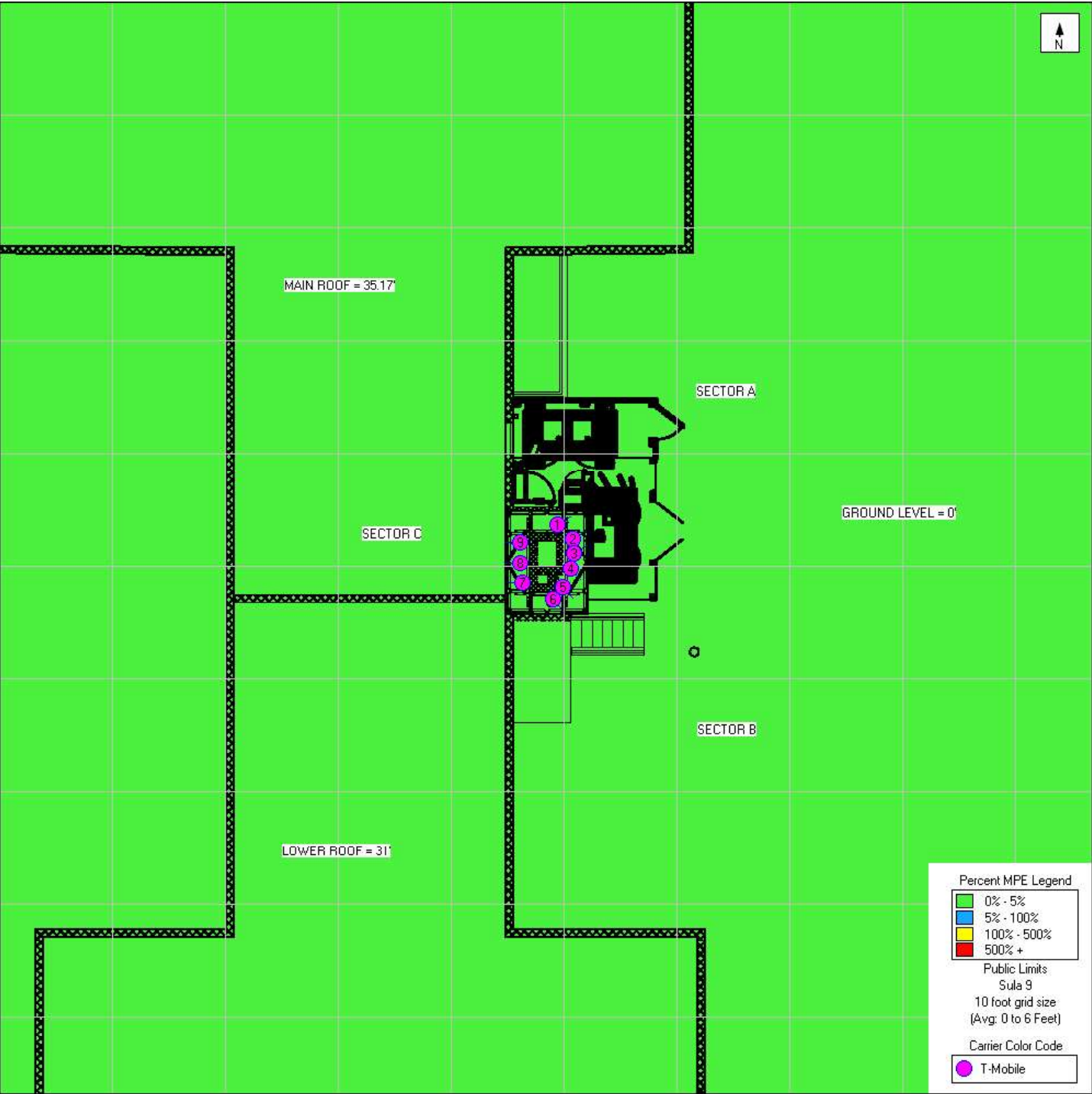
Attachment 1b: MPE Analysis and Recommended Signage (Lower Roof Level)



Post at Roof
Access Points



Attachment 1c: MPE Analysis (Ground Level)



Sign	Sign Count	Description	Posting Instructions
	I +	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.	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	I +	Guidelines Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	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 not required.
	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 not required.
Notes:	The proposed site will be compliant with the installation of the mitigation measures. 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	VV-65A-R1B 03DT 2100.ant	2100	6683.83	1.39	60	0	62.0
T-Mobile	1	2	ANT 1	VV-65A-R1B 03DT 1900.ant	1900	5741.50	1.39	60	0	62.0
T-Mobile	1	3	ANT 1	VV-65A-R1B 03DT 1900.ant	1900	2870.75	1.39	60	0	62.0
T-Mobile	2	1	ANT 2	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	60	0	64.0
T-Mobile	2	2	ANT 2	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	60	0	64.0
T-Mobile	2	3	ANT 2	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	60	0	64.0
T-Mobile	2	4	ANT 2	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	60	0	64.0
T-Mobile	3	1	ANT 3	APXVAALL24 43-U-NA20 05DT 700.ant	700	607.60	2.44	60	0	62.0
T-Mobile	3	2	ANT 3	APXVAALL24 43-U-NA20 05DT 600.ant	600	529.20	2.44	60	0	62.0
T-Mobile	3	3	ANT 3	APXVAALL24 43-U-NA20 05DT 600.ant	600	1411.20	2.44	60	0	62.0
T-Mobile	3	4	ANT 3	APXVAALL24 43-U-NA20 03DT 1900.ant	1900	8000.49	2.44	60	0	62.0
T-Mobile	4	1	ANT 4	VV-65A-R1B 03DT 2100.ant	2100	6683.83	1.39	140	0	62.0
T-Mobile	4	2	ANT 4	VV-65A-R1B 03DT 1900.ant	1900	5741.50	1.39	140	0	62.0
T-Mobile	4	3	ANT 4	VV-65A-R1B 03DT 1900.ant	1900	2870.75	1.39	140	0	62.0
T-Mobile	5	1	ANT 5	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	140	0	64.0
T-Mobile	5	2	ANT 5	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	140	0	64.0
T-Mobile	5	3	ANT 5	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	140	0	64.0
T-Mobile	5	4	ANT 5	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	140	0	64.0
T-Mobile	6	1	ANT 6	APXVAALL24 43-U-NA20 05DT 700.ant	700	607.60	2.44	140	0	62.0
T-Mobile	6	2	ANT 6	APXVAALL24 43-U-NA20 05DT 600.ant	600	529.20	2.44	140	0	62.0
T-Mobile	6	3	ANT 6	APXVAALL24 43-U-NA20 05DT 600.ant	600	1411.20	2.44	140	0	62.0
T-Mobile	6	4	ANT 6	APXVAALL24 43-U-NA20 03DT 1900.ant	1900	8000.49	2.44	140	0	62.0
T-Mobile	7	1	ANT 7	VV-65A-R1B 03DT 2100.ant	2100	6683.83	1.39	270	0	62.0
T-Mobile	7	2	ANT 7	VV-65A-R1B 03DT 1900.ant	1900	5741.50	1.39	270	0	62.0
T-Mobile	7	3	ANT 7	VV-65A-R1B 03DT 1900.ant	1900	2870.75	1.39	270	0	62.0
T-Mobile	8	1	ANT 8	SON_AIR6449 2500 LTE TB.ant	2500	25356.33	0.84	270	0	64.0
T-Mobile	8	2	ANT 8	SON_AIR6449 2500 NR TB.ant	2500	25356.33	0.84	270	0	64.0
T-Mobile	8	3	ANT 8	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	270	0	64.0
T-Mobile	8	4	ANT 8	SON_AIR6449 2500 LTE MACRO.ant	2500	2642.20	0.84	270	0	64.0
T-Mobile	9	1	ANT 9	APXVAALL24 43-U-NA20 05DT 700.ant	700	607.60	2.44	270	0	62.0
T-Mobile	9	2	ANT 9	APXVAALL24 43-U-NA20 05DT 600.ant	600	529.20	2.44	270	0	62.0
T-Mobile	9	3	ANT 9	APXVAALL24 43-U-NA20 05DT 600.ant	600	1411.20	2.44	270	0	62.0
T-Mobile	9	4	ANT 9	APXVAALL24 43-U-NA20 03DT 1900.ant	1900	8000.49	2.44	270	0	62.0

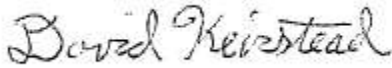
Note that Power (W) ERP/EiRP values are listed respective to the frequency of the antenna. (Values less than 1,000 MHz are listed as ERP and greater than 1,000 MHz are listed as EiRP.)

Appendix A: Certifications

Preparer Certification

I, David Keirstead, 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.

A rectangular box containing a handwritten signature in cursive script that reads "David Keirstead".

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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 and 800 MHz Bands is 467 $\mu\text{W}/\text{cm}^2$ and 567 $\mu\text{W}/\text{cm}^2$ respectively, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu\text{W}/\text{cm}^2$. 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.

SHEET NUMBER: T-1	REVISION 2
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1. THE STRUCTURAL STEEL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANCHOR BOLT LOCATIONS, ELEVATION OF TOP OF CONCRETE AND BEARING PLATES, ALIGNMENT, ETC.
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. AISC-- "STEEL DESIGN MANUAL OF STRUCTURAL STEELWORK".
3. MATERIAL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS:
 - STRUCTURAL, WIDE FLANGE & SHAPES A5892 OR A572, FY = 50KSI
 - OTHER STRUCTURAL SHAPES AND PLATES A572, FY = 50KSI
 - STRUCTURAL TUBING A500, GRADE B, FY = 46KSI
 - HIGH STRENGTH BOLTS A325, A307
 - THREADED RODS A307, A308, GRADE BC
 - ANCHOR BOLTS A325 OR A304 BC
 - PIPE (WARRANT) SCH 40 PIPE
4. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, USING E70XX ELECTRODES, UNLESS OTHERWISE NOTED. PROVIDE MINIMUM SIZE 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. THE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED BY FIELD MEASUREMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CONDITIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH CONSTRUCTION.
10. THE GENERAL CONTRACTOR AND HIS SUB CONSULTANTS SHALL BE RESPONSIBLE FOR OBTAINING ALL BUILDING AND/or TRADE PERMITS AND INSPECTIONS THAT MAY BE REQUIRED FOR THE PROJECT.
11. STRUCTURAL, THREADED FASTENERS FOR STEEL, ANCHOR MOUNTING ASSEMBLIES SHALL CONFORM TO ASTM A307 OR ASTM A308. STRUCTURAL FASTENERS FOR STRUCTURAL STEEL, FRAMING SHALL CONFORM TO ASTM A325. STRUCTURAL FASTENERS SHALL BE 5/8" DIAMETER FOR ALL CONNECTIONS WITH THE THREADED RODS EXCEPT FOR THE SHEAR PLATE FOR ANGLES. STRUCTURAL FASTENERS SHALL BE 3/4" DIAMETER BEARING TYPE CONNECTIONS WITH THE THREADED EXCLUDED FROM THE SHEAR PLATE FOR ALL OTHER STRUCTURAL SHAPES. ALL STRUCTURAL FASTENERS, NUTS AND WASHERS SHALL BE HOT DIP GALVANIZED UNLESS OTHERWISE NOTED.
12. EXPANSION ANCHORS INSTALLED IN CONCRETE SHALL BE HILTI STAINLESS STEEL ANCHORS AS SPECIFIED ON THE PLANS. THE EXPANSIONS ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.
13. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY NORTH AND INFORM ARCHITECT/ENGINEER OF ANY DISCREPANCY BEFORE STARTING CONSTRUCTION.
14. ROOF PROTECTION PADS UNDER THE CABLE BRIDGE SLEEPERS AND ROOF PAVERS SHALL BE 0.30" THICK RUBBER FIRESTONE PROTECTION PADS. THE ROOF PROTECTION PADS SHALL BE INSTALLED UNDER THE SLEEPERS AND UNDER THE SLEEPERS. PROVIDE A 28 LB FELT FLOOR SLOPE SHEET 2" LARGER THAN THE ROOF PROTECTION PAD DIRECTLY ON THE ROOF. REMOVE ALL LOG STONES PRIOR TO PLACING THE SEPARATOR SHEET. THE PROTECTION PADS SHALL NOT BE PLACED WITH IN 6" OF AN ADJACENT PAD OR OTHER ROOF OBSTRUCTION TO FACILITATE DRAINAGE.
15. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE BUILDING OWNER'S ROOF CONTRACTOR WHO WILL COMPLETE ALL WORK ASSOCIATED WITH THE ROOF. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE BUILDING OWNER'S ROOF CONTRACTOR BEFORE INSTALLATION OF ANY ROOF MOUNTED EQUIPMENT.
16. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301, AND SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. ALL CONCRETE SHALL BE CONTAIN MATERIAL MORE THAN 2" IN DIAMETER. UNLESS OTHERWISE NOTED, MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE 3 INCHES UNLESS OTHERWISE NOTED.
17. CONCRETE SHALL BE 4 TO 6% AIR ENTRAINED.
18. ALL REINFORCING STEEL SHALL CONFORM TO ASTM 615 GRADE 60. DEFORMED BILLET STEEL BARS, WELDED REIN. FABRIC SHALL CONFORM TO ASTM A185.
19. FENCED AREA SHALL BE CLEARED AND GRUBBED, REMOVE UNSUITABLE LOGS OR SOFT SOIL. ALL MATERIAL OR DEBRIS TO BE REMOVED FROM THE AREA. FILL TO FINISH GRADE TO BE BELOW FINISH GRADE. PLACE A MINRAI 500 SOIL STABILIZATION PRODUCT ON SUBGRADE. FILL WITH 6" OF ASH70 57 STONE TO FINISH GRADE.
20. WHERE FILL IS REQUIRED, FILL IN LAYERS WHICH DO NOT EXCEED 8" BEFORE COMPACTED. SPREAD FILL UNIFORMLY AND EVENLY. LAID MIX EACH LAYER TO ENSURE COMPACT. FILL MATERIAL SHALL BE 57 STONE TO CONTAIN MATERIAL MORE THAN 2" IN DIAMETER. COMPACT EACH LAYER NOT LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM 557 MODIFIED PROCTOR TEST OR (ASTM 698 STANDARD PROCTOR TEST). USE FILL MATERIAL WITH MOISTURE

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY 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 CONTACTS, 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. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/EIA/TIA 222-G REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
13. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSIDERED AS AN ACCURATE BOUNDARY SURVEY.
14. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
15. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
16. NO SIGNIFICANT NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY.
17. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
18. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
19. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER UNLESS OTHERWISE NOTED IN THIS DRAWING SET.

1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
3. ALL WIRES SHALL BE AWG THIN/THIN COPPER UNLESS NOTED OTHERWISE.
4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, BUILDING GROUND AND FENCE POSTS SHALL BE EXOTHERMIC ("CAWDELDS") UNLESS NOTES OTHERWISE. CLEAN SURFACES TO SHINY METAL. WHERE GROUND WIRES ARE CAWDELDED TO GALVANIZED SURFACE, SPRAY CAWDELDED WITH GALVANIZING PAINT.
5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
6. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
7. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12° RADIUS.
8. INSTALL 2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND 2 BAR TINNED COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
9. REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CAWDELDS") TO ANTENNA MOUNTS AND GROUNDING RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTION TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
10. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"x4'-0" COPPER CLAD STEEL, INTERCONNECTED WITH 2 BARE TINNED COPPER WIRE BURED 30" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 8' APART.
11. IF ROD IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45°.
12. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT.
13. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE T-MOBILE CONSTRUCTION MANAGER.
14. GROUND RING & CONNECTIONS TO IT SHALL BE 2 BARE SOLID BARE TINNED COPPER WIRE. EQUIPMENT GROUND CONNECTIONS TO MGB SHALL BE 2 AWG STRANDED TO WIRE.
15. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPF-SHIELD (TM JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPF-SHIELD OR EQUIV.
16. ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "TALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A T-MOBILE REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
17. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, RUN 1' BELOW GRADE AND SEAL TOP WITH SILICON MATERIAL.
18. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTIONS, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT:
 - 19. ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 8 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF 2 BARE TINNED COPPER WIRE.
20. BUILDING GROUND BUS BAR REQUIRES (2) SOLID LEADS CAWDELDED TO THE BUS BAR.
21. MAIN EQUIPMENT BUS BAR REQUIRES (2) SOLID LEADS CAWDELDED TO AND TO THE GROUND.
22. ALL SOLID LEADS TERMINATED TO EITHER A SOLID BAR OR EQUIPMENT SHALL BE PROTECTED WITH CAPEX.

1. SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.

2. CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO BEGINNING OF THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.

3. VERIFY HEIGHT WITH PROJECT MANAGER PRIOR TO INSTALLATION.

4. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.

5. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONALLY CIRCUMSTANCES SURROUNDING THE PROJECT.

6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT INSTALLATION CONNECTION TOOLS, TRANSPORTATION ETC. FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS SIZED AND SPECIFIED AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.

7. ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND IN PERCENT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH TYPE OF WORK OR EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "N" WHICH REFERS TO SUCH LISTED MATERIALS. CONTRACTOR SHALL BE FULLY DULY AWARE OF THE GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, UL AND NFPA. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.

8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.

9. ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE. MATERIALS, EQUIPMENT AND EQUIPMENT SHALL BE FULLY DULY AWARE THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.

10. PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE-STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE-RATED ASSEMBLIES, WATER-TIGHT USING SILICONE SEALANT.

11. LOCATE ALL PENETRATIONS SUCH THAT ALL REINFORCEMENT CONTAINED WITHIN THE EXISTING BUILDING STRUCTURE REMAINS UNHARMED AND UNDISTURBED. SUBMIT LOCATION METHOD TO PROJECT MANAGER FOR APPROVAL PRIOR TO EXECUTION.

12. DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT AND FIRE MAINTENANCE LABEL MECHANICAL EQUIPMENT.

13. ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE 12 AWG, UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THWN, RATED IN ACCORDANCE WITH NEC 110-14(C).

14. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.

15. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.

16. CONDUIT: ALL ABOVE GROUND CONDUITS SHALL BE RIGID & LFMG TO 6" AS STATED BELOW:

A. RIGID CONDUIT SHALL BE U.S. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND BLACK EXTERIOR USED WHERE CONDUIT IS EXPOSED TO WEATHER, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON UNPAVED EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2" LAPPED WRAPPING WITH GALVANIZED STEEL STRAP PROVIDED.

B. ELECTRICAL METALLIC TUBING SHALL HAVE U.S. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.

C. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.S. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECEPTORS AND WHERE PERMITTED BY THE UTILITY COMPANY. CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.

D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING OR BEAMS. CONDUIT SHALL BE RUN ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.

E. PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS, EXCEPT WHERE PERMITTED BY CODE TO OMIT.

17. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PHENOLIC PLASTIC NAMEPLATES. PFC, METER, DISCONNECT, RAC353, PCBO, AND HF JUNCTION BOX. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.

18. UPON COMPLETION OF WORK, CONDUIT CONNECTIONS, SHORT CIRCUIT, AND FAIL OF POTENTIAL GRADIENT TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO T-MOBILE PROJECT MANAGER.

19. IF THE TESTED RESISTANCE VALUE OF THE CONDUIT IS LESS THAN 1 OHM, IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE T-MOBILE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.

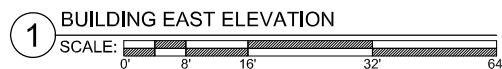
20. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNFINISHED CONDITION. PROVIDE ALL MATERIALS, EQUIPMENT, UNUSED AND EXCESS MATERIAL, GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.

21. COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE PROJECT. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.

22. VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.

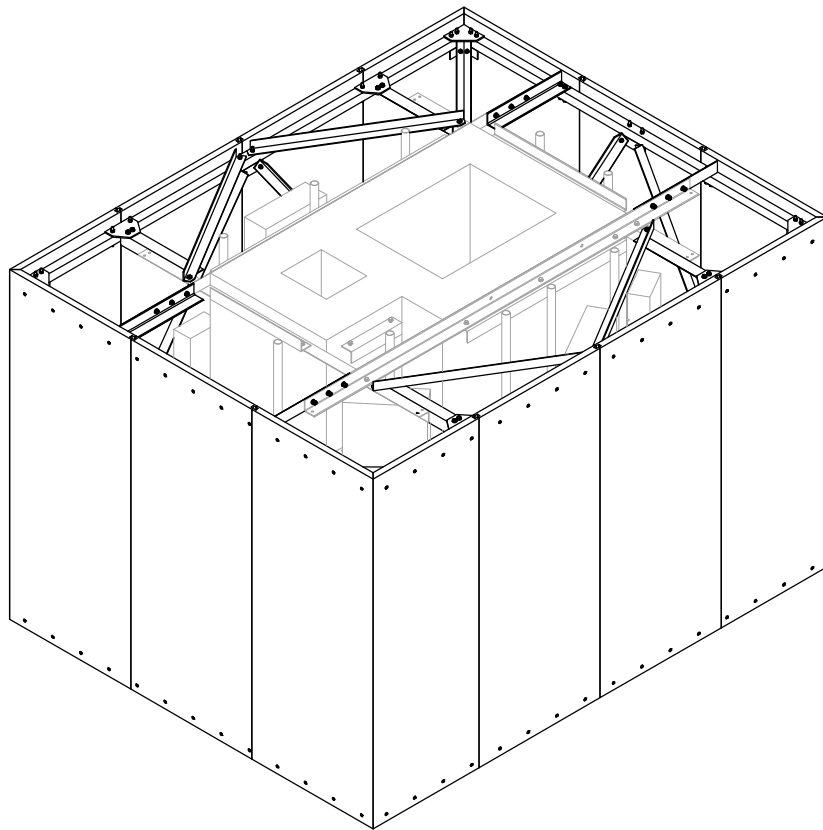
23. RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO THE T-MOBILE CONSTRUCTION MANAGER.





1 ANTENNA, RF & CABLING SCHEMATIC DIAGRAM
SCALE: N.T.S.





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FINAL ENGINEERING

SMARTLINK LLC
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820 UNIVERSITY BLVD
EAST SILVER SPRING, MD 20903

JOB #: TM21-00760W-17R0

DRAWING INDEX

T1	TITLE SHEET
N1-N2	NOTES & SPECIFICATIONS
S1-S3	ASSEMBLY - ELEVATIONS



T1

REVISION
C

05-27-2021

GENERAL

1. THIS PRODUCT IS SOLD PURSUANT TO RAYCAP|STEALTH TERMS AND CONDITIONS, WHICH ARE INCORPORATED HEREIN BY REFERENCE.
2. THESE SHALL APPLY FOR ALL CASES UNLESS NOTED OTHERWISE (U.N.O.).
3. ANY ITEMS REFERENCED AS BEING ON "HOLD" ARE TO BE INCLUDED IN THE WORK AS SHOWN, HOWEVER, CONSTRUCTION OR FABRICATION IS NOT TO BEGIN UNTIL THE "HOLD" REFERENCE IS REMOVED.
4. IN THE CASE WHERE DIMENSIONS CONTAINED WITHIN ARE LABELED TO BE VERIFIED IN FIELD (V.I.F.), THEY MUST BE FIELD VERIFIED AND/OR CUSTOMER APPROVED PRIOR TO FABRICATION OF MATERIALS.
5. IN THE CASE THAT THE PROPOSED IS TO BE PLACED ON AN EXISTING STRUCTURE, THE MODIFICATIONS DEPICTED IN THESE DRAWINGS ARE INTENDED TO PROVIDE STRUCTURAL SUPPORT FOR THE ADDITION OF THE TELECOM STRUCTURE OUTLINED WITHIN. THE EXISTING STRUCTURE, WHETHER IT BE A FOUNDATION, POLE, OR BUILDING (IF APPLICABLE) SHALL BE ANALYZED AND RETROFITTED AS REQUIRED, BY OTHERS, TO WITHSTAND THE LOADS IMPOSED BY THE NEW RAYCAP STRUCTURE SHOWN ON THE DRAWINGS.
6. TELECOM PRODUCTS SHALL BE INSTALLED BY A CONTRACTOR EXPERIENCED IN SIMILAR WORK. CARE SHALL BE TAKEN IN THE INSTALLATION OF ANY AND ALL MEMBERS IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS AND PROCEDURES. ALL APPLICABLE OSHA SAFETY GUIDELINES ARE TO BE FOLLOWED. RAYCAP IS NOT PROVIDING FIELD INSTALLATION SUPERVISION.
7. NOTES FOR CONTRACTOR/INSTALLER: ALL BIDS FOR THE INSTALLATION/ERECTION OF THIS PRODUCT SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING MINIMUM REQUIRED TRADES: RIGGING, STEEL ERECTION, STEEL FABRICATION/MODIFICATION, WELDING, ELECTRICAL, CONCRETE, EXCAVATION AND WATERPROOFING. CONTRACTOR MAY, IN CONTRACTOR'S SOLE AND ABSOLUTE DISCRETION, DETERMINE ADDITIONAL TRADES ARE NECESSARY TO INSTALL/ERECT THE PRODUCT.
8. THESE DRAWINGS INDICATE THE MAJOR OPERATIONS TO BE PERFORMED, BUT DO NOT SHOW EVERY FIELD CONDITION THAT MAY BE ENCOUNTERED. THEREFORE, PRIOR TO BEGINNING OF WORK THE CONTRACTOR SHOULD SURVEY THE JOB SITE THOROUGHLY TO MINIMIZE FIELD PROBLEMS.
9. PROTECTION OF EXISTING STRUCTURES DURING THE COURSE OF THE CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
10. THE STRUCTURAL INTEGRITY OF THIS STRUCTURE IS DESIGNED TO BE ATTAINED IN ITS COMPLETED STATE. WHILE UNDER CONSTRUCTION ANY TEMPORARY BRACING OR SHORING WHICH MAY BE REQUIRED TO MAINTAIN STABILITY PRIOR TO COMPLETION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
11. THE PLANS AND DETAILS WITHIN DO NOT INCLUDE DETAILS OR DESIGN FOR DRAINAGE FROM OR WATERPROOFING OF EXTERIOR OR INTERIOR SURFACES OF THE STRUCTURE, THESE DETAILS MUST BE COMPLETED BY OTHERS.
12. CONTRACTOR TO SHIM BASE PLATES AND MATING FLANGES AS REQUIRED TO ENSURE LEVEL SURFACE.

STRUCTURAL STEEL AND ALUMINUM

1. STEEL FABRICATION AND INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL AND SPECIFICATIONS.
2. STEEL I-SHAPE, ANGLE, CHANNEL, AND MISCELLANEOUS MEMBERS SHALL CONFORM TO ASTM A36 (36 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS, U.N.O.
3. STEEL PLATE MEMBERS SHALL CONFORM TO MINIMUM ASTM A36 (36 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS U.N.O.
4. STEEL PIPE AND ROUND TUBE MEMBERS SHALL CONFORM TO ASTM A500 GRADE B (42 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS, U.N.O.
5. STEEL RECTANGULAR AND SQUARE TUBE MEMBERS SHALL CONFORM TO ASTM A500 GRADE B (46 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS, U.N.O.
6. STEEL WIDEFLANGE MEMBERS SHALL CONFORM TO ASTM A992 (50 KSI MIN. YIELD STRENGTH) STEEL SPECIFICATIONS U.N.O.
7. STEEL TAPERED POLES SHALL CONFORM TO ASTM A572 GR50 FOR 11 GA AND ASTM A572 GR65 FOR .188" and .25" WALL THICKNESS.
8. ALUMINUM PLATE MEMBERS SHALL BE GRADE 5052. EXCEPTION FOR 3/8" OR THICKER UNBENT MEMBERS TO BE GRADE 6061.
9. ALUMINUM PIPE TO BE GRADE 6061.
10. ALUMINUM TAPERED POLES TO BE GRADE 6063.
11. ALL STRUCTURAL BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL CONFORM TO ASTM F3125 GRADE A325 SPECIFICATIONS, U.N.O. A325N AND A325X ALLOWED. ALL BOLTS ARE RECOMMENDED TO BE ORIENTED WITH THREADS UP AND OUT UNLESS SITE SPECIFIC CONDITIONS WARRANT OTHERWISE.
12. STRUCTURAL BOLTS SHALL BE TIGHTENED TO A MINIMUM "SNUG TIGHT" CONDITION U.N.O. IN THE CASE "TURN OF THE NUT" METHOD IS REQUIRED, REFERENCE TABLE N1.1.
13. STRUCTURAL BOLT HOLE EDGE DISTANCES SHALL BE PER AISC SECTION J3
14. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND PROCEDURES OF THE AMERICAN WELDING SOCIETY (AWS) BY CERTIFIED WELDERS PER AWS D1.1 FOR STEEL, AWS D1.2 FOR ALUMINUM AND AWS D1.6 FOR STAINLESS STEEL. STEEL WELDS SHALL BE BY E70XX, LOW HYDROGEN ELECTRODE.
15. UNCOATED STEEL SHALL BE HOT DIP GALVANIZED PER ASTM A123 SPECIFICATIONS AFTER FABRICATION OR PAINTED WITH RUST INHIBITIVE PRIMER.
16. STEEL HARDWARE SHALL BE HOT DIP GALVANIZED PER ASTM F2329, U.N.O.
17. AFTER ANY FIELD HOLE PUNCHING / DRILLING OR CUTTING HAS BEEN COMPLETED, OR FOR ANY DAMAGED STRUCTURAL MEMBER, THE GALVANIZING MUST BE REPAIRED ACCORDING TO ASTM A780.
18. ALL WELDED STEEL ASSEMBLIES AND INDIVIDUAL STEEL PARTS SHOULD HAVE THE PART NUMBER WELDED OR TAGGED ONTO THE PART OR ASSEMBLY. IF WELDED, THE PART NUMBERS SHOULD BE LOCATED CONSISTENTLY AND AWAY FROM ANY CONNECTION POINT TO AVOID ANY INTERFERENCE ISSUES WITH THE WELD.

STEALTHSKIN PANELS

1. FASTENER HOLES IN STEALTHSKIN FOAM COMPOSITE PANELS ARE NOT FACTORY DRILLED AND MUST BE DRILLED IN THE FIELD.
2. PANEL FASTENERS TO BE SPACED 12" O.C. MAX. AND LOCATED 6" MAX. HORIZONTALLY FROM EACH EDGE AT TOP AND BOTTOM OF PANEL, UNLESS NOTED OTHERWISE. MAINTAIN 1 1/2" MIN. EDGE DISTANCE FROM ALL EDGES. 4" WIDE PANELS REQUIRE (4) FASTENERS TOP AND BOTTOM. 5" WIDE PANELS REQUIRE (5) FASTENERS TOP AND BOTTOM.
3. WHEN FASTENER BOLT HEAD OR NUT BEARS DIRECTLY ON SURFACE OF STEALTHSKIN PANEL, TIGHTEN PANEL BOLTS ONLY 1/2 TURN PAST SNUG. APPLY THREAD LOCK COMPOUND TO THE THREADS OF METAL BOLTS. USE THIN BEAD OF EPOXY TO LOCK THE NUTS OF FRP BOLTS AND STEALTH® STAINLESS STEEL PANEL BOLTS. USE WASHER OR FLANGED HEAD BOLT, OR FASTENER WITH LARGE BEARING SURFACE.
4. PANELS WILL EXPAND AND CONTRACT DUE TO TEMPERATURE. WHEN INSTALLING PANELS IN COLD TEMPERATURES, EVENLY SPACE PANELS ALONG LENGTH OF SCREEN WALL WITH EQUAL GAPS BETWEEN PANELS TO ALLOW FOR EXPANSION DURING WARM TEMPERATURES.
5. ADJACENT FLAT PANELS ARE JOINED BY A VERTICAL FOAM SPLINE THAT IS INSERTED INTO GROOVES CUT INTO THE SIDE OF EACH PANEL, DO NOT LIFT PANELS BY GROOVES, PANELS MUST BE LIFTED WITH FORCE DIRECTED ONTO PANEL SURFACE.
6. ADJACENT RADIUS PANELS ARE JOINED BY A VERTICAL H-CHANNEL. INSERT PANELS INTO EACH SIDE OF H-CHANNEL.
7. RADIUS PANELS MUST BE EVENLY SPACED ALONG RADIUS SUPPORT. CONTRACTOR TO MEASURE LENGTH OF RADIUS SUPPORT AND DIVIDE BY THE NUMBER OF RADIUS PANELS TO DETERMINE PROPER SPACING. H-CHANNEL CONNECTORS ARE USED TO COVER THE GAP BETWEEN PANELS AND TO ALLOW FOR PANEL EXPANSION AND CONTRACTION.
8. SURFACES OF PANELS SHALL BE COATED WITH SUITABLE PAINT FOR UV PROTECTION. TOP EDGE OF PANEL MUST BE COVERED TO PREVENT WATER TRAVEL BETWEEN PANELS. USE SHERWIN WILLIAMS "COROTHANE 11" OR PRE-APPROVED EQUIVALENT.
9. EXPOSED TOP AND SIDE FOAM EDGES OF PANELS MUST BE COVERED OR COATED FOR UV PROTECTION. RAYCAP, INC. WILL PROVIDE PANEL EDGE CAPS (VERTICAL AND HORIZONTAL) TO BE FIELD APPLIED FOR THIS PURPOSE FOR MOST APPLICATIONS. HORIZONTAL AND VERTICAL PANEL EDGE CAPS TO BE SECURED TO THE EXPOSED EDGES OF THE PANELS WITH PROVIDED TEK SCREWS INSTALLED @ 12" MAXIMUM SPACING ON THE INSIDE FACE OF THE PANEL. IN RF SENSITIVE LOCATIONS, CONTRACTOR WILL APPLY (2) BEADS OF ADHESIVE TO EACH INSIDE CORNER OF THE EDGE CAP AND SECURE CAP TO PANEL WITH TAPE WHILE ADHESIVE CURES.
10. AT CORNER APPLICATIONS, VERTICAL PANEL EDGE CAPS ARE TO BE USED TO CAP BOTH EXPOSED EDGES (1 PER CUT EDGE OF PANELS). THESE EDGE CAPS ARE TO BE CUT 1" SHORTER THAN THE PANEL AND LEAVE 1" GAP AT THE TOP TO ALLOW ROOM FOR THE THE HORIZONTAL PANEL EDGE CAP AT THE TOP. CONTRACTOR TO APPLY (2) BEADS OF ADHESIVE TO EACH EDGE CAP (INSIDE CORNERS OF CAP), AND SECURE WITH TAPE AND/OR PROVIDED SCREWS (16 TOTAL PER CORNER) WHILE THE ADHESIVE CURES. IF CORNERS ARE IN NON-RF AREAS, EDGE CAP SCREWS CAN BE LEFT IN PLACE.
11. AT CORNER APPLICATIONS WITH SSV PANEL ONLY, CORNER CHANNELS ARE TO BE USED TO JOIN PANELS TOGETHER. BOTH ADJOINING PANELS WILL BE INSERTED INTO THE CORNER CHANNEL AND SECURED USING PROVIDED NYLON PUSHPINS. THE PUSHPINS ARE TO BE PLACED ON THE INSIDE OF ONE OF THE PANELS ONLY @ 12" MAXIMUM SPACING.

BALLASTED CONCEALMENTS

1. ROOF MUST BE CLEAN AND FREE OF DEBRIS.
2. THE BALLAST FRAME IS TO BEAR ON A NEOPRENE PAD PROVIDED BY OTHERS, PLACED BETWEEN THE NEW BALLAST FRAME AND ROOF.
3. DESIGN ASSUMES CONTRACTOR IS RESPONSIBLE FOR LEVELING THE PLATFORM ON ROOF AND PROVIDING APPROPRIATE SHIM METHOD IF ROOF IS SLOPED.

FRP STRUCTURAL MEMBERS

1. FRP STRUCTURAL SHAPES SHALL BE BEDFORD FRP SERIES 1525, MANUFACTURED USING THE PULTRUSION PROCESS.
2. IF PREFABRICATED MEMBERS DO NOT ASSEMBLE PER PLAN, CONTACT RAYCAP, INC. BEFORE CUTTING OR ALTERING FABRICATED MEMBERS.
3. FRP STRUCTURAL MEMBERS SHALL BE FABRICATED AND ASSEMBLED AS INDICATED ON THE DRAWINGS.
4. THE CONTRACTOR SHALL PROTECT THE FRP STRUCTURAL MEMBERS FROM ABUSE TO PREVENT BREAKAGE, NICKS, GOUGES, ETC. DURING FABRICATION, HANDLING, AND INSTALLATION.
5. FRP BOLTS SHOULD BE TIGHTENED 1/2 TURN PAST SNUG AND LOCKED WITH EPOXY.

DESIGN NOTES:

STRUCTURAL DESIGN IS BASED ON THE 2018 IBC & THE ASCE 7-16 STANDARD

SITE LOCATION:

EAST SILVER SPRING, MD

DESIGN LOADS:

WIND:

ULTIMATE WIND SPEED: 113 MPH (3-SEC GUST)

RISK CATEGORY: II

EXPOSURE: C

SEISMIC:

IMPORTANCE FACTOR: 1.0

RISK CATEGORY: II

SITE CLASS: D

MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_v = 0.133g S₁ = 0.43g

SEISMIC DESIGN CATEGORY: B

SPECTRAL RESPONSE COEFFICIENTS: S_{ds} = 0.142g S_{d1} = 0.069g

REACTIONS:

SHEAR REACTION: V= 550 lbs

AXIAL REACTION: R= 700 lbs



DRAWN	DSP	Raycap STEALTH 7555-A PALMETTO COMMERCE PARKWAY NORTH CHARLESTON, SC 29420 USA									
DESIGNED	VG										
REVISED	NB+C										
DRAWING NOT TO SCALE. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED		SMARTLINK LLC 7WAS565A 820 UNIVERSITY BLVD EAST SILVER SPRING, MD 20903									
<u>TOLERANCES</u> FRACTIONAL: X/X ± 1/16 DECIMAL: .X ± 0.1 .XX ±0.03 .XXX ±0.01 ANGLES ±.5° ALL BENDING TOLERANCES: ± 1.0°		<table><tr><th colspan="2">NOTES & SPECIFICATIONS</th><th>SHEET #</th><th>REVISION</th></tr><tr><td colspan="2"></td><td>N1</td><td>C</td></tr></table>		NOTES & SPECIFICATIONS		SHEET #	REVISION			N1	C
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		N1	C								
JOB #TM21-00760W-17R0		DATE: 05-27-2021									
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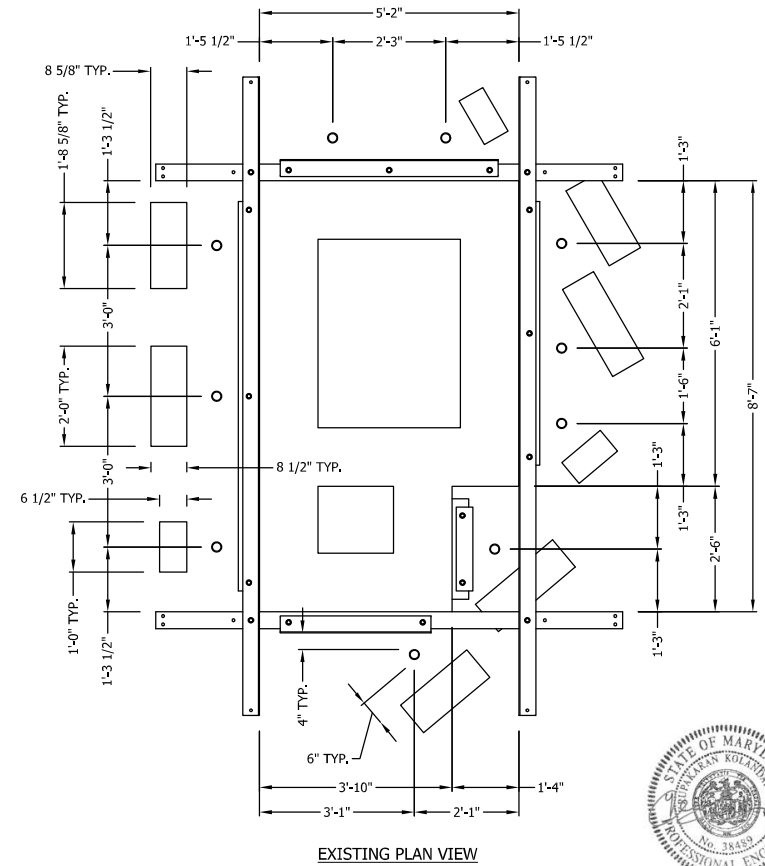
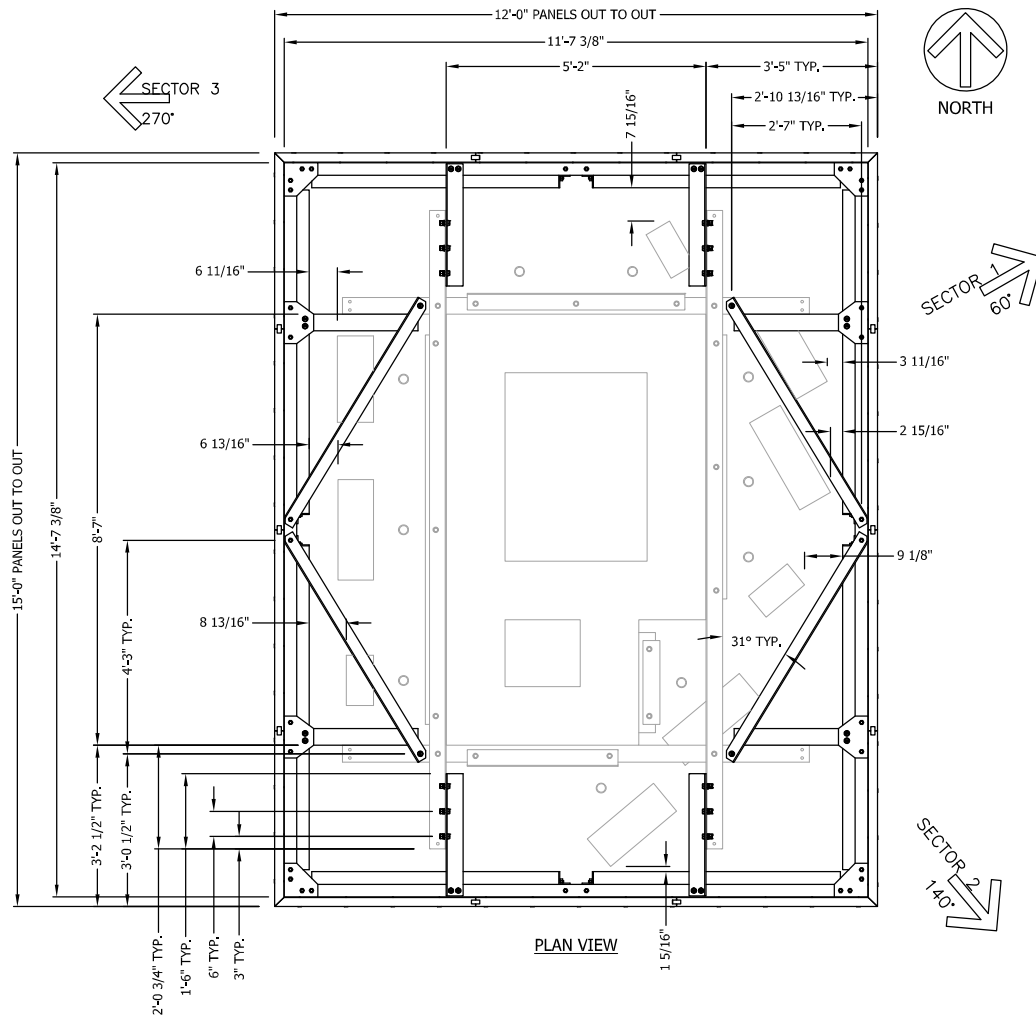


NB+C ENGINEERING SERVICES, LLC.
4000 KENNEDY DRIVE, SUITE 100
ELLSBURGH, MD 21111
(410) 326-1100

REVISION TABLE			
REVISION	DESIGNER	DATE	SCOPE OF REVISION
A	SH	05-10-21	PRELIMINARY DESIGN
B	SH	05-21-21	REVISED PER NEW RFDS DATED 05-19-21
C	NB+C	05-27-2021	FINAL ENGINEERING



DRAWN	DSP	 7555-A PALMETTO COMMERCE PARKWAY NORTH CHARLESTON, SC 29420 USA	
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REVISED	NB+C		
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NOTES & SPECIFICATIONS		SHEET #	REVISION
		N2	C
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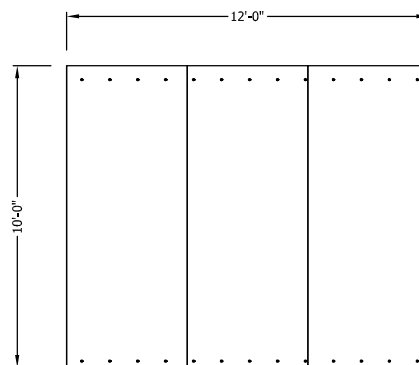
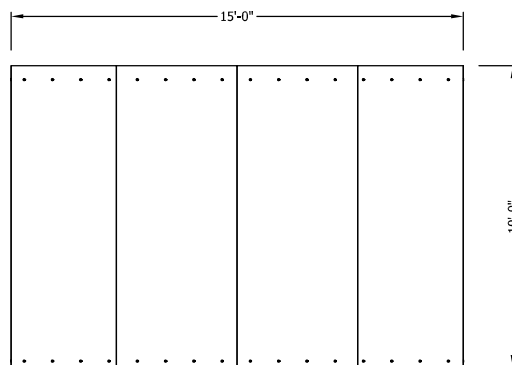
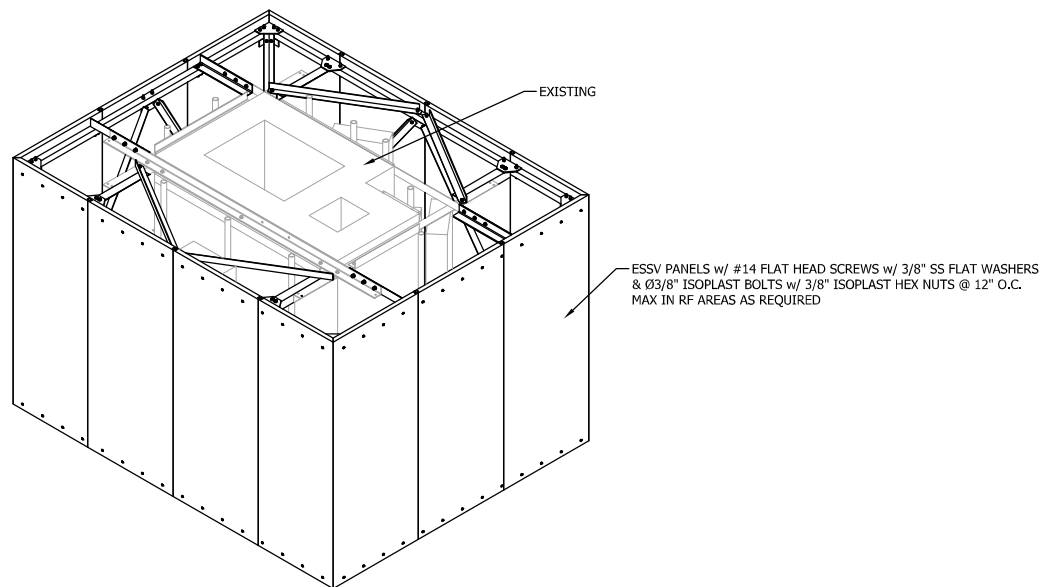


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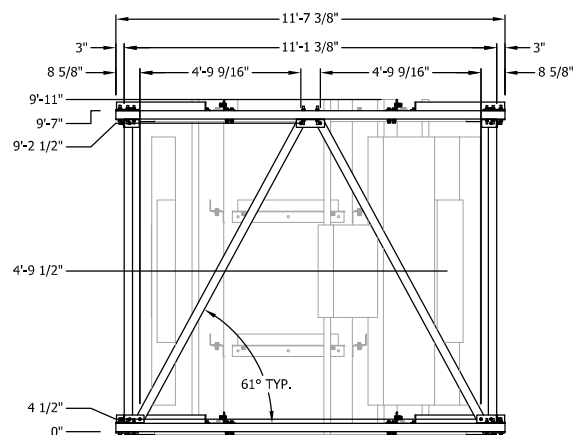
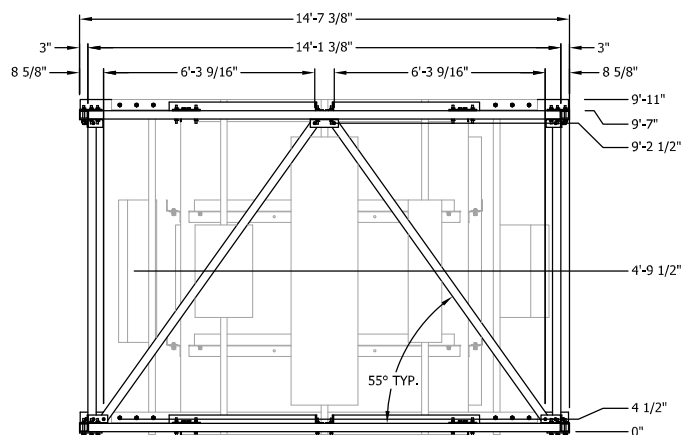
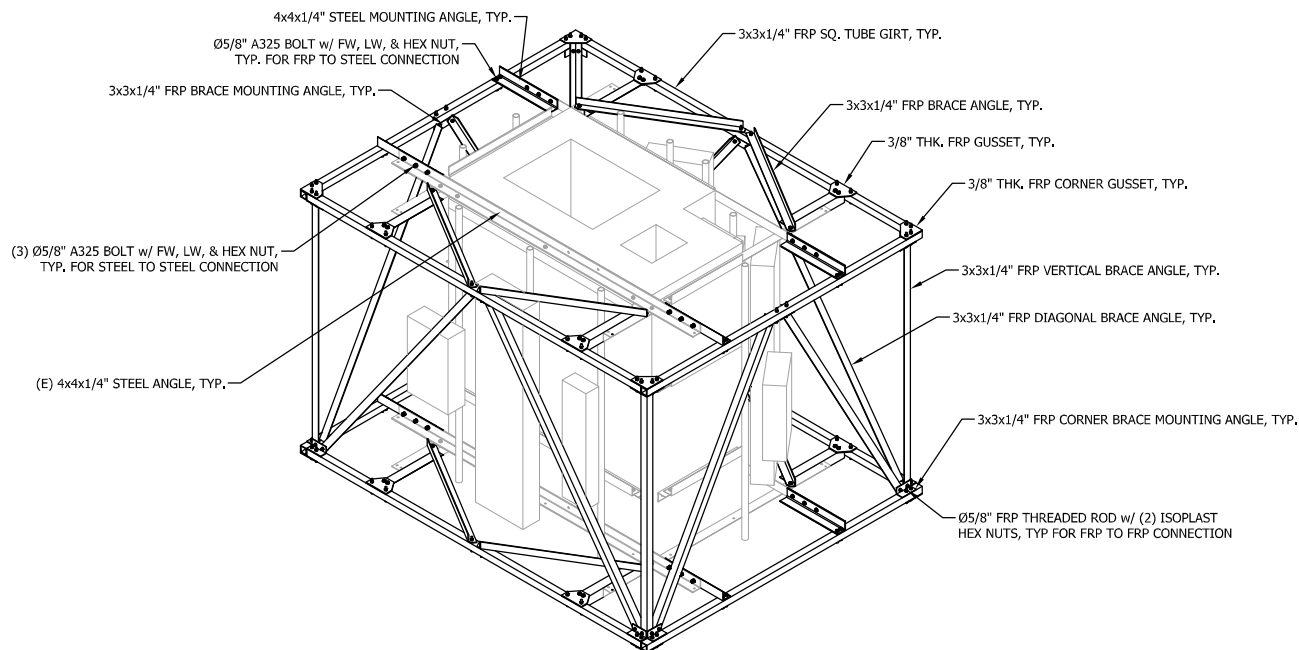
- 1.) THE INTEGRITY OF THE EXISTING STRUCTURE MUST BE VERIFIED BY OTHERS.
- 2.) DIMENSIONS OF THE EXISTING STRUCTURE ARE BASED UPON DRAWINGS BY (STEALTH) DATED 04-27-17 AND HAVE NOT BEEN PHYSICALLY VERIFIED BY RAYCAP. VERIFICATION OF THESE DIMENSIONS IS THE RESPONSIBILITY OF THE CUSTOMER.
- 3.) THE ATTACHMENT TO EXISTING (DESIGN AND FASTENERS) MUST BE PROVIDED BY OTHERS. RAYCAP WILL ONLY SUPPLY FASTENER SIZE AND QUANTITY REQUIRED, FOR ATTACHMENT TO EXISTING.
- 4.) THE PANELS ARE TO BE PAINTED / TEXTURED ACCORDING TO THE CUSTOMER APPROVED SAMPLE(S).
- 5.) THIS CONCEALMENT WAS DESIGNED TO ACCEPT THE FOLLOWING ANTENNA (ERICSSON AIR32 KRD901146-1_B66A_B2A, ERICSSON AIR6449 B41, & RFS APXVAALL24_43-U-NA20). IT IS THE CUSTOMERS RESPONSIBILITY TO ENSURE THE FIT OF THE ANTENNA AND COAX WITH THEIR SPECIFIC MOUNTING EQUIPMENT.
- 6.) IT IS STRONGLY RECOMMENDED THAT THE CUSTOMER REVIEWS THE RF CONSIDERATIONS IN THIS DESIGN.



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<u>TOLERANCES</u>			
FRACTIONAL: X/X ± 1/16			
DECIMAL: X ± 0.1 .XX ± 0.03 .XXX ± 0.01 ANGLES ±.5°		SHEET #	REVISION
		S1	C
ALL BENDING TOLERANCES: ± 1.0°		JOB # TM21-00760W-17R0	DATE: 05-27-2021
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		SHEET #		REVISION
		S2		C
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		SHEET # S3	REVISION C
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