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ACOUSTICS TECHNOLOGY VIBRATION

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Via Email: jcletayf@llvcorp.com

Subject: **Rooftop Event Deck Study**
Seacoast Market Place, Imperial Beach, CA
Project Number J638180

Dear Juan Carlos,

On July 19, 2024, Acentech conducted environmental sound measurements at the site of the Seacoast Market Place project located at 951 Seacoast Drive in Imperial Beach, California. These measurements were to inform a community noise study of the project's planned rooftop event deck programming for purposes of ensuring compliance with applicable noise regulations. Outlined in this report are the results of this study and corresponding sound control recommendations as needed to meet regulatory limits at the site.

APPLICABLE NOISE ORDINANCE

The Seacoast Market Place project is subject to the regulations of the City of Imperial Beach, California. These regulations are detailed in the City of Imperial Beach Code of Ordinances, Chapter 9.32 "Noise." There are no known state or federal regulations of noise emissions that apply to this project.

The Imperial Beach noise ordinance places no quantitative restrictions on building noise emissions, stating only that noise that is audible at 50 feet from its building, structure, or vehicle of origin will be considered a prima facie violation of the ordinance.

In order to translate this regulatory requirement into quantitative terms for purposes of this study, we followed design parameters accepted by industry standards and other California counties that dictate sound levels of at least 6 decibels (dB) below another coexistent sound level will not increase the total sound level at that location. This meant that we set noise emissions goals for the project to be 6 dB below the ambient noise levels measured when visiting the site.

STUDY METHODOLOGY

Acentech's measurements for this study were taken using calibrated Brüel and Kjær 2250 sound level meters, which are Class 1 sound level meters per the International Electrotechnical Commission (IEC). The measurement setup consisted of one continuously sampling 2250 meter, which operated from 4:00 pm to midnight on July 19, 2024; and a handheld 2250 meter used to collect both short-term daytime and nighttime ambient noise levels at various locations around the project site on the same day.

The continuously operating sound level meter was located on the roof of the Seacoast Market Place building—Figure 1 in the Appendix is a photograph of the rooftop 2250 in its operating configuration. Figure 2 in the Appendix shows the position of project's rooftop 2250 sound level meter, along with markers for all of Acentech's short-term, handheld measurement locations. All locations were selected because they were at, or representative of, either the project's own property lines or the property lines of

potentially noise-sensitive neighboring buildings. Therefore, the short-term measurement data represents the expected typical ambient noise levels at these neighboring receivers.

Both methods of measurement produced timestamped logs of sound pressure level data. The metric that informed our decisions on what constituted ambient noise was the A-weighted equivalent energy sound level (LAeq), or "equivalent continuous A-weighted sound level," which is commonly interpreted as an average sound level for the measurement period. Its full definition can be found in ANSI S1.1-2013, supplemented by the definition of A-weighting in ANSI S1.4-1983 (R2006). The LAeq was computed at prescribed intervals of 1 second for short-term measurements and 3 minutes for continuous monitoring throughout each measurement period, along with other quantitative information about ambient conditions.

MEASUREMENTS

Noise-sensitive receivers near the project site include both single-family and multi-family residences. Some nearby buildings are also mixed-use or fully commercial. Existing noise sources that were observed in the area included local traffic, other buildings' mechanical/HVAC systems (such as a mechanical vent facing the project site across the alleyway attributed to 103 Evergreen Avenue), and the sound of the ocean. No audio recordings were taken as part of these measurements. The lowest LAeq values from each monitoring location, and their corresponding sound emissions benchmark limits for the project, are presented in Table 1 below. Table 2 in the Appendix shows the complete hourly noise data collected at the continuous rooftop monitoring location.

Table 1: Sound emissions benchmarks by survey location.

Location		Lowest Hourly LAeq (dBA)	Project Sound Limit (dBA)
Short-Term Location	Address		
Handheld 1	Sidewalk corner southwest of 103 Evergreen Ave	60	54
Handheld 2	Sidewalk near northwest corner of 110 Elder Ave	48	42
Handheld 3	Sidewalk near southwest corner of 110 Elder Ave	46	40
Handheld 4	Sidewalk along Seacoast Dr outside 2 Ocean Ln	49	43
Handheld 5	Sidewalk near northwest corner of 121 Elder Ave	46	40

COMPUTER MODEL INFORMATION

The project's sound level emissions are planned to be from amplified playback of recorded music with an MC located on the rooftop event deck. This deck is open to the outdoors on three sides and has no roof, as currently constructed. To estimate the project's sound emissions to the environment, we created a computer model of the project site and its immediate vicinity using the software CadnaA 2023 Build 195.5312, by DataKustik GmbH. This program operates in accordance with the international standard ISO 9613 "Acoustics — Attenuation of sound during propagation outdoors."

For this project, no planned speaker arrangement or product data had yet been selected by the project team. We modelled a row of outdoor speaker sources along the eastern edge of the rooftop near the parapet to mimic a "worst-case" scenario to the nearest sensitive receptor. Other speaker amounts and orientations are possible to produce code-compliant results. The sound power spectrum used in the computer model for the speakers—which is the data set that informs the computer model of the musical frequency characteristics it should calculate—was typical of amplified dance music.

All speaker sources were set to emit sound simultaneously, subject to the mitigation measures listed in the following section. We then used the model to estimate the sound levels generated by each hypothetical project speaker configuration at several key locations, including all of Acentech's in-person measurement locations and the beach itself. These receivers' locations are shown in Figure 3 in the Appendix. Special attention was paid to the residential floors of nearby buildings that are at higher elevations than the project site due to potential vertical sound emissions from the project's roof deck. Figure 4 in the Appendix shows a 3-D view of the computer model that assisted this analysis.

PROPOSED MITIGATION MEASURES

Using the above-described computer model, we estimated the sound pressure levels that would be produced by the proposed event deck at nearby residences. In addition to the precepts outlined above, we applied the following mitigation measures in the model as follows:

1. Reducing lower bass frequencies from our model's hypothetical speaker arrangement, thus lessening the contributions of bass frequencies to the project's sound level emissions (this would be realized in the finished project by use of an equalizer);
2. Extending the length and/or height of the rooftop parapet such that it matches the height of the nearby roof and/or extends around the building's southeastern rooftop corner and beyond that point for a distance of approximately 7.5 feet;
3. Locating all speakers for the project to be mounted at the floor of the rooftop deck;
4. Limiting the volume for all speakers to be no more than 65 dBA at 3 feet in front of any speaker (this would be adjusted, as required, in the finished project to maintain code compliance);

With these mitigation measures in place, the resulting estimated sound pressure levels at each of the short-term measurement locations are consistent with the benchmark limits stated previously. Mitigation measures with respect to any audio-visual equipment will need to be calibrated onsite, in real time, to ensure that the project complies with the Imperial Beach noise ordinance. Figure 5 shows the modelled propagation of sound with the mitigation measures in place in the form of equal-noise contours. This demonstrates compliance with Chapter 9.32 of the noise ordinance.

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We hope that this information is helpful to you at this time. We are available to answer any questions or concerns that may arise on this subject at:

WSpallino@ACENTECH.com, (617) 499-8035;
JZeman@ACENTECH.com, (424) 499-1459.

Sincerely,

[redacted]

Will Spallino
Consultant

[redacted]

John Zeman, LEED AP BD+C
Principal

Cc: Carolina Campos (RC Commercial Holdings)

Encl: Appendix

APPENDIX

Figure 1: Installation photo of the rooftop continuous monitoring 2250 sound level meter at 951 Seacoast Dr.

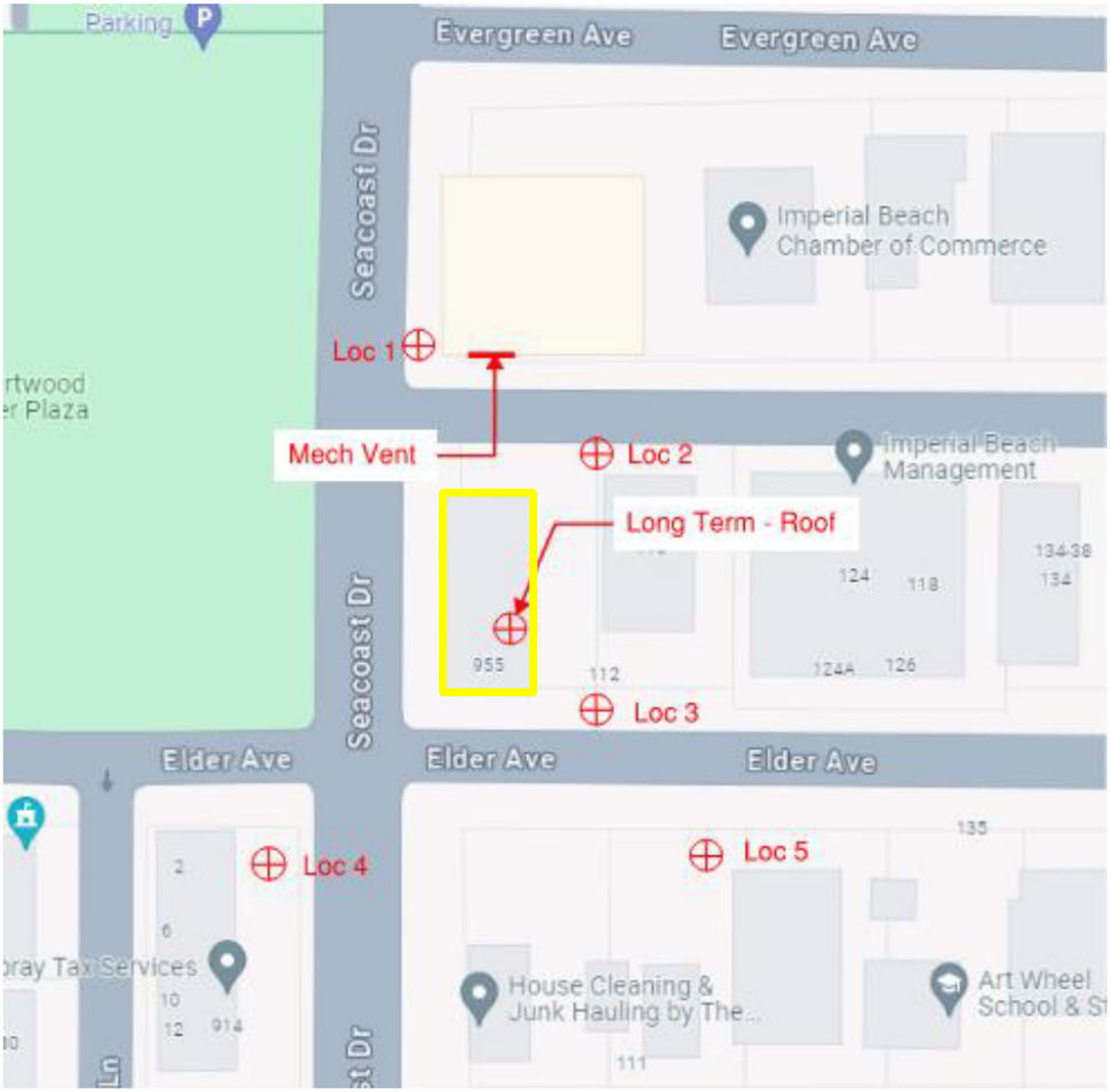

Figure 2: Map view of the project site and its surroundings. Acentech measurement locations are labeled in red and the project site outlined in yellow.

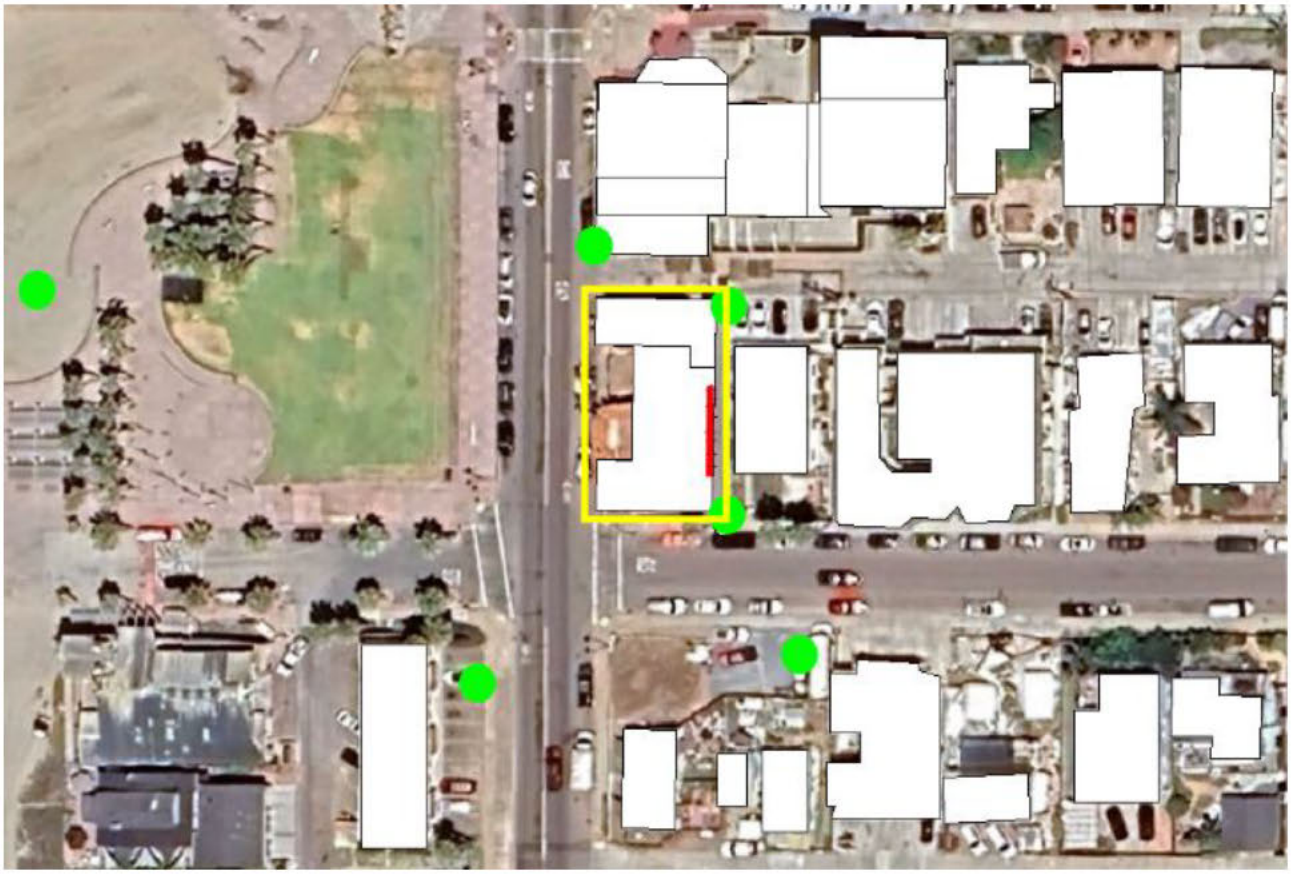

Figure 3: Layout of computer-modeled sound sources and sound receivers for project site and its surroundings. Project site is outlined in yellow; sound sources are denoted by the red line; modeled sound receivers are marked by green circles.

Table 2: Sound pressure levels by hour (as measured on the Seacoast Market Place rooftop).

Time Period	LAeq (dB)[1,2]
4:40 pm – 5:00 pm; July 19, 2024	59
5:00 pm – 6:00 pm; July 19, 2024	57
6:00 pm – 7:00 pm; July 19, 2024	59
7:00 pm – 8:00 pm; July 19, 2024	56
8:00 pm – 9:00 pm; July 19, 2024	55
9:00 pm – 10:00 pm; July 19, 2024	55
10:00 pm – 11:00 pm; July 19, 2024	54
11:00 pm – 11:45 pm; July 19, 2024	53

[1] LAeq values are rounded to the nearest whole decibel.
[2] Other metrics were collected but were not relevant to the community noise analysis presented in this report.

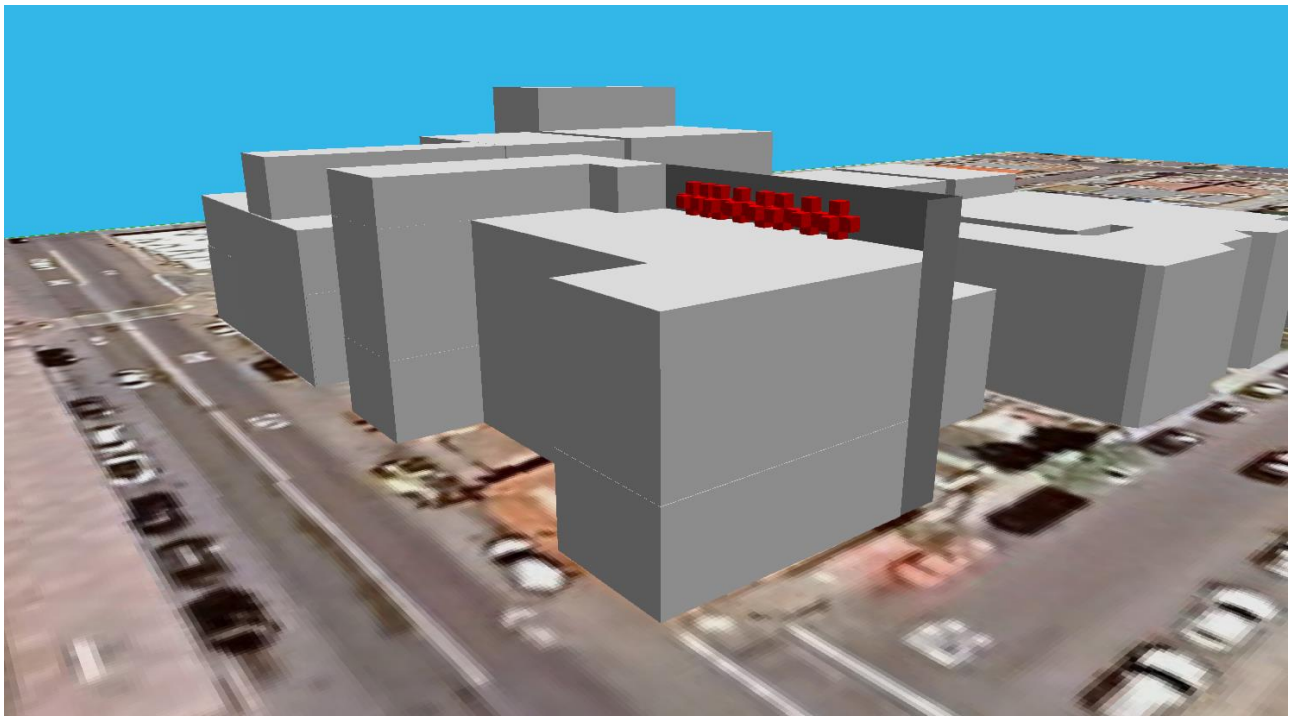

Figure 4: Three-dimensional (3-D) view of the project site generated within the CadnaA software, including the recommended extended parapet. Red "plus signs" represent proposed speaker locations.

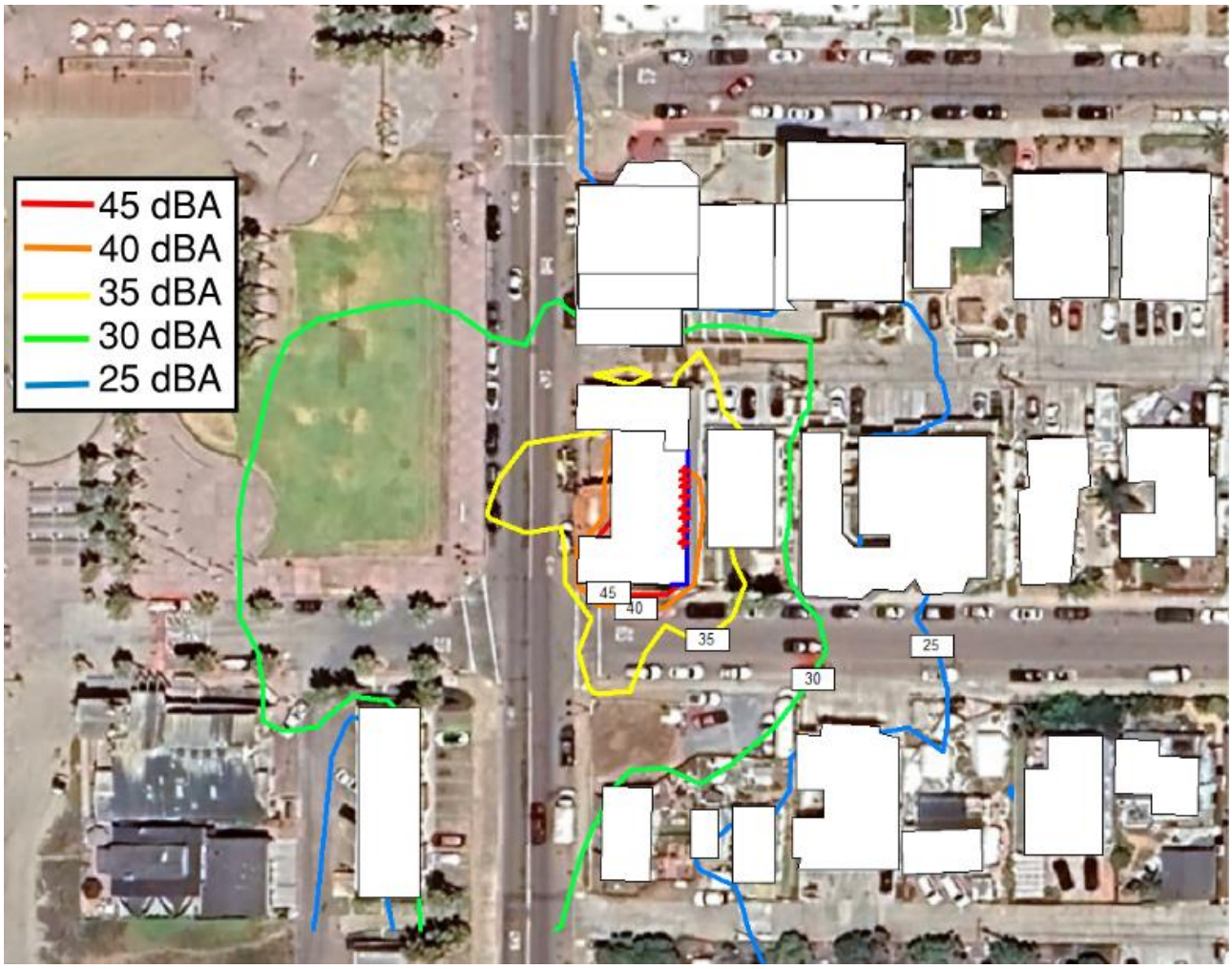

Figure 5: Sound contour lines with mitigation measures in place. Sound receiver heights are set to 1.5 m. Red plus signs indicate proposed speaker locations. Blue line at building edge represents the fully extended/raised parapet.