SSA acoustics
Stewart · Burt · Nelsen · Esselstrom

September 10, 2024

Patrick Ewing
Centerline Communications

Re: Acoustical Report – AT&T Wireless PD33 Boones and Ibach
Site: 8930 SW Norwood Road, Tualatin, OR 97062

Dear Patrick,

This report presents a noise survey performed in the immediate vicinity of the proposed AT&T Wireless facility at 8930 SW Norwood Road in Tualatin, Oregon. This noise survey extends from the proposed equipment to the nearest properties. The purpose of this report is to document the existing conditions and the impacts of the acoustical changes due to the proposed equipment. This report contains data on the existing and predicted noise environments, impact criteria and an evaluation of the predicted sound levels as they relate to the criteria.

Code Requirements

The site is located within the City of Tualatin Zoning jurisdiction on property designated with an IN zoning. The receiving property to the north, south and east are zoned RML, and are in Residential use. The receiving property to the west is zoned IN, in use as a church/school. All of the receiving properties are Noise Sensitive Properties as defined in Tualatin Municipal Code 6-14-020.

The proposed new equipment consists of equipment support cabinets and an emergency generator. The cabinets are expected to run 24 hours a day. The generator will run once a week during daytime hours only for maintenance and testing purposes.

Tualatin Municipal Code 6-14-050 limits noise to a noise sensitive property as follows:

Noise is limited to 50 dBA between 10:00 pm and 7:00 am. As the cabinets will run 24 hours a day they must meet this nighttime limit.

Noise is limited to 70 dBA between 7:00 am and 10:00 pm. The generator must meet this limit during daytime maintenance and testing. The generator is exempt during emergency operation.

Ambient Conditions

Existing ambient noise levels were measured on site with a Svantek 971 sound level meter on September 3, 2024. Measurements were conducted in accordance with Oregon Administrative Rules (OAR) 340-35-035 subsection (3)(b). The average ambient noise level was 50 dBA.

Predicted Equipment Sound Levels

24-Hour Operation Equipment

The following table presents a summary of the equipment and their associated noise levels:

Table 1: Equipment Noise Levels

Equipment	dBA (each)	Quantity	Combined dBA @ 5 ft
Vertiv NetSure X744 3-Bay Walk-Up Cabinet	70 dBA @ 5 ft	1	70
Purcell FlexSure-FLX12 Cabinet	65 dBA @ 5ft	1	65
Total dBA (All cabinets combined)			**71**

Methods established by AHRI Standard 275-2010 and ASHRAE were used in predicting equipment noise levels to the receiving properties. Application factors such as location, height, and reflective surfaces are accounted for in the calculations.

The equipment will be located at grade. The nearest noise-sensitive receiving property is approximately 60 feet north of the equipment. The following table presents the predicted sound level at the nearest noise-sensitive receiving property:

Table 2: Predicted Noise Level: Proposed Equipment Cabinets

Line	Application Factor	N
1	Sound Pressure Level at 5 ft (dBA), Lp1	71
2	Distance Factor (DF) Inverse-Square Law (Free Field): DF = 20*log (d1/d2)	-22 (60 ft)
3	New Equipment Sound Pressure Level at Receiver, Lpr (Add lines 1 and 2)	**49**

As shown in Table 2, the predicted sound level from the proposed equipment is 49 dBA at the nearest noise-sensitive receiving property to the north, which meets the 50 dBA nighttime code limit. Noise levels at other receiving properties, which are further away, will be lower and within code limits.

Emergency Equipment

The proposed equipment includes one Kohler 30REOZK 30 KW generator with a sound enclosure which has a sound level of 65 dBA at 23 feet. The generator will be located at grade. The nearest noise-sensitive receiving property is approximately 61 feet north of the generator. The following table presents the predicted sound level at the nearest noise-sensitive receiving property:

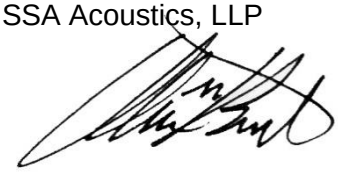
Table 3: Predicted Noise Levels: Proposed Emergency Generator

Line	Application Factor	N
1	Equipment Sound Pressure Level at 23 ft. (dBA), Lp1	65
2	Distance Factor (DF) Inverse-Square Law (Free Field): DF = 20log (d1/d2)	-8 (61 ft)
3	New Equipment Sound Pressure Level at Receiver, Lpr (Add lines 1 and 2)	**57**

As shown in Table 3, the predicted sound level from the proposed generator during test cycle operation is 57 dBA at the nearest noise-sensitive receiving property to the north, which meets the 70 dBA code limit. Noise levels at other receiving properties, which are further away, will be lower and within code limits.

Please contact us if you have any questions or require further information.

Sincerely,
SSA Acoustics, LLP



Alan Burt, P.E.
MANAGING PARTNER
SENIOR ACOUSTICAL CONSULTANT

RENEWAL DATE: 12/31/25

Radio Frequency Safety Survey Report Prediction (RFSSRP)

AT&T Monopole Facility

Site Name	BOONES AND IBACH
Site ID	PD33
Site Address	8930 SW NORWOOD RD, TUALATIN, OR 97062
Latitude: 45.351533 **Longitude:** -122.769051 **USID:** 332346 **FA**: 10576570 **Centerline PN:** Internal **Pace ID:** WSWOR0038594	**Prepared for:** Centerline on behalf of AT&T **Report Date:** September 25, 2024 **Report Writer:** Devin Lotter **Report Reviewer:** Michael Fischer

Statement of Compliance

AT&T will be compliant with FCC regulations upon installation of recommended mitigation measures.

TABLE OF CONTENTS

1.0 GENERAL SUMMARY

Centerline has been contracted to provide a Radio Frequency (RF) Analysis for the following AT&T monopole facility to determine whether the facility is in compliance with federal standards and regulations regarding RF emissions. This analysis includes theoretical emissions calculations for all equipment for AT&T.

1.1 SITE SUMMARY

Analysis Site Data	
Site USID:	332346
Site FA#:	10576570
Site Name:	BOONES AND IBACH
Site Address:	8930 SW NORWOOD RD, TUALATIN, OR 97062
Site Latitude:	45.351533
Site Longitude:	-122.769051
Facility Type:	Monopole
Compliance Summary	
Compliance Status:	Compliant Upon Mitigation
Maximum Calculated AT&T MPE Level on Site (General Population Limit):	2.00%
Maximum Calculated Composite MPE Level on Site (General Population Limit):	3.90%
Maximum Calculated AT&T MPE Level at Ground (General Population Limit):	1.14%
Maximum Calculated Composite MPE Level at Ground (General Population Limit):	2.33%
Site Data Information	
CD:	AT&T_PD33 Boones and Ibach_90_ NB ZD REV B_2024-08-01(DT)
RFDS:	Snapshot-RF Issue Final RFDS-1720018355335
MPE Modeling Program:	IXUS Version: 4.12; Published 2024-07-24

1.2 SITE MITIGATION

Signage and barriers are the primary means of mitigating accessible areas of exposure. Below is a summary of existing and recommended signage at this AT&T facility.

Existing Signage and Barriers (AT&T Sectors)										
Location	Safety Instructions	Notice 2	Notice 2D	Caution 2	Caution 2B	Caution 2C	Caution 2D	Warning 1B	Warning 2A	Barrier
Monopole Base	0	0	0	0	0	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0	0

Proposed Signage and Barriers (AT&T Sectors)									
Location	Notice 2	Notice 2D	Caution 2	Caution 2B	Caution 2C	Caution 2D	Warning 1B	Warning 2A	Barrier
Monopole Base	0	0	0	1	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0

Final Signage and Barriers (AT&T Sectors)									
Location	Notice 2	Notice 2D	Caution 2	Caution 2B	Caution 2C	Caution 2D	Warning 1B	Warning 2A	Barrier
Monopole Base	0	0	0	1	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0

Monopole Base:

- Install (1) Caution 2B sign at the monopole base.

Alpha:

- No action required.

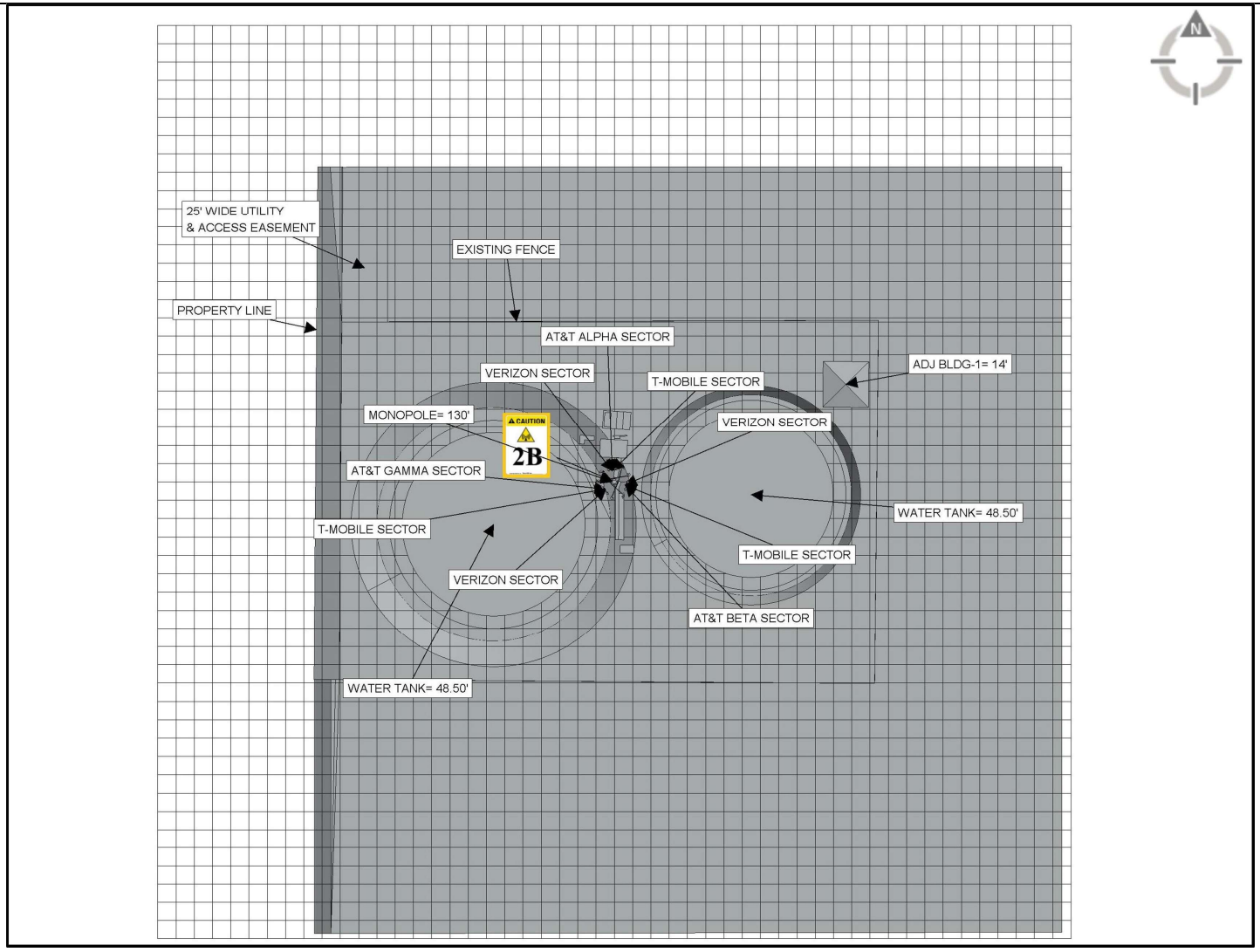
Beta:

- No action required.

Gamma:

- No action required.

2.0 SITE SCALE MAP



Site Scale

Grid size: 10’

Safety Instructions

Caution 1

Notice 1

Caution 2

Notice 2

Caution 2D

Notice 2D

Warning

Existing Barrier

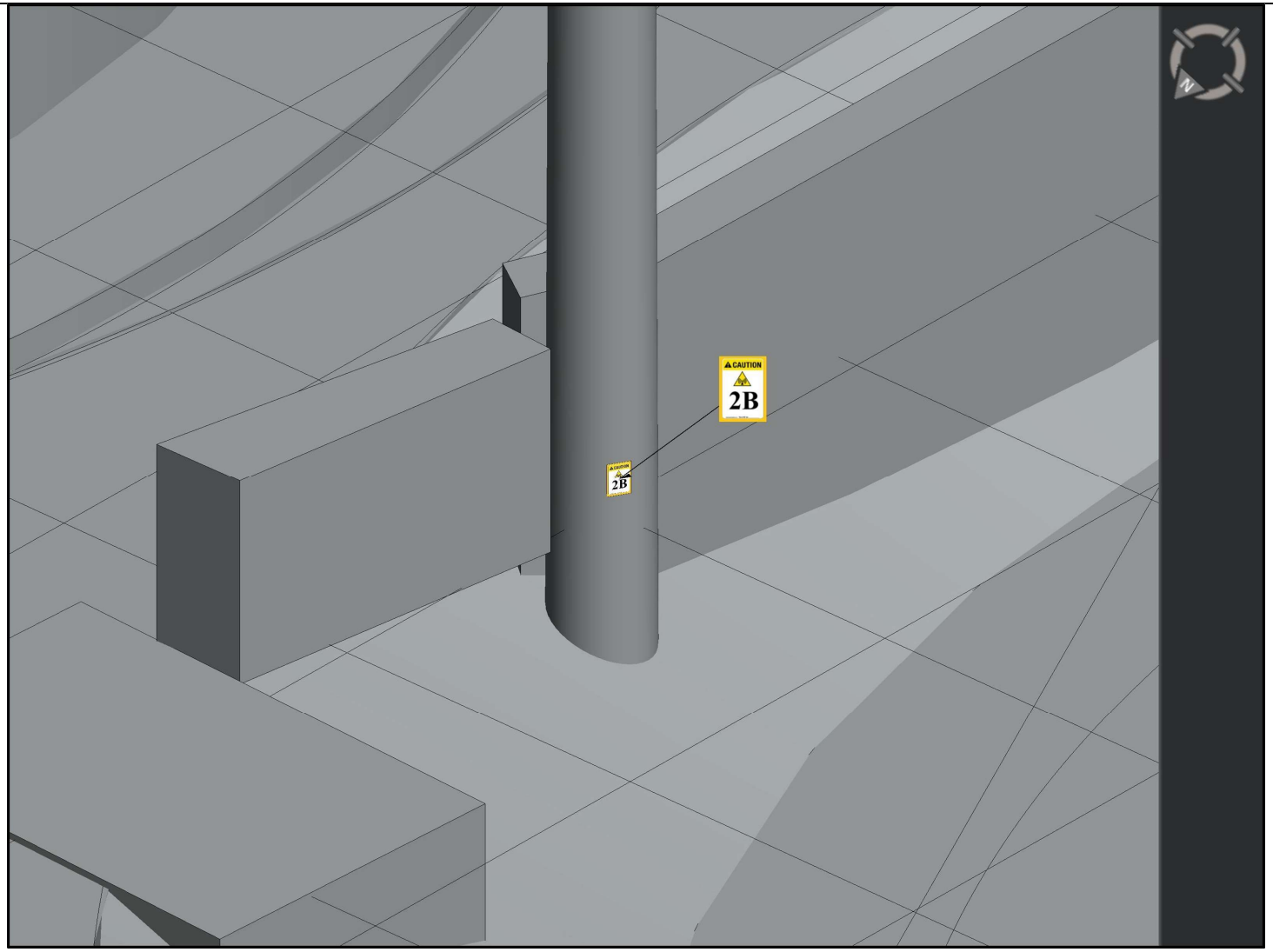
Proposed Barrier

Items to be removed

Existing Sign

Proposed Sign

Signage / Mitigation Plan
BOONES AND IBACH / 10576570



Monopole Signage

Grid size: 10’

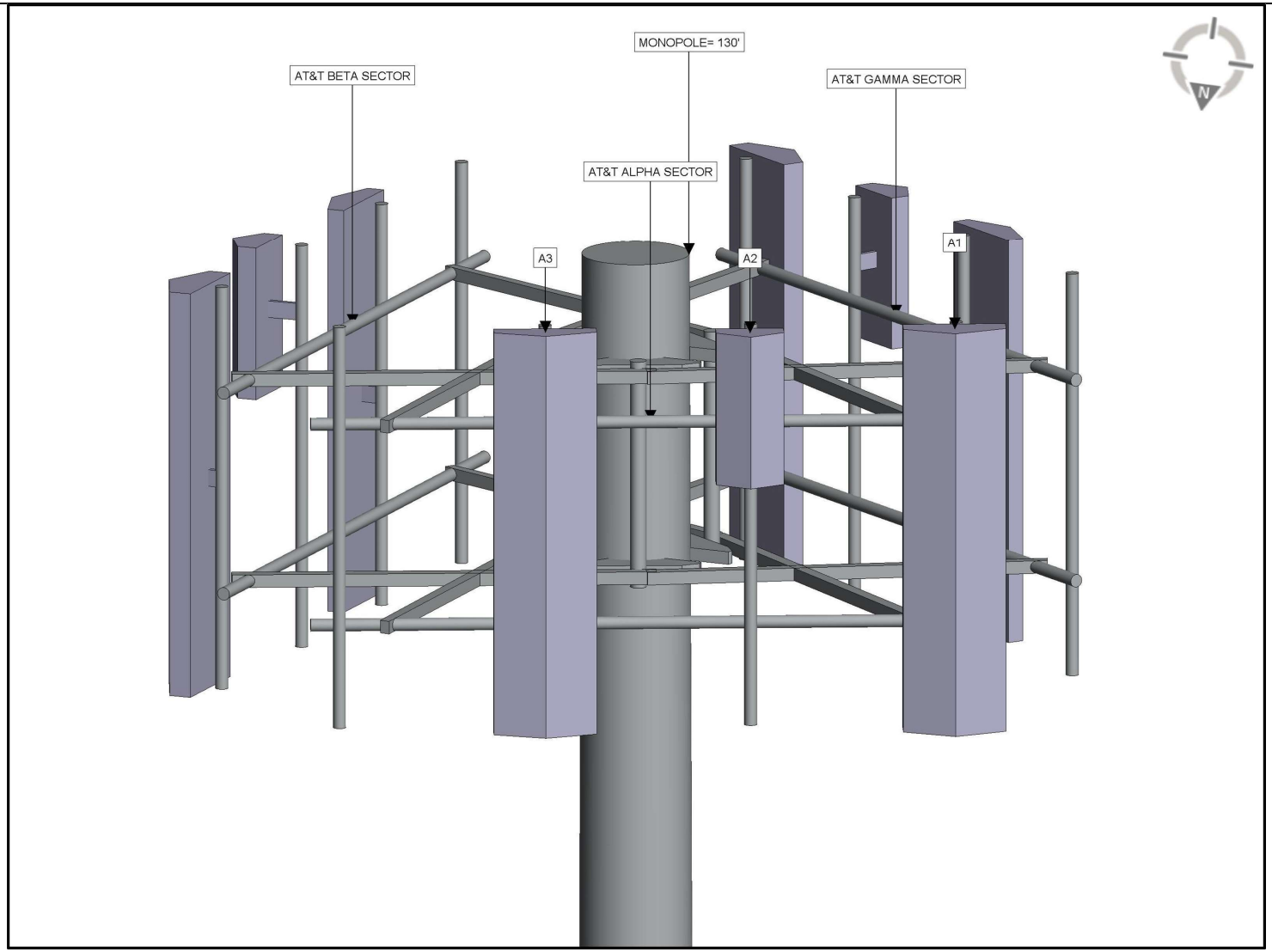
 Safety Instructions	 Caution 1
 Notice 1	 Caution 2
 Notice 2	 Caution 2D
 Notice 2D	 Warning
 Existing Barrier	 Proposed Barrier

 Items to be removed

 Existing Sign

 Proposed Sign

Signage / Mitigation Plan
BOONES AND IBACH / 10576570



Alpha Sector

Grid size: 10'

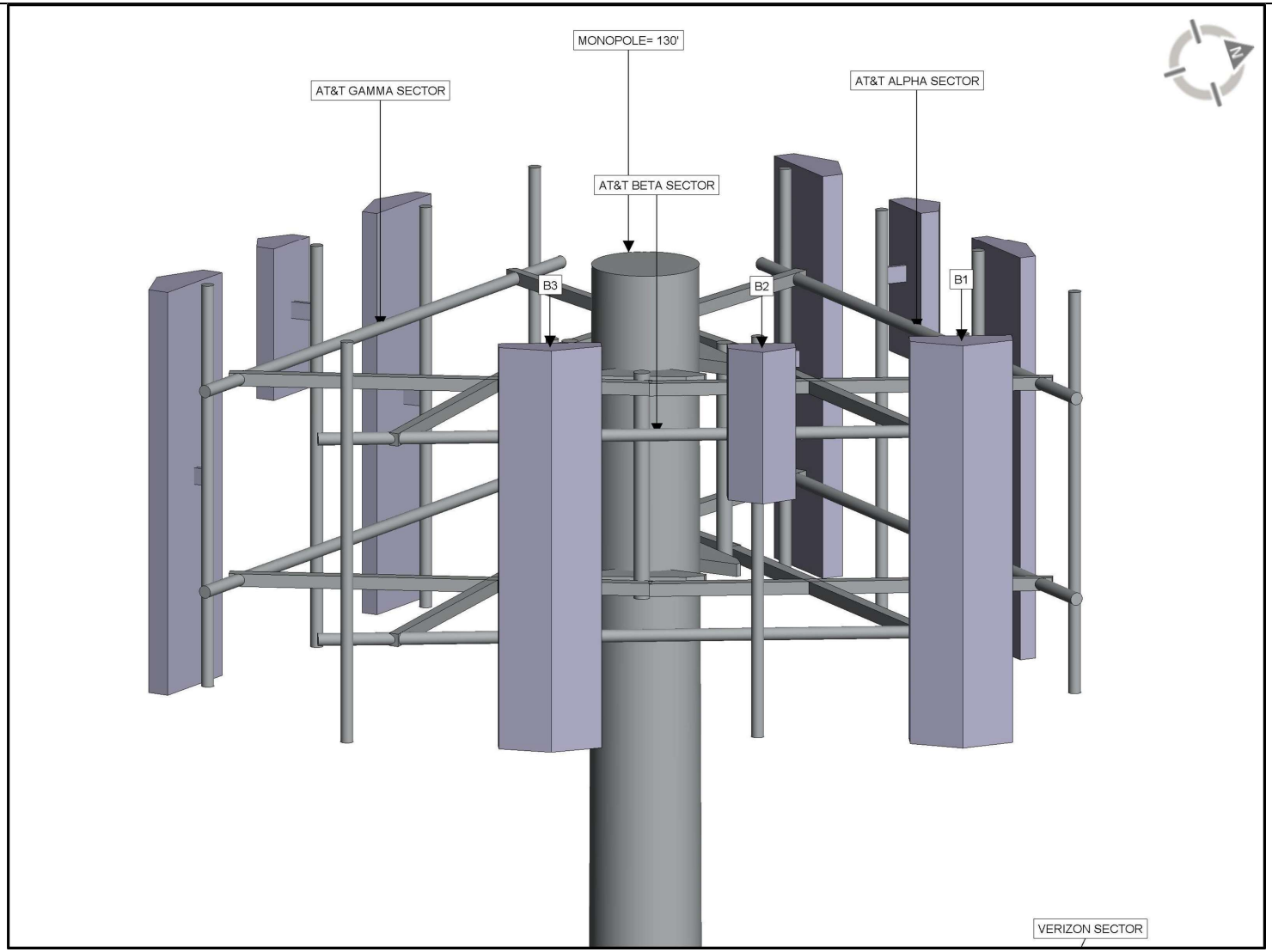
 Safety Instructions	 Caution 1
 Notice 1	 Caution 2
 Notice 2	 Caution 2D
 Notice 2D	 Warning
 Existing Barrier	 Proposed Barrier

 Items to be removed

 Existing Sign

 Proposed Sign

Signage / Mitigation Plan
BOONES AND IBACH / 10576570



Beta Sector

Grid size: 10'

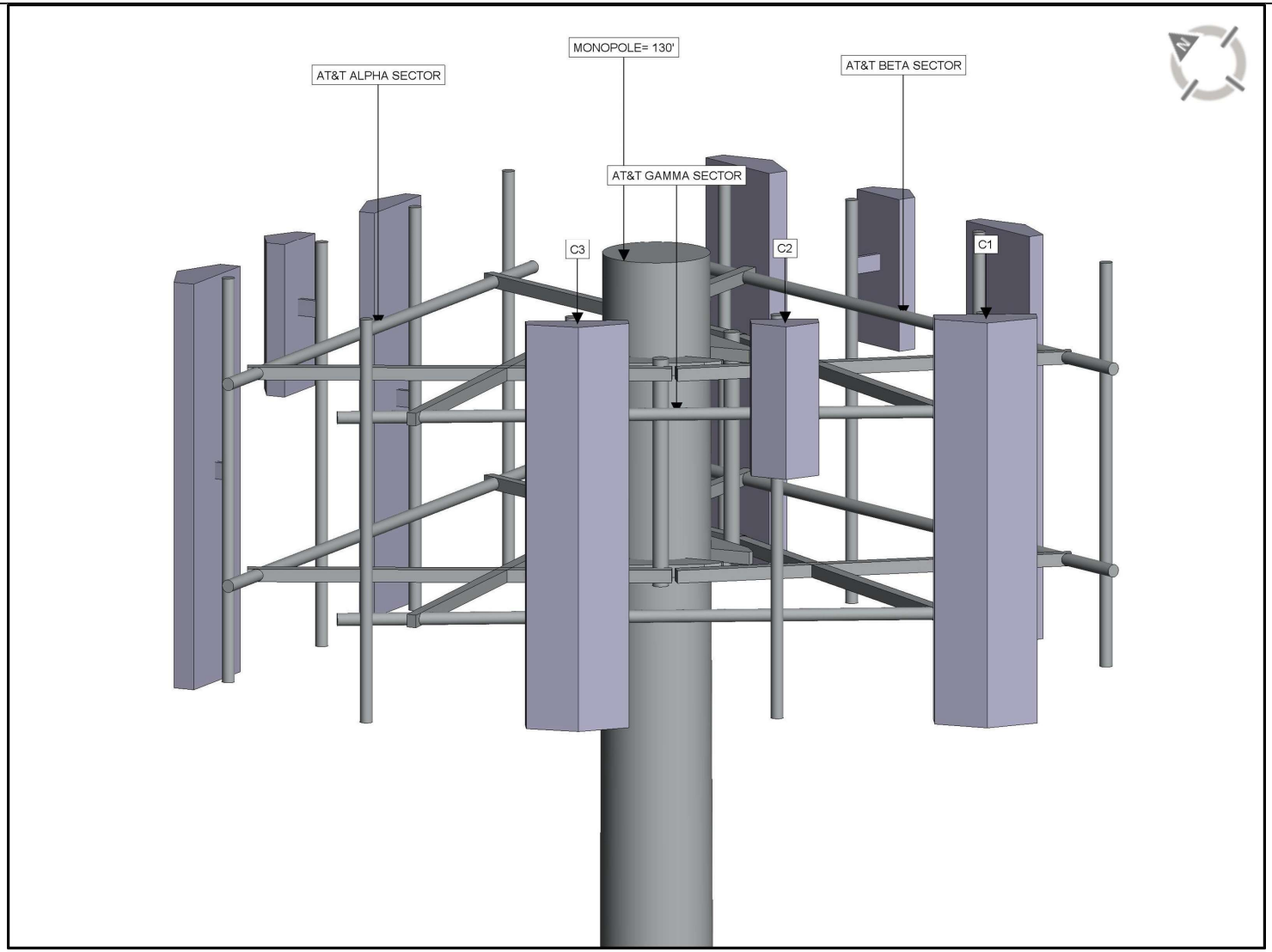
 Safety Instructions	 Caution 1
 Notice 1	 Caution 2
 Notice 2	 Caution 2D
 Notice 2D	 Warning
 Existing Barrier	 Proposed Barrier

 Items to be removed

 Existing Sign

 Proposed Sign

Signage / Mitigation Plan
BOONES AND IBACH / 10576570



Gamma Sector

Grid size: 10'

Safety Instructions

Caution 1

Notice 1

Caution 2

Notice 2

Caution 2D

Notice 2D

Warning

Existing Barrier

Proposed Barrier

Items to be removed

Existing Sign

Proposed Sign

Signage / Mitigation Plan
BOONES AND IBACH / 10576570

3.0 ANTENNA INVENTORY

ANT ID	Operator	Antenna Manufacturer	Antenna Model	System / Freq (MHz)	TPO (Watts)	Gain (dBd)	Total ERP (Watts)	Azimuth (°)	Mech. Tilt (°)	Elec. Tilt (°)	Antenna Length (ft.)	Antenna Centerline (ft.)	Antenna Bottom Tip (ft.)
A1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	LTE 700	180	14.85	5498.86	350	0	2 to 12	8.04	126	121.98
A1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	NR 850	180	15.15	5892.13	350	0	2 to 12	8.04	126	121.98
A1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	WCS 2300	75	18.55	5371.08	350	0	1 to 10	8.04	126	121.98
A2	AT&T	Ericsson	AIR6472 B77G B77M	DoD 3450	49.21	24.25	13093.43	350	0	6	3.02	128.5	126.99
A2	AT&T	Ericsson	AIR6472 B77G B77M	C-Band 3700	78.62	25.15	25735.53	350	0	6	3.02	128.5	126.99
A3	AT&T	CellMax	120726	LTE 700	120	14.95	3751.3	350	0	2 to 8	8.02	126	121.99
A3	AT&T	CellMax	120726	LTE 700	60	14.95	1875.65	350	0	2 to 8	8.02	126	121.99
A3	AT&T	CellMax	120726	LTE 1900	180	19.55	16228.28	350	0	1 to 9	8.02	126	121.99
A3	AT&T	CellMax	120726	LTE 2100	180	19.55	16228.28	350	0	1 to 9	8.02	126	121.99
B1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	LTE 700	180	14.85	5498.86	105	0	2 to 12	8.04	126	121.98
B1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	NR 850	180	15.15	5892.13	105	0	2 to 12	8.04	126	121.98
B1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	WCS 2300	75	18.55	5371.08	105	0	1 to 10	8.04	126	121.98
B2	AT&T	Ericsson	AIR6472 B77G B77M	DoD 3450	49.21	24.25	13093.43	105	0	6	3.02	128.5	126.99
B2	AT&T	Ericsson	AIR6472 B77G B77M	C-Band 3700	78.62	25.15	25735.53	105	0	6	3.02	128.5	126.99
B3	AT&T	CellMax	120726	LTE 700	120	14.95	3751.3	105	0	2 to 8	8.02	126	121.99
B3	AT&T	CellMax	120726	LTE 700	60	14.95	1875.65	105	0	2 to 8	8.02	126	121.99
B3	AT&T	CellMax	120726	LTE 1900	180	19.55	16228.28	105	0	1 to 9	8.02	126	121.99

ANT ID	Operator	Antenna Manufacturer	Antenna Model	System / Freq (MHz)	TPO (Watts)	Gain (dBd)	Total ERP (Watts)	Azimuth (°)	Mech. Tilt (°)	Elec. Tilt (°)	Antenna Length (ft.)	Antenna Centerline (ft.)	Antenna Bottom Tip (ft.)
B3	AT&T	CellMax	120726	LTE 2100	180	19.55	16228.28	105	0	1 to 9	8.02	126	121.99
C1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	LTE 700	180	14.85	5498.86	230	0	2 to 12	8.04	126	121.98
C1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	NR 850	180	15.15	5892.13	230	0	2 to 12	8.04	126	121.98
C1	AT&T	CellMax	CMA-UBTULBULBHHP-6517-17-21-21	WCS 2300	75	18.55	5371.08	230	0	1 to 10	8.04	126	121.98
C2	AT&T	Ericsson	AIR6472 B77G B77M	DoD 3450	49.21	24.25	13093.43	230	0	6	3.02	128.5	126.99
C2	AT&T	Ericsson	AIR6472 B77G B77M	C-Band 3700	78.62	25.15	25735.53	230	0	6	3.02	128.5	126.99
C3	AT&T	CellMax	120726	LTE 700	120	14.95	3751.3	230	0	2 to 8	8.02	126	121.99
C3	AT&T	CellMax	120726	LTE 700	60	14.95	1875.65	230	0	2 to 8	8.02	126	121.99
C3	AT&T	CellMax	120726	LTE 1900	180	19.55	16228.28	230	0	1 to 9	8.02	126	121.99
C3	AT&T	CellMax	120726	LTE 2100	180	19.55	16228.28	230	0	1 to 9	8.02	126	121.99
TMO 1	T-Mobile	RFS	APXVSPP18-C-A20	LTE 1900	160	15.85	6153.47	350	0	0	6	97.5	94.5
TMO 2	T-Mobile	RFS	APXVAARR18_43-U-NA20	LTE 700	160	12.35	2748.65	350	0	0	6	97.5	94.5
TMO 3	T-Mobile	CommScope	FFVV-65A-R2-V1	LTE 2100	160	15.25	5359.45	350	0	2 to 12	4.02	97.5	95.49
TMO 4	T-Mobile	RFS	APXVSPP18-C-A20	LTE 1900	160	15.85	6153.47	105	0	0	6	97.5	94.5
TMO 5	T-Mobile	RFS	APXVAARR18_43-U-NA20	LTE 700	160	12.35	2748.65	105	0	0	6	97.5	94.5
TMO 6	T-Mobile	CommScope	FFVV-65A-R2-V1	LTE 2100	160	15.25	5359.45	105	0	2 to 12	4.02	97.5	95.49
TMO 7	T-Mobile	RFS	APXVSPP18-C-A20	LTE 1900	160	15.85	6153.47	230	0	0	6	97.5	94.5
TMO 8	T-Mobile	RFS	APXVAARR18_43-U-NA20	LTE 700	160	12.35	2748.65	230	0	0	6	97.5	94.5
TMO 9	T-Mobile	CommScope	FFVV-65A-R2-V1	LTE 2100	160	15.25	5359.45	230	0	2 to 12	4.02	97.5	95.49

ANT ID	Operator	Antenna Manufacturer	Antenna Model	System / Freq (MHz)	TPO (Watts)	Gain (dBd)	Total ERP (Watts)	Azimuth (°)	Mech. Tilt (°)	Elec. Tilt (°)	Antenna Length (ft.)	Antenna Centerline (ft.)	Antenna Bottom Tip (ft.)
VZW 1	Verizon Wireless	CommScope	SBNHH-1D65B	LTE 700	160	12.75	3013.84	0	0	0 to 14	6.07	107.75	104.72
VZW 2	Verizon Wireless	CommScope	SBNHH-1D65B	LTE 850	160	12.55	2878.19	0	0	0 to 14	6.07	107.75	104.72
VZW 3	Verizon Wireless	Andrew	SBNHH-1D65A	LTE 1900	160	14.95	5001.73	0	0	0 to 10	4.64	107.75	104.72
VZW 4	Verizon Wireless	CommScope	SBNHH-1D65B	LTE 700	160	12.75	3013.84	120	0	0 to 14	6.07	107.75	104.72
VZW 5	Verizon Wireless	CommScope	SBNHH-1D65B	LTE 850	160	12.55	2878.19	120	0	0 to 14	6.07	107.75	104.72
VZW 6	Verizon Wireless	Andrew	SBNHH-1D65A	LTE 1900	160	14.95	5001.73	120	0	0 to 10	4.64	107.75	104.72
VZW 7	Verizon Wireless	CommScope	SBNHH-1D65B	LTE 700	160	12.75	3013.84	240	0	0 to 14	6.07	107.75	104.72
VZW 8	Verizon Wireless	CommScope	SBNHH-1D65B	LTE 850	160	12.55	2878.19	240	0	0 to 14	6.07	107.75	104.72
VZW 9	Verizon Wireless	Andrew	SBNHH-1D65A	LTE 1900	160	14.95	5001.73	240	0	0 to 10	4.64	107.75	104.72

75% duty cycle is assumed for all AT&T antennas

AIR6472 antennas were calculated using AT&T's preferred conservative power reduction factor of 0.32

4.0 CALCULATED RF EXPOSURE LEVELS

Calculations performed based upon the data listed for this facility have produced the results that are shown below:

Maximum Calculated AT&T MPE Level on Site:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**2.00%**
Accessible **Occupational** MPE Limits:	**0.40%**

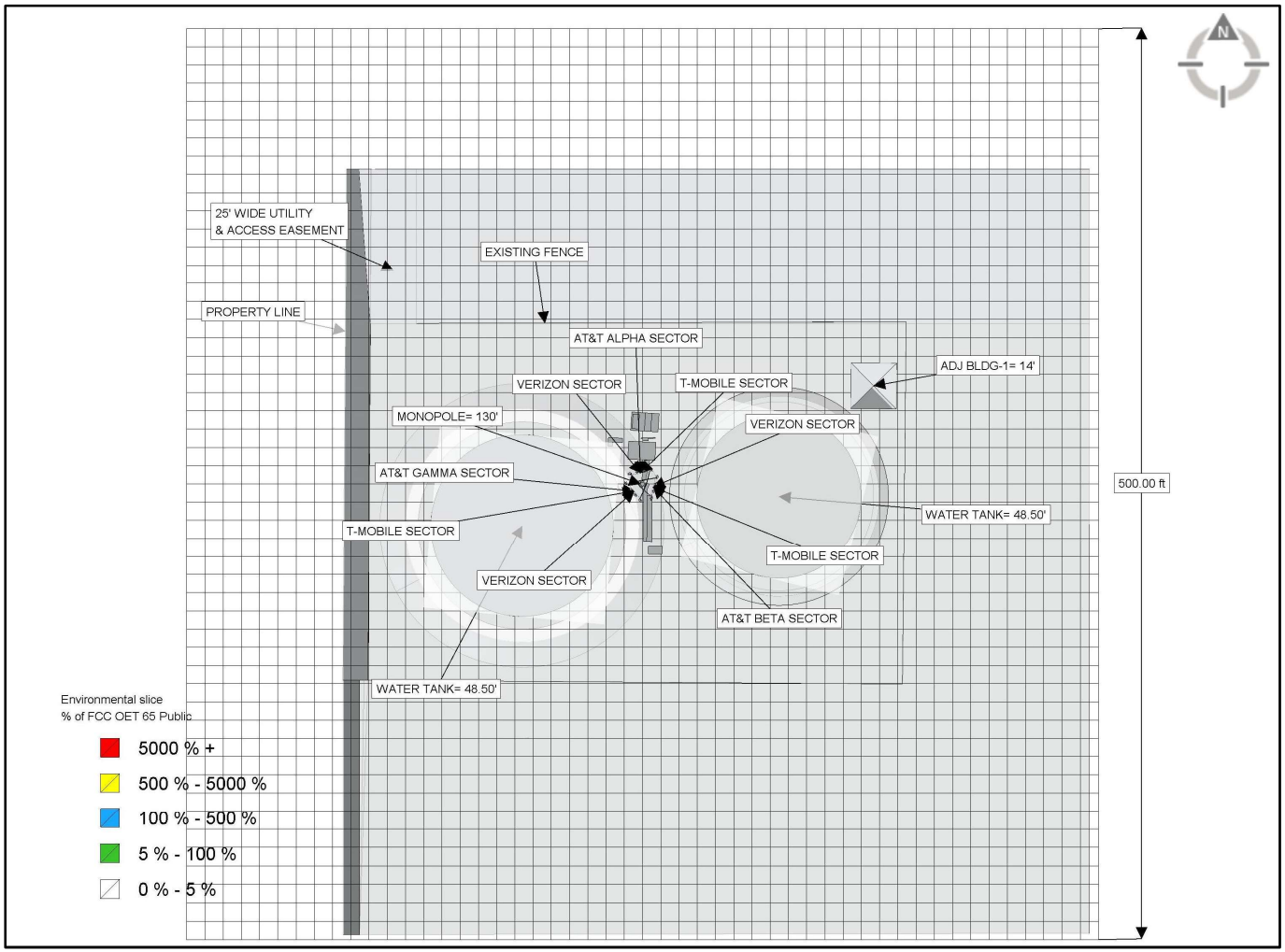
Maximum Calculated Composite MPE Level on Site:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**3.90%**
Accessible **Occupational** MPE Limits:	**0.78%**

Maximum Calculated AT&T Ground Level MPE:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**1.14%**
Accessible **Occupational** MPE Limits:	**0.23%**

Maximum Calculated Composite Ground Level MPE:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**2.33%**
Accessible **Occupational** MPE Limits:	**0.47%**

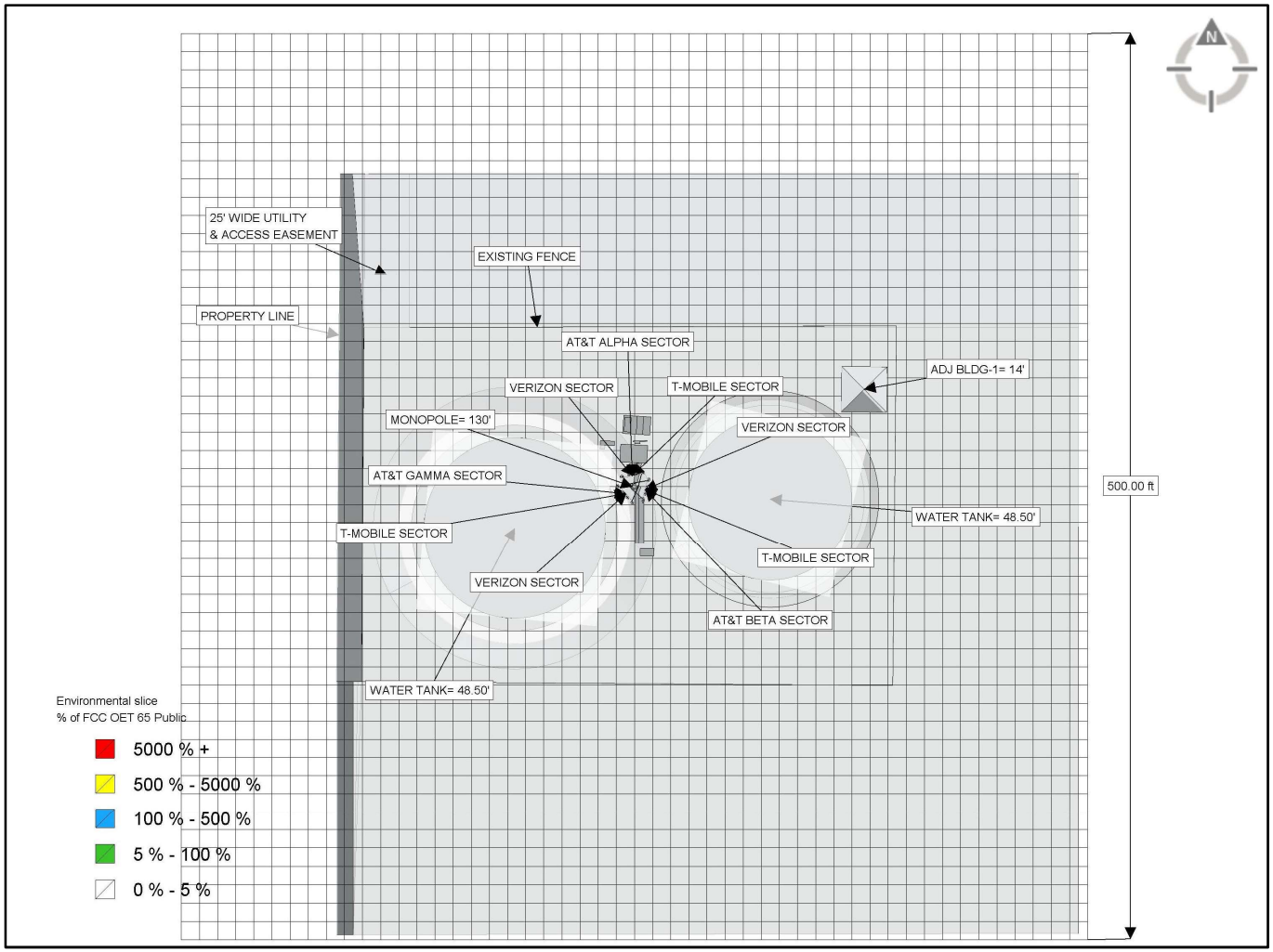
5.0 RF EXPOSURE DIAGRAMS

Composite - Overview



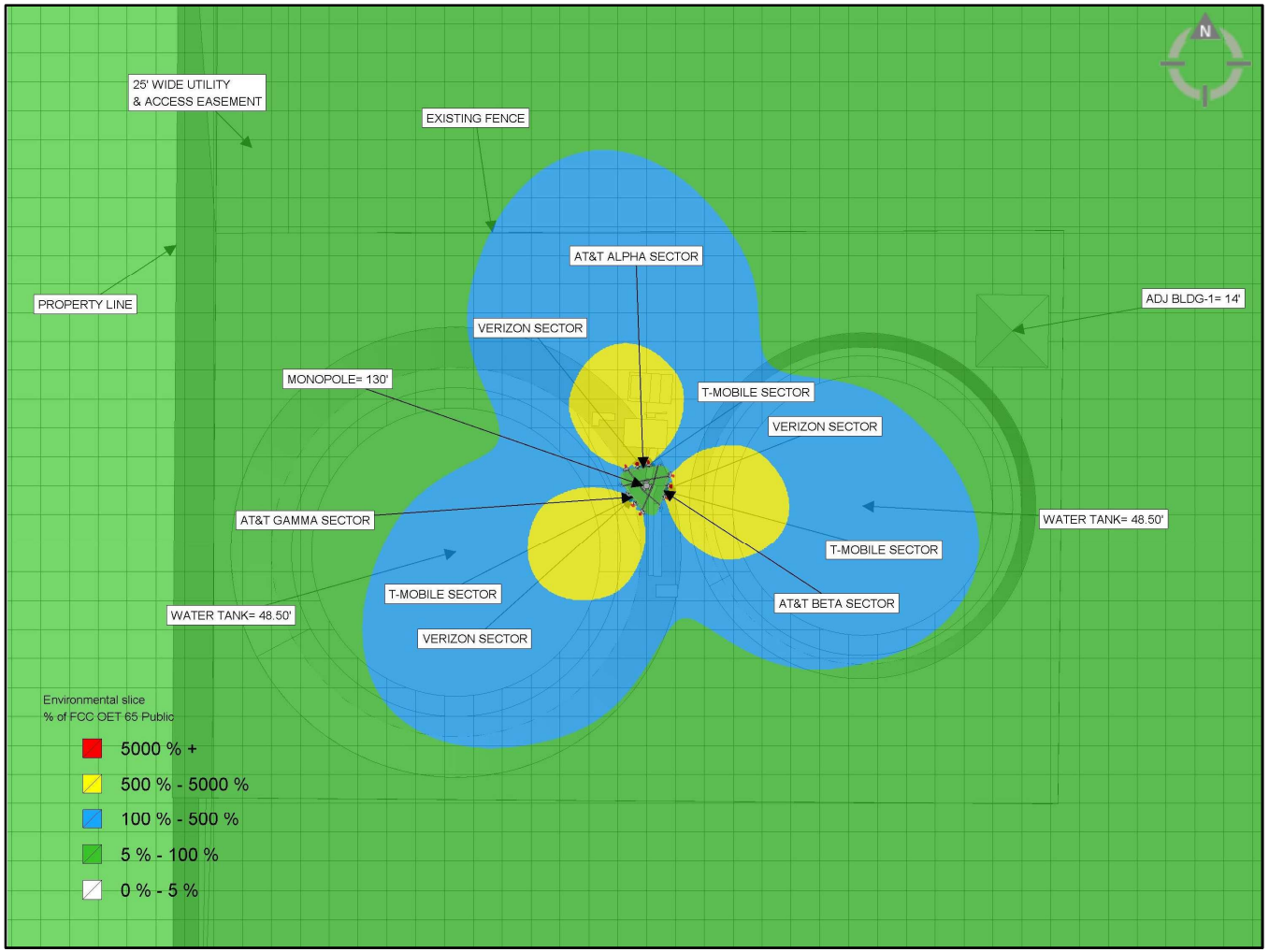
Grid Size: 10'

AT&T Only - Overview



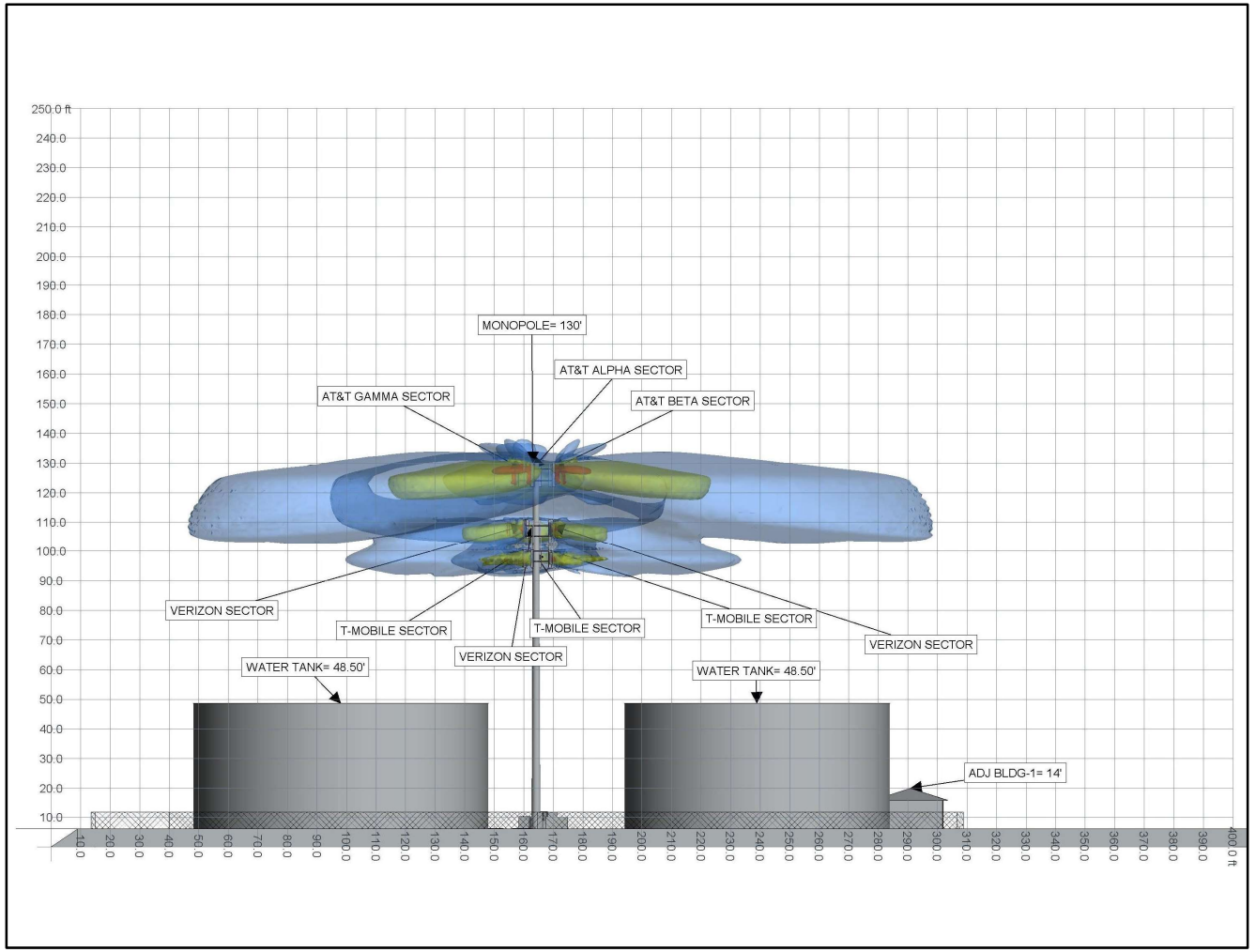
Grid Size: 10’

AT&T Antenna Level



Grid Size: 10’

Elevation View



Grid Size: 10'

6.0 STATEMENT OF COMPLIANCE

Centerline conducted worst case modeling to determine whether the subject facility is in compliance with FCC regulations.

Based on the information analyzed, AT&T will be compliant with FCC regulations once the mitigation measures recommended in this report are implemented.

6.1 RECOMMENDATIONS

Existing Signage and Barriers (AT&T Sectors)										
Location	Safety Instructions	Notice 2	Notice 2D	Caution 2	Caution 2B	Caution 2C	Caution 2D	Warning 1B	Warning 2A	Barrier
Monopole Base	0	0	0	0	0	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0	0

Proposed Signage and Barriers (AT&T Sectors)									
Location	Notice 2	Notice 2D	Caution 2	Caution 2B	Caution 2C	Caution 2D	Warning 1B	Warning 2A	Barrier
Monopole Base	0	0	0	1	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0

Final Signage and Barriers (AT&T Sectors)									
Location	Notice 2	Notice 2D	Caution 2	Caution 2B	Caution 2C	Caution 2D	Warning 1B	Warning 2A	Barrier
Monopole Base	0	0	0	1	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0	0

Monopole Base:

- Install (1) Caution 2B sign at the monopole base.

Alpha:

- No action required.

Beta:

- No action required.

Gamma:

- No action required.

APPENDIX A: AT&T RF SIGNAGE

Sign	Details	Sign	Details
	**Safety Instructions** Provides guidelines on how to proceed and who to contact regarding areas that may exceed either the FCC's General Population or Occupational exposure limits.		**Notice 2** Used to alert individuals that they are entering an area that may exceed the FCC's General Population exposure limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Blue Notice 1 signs.
	**Caution 2** Used to alert individuals that they are entering an area that may exceed the FCC's Occupational exposure limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Yellow Caution 1 signs.		**Caution 2A** Used to alert individuals that they are entering an area that may exceed the FCC's Occupational exposure limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Yellow Caution 1 signs (used in conjunction with painted stripes).
	**Caution 2B** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational exposure limits. Must be placed at the base of the tower to warn tower climbers of potential for exposure.		**Caution 2C** Gives specific information on how to proceed and who to contact regarding antennas that are façade mounted, concealed or on stand-alone structures.
	**Notice 2D** Used to inform individuals accessing adjacent towers that AT&T is exceeding FCC's General Population exposure limits on the structure.		**Caution 2D** Used to inform individuals accessing adjacent towers that AT&T is exceeding FCC's Occupational exposure limits on the structure.
	**Warning 1B** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational exposure limits by a factor of 10 or greater. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.		**Warning 2A** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational exposure limits by a factor of 10 or greater. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas (used in conjunction with painted stripes).

APPENDIX B: FCC GUIDELINES AND EMISSIONS THRESHOLD LIMITS

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Because exposure limits may vary for each frequency band, it is necessary to report % MPE rather than power density.

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

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

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

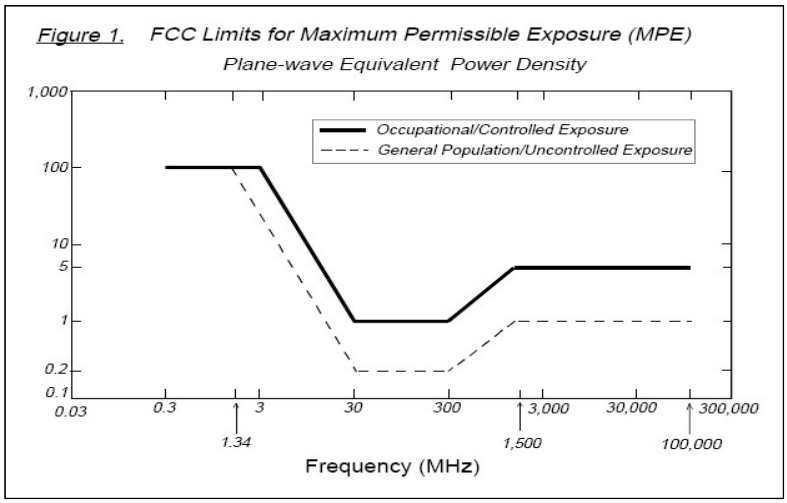
The FCC mandates that if a site is found to be out of compliance with regard to exposure, any system operator contributing 5% or more to areas exceeding the FCC's allowable limits will be responsible for bringing the site into compliance.

Additional details can be found in FCC OET 65.

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 Population/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



APPENDIX C: CALCULATION METHODOLOGY

IXUS electromagnetic energy (EME) calculation software was used to assess all RF field levels presented in this study. IXUS software uses a fast and accurate EME calculation tool that allows for the determination of RF field strength in the vicinity of radio communication base stations and transmitters. At its core, the IXUS EME calculation module implements evaluation techniques detailed in the ITU-T K.61, CENELEC EN 50383, and IEC 62232 specifications and referenced in *C95.3 IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz to 300 GHz*. The EME calculation result at any point in 3D space is achieved via a synthetic ray tracing technique, a conservative cylindrical envelope method, or through full-wave electromagnetic simulation. The ray tracing method is an advanced computation method described in IEC 622322 where the power is summed from elemental sources representing the individual components of the antenna which are selected by an analysis of published manufacturer datasheets and antenna pattern information. The selection of the solution method is determined by the particular antenna being considered.

Power Calculation Table

All Systems	Tx power in Watts = (**X**) x 0.75 = Power (Total) 75% Duty Cycle AT&T) Example: **160**W x 0.75 = 120W
C-Band (3800 MHz / DOD-band (3500 MHz)	Tx power in Watts = (**X**) x 0.75 x Power Tolerance 1.412 x Power Reduction Factor 0.32 = Power (Total) 75% Duty Cycle AT&T Example 1: **320**W x 0.75 x 1.412 x 0.32 = 108.44W Example 2: **256**W x 0.75 x 1.412 x 0.32 = 86.75W Example 3: **160**W x 0.75 x 1.412 x 0.32 = 54.22W

APPENDIX D: CERTIFICATIONS

I, Devin Lotter, preparer of this report certify that I am fully trained and aware of 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 the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Devin Lotter

9/25/2024

I, Michael Fischer, reviewer and approver of this report certify that I am fully trained and aware of 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 the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Michael Fischer

9/25/2024

APPENDIX E: PROPRIETARY STATEMENT

This report was prepared for the use of AT&T to meet all applicable FCC requirements. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by Centerline are based solely on the information provided by AT&T and all 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 Centerline 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.

Date:	August 7, 2024
Site Number:	PD33 – Boones & Ibach
FA Code:	10576570
USID:	332346
Address:	8930 SW Norwood Road, Tualatin, OR 97062
Re:	Radio Frequency Compliance

Statement of Compliance

This AT&T wireless communications facility complies with all federal standards for radio frequency radiation in accordance with the Telecommunications Act of 1996 and subsequent amendments and any other requirements imposed by state or federal regulatory agencies.

Description of Facility:

Location Type: Proposed modifications to the wireless communications facility will be comprised of multiple panel antennas and associated radio cabinets utilizing licensed frequencies in the 700, 850, 1900, 2100 and 3700 MHz bands. The purpose of the facility is to provide coverage and/or capacity to the geographic service area.

Power Density:

The power density from any sector as designed with the proposed facility shall not exceed the FCC maximum permissible exposure limits in accordance with FCC Public Standards OET Bulletin 65 (e.g., 1 mW/cm^2 at 1900 MHz) at any location that is considered readily accessible by the general public.

The proposed facility should not interfere with other communications facilities. Our sites are monitored 24/7 by a national operations center to insure all is operating normally. In addition, we have local technicians who make routine visits to cell sites to make repairs when needed. AT&T audits our facilities on a semi-annual basis to ensure that FCC compliance levels are continuously met.

If requested, a detailed radio frequency emission safety report detailing the maximum potential exposures will be provided to the jurisdiction.

Sincerely,

M Samsul Bujang
AT&T Mobility - RAN Engineering

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: CECIL J MATHEW
NEW CINGULAR WIRELESS PCS, LLC
208 S AKARD ST., RM 1015
DALLAS, TX 75202

Call Sign	File Number
WPWU989	0008643019
Radio Service	
WZ - 700 MHz Lower Band (Blocks C, D)	

FCC Registration Number (FRN): 0003291192

Grant Date	Effective Date	Expiration Date	Print Date
11-05-2019	11-05-2019	06-13-2029	11-07-2019

Market Number	Channel Block	Sub-Market Designator
EAG706	D	0

Market Name
Pacific

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-13-2019			

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

Operation of the facilities authorized herein, are subject to the condition that harmful interference may not be caused to, but must be accepted from UHF TV transmitters in Canada and Mexico as identified in existing and any future agreements with those countries.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPWU989 **File Number:** 0008643019 **Print Date:** 11-07-2019

This application is granted pursuant to the Commission's Order In the Matter of Qualcomm Incorporated Petition for Declaratory Ruling, WT Docket No. 05-7, FCC 06-155, released October 13, 2006.

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPWU989 **File Number:** 0008643019 **Print Date:** 11-07-2019

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status