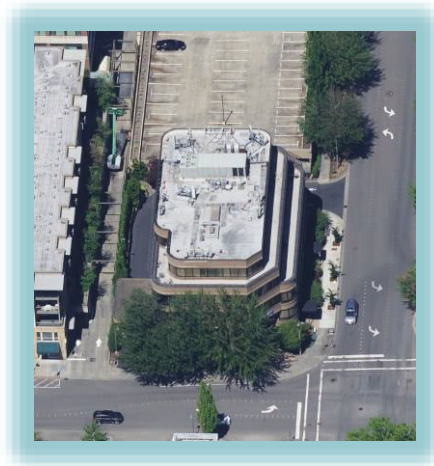


AT&T Radio Frequency Safety Survey Report Prediction (RFSSRP)

Site Name: Mercer Island
FA#: 10092489
USID: 11491
Site ID: SD05
Address: 7900 SE 28th Street
Mercer Island, Washington 98040
County: King
Latitude: 47.58564000
Longitude: -122.23206000
EBI Project Number: 6222002061

M-RFSC Name: Son Tran
Site Structure Type: Rooftop
PACE#: MRWOR052471, MRWOR051810,
MRWOR051708
Prepared For: AT&T Mobility, LLC
c/o Mastec Network Solutions
22263 68th Avenue South
Kent, WA 98032



Report Information:

Report Writer: David Keirstead
Report Date: April 5, 2022

CDs: SD05 Mercer Island 5G Cband Rev B_Redlined_CC

RFDS: SEATTLE-OREGON-NO-ID_WASHINGTON_WASBU1442_2022-5G-NR-Radio_5G-NR-ISR-CBAND_ea1814_3801A0YFMI_10092489_11491_01-12-2021_Final-Approved_v4.00

Compliance Statement:

AT&T Mobility Compliance Statement: Based on the information collected, AT&T Mobility will be Compliant with FCC Rules and Regulations at the nearest walking surface if recommendations in the Compliance Summary are implemented.



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1.0 EXECUTIVE SUMMARY

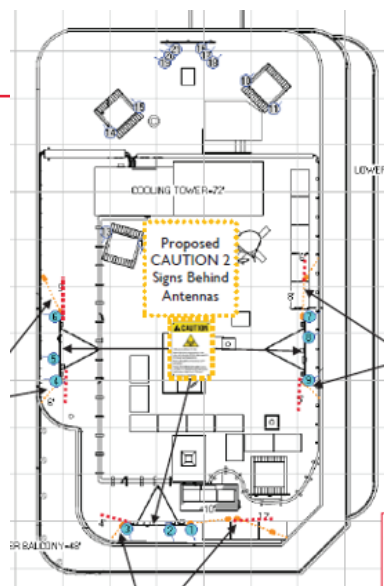
EnviroBusiness Inc. (dba EBI Consulting) has been contracted by AT&T Mobility, LLC to conduct radio frequency electromagnetic (RF-EME) modeling for AT&T Site SD05 located at 7900 SE 28th Street in Mercer Island, Washington to determine RF-EME exposure levels from proposed AT&T wireless communications equipment at this site. As described in greater detail in Appendix A 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 document addresses the compliance of AT&T's transmitting facilities independently and in relation to all collocated facilities at the site.

1.1 SITE SUMMARY

Recommended Mitigation at the Site:

- Access Point(s):
 - 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.
- Signage at AT&T Mobility Sectors:
 - A: Yellow CAUTION 2 signs posted on the back of the antenna array.
 - B: Yellow CAUTION 2 signs posted on the back of the antenna array.
 - C: Yellow CAUTION 2 signs posted on the back of the antenna array.
- Barriers at AT&T Mobility Sectors:
 - Keep/Verify Existing Barriers/Signage on site per the previous 5G build- Do not remove any of the existing barriers

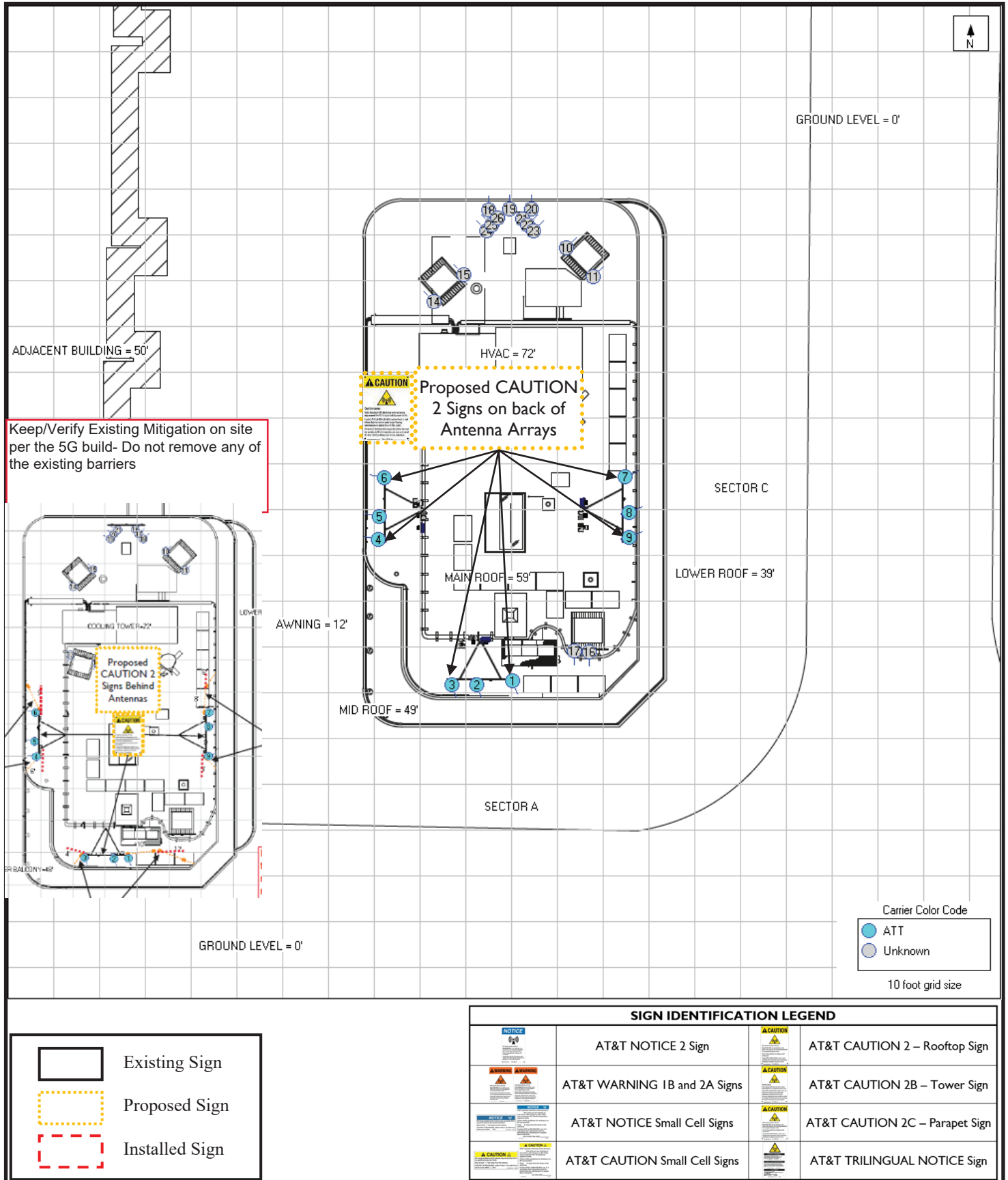


Predictive Modeling Results:

The maximum predictive power density generated by the antennas is approximately 2,083.71 percent of the FCC's general public limit (416.74 percent of the FCC's occupational limit) at the main roof level.

At ground level, the maximum predictive power density generated by the antennas is approximately 2.2 percent of the FCC's general public limit (0.44 percent of the FCC's occupational limit).

2.0 SIGNAGE AND MITIGATION PLAN



3.0 ANTENNA INVENTORY

Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (deg.)	Mechanical Downtilt (deg.)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Power Input (Watts)	Transmitter Count	Antenna Gain (dBd)	Total ERP (Watts)	Total EIRP (Watts)	Miscellaneous Loss (dB)
1	ATT	NOKIA	AEQK_n77	5G 3700	160	0	13	2.5	67.776	1	22.62	12390.13	20319.82	0
2	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 04DT 700	LTE B12 700	160	0	68	6.0	40	4	13.15	3304.61	5419.56	0
2	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 04DT 700	LTE B14 700	160	0	68	6.0	40	4	13.15	3304.61	5419.56	0
2	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 1900	LTE/5G 1900	160	0	67	6.0	40	4	17.35	8692.01	14254.89	0
2	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 2100	LTE 2100	160	0	66	6.0	40	4	17.95	9979.76	16366.80	0
3	ATT	COMMSCOPE	NNH4-65B-R6 04DT 850	5G 850	160	0	62	6.0	40	4	12.65	2945.24	4830.19	0
3	ATT	COMMSCOPE	NNH4-65B-R6 02DT 2300	LTE 2300	160	0	59	6.0	25	4	14.45	2786.12	4569.24	0
4	ATT	COMMSCOPE	NNH4-65B-R6 02DT 850	5G 850	280	0	62	6.0	40	4	12.65	2945.24	4830.19	0
4	ATT	COMMSCOPE	NNH4-65B-R6 02DT 2300	LTE 2300	280	0	59	6.0	25	4	14.45	2786.12	4569.24	0
5	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 700	LTE B12 700	280	0	67	6.0	40	4	13.25	3381.58	5545.80	0
5	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 700	LTE B14 700	280	0	67	6.0	40	4	13.25	3381.58	5545.80	0
5	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 1900	LTE/5G 1900	280	0	67	6.0	40	4	17.35	8692.01	14254.89	0
5	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 2100	LTE 2100	280	0	66	6.0	40	4	17.95	9979.76	16366.80	0
6	ATT	NOKIA	AEQK_n77	5G 3700	280	0	13	2.5	67.776	1	22.62	12390.13	20319.82	0
7	ATT	NOKIA	AEQK_n77	5G 3700	65	0	13	2.5	67.776	1	22.62	12390.13	20319.82	0
8	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 700	LTE B12 700	65	0	67	6.0	40	4	13.25	3381.58	5545.80	0
8	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 700	LTE B14 700	65	0	67	6.0	40	4	13.25	3381.58	5545.80	0
8	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 1900	LTE/5G 1900	65	0	67	6.0	40	4	17.35	8692.01	14254.89	0
8	ATT	CELLMAX	CMA-UBTMLBMLBHH-6516-16-21-21 02DT 2100	LTE 2100	65	0	66	6.0	40	4	17.95	9979.76	16366.80	0
9	ATT	COMMSCOPE	NNH4-65B-R6 02DT 850	5G 850	65	0	62	6.0	40	4	12.65	2945.24	4830.19	0
9	ATT	COMMSCOPE	NNH4-65B-R6 02DT 2300	LTE 2300	65	0	59	6.0	25	4	14.45	2786.12	4569.24	0
10	Unknown	GENERIC	PANEL 4FT 00DT 850	850	45	0	61	4.0	100	1	11.52	1419.06	2327.25	0
11	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	45	0	65	4.0	100	1	14.65	2917.43	4784.58	0
12	Unknown	GENERIC	PANEL 4FT 00DT 850	850	195	0	61	4.0	100	1	11.52	1419.06	2327.25	0
13	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	195	0	65	4.0	100	1	14.65	2917.43	4784.58	0
14	Unknown	GENERIC	PANEL 4FT 00DT 850	850	315	0	61	4.0	100	1	11.52	1419.06	2327.25	0
15	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	315	0	65	4.0	100	1	14.65	2917.43	4784.58	0
16	Unknown	GENERIC	PANEL 4FT 00DT 850	850	180	0	61	4.0	100	1	11.52	1419.06	2327.25	0

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Site Name: Mercer Island
 Site FA: 10092489

Site USID: 11491
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Ant #	Operator	Antenna Make	Antenna Model	Frequency (MHz)	Azimuth (deg.)	Mechanical Downtilt (deg.)	Horizontal Beamwidth (Degrees)	Aperture (feet)	Power Input (Watts)	Transmitter Count	Antenna Gain (dBd)	Total ERP (Watts)	Total EIRP (Watts)	Miscellaneous Loss (dB)
17	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	180	0	65	4.0	100	1	14.65	2917.43	4784.58	0
18	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	1	11.52	1419.06	2327.25	0
19	Unknown	GENERIC	PANEL 4FT 00DT 1900	1900	0	0	65	4.0	100	1	14.65	2917.43	4784.58	0
20	Unknown	GENERIC	PANEL 4FT 00DT 850	850	0	0	61	4.0	100	1	11.52	1419.06	2327.25	0
21	Unknown	GENERIC	PANEL 2FT 00DT 850	850	45	0	65	2.0	100	1	8.110001	647.14	1061.31	0
22	Unknown	GENERIC	PANEL 2FT 00DT 1900	1900	45	0	60	2.0	100	1	12.14	1636.82	2684.38	0
23	Unknown	GENERIC	PANEL 2FT 00DT 850	850	45	0	65	2.0	100	1	8.110001	647.14	1061.31	0
24	Unknown	GENERIC	PANEL 2FT 00DT 850	850	315	0	65	2.0	100	1	8.110001	647.14	1061.31	0
25	Unknown	GENERIC	PANEL 2FT 00DT 1900	1900	315	0	60	2.0	100	1	12.14	1636.82	2684.38	0
26	Unknown	GENERIC	PANEL 2FT 00DT 850	850	315	0	65	2.0	100	1	8.110001	647.14	1061.31	0

- Note there are 4 AT&T panel antennas per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.
- Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes.
- A 75% duty cycle was applied to NR technologies.
- An adjusted power reduction factor of 0.32 was applied to the AEQK antennas per guidance from AT&T.

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Site Name: Mercer Island
 Site FA: 10092489

Site USID: 11491
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Ant #	NAME	X	Y	Antenna Radiation Centerline	Z-Height HVAC	Z-Height Main Roof	Z-Height Adjacent Roof	Z-Height Mid Roof	Z-Height Lower Roof	Z-Height Awning	Z-Height Ground
1	ATT	110.2	39.6	67.8	-5.5	7.5	16.5	17.5	27.5	54.5	66.5
2	ATT	102.4	38.7	66.3	-8.8	4.2	13.2	14.2	24.2	51.2	63.2
3	ATT	97.0	38.7	66.3	-8.7	4.3	13.3	14.3	24.3	51.3	63.3
4	ATT	80.9	70.4	66.3	-8.7	4.3	13.3	14.3	24.3	51.3	63.3
5	ATT	81.1	75.4	66.3	-8.8	4.2	13.2	14.2	24.2	51.2	63.2
6	ATT	82.2	83.9	67.8	-5.5	7.5	16.5	17.5	27.5	54.5	66.5
7	ATT	134.8	84.1	67.8	-5.5	7.5	16.5	17.5	27.5	54.5	66.5
8	ATT	135.7	76.3	66.3	-8.8	4.2	13.2	14.2	24.2	51.2	63.2
9	ATT	135.7	70.9	66.3	-8.7	4.3	13.3	14.3	24.3	51.3	63.3
10	Unknown	122.0	134.1	71.0	-3.0	10.0	19.0	20.0	30.0	57.0	69.0
11	Unknown	127.8	127.8	71.0	-3.0	10.0	19.0	20.0	30.0	57.0	69.0
12	Unknown	100.4	100.0	69.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
13	Unknown	92.4	102.4	69.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
14	Unknown	93.0	122.4	71.0	-3.0	10.0	19.0	20.0	30.0	57.0	69.0
15	Unknown	99.6	128.3	71.0	-3.0	10.0	19.0	20.0	30.0	57.0	69.0
16	Unknown	127.0	45.9	69.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
17	Unknown	123.7	46.1	69.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
18	Unknown	105.0	142.4	64.0	-10.0	3.0	12.0	13.0	23.0	50.0	62.0
19	Unknown	109.6	142.6	64.0	-10.0	3.0	12.0	13.0	23.0	50.0	62.0
20	Unknown	114.3	142.6	64.0	-10.0	3.0	12.0	13.0	23.0	50.0	62.0
21	Unknown	112.4	140.4	68.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
22	Unknown	113.5	139.1	68.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
23	Unknown	114.8	137.8	68.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
24	Unknown	104.6	137.8	68.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
25	Unknown	105.7	139.1	68.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0
26	Unknown	107.0	140.7	68.0	-5.0	8.0	17.0	18.0	28.0	55.0	67.0

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4.0 WORST-CASE PREDICTIVE MODELING

In accordance with AT&T's RF Exposure policy, EBI performed theoretical modeling using RoofMaster™ software to estimate the worst-case power density at the site rooftop-level and nearby rooftops resulting from operation of the antennas.

For this report, EBI utilized antenna and power data provided by AT&T and compared the resultant worst-case MPE levels to the FCC's occupational/controlled exposure limits outlined in OET Bulletin 65.

The assumptions used in the modeling are based upon information provided by AT&T and information gathered from other sources. A power reduction factor of 0.32 of maximum power was applied to account for spatial distribution of served users, as recommended by AT&T. Two Unknown Carriers also have antennas on the rooftop. Information about these antennas was included in the modeling analysis.

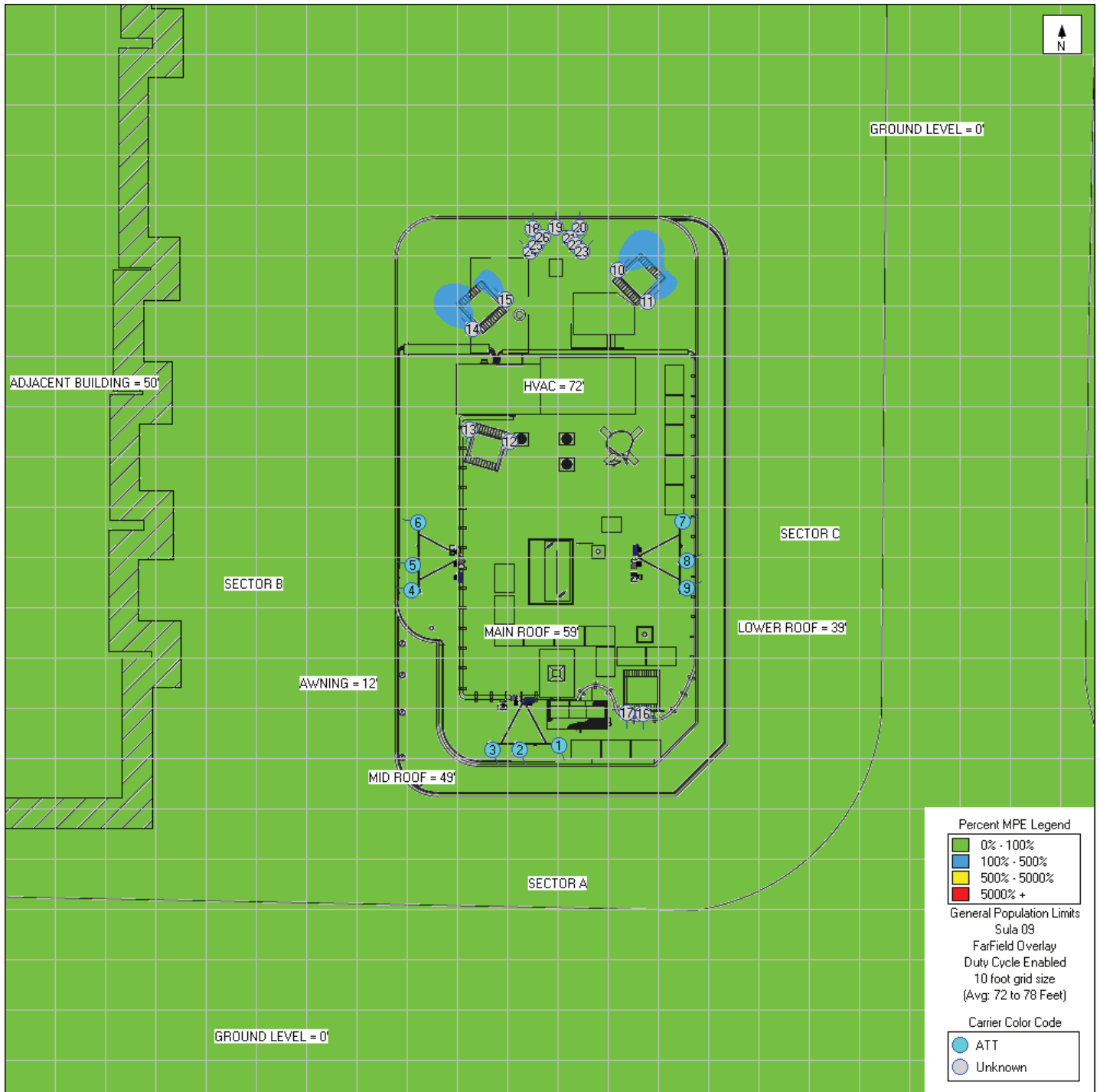
Per AT&T's corporate policy, the FCC's general population limits are applicable to all rooftop sites, regardless of the level of access control. Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 66 feet of AT&T's Sector A antennas on the main roof level and 58 feet of AT&T's Sector B and C antennas on the lower main level. Modeling also indicates that the worst-case emitted power density may exceed the FCC's occupational limit within approximately 17 feet of AT&T's Sector A antennas on the main roof level and 15 feet of AT&T's Sector B and C antennas on the lower main level.

At the nearest walking/working surfaces to the AT&T antennas on the main roof level, the maximum power density generated by the AT&T antennas is approximately 2,083.08 percent of the FCC's general public limit (416.62 percent of the FCC's occupational limit). The composite exposure level from all carriers on this site is approximately 2,083.71 percent of the FCC's general public limit (416.74 percent of the FCC's occupational limit) at the nearest walking/working surface to each antenna. Based on worst-case predictive modeling, there are no areas at ground/street level related to the proposed AT&T antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground/street level, the maximum power density generated by the antennas is approximately 2.2 percent of the FCC's general public limit (0.44 percent of the FCC's occupational limit).

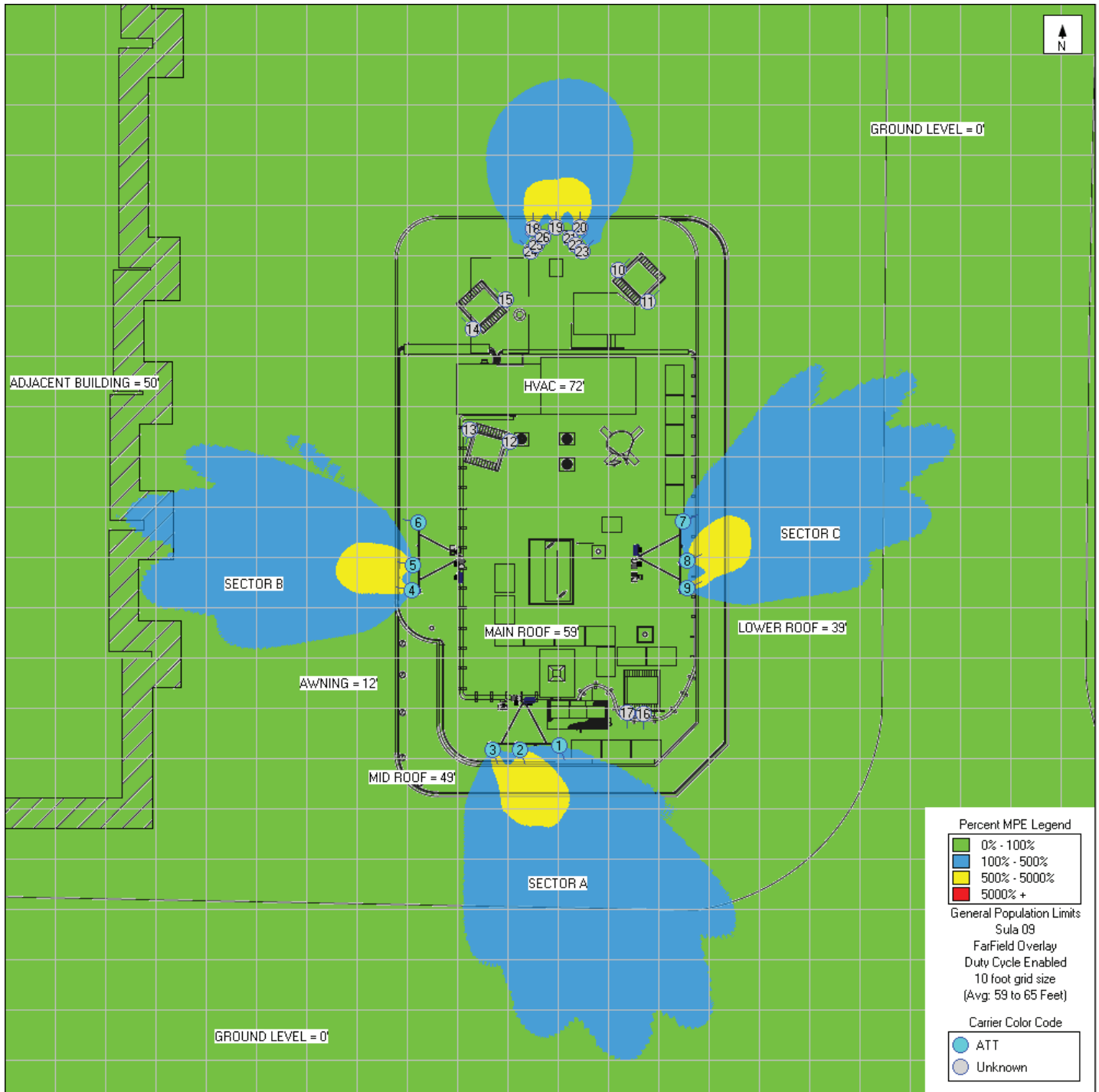
There were also worst-case predicted exposures above the general public MPE in front of the Unknown Carrier antennas. Modeling indicates that the AT&T contribution to these areas is 5% or less of the general public MPE and, as such, under FCC regulations, AT&T is not responsible for these predicted exceedances.

Microwave dish antennas are designed for point-to-point operations at the elevations of the installed equipment rather than ground-level coverage. Based on AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, microwave antennas are considered compliant if they are higher than 20 feet above any accessible walking/working surface. There are no microwaves installed at this site.

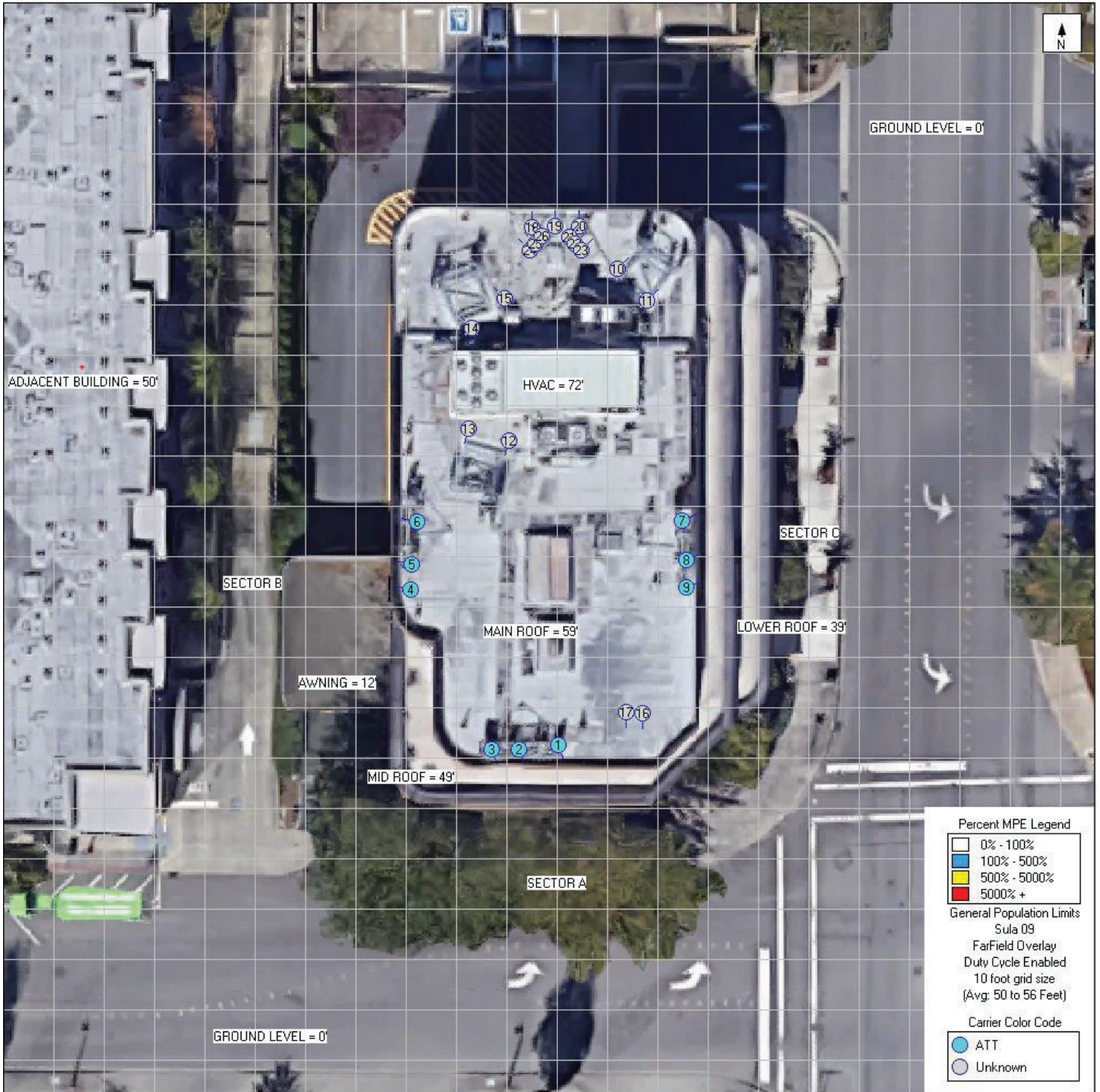
HVAC Level (72 feet AGL)



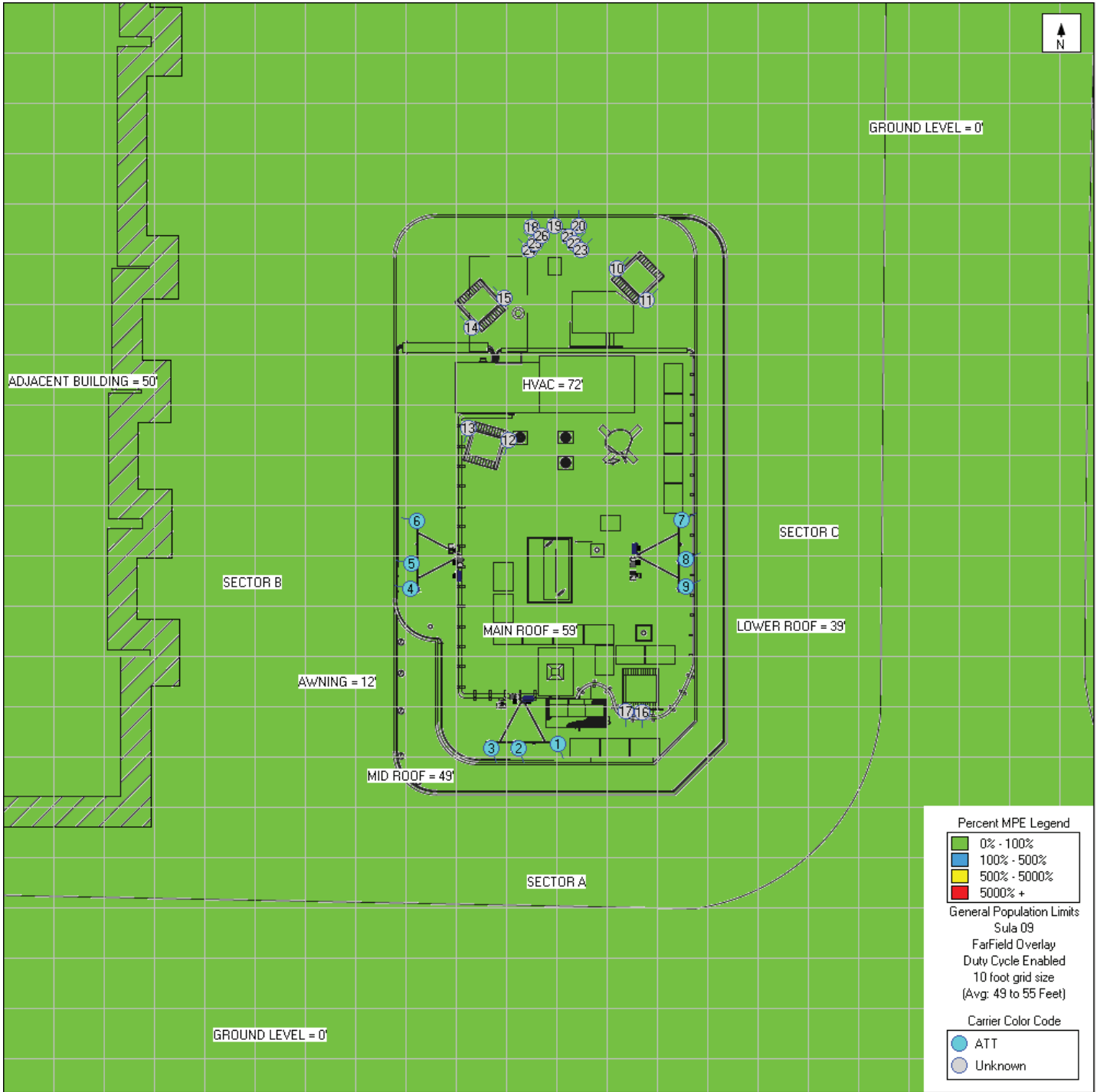
Main Roof Level (59 feet AGL)



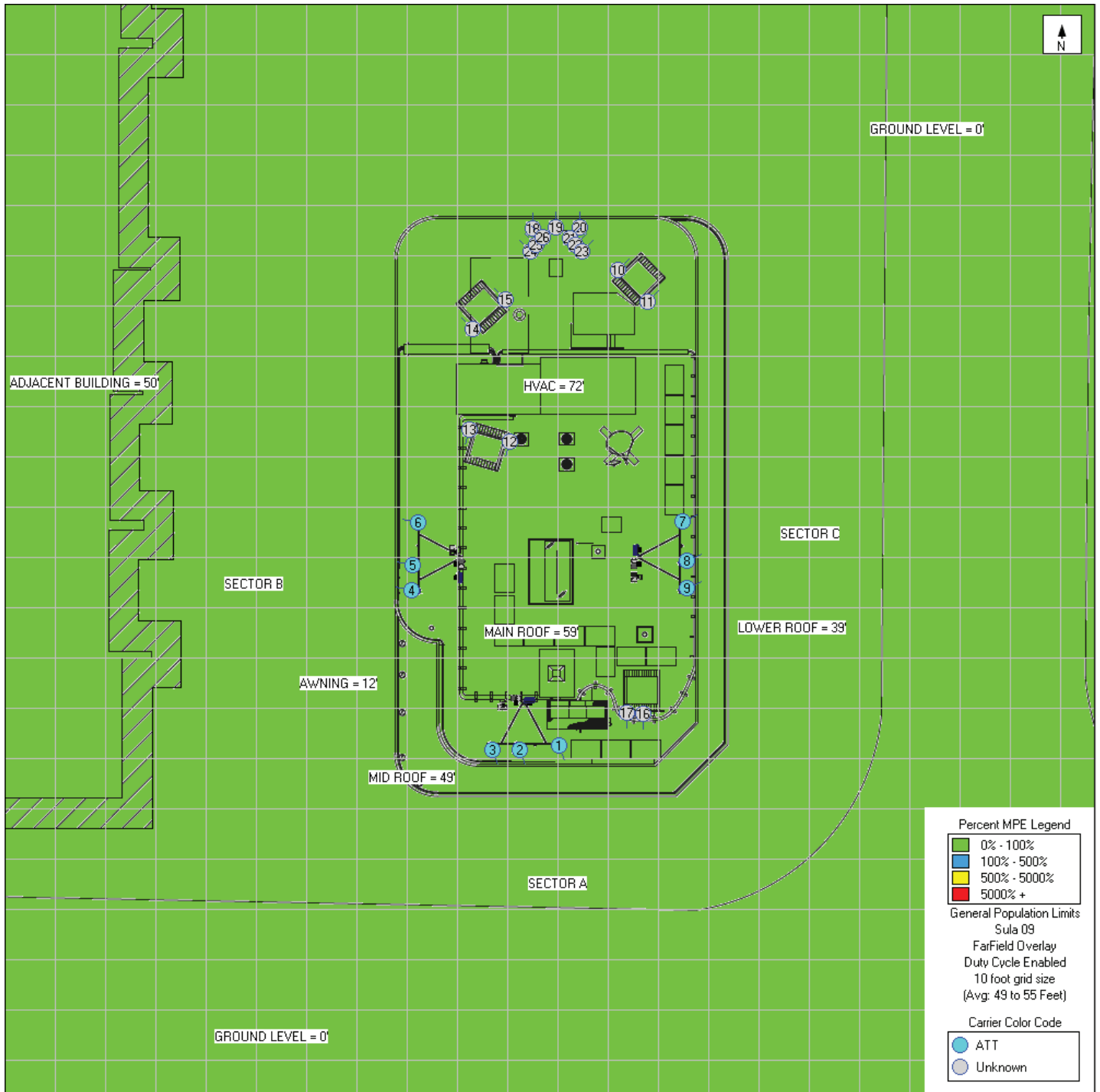
Adjacent Roof Level (50 feet AGL)



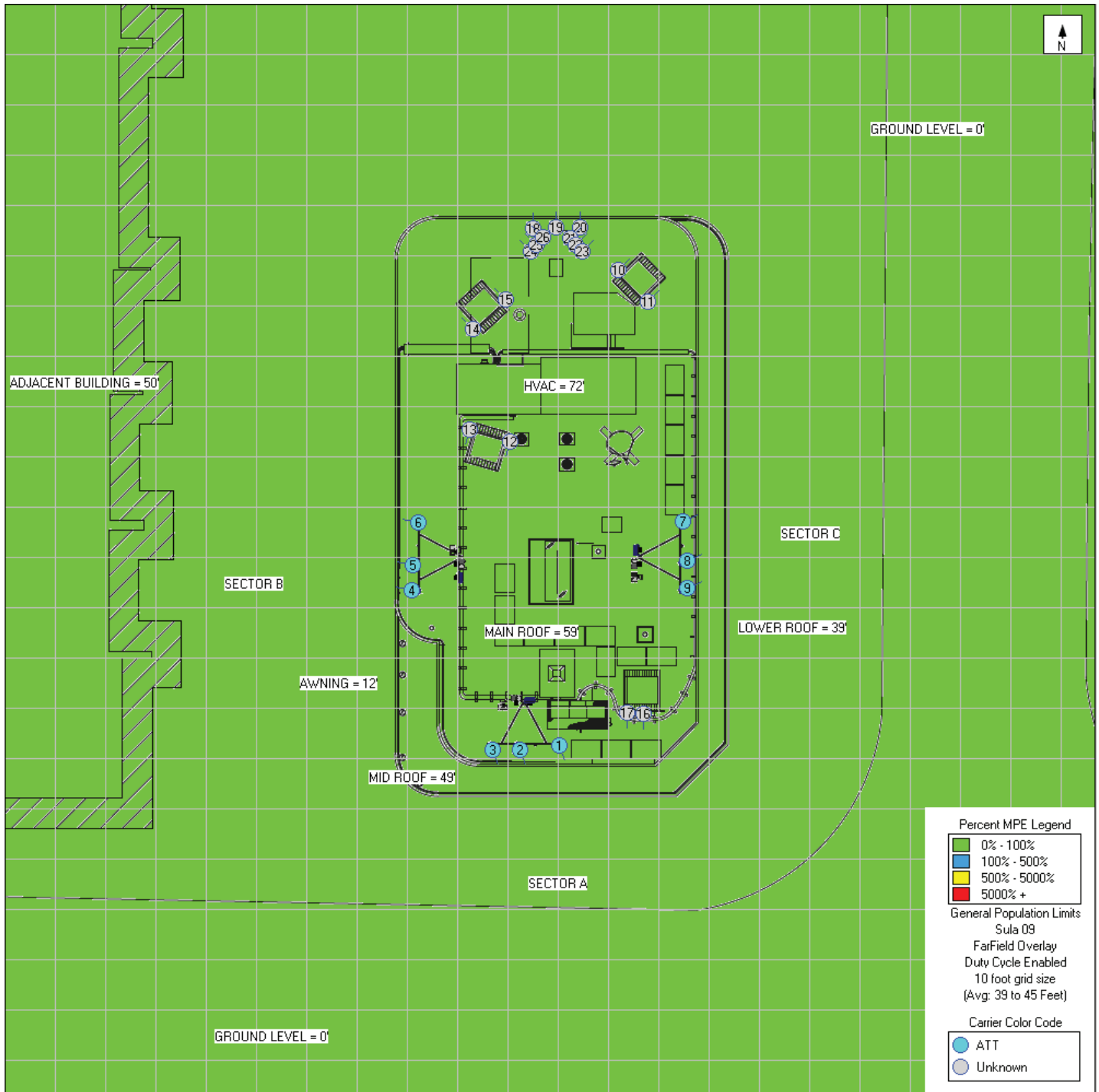
Building Top Floor Level (49 feet AGL) – 10 db Loss Added



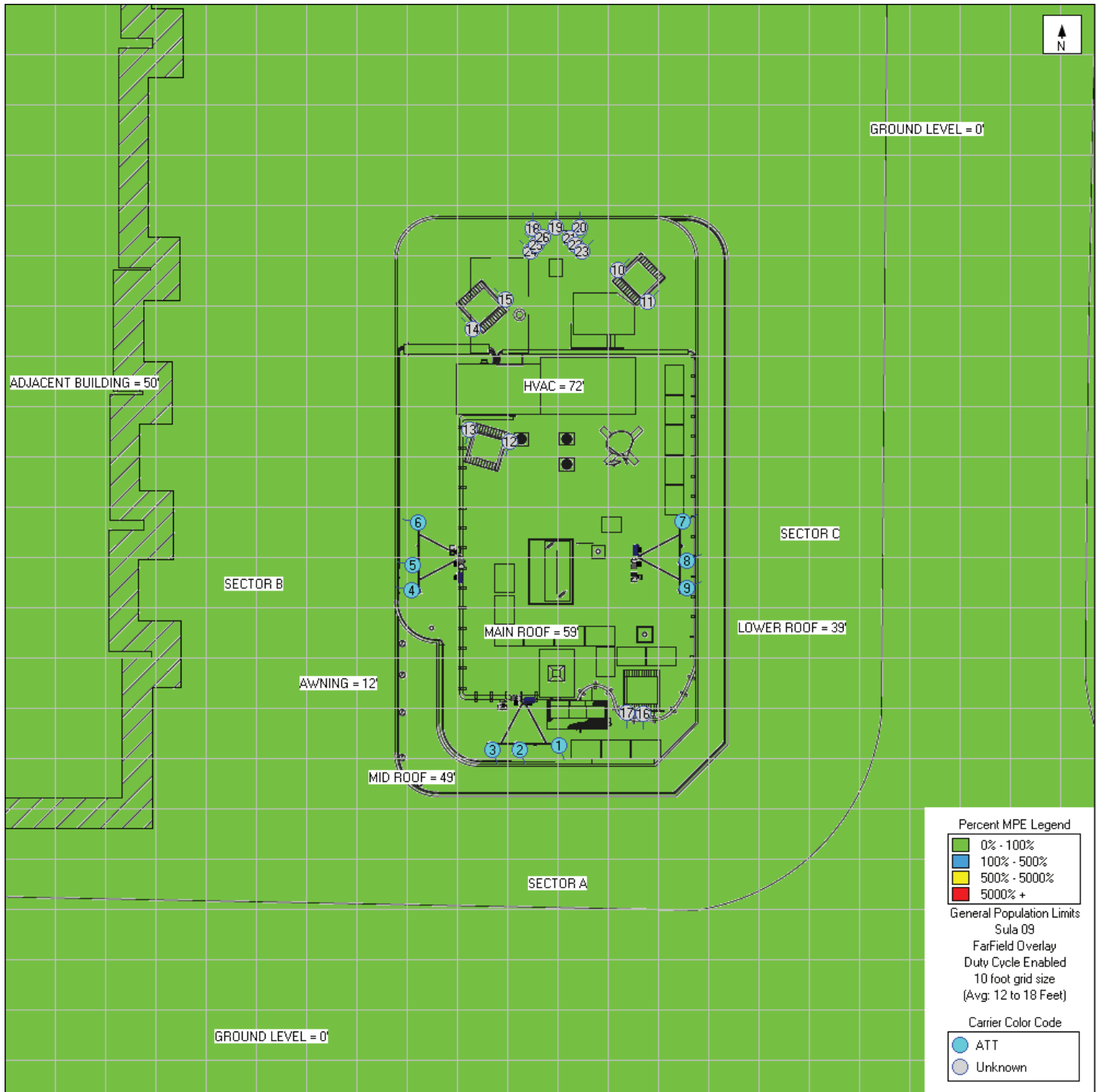
Mid Roof Level (49 feet AGL)



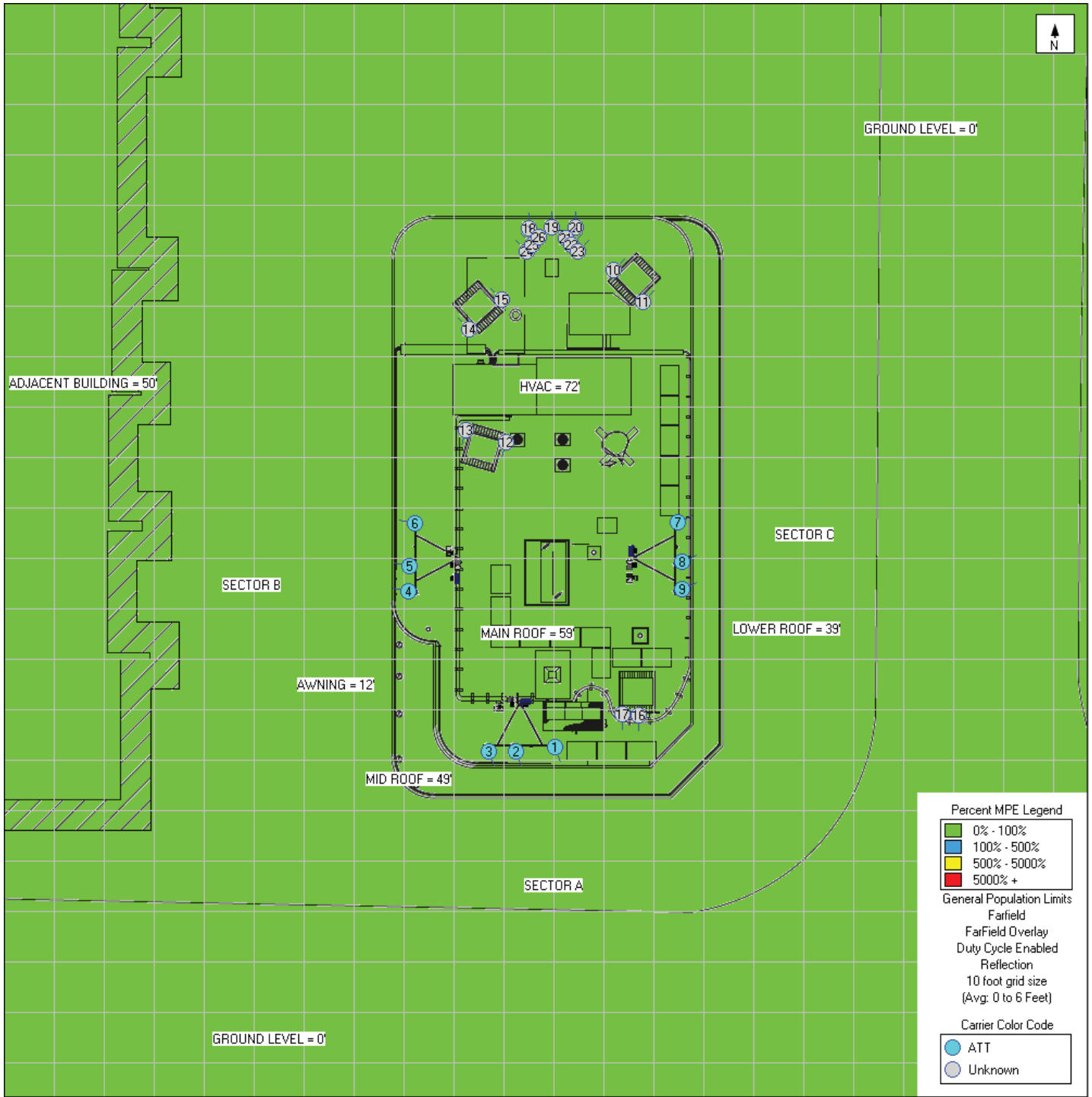
Lower Roof Level (39 feet AGL)



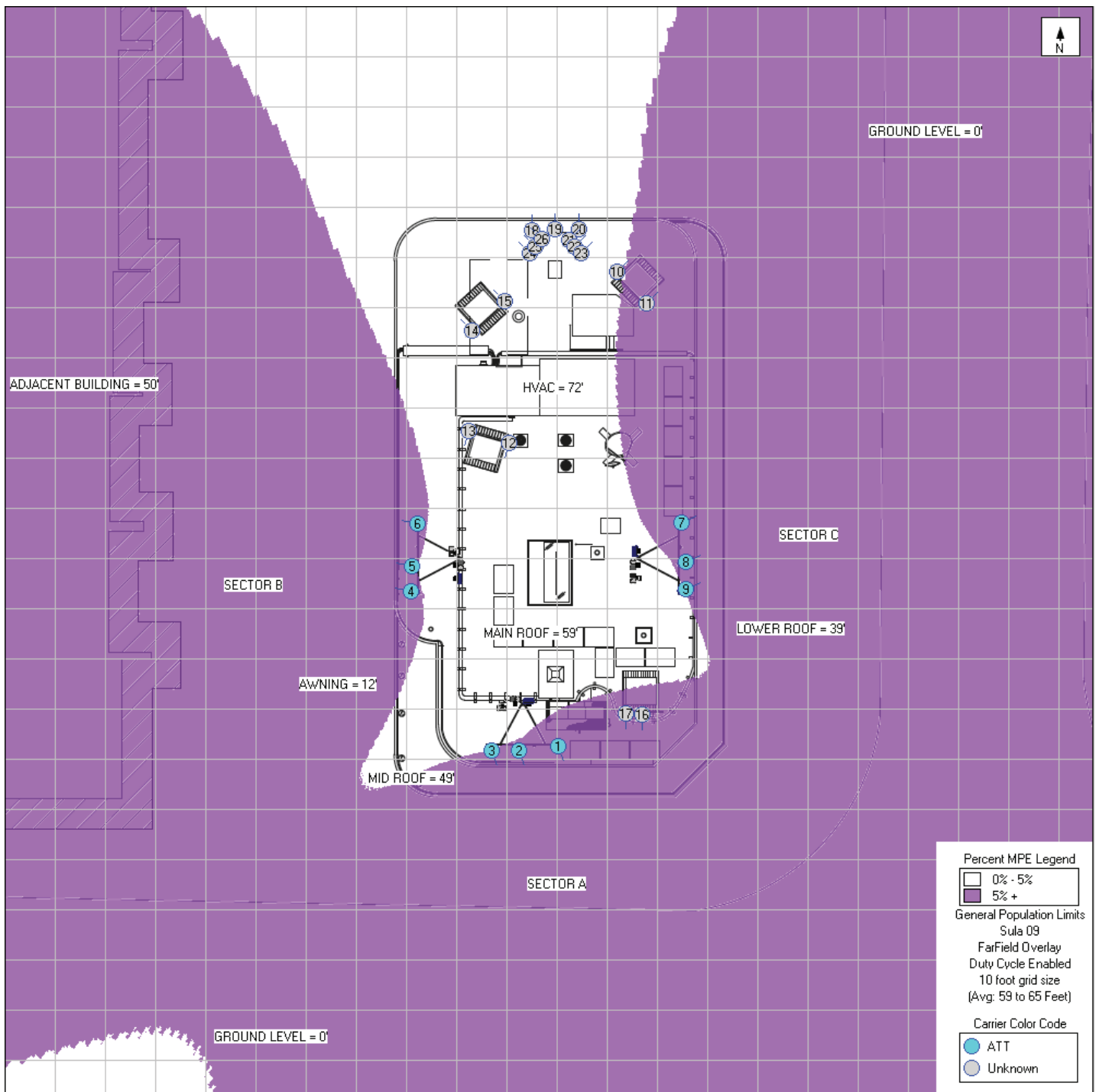
Awning Level (12 feet AGL)



Ground Level (0 feet AGL)



AT&T Contribution of More Than 5% of the FCC's General Exposure RF Limit



Note that the areas shown in purple are where AT&T antennas contribute more than 5% of the FCC's general exposure RF limit. These do not overlap any areas in front of other carrier antennas exceeding the FCC's general exposure RF limit as shown in Figure 1. Under FCC regulations, AT&T is therefore not responsible for predicted exceedances of another carrier's antennas.

5.0 COMPLIANCE SUMMARY

Based on the information collected, AT&T Mobility will be Compliant with FCC Rules and Regulations at the nearest walking surface if recommendations in the Compliance Summary are implemented.

The following mitigation measures are recommended for this site.

- **Access Point(s):**

- 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.

- **AT&T Mobility Sectors:**

- **Sector A:**

- Yellow CAUTION 2 signs posted on the back of the antenna array.

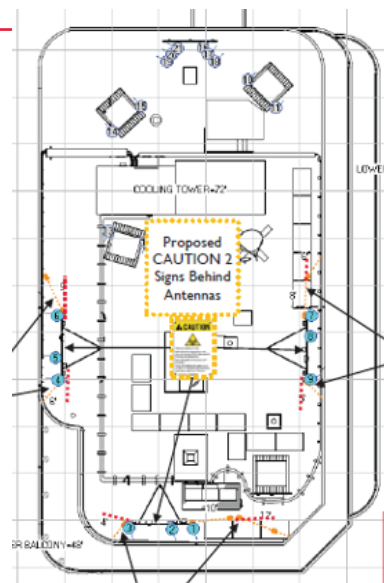
- **Sector B:**

- Yellow CAUTION 2 signs posted on the back of the antenna array.

- **Sector C:**

- Yellow CAUTION 2 signs posted on the back of the antenna array.

Keep/Verify Existing Barriers/Signage on site per the previous 5G build- Do not remove any of the existing barriers



6.0 APPENDICES

Appendix A: FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

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 public/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.

General public/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.

Table I and Figure I (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

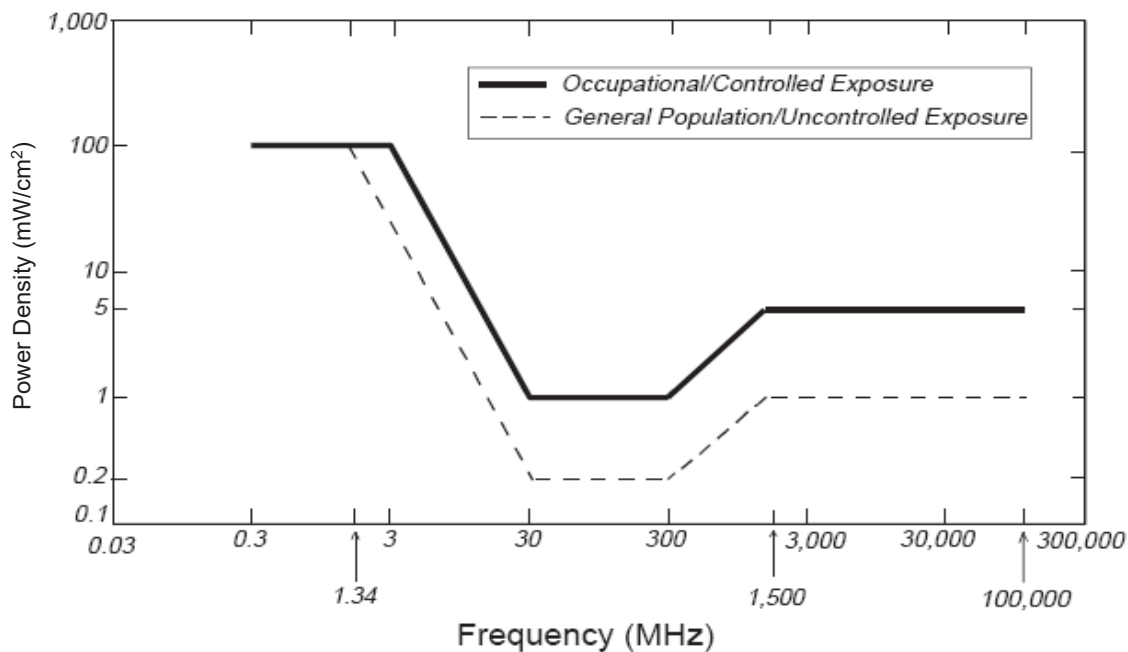
The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm²). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm²) and an uncontrolled MPE of 1 mW/cm² for equipment operating in the 1900 MHz frequency range. For the AT&T equipment operating at 700 MHz, the FCC's occupational MPE limit is 2.33 mW/cm² and an uncontrolled MPE limit of 0.47 mW/cm². For the AT&T equipment operating at 1900 MHz, the FCC's occupational MPE is 5.0 mW/cm² and an uncontrolled MPE limit of 1.0 mW/cm². These limits are considered protective of these populations.

Table I: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)
 Plane-wave Equivalent Power Density



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Microwave (Point-to-Point)	5,000 - 80,000 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Broadband Radio (BRS)	2,600 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Wireless Communication (WCS)	2,300 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Advanced Wireless (AWS)	2,100 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Cellular Telephone	870 MHz	2.90 mW/cm ²	0.58 mW/cm ²
Specialized Mobile Radio (SMR)	855 MHz	2.85 mW/cm ²	0.57 mW/cm ²
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm ²	0.47 mW/cm ²
Most Restrictive Frequency Range	30-300 MHz	1.00 mW/cm ²	0.20 mW/cm ²

MPE limits are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

Personal Communication (PCS) facilities used by AT&T in this area operate within a frequency range of 700-1900 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed 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 directly in front of the antennas.

FCC Compliance Requirement

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.

Appendix B: AT&T RF EXPOSURE POLICY REQUIREMENTS

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated May 27, 2015, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Appendix C: AT&T SIGNAGE AND MITIGATION

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. As presented in the AT&T guidance document, the signs must:

- Be posted at a conspicuous point;
- Be posted at the appropriate locations;
- Be readily visible; and
- Make the reader aware of the potential risks prior to entering the affected area.

The table below presents the signs that may be used for AT&T installations.

CRAN / HETNET Small Cell Decals / Signs		Alerting Signs	
	<p>STONEHOUSE NOTICE DECAL</p>		<p>TRILINGUAL NOTICE NOTICE 2</p>
	<p>STONEHOUSE NOTICE SIGN</p>		<p>CAUTION 2 - ROOFTOP CAUTION 2A</p>
	<p>STONEHOUSE CAUTION DECAL</p>		<p>CAUTION 2B - TOWER CAUTION 2C - PARAPETS</p>
	<p>STONEHOUSE CAUTION SIGN</p>		<p>WARNING 1B WARNING 2A</p>

Appendix D: LIMITATIONS

This report was prepared for the use of AT&T Mobility, LLC to meet requirements outlined in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of the trade, albeit proprietary in specific content, including other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI and its partners are based solely on information supplied by AT&T, including modeling instructions, inputs, parameters and methods. Calculations, data, and modeling methodologies for C Band equipment include a statistical factor reducing the power to 32% of maximum theoretical power to account for spatial distribution of users, network utilization, time division duplexing, and scheduling time. AT&T recommends the use of this factor based on a combination of guidance from its antenna system manufacturers, supporting international industry standards, industry publications, and its extensive experience. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix E: RoofMaster™

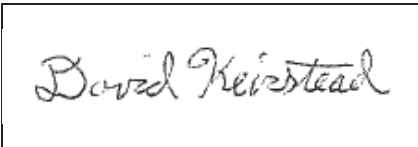
RoofMaster™ is a widely-used predictive modeling program that has been developed to predict RF power density values for rooftop and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. Using the computational methods set forth in Federal Communications (FCC) Office of Engineering & Technology (OET) Bulletin 65, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields” (OET-65), RoofMaster™ calculates predicted 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. A power reduction factor of 0.32 of maximum power was applied to account for spatial distribution of served users, as recommended by AT&T.

Appendix F: 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 in on the procedures outlined in AT&T’s RF Exposure: Responsibilities, Procedures & Guidelines document (dated October 28, 2014) and 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.



David Keirstead