MEASUREMENT REPORT

Radio Frequency Exposure Measurements

Main Transmitter Site
Sandia Crest Electronic Site

KIOT (FM) 102.5 MHz
Los Lunas, New Mexico

Date:
December 3, 2015

Prepared By:
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This report has been prepared by Andrew C. Kiska, Engineering Manager for Univision Radio New Mexico, Inc. the licensee of KIOT(FM), Los Lunas, New Mexico, and pertains to the facility constructed pursuant to construction permit BPH-20150218AAW, granted on August 6, 2015.

The KIOT(FM) transmitter site is located on top of Sandia Crest Mountain, approximately 25 kilometers northeast of Albuquerque, New Mexico. The transmitter building and tower are located with the confines of the area known as "The Sandia Crest Electronic Site" that is fenced and gated and not accessible to the general public or untrained personnel. At the main entrance to the site is a locked gate with warning signs, in English and Spanish, stating that high levels of radio frequency energy (RFE) are present and that no untrained personal are allowed into the site. Additionally there are 2 other gates on the north end of the property which separate the "High Power RF" area from the "Low Power RF" area (both of which are fenced). The tower supporting the KIOT(FM) transmitting antenna is shown on Figure 1 and is indicated as tower number (31) for reference and sits at the boundary between the 2 areas. There is a sheer cliff on the west side of the property, approximately 60 feet from the tower.

The transmit antenna is an ERI SPHX-4AC/10F four (4) bay, circularly polarized, one wavelength spaced, with a power gain of 3.19. The transmitter operates with an output power of 11.6 kilowatts to produce an ERP of 20 kilowatts.

Radio Frequency Radiation Procedures & Measurements

On November 9th through the 24th, 2015, I traveled to the site to perform the required measurements between the hours of 11:30 and 16:00. To the best of my knowledge, all known, licensed RFE contributors at the site were operating when the measurements were made and KIOT(FM) was operating at its full authorized power during the measurements that include it. Weather was clear, 44° with 1 foot of snow on the ground.

Measurements were taken at 20 individual points around the transmitter building, at all 3 tower guy wire anchors, the base of the tower and at the front and back of the transmitter inside the transmitter building, all within the High Power area. Additional measurements were taken at 24 points on the road servicing the site and at 10 points in the Low Power area.

Measurements at the site were made using a Narda Model NBM-550, 2400/101B Broadband Field Strength Meter, Serial # F-0021 calibrated on September 8, 2014, and a Narda Probe Model EA5091, serial number 01161 calibrated on January 1, 2015. This system displays the RF exposure level in percent of the FCC's guideline values for controlled (occupational) environments. The probe is frequency shaped to match the variation of permissible exposure with the frequency of the RFE sources, thus allowing the meter to correctly measure the total exposure from the various emitters at the site.

RFR measurements were spatially averaged over a 30 second period from ground level to 1.9 meters above ground. Measurements were taken at twenty (20) individual locations around the transmitter building and adjacent area, at each guy anchor and at the front and back of the

transmitter. The spatial average and maximum values were recorded. Table 1 shows the measurements within the "high power" area, with the transmitter off and on. An additional twenty-four measurements were made along the road servicing the site, reported in Table 2, and ten measurements were made in the adjacent "low power" area, shown in Table 3.

Result Summary

At no measurement location within the High Power area did the measured RF exposure level exceed the guideline value for uncontrolled environments. The highest measured spatial maximum RF exposure level reached 15.9% of the guideline value for this *controlled* area, which is also 79.5% of the value for uncontrolled areas. The highest spatial average RF exposure level in that area was 14.4% of the controlled area limit, which is 72% of the uncontrolled limit.

Elsewhere, the measured RF exposure level did not exceed 50% of the guideline value for uncontrolled environments. Along the roadways and within the fences, the highest measured spatial maximum RFE value was 9.5% and the highest spatial average was 6.63%. The highest measured spatial maximum RFE value within the Low Power" area was 1.48% of the guideline value.

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Table 1

RFE Levels in "High Power" Area

KIOT(FM) Los Lunas, NM

Measurement Location	**KIOT(FM) Off** Spatial RFE Level Average	Maximum	**KIOT(FM) On** Spatial RFE Level Average	Maximum
	(% of guideline value)*		(% of guideline value)*	
Tower Base			4.44%	5.32%
Southwest Anchor			6.36%	8.89%
Northwest Anchor			3.23%	5.62%
East Anchor			5.21%	6.10%
1	1.89%	1.94%	5.43%	6.69%
2	2.10%	3.89%	5.43%	6.62%
3	2.89%	4.28%	5.23%	6.02%
4	6.29%	8.10%	14.42%	15.69%
5	4.41%	6.24%	9.92%	10.73%
6	6.28%	2.69%	13.08%	15.89%
7	2.72%	5.30%	8.83%	10.10%
8	3.19%	3.35%	6.53%	6.70%
9	3.17%	5.97%	4.43%	5.61%
10	2.97%	5.72%	3.85%	5.30%
11	2.97%	5.75%	3.35%	4.18%
12	2.85%	3.22%	3.37%	4.88%
13	2.70%	3.00%	3.37%	4.11%
14	2.63%	3.21%	1.95%	2.35%
15	2.61%	4.12%	2.21%	3.10%
16	2.65%	3.21%	2.17%	3.12%
17	3.11%	4.50%	2.96%	3.25%
18	4.23%	5.20%	5.23%	6.10%
19	4.50%	6.87%	4.60%	7.97%
20	4.23%	5.31%	2.12%	3.46%
Building Interior				
Transmitter Front	0.00%	0.00%	0.13%	1.13%
Transmitter Rear	0.00%	0.00%	0.14%	2.30%

* for uncontrolled (occupational) areas

Table 2

RFE Levels Along Roadways

KIOT(FM) Los Lunas, NM

Measurement Location	Spatial RFE Level Average	Maximum
	(% of guideline value)*	
R-1	5.59%	8.20%
R-2	4.40%	5.12%
R-3	5.54%	7.62%
R-4	3.63%	7.98%
R-5	3.65%	7.91%
R-6	2.14%	3.12%
R-7	3.95%	5.90%
R-8	4.23%	5.20%
R-9	6.31%	9.50%
R-10	5.51%	7.95%
R-13	6.63%	8.81%
R-14	4.54%	7.29%
R-15	5.59%	8.21%
R-16	6.63%	8.55%
R-17	6.63%	8.89%
R-18	6.25%	8.75%
R-19	5.59%	8.21%
R-20	4.25%	5.21%
R-21	4.58%	7.20%
R-22	3.13%	4.50%
R-23	2.79%	4.15%
R-24	2.65%	3.18%

* for uncontrolled (occupational) areas

Table 3

RFE Levels in "Low Power" Area

KIOT(FM) Los Lunas, NM

Measurement Location	Spatial RFE Level Average	Spatial RFE Level Maximum
	(% of guideline value)*	
LP-1	0.41%	0.53%
LP-2	0.68%	0.98%
LP-3	0.50%	1.05%
LP-4	0.28%	1.27%
LP-5	0.62%	0.85%
LP-6	0.74%	1.76%
LP-7	0.40%	0.44%
LP-8	0.69%	0.78%
LP-9	0.79%	1.08%
LP-10	0.55%	1.48%

* for uncontrolled (occupational) areas

Figure 1.

Sandia Crest Electronics Site • Albuquerque, New Mexico

Site Map

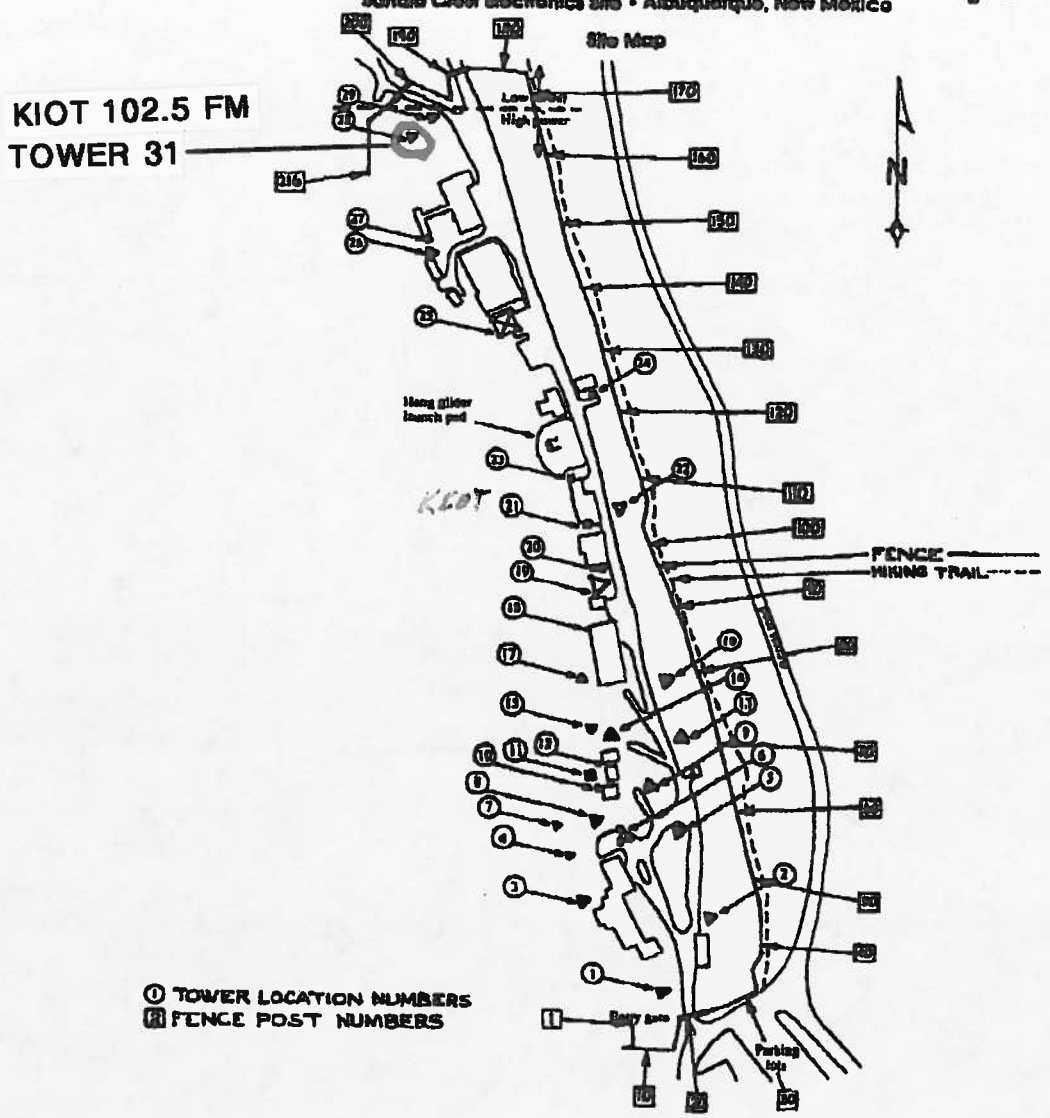
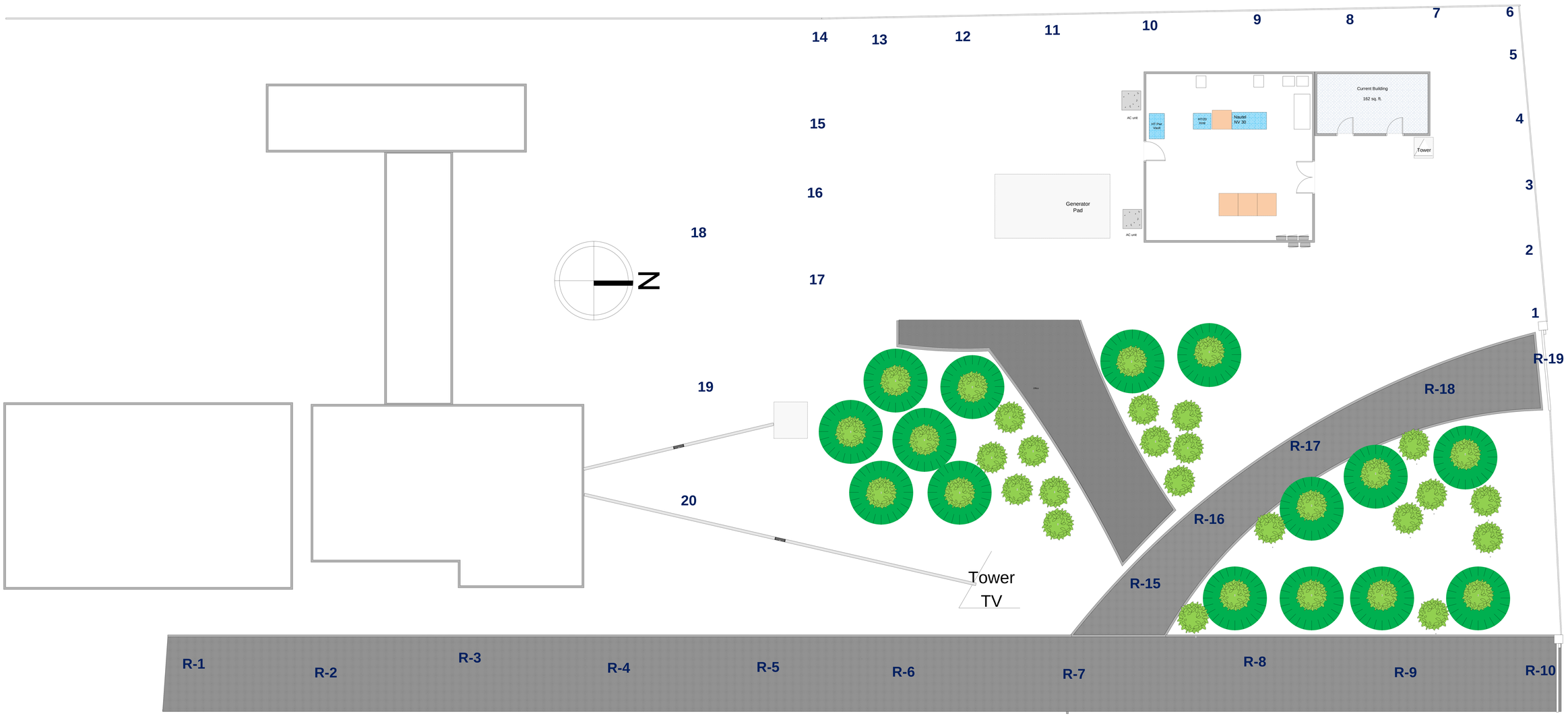
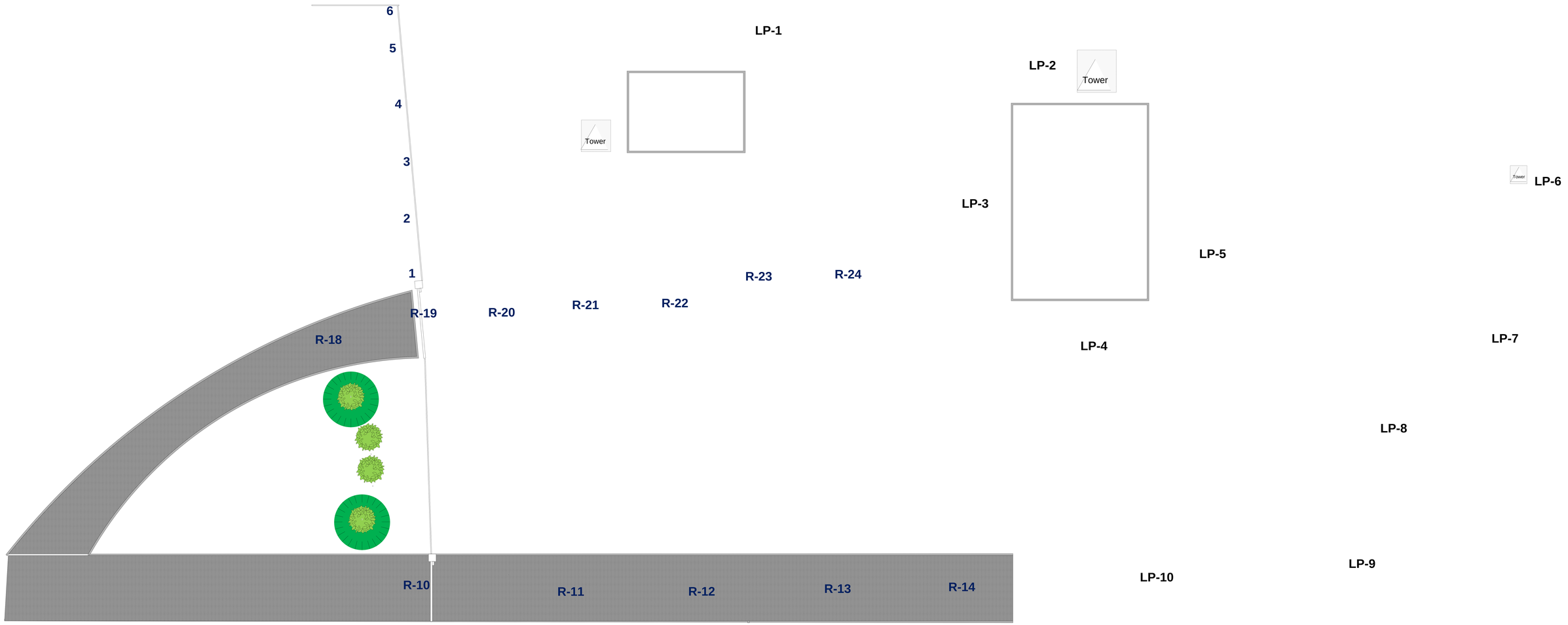


Figure 2
High Power Area Measurement Points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Low Power Area Measurement Points