

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

Site Number: 674349

Ashland_MA

Albert Ray Drive

Ashland, MA 01721

42° 16' 25.34" N, 071° 27' 05.22" W



Prepared For:

verizon✓









Radio Frequency Exposure FCC Compliance Assessment

Pre-Activation Post-Activation

SITE-SPECIFIC-INFORMATION			
Site Name	Ashland_MA	Multi-Licensee Facility	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Street Address	Albert Ray Drive	Is Verizon a Significant Contributor To Co-Locator Areas Requiring Mitigation?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A
City, State, Zip	Ashland, MA, 01721		
Verizon's Max % MPE (Measured - Occupational)	N/A	Verizon's Max % MPE (Predictive - Occupational)	1.40% Occupational Predictive
Structure Type	Lattice Tower	Assessment Date	7/18/2022
Broadcast (AM/FM/TV) Co-Locators	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Assessment Purpose	MODIFICATION
Total Access Points	1	Total Report Revisions	N/A
Original Report Date	7/18/2022	Report Revision Date	No Revisions
Compliance Status	<input checked="" type="checkbox"/> COMPLIANT AS DESIGNED <input type="checkbox"/> COMPLIANT PER RF SAFETY PLAN SUBMISSION <input type="checkbox"/> MITIGATION IS REQUIRED		

VERIZON'S WORST-CASE RF EMISSIONS IN ACCESSIBLE AREAS AT THIS FACILITY	
<input checked="" type="checkbox"/>	BELOW the General Population MPE limit
<input type="checkbox"/>	ABOVE the General Population MPE limit and BELOW the Occupational MPE limit
<input type="checkbox"/>	ABOVE the Occupational MPE limit and BELOW 10x the Occupational MPE limit
<input type="checkbox"/>	ABOVE 10x the Occupational MPE limit

Final Compliant Configuration						
	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER/MARKER
Access Point(s)	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Alpha	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Beta	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Gamma	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions

NOTE: The table above represents EVERY compliance item that MUST be implemented at this location; Also in Sec. 4 (B)

Additional Compliance Requirement(s):			
N/A			
Consultant Legal Name	Centerline Communications, LLC	Phone/Fax	(781) 713-4725
Address	750 W Center St, West Bridgewater, MA 02379		

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1. Introduction

Verizon Wireless has contracted with Centerline Communications, LLC, an independent Radio Frequency consulting firm, to conduct a **Radio Frequency Exposure (RFE) FCC Compliance Assessment** of the Ashland_MA cell site. The following report contains a detailed summary of the Radio Frequency environment as it relates to Federal Communications Commission (FCC) and Occupational Safety & Health Administration (OSHA) Rules and Regulations for all individuals.

The **Verizon Wireless antenna data** was provided by:

Name	Candace Vivenzio
Title	RF Engineer
Date	07/01/2022
Sub-Market	NE

This compliance assessment and report has been **prepared** and **reviewed** by:

	Preparer	Reviewer
Name	Matt Schulzinger	Yasir Alqadhili
Title	RF EME Technical Writer	RF EME Technical Writer
Date	7/18/2022	7/18/2022

This report utilizes the following **for predictive modeling of the ambient RF environment**:

MPE Modeling Program: RoofMaster™ 2020 Version 35.5.23.2022

Required Modeling Assumptions: 100% Duty Cycle and Maximum Total Power Output.

Additional Modeling Assumptions:

Centerline Communications, LLC has performed theoretical modeling using Waterford Consultants' RoofMaster™ 2020 Version 35.5.23.2022 which uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations the power decreases inversely with the square of the distance. This modeling technique is accurate with low antenna centerlines, such as rooftops, where persons can get close to the antennas and pass through fields in close proximity.

2. Existing Site Characteristics

a. Structure

Physical Description	This site is located on a 99' monopole.
Single-Family Home	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Latitude (NAD 83)	42° 16' 25.34" N
Longitude (NAD 83)	071° 27' 05.22" W
Total Analyzed Elevations	<p style="text-align: center;"> Ground Level 0.00 ft. Ground Level 0.00 ft. Antenna Level 99.00 ft. Residential Buildings 55.00 ft. Residential Buildings 55.00 ft. Elevation View </p>

b. Accessibility

Did the property owner or agent of the property owner (e.g. a security guard) grant you access to the rooftop?	<input type="checkbox"/> YES <input type="checkbox"/> NO
If not - were you required to be escorted by Verizon personnel in order to gain access?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Were you required to provide any proof of identity to gain access?	<input type="checkbox"/> YES <input type="checkbox"/> NO
What specific documents were required in order to gain access?	N/A
All access points locked at time of assessment?	<input type="checkbox"/> YES <input type="checkbox"/> NO
All access points alarmed at time of assessment?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Were there any broken locks or inoperable alarms on any of the access points to the rooftop?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Were there any access issues caused by either the property owner or agent of the property owner?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Additional Notes: N/A	

c. Existing Verizon Observations

Existing Observations						
	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER/MARKER
Access Point(s)	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Alpha	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Beta	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Gamma	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions

NOTE: The table above represents EXISTING compliance items implemented at this location.

Are Verizon signs visible from all areas of approach?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Are there any broken, damaged or illegible Verizon signs?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Are there any broken or damaged Verizon physical barriers?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Are there any Verizon indicative markers in need of repair or replacement?	<input type="checkbox"/> YES <input type="checkbox"/> NO

d. Antenna Inventory

Z-height represents the distance from the ground to the Centerline of the antenna.	<input type="checkbox"/> Bottom <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Top
NON-Verizon Co-locator Data	<input checked="" type="checkbox"/> Estimates <input type="checkbox"/> Actual Data

Ant Num	Carrier	Freq (MHz)	Tx (#)	Power (TPO)	ERP	Mfg	Model	Tech	(ft) Z	Gain in dbd	Azimuth	Horizontal BW	MDT	Length (ft.)
1	Verizon	850	7	20	2891.53	JMA	X7C-680-VR0-0	CDMA	102.00	13.15	27.00	78.00	3.00	6.00
2	Verizon	700	2	40	1355.47	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.29	27.00	65.00	0.00	6.00
2	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.70	27.00	60.00	0.00	6.00
2	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	NR	102.00	12.70	27.00	60.00	0.00	6.00
2	Verizon	2100	4	40	6700.70	COMMSCOPE	NHH-65B-R2B	AWS	102.00	16.22	27.00	64.00	0.00	6.00
3	Verizon	700	2	40	1355.47	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.29	27.00	65.00	0.00	6.00
3	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.70	27.00	60.00	0.00	6.00
3	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	NR	102.00	12.70	27.00	60.00	0.00	6.00
3	Verizon	1900	4	40	5876.52	COMMSCOPE	NHH-65B-R2B	LTE	102.00	15.65	27.00	69.00	0.00	6.00
4	Verizon	3700	4	50	43254.37	SAMSUNG	MT6407	C-Band	102.00	23.35	27.00	12.00	0.00	2.92
5	Verizon	850	7	20	2891.53	JMA	X7C-680-VR0-0	CDMA	102.00	13.15	147.00	78.00	4.00	6.00
6	Verizon	700	2	40	1355.47	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.29	147.00	65.00	0.00	6.00
6	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.70	147.00	60.00	0.00	6.00
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7	Verizon	700	2	40	1355.47	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.29	147.00	65.00	0.00	6.00
7	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.70	147.00	60.00	0.00	6.00
7	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	NR	102.00	12.70	147.00	60.00	0.00	6.00
7	Verizon	1900	4	40	5876.52	COMMSCOPE	NHH-65B-R2B	LTE	102.00	15.65	147.00	69.00	0.00	6.00
8	Verizon	3700	4	50	43254.37	SAMSUNG	MT6407	C-Band	102.00	23.35	147.00	12.00	0.00	2.92
9	Verizon	850	7	20	2891.53	JMA	X7C-680-VR0-0	CDMA	102.00	13.15	267.00	78.00	2.00	6.00
10	Verizon	700	2	40	1355.47	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.29	267.00	65.00	0.00	6.00
10	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.70	267.00	60.00	0.00	6.00
10	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	NR	102.00	12.70	267.00	60.00	0.00	6.00
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11	Verizon	700	2	40	1355.47	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.29	267.00	65.00	0.00	6.00
11	Verizon	850	1	40	744.83	COMMSCOPE	NHH-65B-R2B	LTE	102.00	12.70	267.00	60.00	0.00	6.00
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12	Verizon	3700	4	50	43254.37	SAMSUNG	MT6407	C-Band	102.00	23.35	267.00	12.00	0.00	2.92
13	AT&T	3840	1	67.78	12476.75	GENERIC	GENERIC C-BAND	C-Band	94.00	22.65	27.00	14.00	0.00	2.46
14	AT&T	700	4	40	2736.02	GENERIC	PANEL 6FT	LTE	94.00	12.33	27.00	68.00	0.00	6.00
14	AT&T	850	4	40	2924.96	GENERIC	PANEL 6FT	LTE	94.00	12.62	27.00	66.00	0.00	6.00
14	AT&T	1900	4	40	6139.32	GENERIC	PANEL 6FT	LTE	94.00	15.84	27.00	66.00	0.00	6.00
14	AT&T	2100	4	40	6968.19	GENERIC	PANEL 6FT	LTE	94.00	16.39	27.00	63.00	0.00	6.00
15	AT&T	3840	1	67.78	12476.75	GENERIC	GENERIC C-BAND	C-Band	94.00	22.65	147.00	14.00	0.00	2.46
16	AT&T	700	4	40	2736.02	GENERIC	PANEL 6FT	LTE	94.00	12.33	147.00	68.00	0.00	6.00
16	AT&T	850	4	40	2924.96	GENERIC	PANEL 6FT	LTE	94.00	12.62	147.00	66.00	0.00	6.00
16	AT&T	1900	4	40	6139.32	GENERIC	PANEL 6FT	LTE	94.00	15.84	147.00	66.00	0.00	6.00
16	AT&T	2100	4	40	6968.19	GENERIC	PANEL 6FT	LTE	94.00	16.39	147.00	63.00	0.00	6.00
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18	AT&T	1900	4	40	6139.32	GENERIC	PANEL 6FT	LTE	94.00	15.84	267.00	66.00	0.00	6.00
18	AT&T	2100	4	40	6968.19	GENERIC	PANEL 6FT	LTE	94.00	16.39	267.00	63.00	0.00	6.00
19	T-Mobile	2500	1	60	3222.19	GENERIC	GENERIC C-BAND	C-Band	85.00	17.30	27.00	65.00	0.00	2.76
19	T-Mobile	2500	1	90	15461.18	GENERIC	GENERIC C-BAND	C-Band	85.00	22.35	27.00	13.00	0.00	2.76
19	T-Mobile	2500	1	90	15461.18	GENERIC	GENERIC C-BAND	C-Band	85.00	22.35	27.00	13.00	0.00	2.76
20	T-Mobile	1900	2	60	4604.49	GENERIC	PANEL 6FT	LTE	85.00	15.84	27.00	66.00	0.00	6.00
20	T-Mobile	2100	2	60	5226.14	GENERIC	PANEL 6FT	LTE	85.00	16.39	27.00	63.00	0.00	6.00
21	T-Mobile	600	2	60	120.00	GENERIC	PANEL 6FT	LTE	85.00	0.00	27.00	68.00	0.00	6.00
21	T-Mobile	700	2	60	2052.02	GENERIC	PANEL 6FT	LTE	85.00	12.33	27.00	68.00	0.00	6.00
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23	T-Mobile	1900	2	60	4604.49	GENERIC	PANEL 6FT	LTE	85.00	15.84	147.00	66.00	0.00	6.00
23	T-Mobile	2100	2	60	5226.14	GENERIC	PANEL 6FT	LTE	85.00	16.39	147.00	63.00	0.00	6.00
24	T-Mobile	600	2	60	120.00	GENERIC	PANEL 6FT	LTE	85.00	0.00	147.00	68.00	0.00	6.00
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26	T-Mobile	1900	2	60	4604.49	GENERIC	PANEL 6FT	LTE	85.00	15.84	267.00	66.00	0.00	6.00
26	T-Mobile	2100	2	60	5226.14	GENERIC	PANEL 6FT	LTE	85.00	16.39	267.00	63.00	0.00	6.00
27	T-Mobile	600	2	60	120.00	GENERIC	PANEL 6FT	LTE	85.00	0.00	267.00	68.00	0.00	6.00
27	T-Mobile	700	2	60	2052.02	GENERIC	PANEL 6FT	LTE	85.00	12.33	267.00	68.00	0.00	6.00

3. Analysis

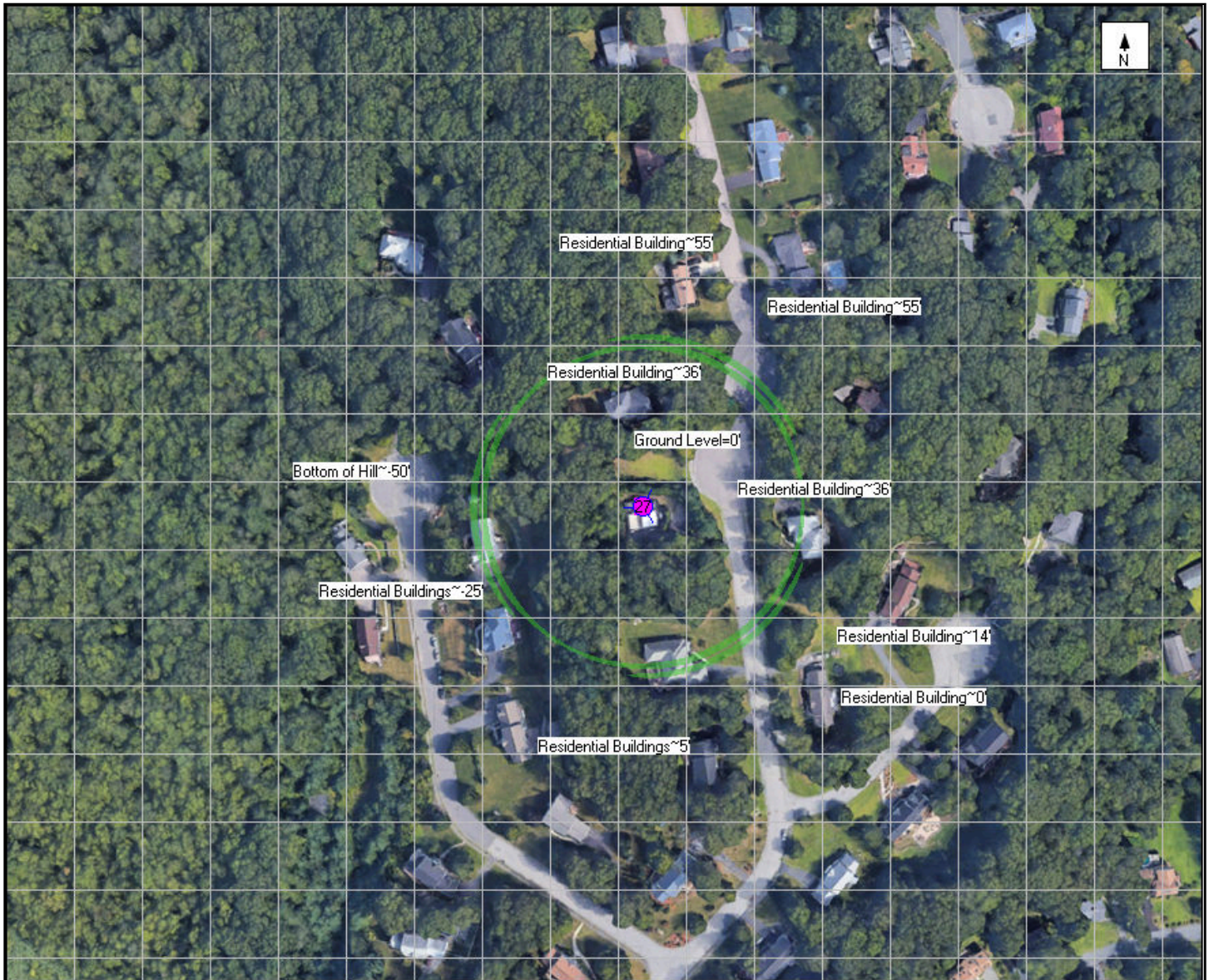
a. Overview Diagrams

Is the area being modeled completely **INACCESSIBLE** to members of the general population (including untrained maintenance workers)?

YES NO

Predictive Model: All Transmitters

Reference Plane: Ground Level 0.00 ft.



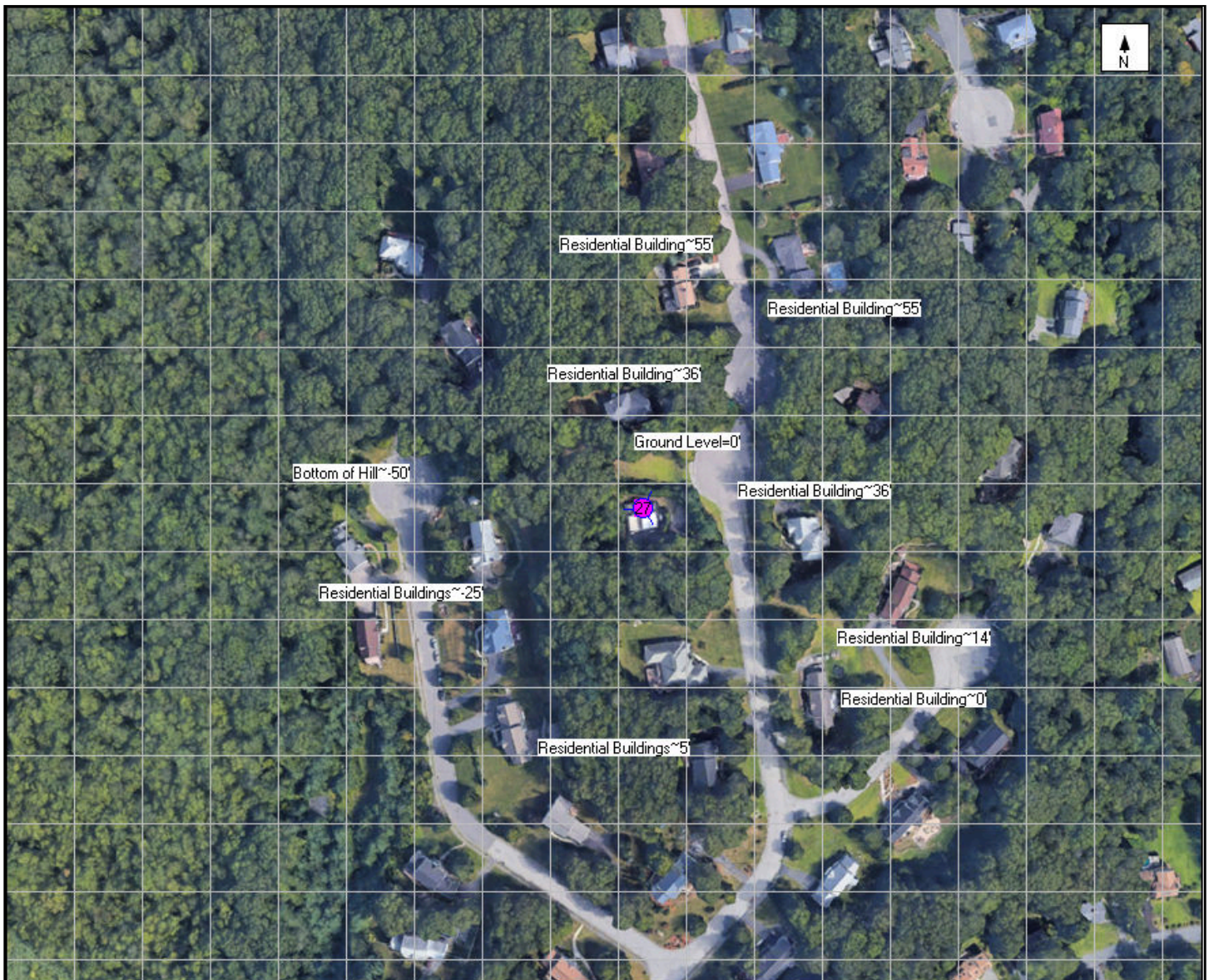
100' grid size

Plot includes MPE levels spatially averaged between the referenced plane and 6ft above.

Carrier Color Code		Existing Marker		Percent MPE Legend		Percent MPE Legend	
● Verizon	● T-Mobile	Existing Marker	Existing Barrier	0% - 5%	0% - 1%	5% - 100%	1% - 20%
● AT&T Mobility	● Sprint	Proposed Marker	Proposed Barrier	100% - 500%	20% - 100%	500% - 5000%	100% - 1000%
● Clearwire	● US Cellular			5000% +	1000% +		
● Cricket	● Metro PCS						
	● Unknown						
				Public Limits	Occupational Limits		

Predictive Model: Verizon Transmitters

Reference Plane: Ground Level 0.00 ft.



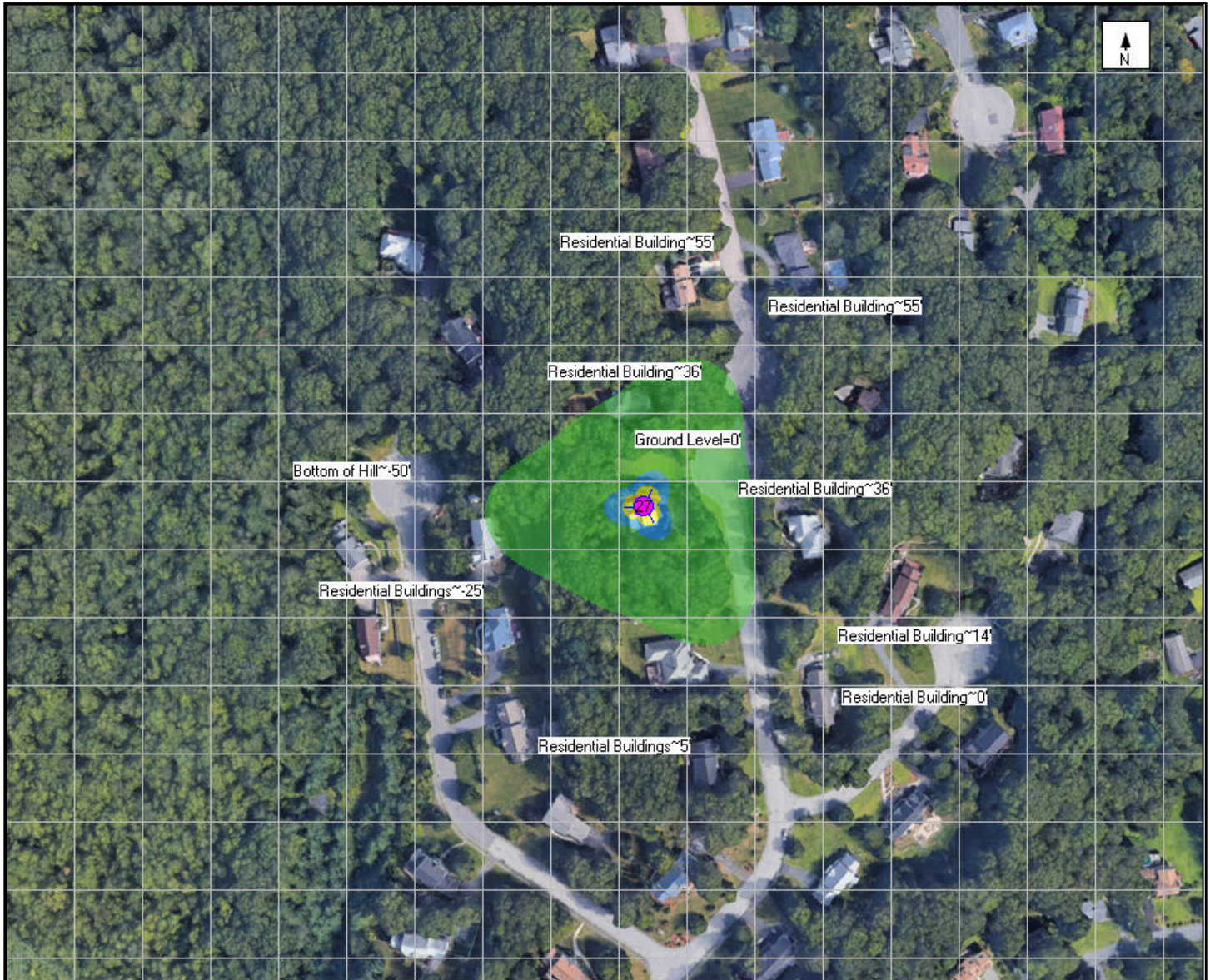
100' grid size

Plot includes MPE levels spatially averaged between the referenced plane and 6ft above.

<p>Carrier Color Code</p> <ul style="list-style-type: none"> ● Verizon ● AT&T Mobility ● Clearwire ● Cricket ● T-Mobile ● Sprint ● US Cellular ● Metro PCS ● Unknown 	<p>Existing Marker —</p> <p>Existing Barrier</p> <p>Proposed Marker —</p> <p>Proposed Barrier</p>	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 5%</td></tr> <tr><td style="background-color: green;"> </td><td>5% - 100%</td></tr> <tr><td style="background-color: blue;"> </td><td>100% - 500%</td></tr> <tr><td style="background-color: yellow;"> </td><td>500% - 5000%</td></tr> <tr><td style="background-color: red;"> </td><td>5000% +</td></tr> </table> <p>Public Limits</p>		0% - 5%		5% - 100%		100% - 500%		500% - 5000%		5000% +	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 1%</td></tr> <tr><td style="background-color: green;"> </td><td>1% - 20%</td></tr> <tr><td style="background-color: blue;"> </td><td>20% - 100%</td></tr> <tr><td style="background-color: yellow;"> </td><td>100% - 1000%</td></tr> <tr><td style="background-color: red;"> </td><td>1000% +</td></tr> </table> <p>Occupational Limits</p>		0% - 1%		1% - 20%		20% - 100%		100% - 1000%		1000% +
	0% - 5%																						
	5% - 100%																						
	100% - 500%																						
	500% - 5000%																						
	5000% +																						
	0% - 1%																						
	1% - 20%																						
	20% - 100%																						
	100% - 1000%																						
	1000% +																						

Predictive Model: All Transmitters

Reference Plane: Antenna Level 99.00 ft.



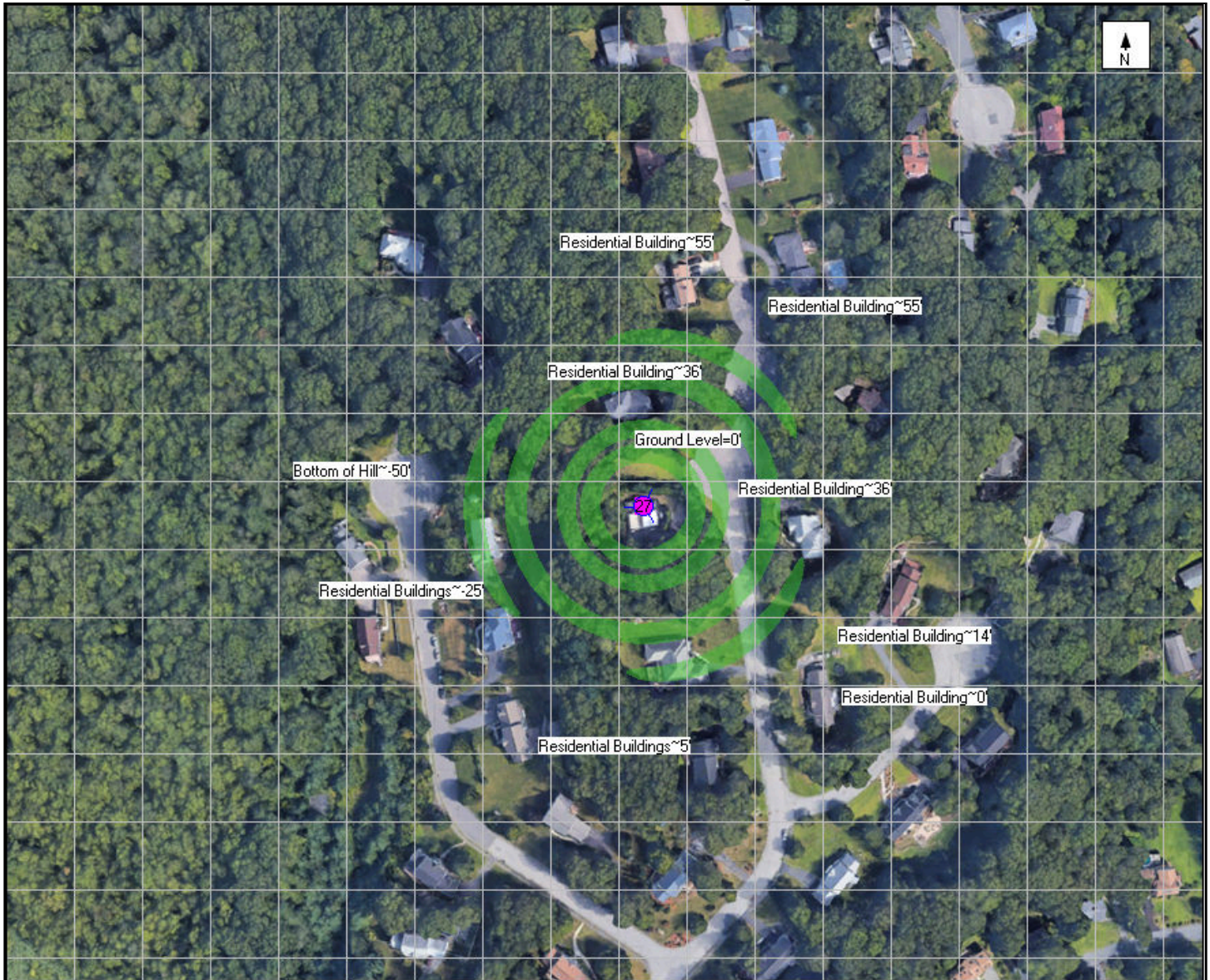
100' grid size

Plot includes MPE levels spatially averaged between the referenced plane and 6ft above.

<p>Carrier Color Code</p> <ul style="list-style-type: none"> ● Verizon ● AT&T Mobility ● Clearwire ● Cricket ● T-Mobile ● Sprint ● US Cellular ● Metro PCS ● Unknown 	<p>Existing Marker —</p> <p>Existing Barrier ····</p> <p>Proposed Marker —</p> <p>Proposed Barrier ····</p>	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 5%</td></tr> <tr><td style="background-color: green;"> </td><td>5% - 100%</td></tr> <tr><td style="background-color: blue;"> </td><td>100% - 500%</td></tr> <tr><td style="background-color: yellow;"> </td><td>500% - 5000%</td></tr> <tr><td style="background-color: red;"> </td><td>5000% +</td></tr> </table> <p>Public Limits</p>		0% - 5%		5% - 100%		100% - 500%		500% - 5000%		5000% +	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 1%</td></tr> <tr><td style="background-color: green;"> </td><td>1% - 20%</td></tr> <tr><td style="background-color: blue;"> </td><td>20% - 100%</td></tr> <tr><td style="background-color: yellow;"> </td><td>100% - 1000%</td></tr> <tr><td style="background-color: red;"> </td><td>1000% +</td></tr> </table> <p>Occupational Limits</p>		0% - 1%		1% - 20%		20% - 100%		100% - 1000%		1000% +
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	100% - 500%																						
	500% - 5000%																						
	5000% +																						
	0% - 1%																						
	1% - 20%																						
	20% - 100%																						
	100% - 1000%																						
	1000% +																						

Predictive Model: All Transmitters

Reference Plane: Residential Buildings 55.00 ft.



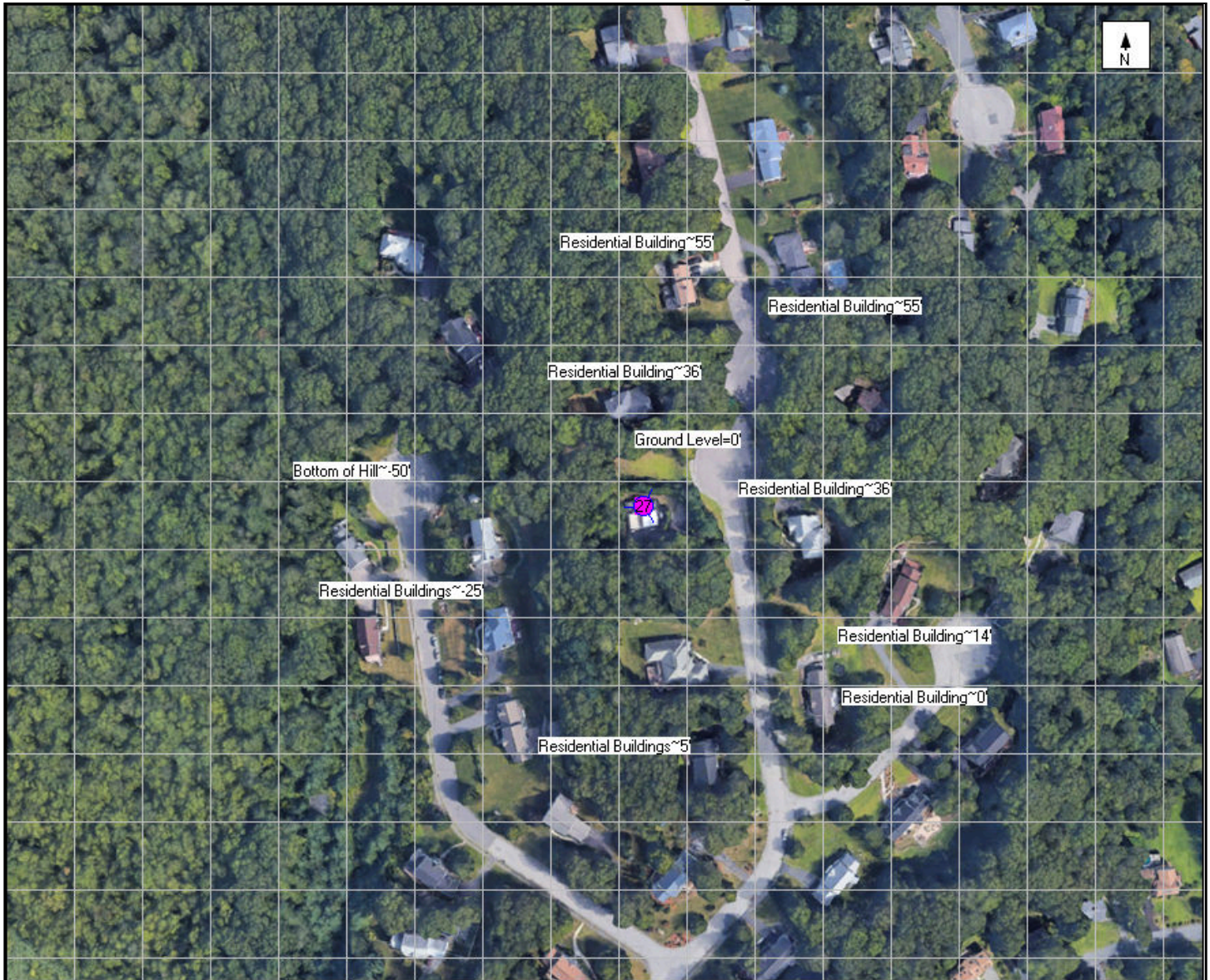
100' grid size

Plot includes MPE levels spatially averaged between the referenced plane and 6ft above.

<p>Carrier Color Code</p> <ul style="list-style-type: none"> ● Verizon ● AT&T Mobility ● Clearwire ● Cricket ● T-Mobile ● Sprint ● US Cellular ● Metro PCS ● Unknown 	<p>Existing Marker —</p> <p>Existing Barrier ····</p> <p>Proposed Marker —</p> <p>Proposed Barrier ····</p>	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 5%</td></tr> <tr><td style="background-color: green;"> </td><td>5% - 100%</td></tr> <tr><td style="background-color: blue;"> </td><td>100% - 500%</td></tr> <tr><td style="background-color: yellow;"> </td><td>500% - 5000%</td></tr> <tr><td style="background-color: red;"> </td><td>5000% +</td></tr> </table> <p>Public Limits</p>		0% - 5%		5% - 100%		100% - 500%		500% - 5000%		5000% +	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 1%</td></tr> <tr><td style="background-color: green;"> </td><td>1% - 20%</td></tr> <tr><td style="background-color: blue;"> </td><td>20% - 100%</td></tr> <tr><td style="background-color: yellow;"> </td><td>100% - 1000%</td></tr> <tr><td style="background-color: red;"> </td><td>1000% +</td></tr> </table> <p>Occupational Limits</p>		0% - 1%		1% - 20%		20% - 100%		100% - 1000%		1000% +
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Predictive Model: Verizon Transmitters

Reference Plane: Residential Buildings 55.00 ft.



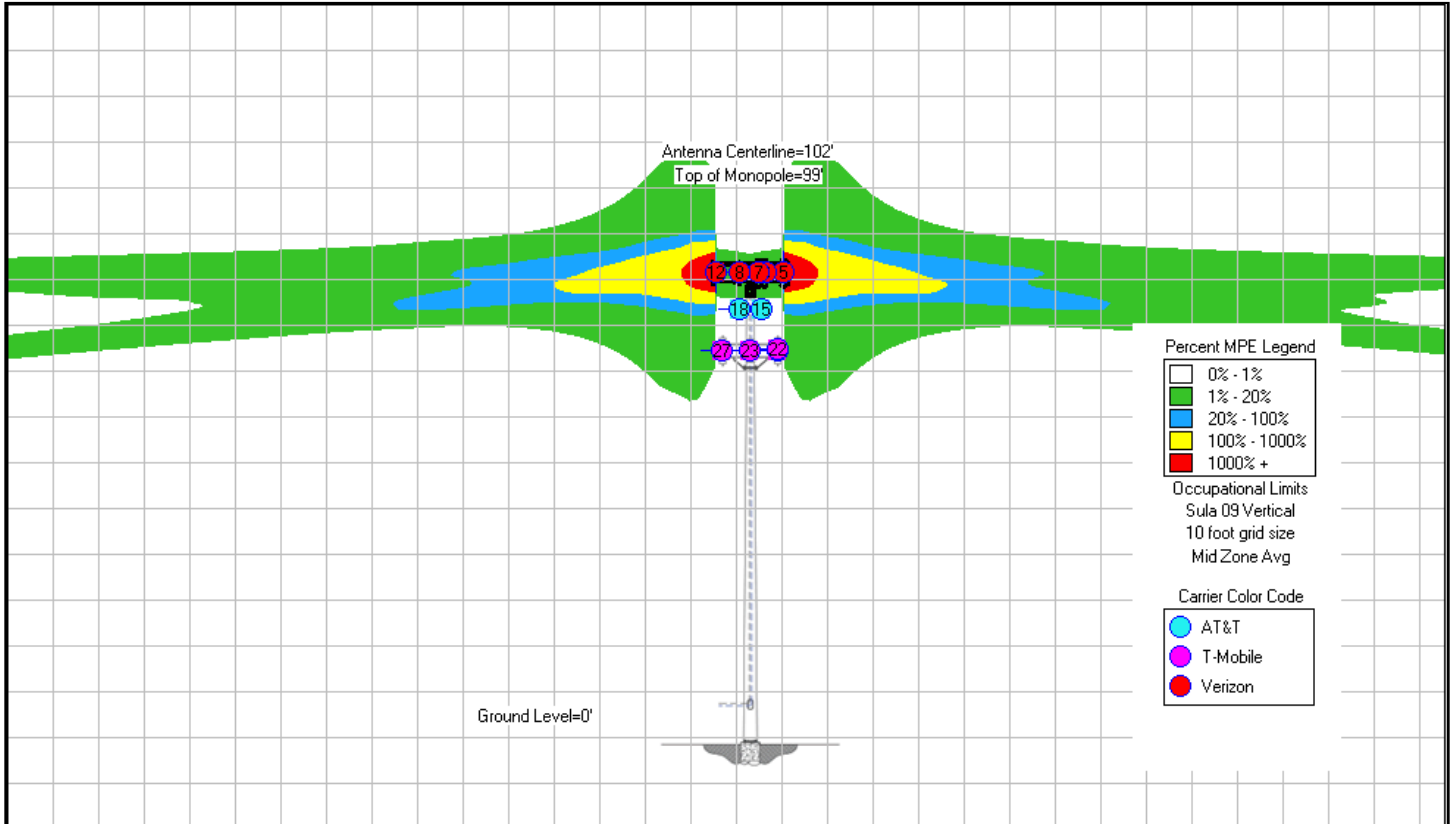
100' grid size

Plot includes MPE levels spatially averaged between the referenced plane and 6ft above.

<p>Carrier Color Code</p> <ul style="list-style-type: none"> ● Verizon ● AT&T Mobility ● Clearwire ● Cricket ● T-Mobile ● Sprint ● US Cellular ● Metro PCS ● Unknown 	<p>Existing Marker —</p> <p>Existing Barrier ····</p> <p>Proposed Marker —</p> <p>Proposed Barrier ····</p>	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 5%</td></tr> <tr><td style="background-color: green;"> </td><td>5% - 100%</td></tr> <tr><td style="background-color: blue;"> </td><td>100% - 500%</td></tr> <tr><td style="background-color: yellow;"> </td><td>500% - 5000%</td></tr> <tr><td style="background-color: red;"> </td><td>5000% +</td></tr> </table> <p>Public Limits</p>		0% - 5%		5% - 100%		100% - 500%		500% - 5000%		5000% +	<p>Percent MPE Legend</p> <table border="1"> <tr><td style="background-color: white;"> </td><td>0% - 1%</td></tr> <tr><td style="background-color: green;"> </td><td>1% - 20%</td></tr> <tr><td style="background-color: blue;"> </td><td>20% - 100%</td></tr> <tr><td style="background-color: yellow;"> </td><td>100% - 1000%</td></tr> <tr><td style="background-color: red;"> </td><td>1000% +</td></tr> </table> <p>Occupational Limits</p>		0% - 1%		1% - 20%		20% - 100%		100% - 1000%		1000% +
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b. Elevation Diagram
Predictive Model: Verizon Transmitters

Reference Plane: Elevation View



10' grid size

<p>Carrier Color Code</p> <ul style="list-style-type: none"> Verizon AT&T Mobility Clearwire Cricket T-Mobile Sprint US Cellular Metro PCS Unknown 	<p>Existing Marker —</p> <p>Existing Barrier ····</p> <p>Proposed Marker —</p> <p>Proposed Barrier ····</p>	<p>Percent MPE Legend</p> <ul style="list-style-type: none"> 0% - 5% 5% - 100% 100% - 500% 500% - 5000% 5000% + <p>Public Limits</p>	<p>Percent MPE Legend</p> <ul style="list-style-type: none"> 0% - 1% 1% - 20% 20% - 100% 100% - 1000% 1000% + <p>Occupational Limits</p>
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4. Conclusion

a. Conclusion Narrative

Based on data provided for this pre-activation MPE modeling, this site has been determined to be **compliant as designed**.

Description of MPE-Limit Exceeding Areas:

Maximum Predicted MPE Level on Site:	% of MPE Limit:	Location:
Accessible General Population MPE Limits:	7.00%	Sector A
Accessible Occupational MPE Limits:	1.40%	

Antenna Level Assessment:	Distance from Antenna (ft.)
Antenna Level General Population Horizontal Distance:	72'
Antenna Level Occupational Horizontal Distance:	36'

Ground Level Assessment:	% of MPE Limit:
Ground Level General Population MPE Limits:	7.00%
Ground Level Occupational MPE Limits:	1.40%

Sector A: Transmitting over Ground Level	% of MPE Limit:	*Distance from Antenna (ft.):
Accessible General Population MPE Limits:	7.00%	0'
Accessible Occupational MPE Limits:	1.40%	0'

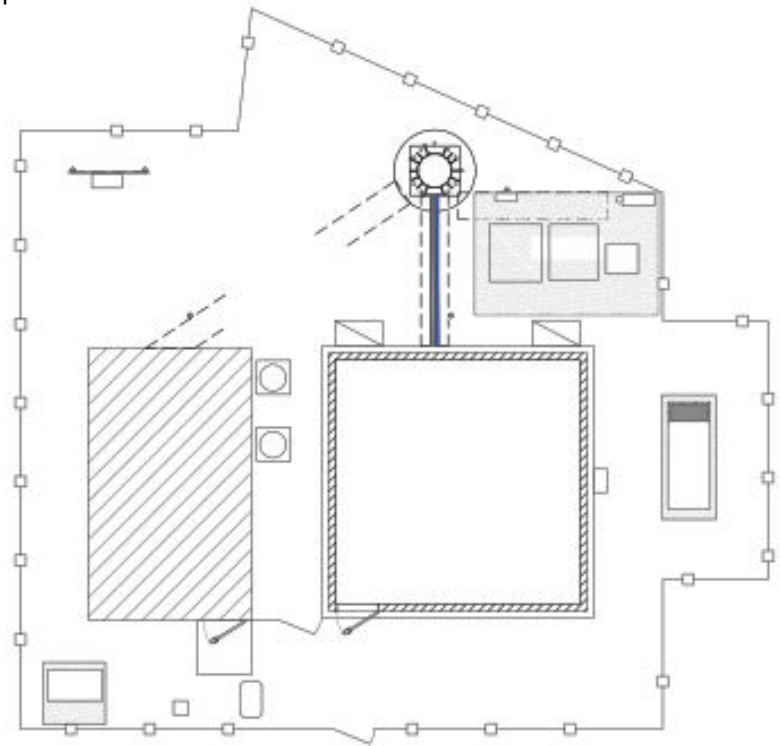
Sector B: Transmitting over Ground Level	% of MPE Limit:	*Distance from Antenna (ft.):
Accessible General Population MPE Limits:	7.00%	0'
Accessible Occupational MPE Limits:	1.40%	0'

Sector G: Transmitting over Ground Level	% of MPE Limit:	*Distance from Antenna (ft.):
Accessible General Population MPE Limits:	7.00%	0'
Accessible Occupational MPE Limits:	1.40%	0'

*Distance from Antenna indicates how far the emissions are predicted to exceed limits from the front of the antennas across a walkable surface.

b. Signage/Barrier Diagram

No action is required; the site is compliant.









10' grid size

Existing Sign Proposed Sign	Existing Marker ——— Existing Barrier ····· Proposed Marker ——— Proposed Barrier ·····	Carrier Color Code Verizon T-Mobile Clearwire US Cellular Unknown AT&T Mobility Sprint Cricket Metro PCS
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Final Compliant Configuration						
	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER/MARKER
Access Point(s)	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Alpha	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Beta	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Gamma	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions

NOTE: The table above represents EVERY compliance item that MUST be implemented at this location.

c. Signage/Barrier Installation Detail

Mitigation Actions Required													
	GUIDELINES		NOTICE		CAUTION		WARNING		NOC INFO		BARRIER/MARKER		
Access Point(s)	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	dimensions
Alpha	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	dimensions
Beta	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	dimensions
Gamma	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>	dimensions
	ADD	REM	ADD	REM	ADD	REM	ADD	REM	ADD	REM	ADD	REM	ADD ONLY

SPECIAL MITIGATION INSTRUCTIONS	
Items to be Installed	<p>Site Access Location No action required.</p> <p>Verizon Sector A No action required.</p> <p>Verizon Sector B No action required.</p> <p>Verizon Sector G No action required.</p>
Items to be Removed	N/A
Items to be Repaired/Replaced	N/A

5. Appendix C: RF Consultant Certifications

a. Preparer Certification

I, Matt Schulzinger, the preparer of this report, 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 am also fully aware of and familiar with the Verizon Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Matt Schulzinger 7/18/2022

b. Reviewer Certification

I, Yasir Alqadhili, the reviewer and approver of this report, 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 am also fully aware of and familiar with the Verizon Wireless Signage & Demarcation Policy. I have reviewed this Radio Frequency Exposure Assessment report and believe it to be both true and accurate to the best of my knowledge.

Yasir Alqadhili 7/18/2022

6. Appendix D: Reference Information

a. FCC Rules & Regulations

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards “incorporate prudent margins of safety.” The following represents explanations of the most applicable information:

Two Classifications for Exposure Limits

<u>Occupational</u> – Applies to situations in which persons are “exposed as a consequence of their <i>employment</i> ” and are “ <i>fully aware</i> of the potential for exposure and can <i>exercise control</i> over their exposure”.	<u>General Population</u> – Applies to situations in which persons are “exposed as a consequence of their employment <i>may not be made fully aware</i> of the potential for exposure or <i>cannot exercise control</i> over their exposure”. Generally speaking, those without significant and documented RF Safety & Awareness training would be in the General Population classification.
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Environment Classification

<u>Controlled</u> – Applies to environments that are restricted or “controlled” in order to prevent access from members of the General Population classification.	<u>Uncontrolled</u> – Applies to environments that are unrestricted or “uncontrolled” that allow access from members of the General Population classification.
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<i>Limits for Occupational/Controlled Exposure</i>		
Frequency	Power Density	Averaging Time
Range	(S)	E ² , H ² , or S
(MHz)	(mW/cm ²)	(minutes)
300-1500	f/300	6
1500-100,000	5	6
<i>Limits for General Population/Uncontrolled Exposure</i>		
Frequency	Power Density	Averaging Time
Range	(S)	E ² , H ² , or S
(MHz)	(mW/cm ²)	(minutes)
300-1500	f/1500	30
1500-100,000	1	30
<i>f = frequency in MHz</i>		

Significant Contribution to the RF Environment

Any carrier contributing an aggregate MPE percentage of 5 or more (to the applicable RF Environment Classification) is defined as a significant contributor. This means that if any area is determined to be out of compliance with FCC rules, all significant contributors are jointly responsible for correcting any deficiencies.

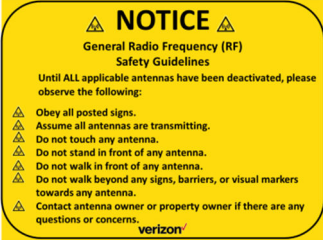

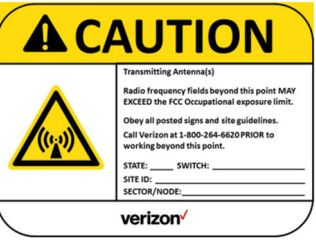
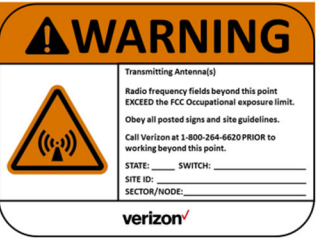
b. Occupational Safety and Health Administration (OSHA) Requirements


A formal adopter of FCC Standards, OSHA stipulates that those in the Occupational classification must complete training in the following: RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
<ul style="list-style-type: none"> Utilization of good equipment Enact control of hazard areas Limit exposures Employ medical surveillance and accident response 	<ul style="list-style-type: none"> Employ Lockout/Tag out Utilize personal alarms & protective clothing Prevent access to hazardous locations Develop or operate an administrative control program

c. RF Signage

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines. These areas must be demarcated by conspicuously posted signage that identifies the potential exposure. Signage MUST be viewable regardless of the viewer’s position.

GUIDELINES	NOTICE	CAUTION	WARNING
<p>This sign will inform anyone of the basic precautions to follow when entering an area with transmitting radiofrequency equipment.</p>	<p>This sign indicates that RF emissions may exceed the FCC General Population MPE limit.</p>	<p>This sign indicates that RF emissions may exceed the FCC Occupational MPE limit.</p>	<p>This sign indicates that RF emissions may exceed at least 10x the FCC Occupational MPE limit.</p>
			

NOC INFORMATION	
<p>Information signs are used as a means to provide contact information for any questions or concerns. They will include specific cell site identification information and the Verizon Wireless Network Operations Center phone number.</p>	

d. Physical Barriers

Physical barriers are control measures that require awareness and participation of personnel. Physical barriers are employed as an additional administration control to complement RF signage and physically demarcate an area in which RF exposure levels may exceed the FCC General Population limit. **Example:** chain-connected stanchions

e. Indicative Markers

Indicative markers are visible control measures that require awareness and participation of personnel, as they cannot physically prevent someone from entering an area of potential concern. Indicative markers are employed as an additional administration control to complement RF signage and visually demarcate an area in which RF exposure levels may exceed the FCC General Population limit. **Example:** paint stripes