



ACOUSTICAL REVIEW & NOISE ATTENUATION PLAN

Date: 30 August 2021

To: Misty M. Polanco
General Manager

Terranova Corporation
801 Arthur Godfrey Rd, Suite 600
Miami Beach, FL 33140

From: Sam Shroyer, ASA INCE
Edward Dugger, FAIA ASA NCAC INCE

Re: **Acoustic Study – City of Miami Beach**
Lincoln Eatery and Rooftop
723 Lincoln Lane North
Miami Beach, FL 33139
ED+A 211302

Misty,

PPF 723 Lincoln Lane, LLC is proposing entertainment on their existing rooftop terrace at 723 North Lincoln Lane (Lincoln Eatery and Rooftop). ED+A has visited the property to inspect the existing loudspeakers and system controls as well as their operation, has conducted long-term acoustical measurements, and has reviewed architectural plans, audio system plans, and technical specifications to prepare this report in support of the proposed modifications to the restaurant's existing Conditional Use Permit for a Neighborhood Impact Establishment to include Outdoor Entertainment.

The venue can operate in this manner without negative sound level impacts on the surrounding area, so long as its audio system is installed and configured following recommendations included in this report. Additionally, the elevation of Lincoln Rooftop and screening provided by building structures in all directions will reduce the level of sound emanating to the surrounding area. The site's location within the CD-3 district and the lack of residential properties nearby further support that the proposed operations are compatible with the surrounding environment.

Please contact ED+A with any questions or comments concerning this report.



INTRODUCTION

Sam Shroyer of ED+A visited the property on July 14, 2021 and July 28, 2021 to inspect the existing establishment and conduct long-term acoustical measurements at the site. Additionally, architectural plans were also reviewed to determine if Lincoln Rooftop can operate in accordance with City of Miami Beach Code of Ordinances Section 46-152 (“the Ordinance”) as required for Entertainment and Neighborhood Impact Establishments per Section 142-1362(7). This section requires review of a Noise Attenuation Plan addressing “how noise will be controlled to meet the requirements of the noise ordinance.”

Project Location

Lincoln Eatery is an existing restaurant located near the center of the Lincoln Road Mall high intensity commercial district (CD-3) between Meridian Avenue and Euclid Avenue on the north side of Lincoln Lane North (see Figure 1). The restaurant operates on the ground level (Lincoln Eatery) and on the rooftop (Lincoln Rooftop) of the five-story building. The rooftop is located above the Marshalls department store and is at a greater elevation than most of the surrounding buildings. The building is adjacent to commercial and parking uses on all sides and there are no residential properties within 100 ft of the establishment.

Operations

The existing Conditional Use Permit allows DJ’s or live performances in the indoor portions of the restaurant between 10:00 a.m. and midnight, Sunday through Wednesday, and 10:00 a.m. to 2:00 a.m., Thursday through Saturdays, but does not permit music and/or entertainment in outdoor areas. The Applicant intends to modify their CUP to allow Outdoor Entertainment at the existing rooftop restaurant and bar.

The existing seating and bar area covers only a portion of the total roof area. The Applicant is proposing the expansion of this area to include the west and east sides of the roof as well (see Figure 2) and is requesting entertainment in all these areas. The Applicant is also proposing the addition of televisions in these areas.

Entertainment in the ground level exterior area is also being requested by the Applicant, but only so that the entertainment music being played indoors may be reproduced through the existing exterior ground level speakers. Sound generated in this area will be at background levels and the output of the loudspeakers will not increase relative to the level of sound that is currently produced. No performers or DJ’s will operate in this area and music will be provided at background levels only.

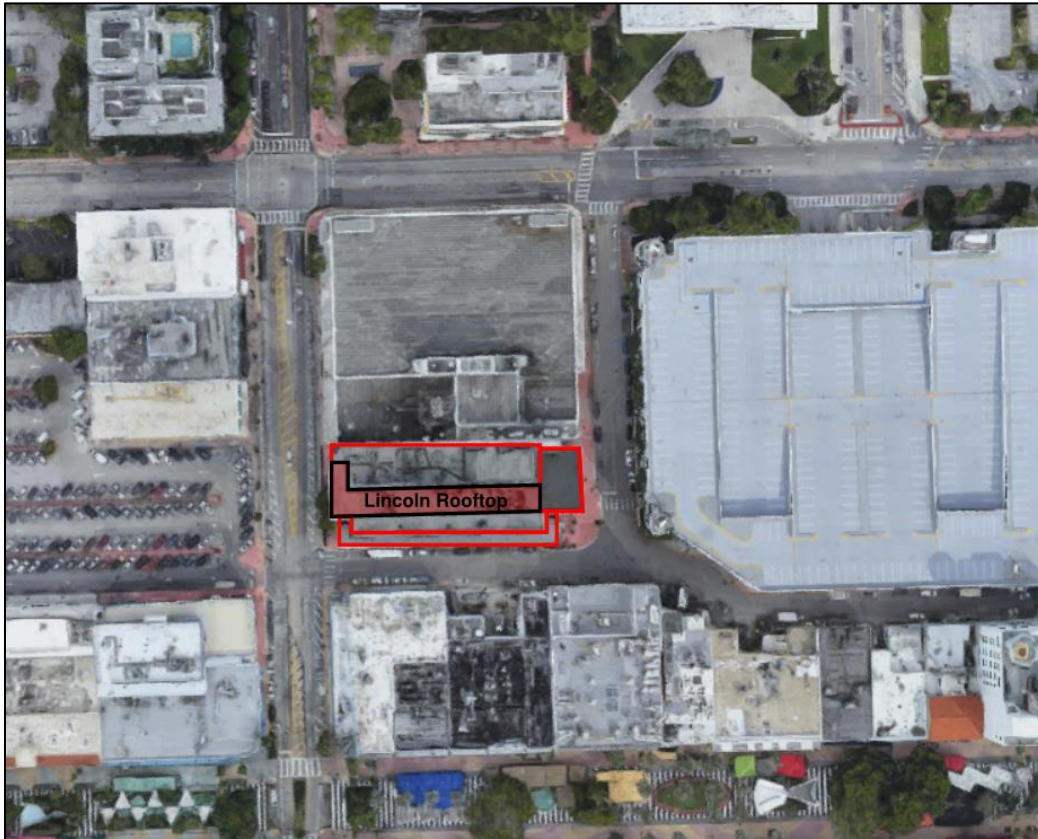


Figure 1. Lincoln rooftop and surrounding area.

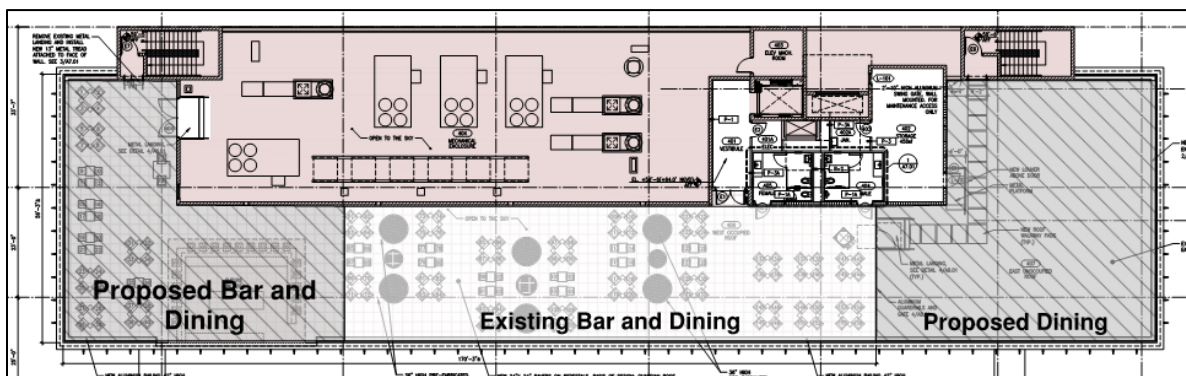


Figure 2. Existing and proposed bar and dining areas.

REVIEW

Many nearby uses—particularly those on Lincoln Lane—currently allow indoor entertainment but do not have roof decks on which outdoor entertainment could be provided. The most similar use in the area is likely Mila Restaurant, Rooftop Lounge & Mixology Bar at 1636 Meridian Avenue to the southwest (see Figure 3), and the Applicant intends to operate this property in a similar manner. However, ED+A believes this property to be more suitable for these activities due to its greater elevation, increased distance from residential properties, screening provided by structures along the north side of the rooftop, and its location within a cluster of large commercial buildings.

The floor of the restaurant is 57 ft above ground with a 3 ft parapet on all sides and is setback substantially from the edge of the building on the south side. Per Detail 1 on Sheet A4.01, the minimum length of the line-of-sight from head height to the rooftop is roughly 90 ft. This distance, along with screening provided by the parapet to the west and east, the parapet and the Lincoln Eatery building to the south, and the parapet, rooftop structures, and department store building to the north, should provide at least a 10 dB reduction in sound level compared to that generated in the existing bar area. Though crowd noise cannot be accurately predicted, this screening will reduce these impacts.



Figure 3. View of the Lincoln Road Mall and Mila from the Lincoln Rooftop.

ACOUSTICAL MEASUREMENTS

Sound levels were measured on the west side of the rooftop over several days. The system began logging data on Wednesday, July 21, 2021 until its removal on Wednesday, July 28, 2021. The measurement microphone was roughly 6 ft above the floor and was near enough to a wall surface for the measured sound levels to be affected by reflected sound, increasing measured levels by up to 3 dB (see Figure 4). The system was calibrated before its installation and prior to its removal from the site. Details specific to the measurement and calibration devices used for these measurements are included in Table 1.

A-weighted equivalent-continuous sound levels were measured in five-minute and one-hour intervals. A-weighted percentile-exceeded sound levels (L_{A10} and L_{A90}) were also measured and evaluated for the same observation periods. A-weighted levels were assessed as the A-weighting network corresponds best with human sensitivity to sound for most community noise assessments, but C-weighted sound levels were also measured.

The measured one-hour sound levels were evaluated to characterize the existing sound environs at the measurement locations through calculation of day average sound levels (L_{Ad}), night average sound levels (L_{An}), and day-night average sound levels (L_{Adn} or DNL) for each day of the measurement period per ANSI S12.9 Part 4. The time intervals between midnight and 7:00 AM and 10:00 PM and midnight were considered night while the day period consisted of the time between 7:00 AM and 10:00 PM.

DNL is a metric developed by the Environmental Protection Agency (EPA) for the evaluation of community noise and it is also used by other federal agencies such as the Department of Housing and Urban Development (HUD) and Federal Aviation Administration (FAA). The American National Standards Institute (ANSI) also includes DNL criteria in the ANSI S12.9 series of standards detailing procedures for the measurement and assessment of environmental sound. DNL is essentially the time-average (L_{Aeq}) of sound measured over a twenty-four-hour period but with a 10 dB “penalty” applied to sound levels measured during the night period described previously. The 10 dB addition is meant to account for increased sensitivity to sound during these hours.

A comparative sound level chart has been included for reference purposes (see Figure 5).

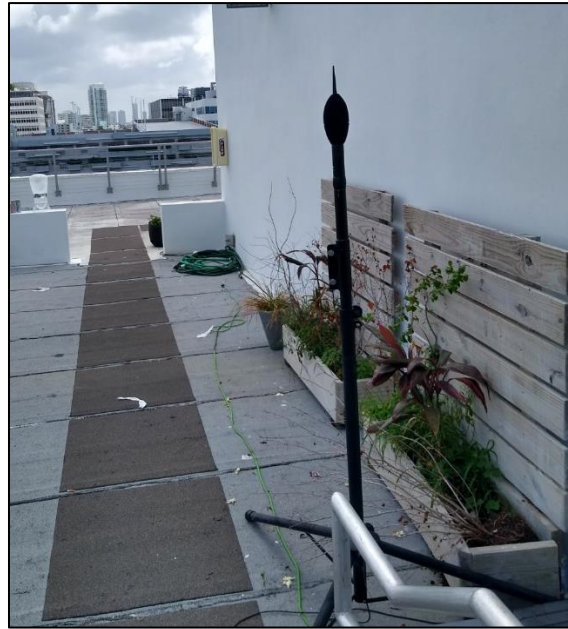


Figure 4. Measurement microphone and west area of Lincoln Rooftop where future seating is proposed.

Table 1. Measurement Equipment			
Manufacturer	Model	Serial Number	Laboratory Calibration
Brüel and Kjær	Type 2250 Analyzer	3008039	June 17, 2021
Brüel and Kjær	Type 4952 Outdoor Microphone	3203561	March 16, 2021
Brüel and Kjær	Type 4231 Sound Calibrator	2394124	August 25, 2020

Results

One-hour L_{Aeq} have been compiled with total L_{Aeq} , L_{Ad} , L_{An} and DNL calculated for each day in Table 2. One-hour L_{Aeq} logged over the entire measurement period are also plotted in Figure 6. Five-minute L_{Aeq} logged over each day of the measurement period are plotted in Figures 7 through 14.

Ambient sound levels measured on the rooftop were consistently between 55 dBA during the early morning and closer to 60 dBA during the day. Ambient sound levels at lower elevations would be expected to be similar if not greater due to increased proximity to traffic and activity at the Lincoln Road Mall to the south. C-weighted ambient sound levels were in the range of 73 to 75 dBA.

The results of acoustical measurements conducted on the rooftop confirm that the existing audio system has been configured to limit the maximum output so that the volume cannot be increased beyond a preset limit. When the audio system was operating, sound levels measured on the rooftop were consistently around 73 dBA and 81 dBC at most; just above background levels that would not interfere with normal conversation. The smaller differences between C-weighted ambient levels and those measured while the audio system was operational (roughly 5 to 8 dB) suggest that the existing system does not produce a significant amount of low-frequency sound.

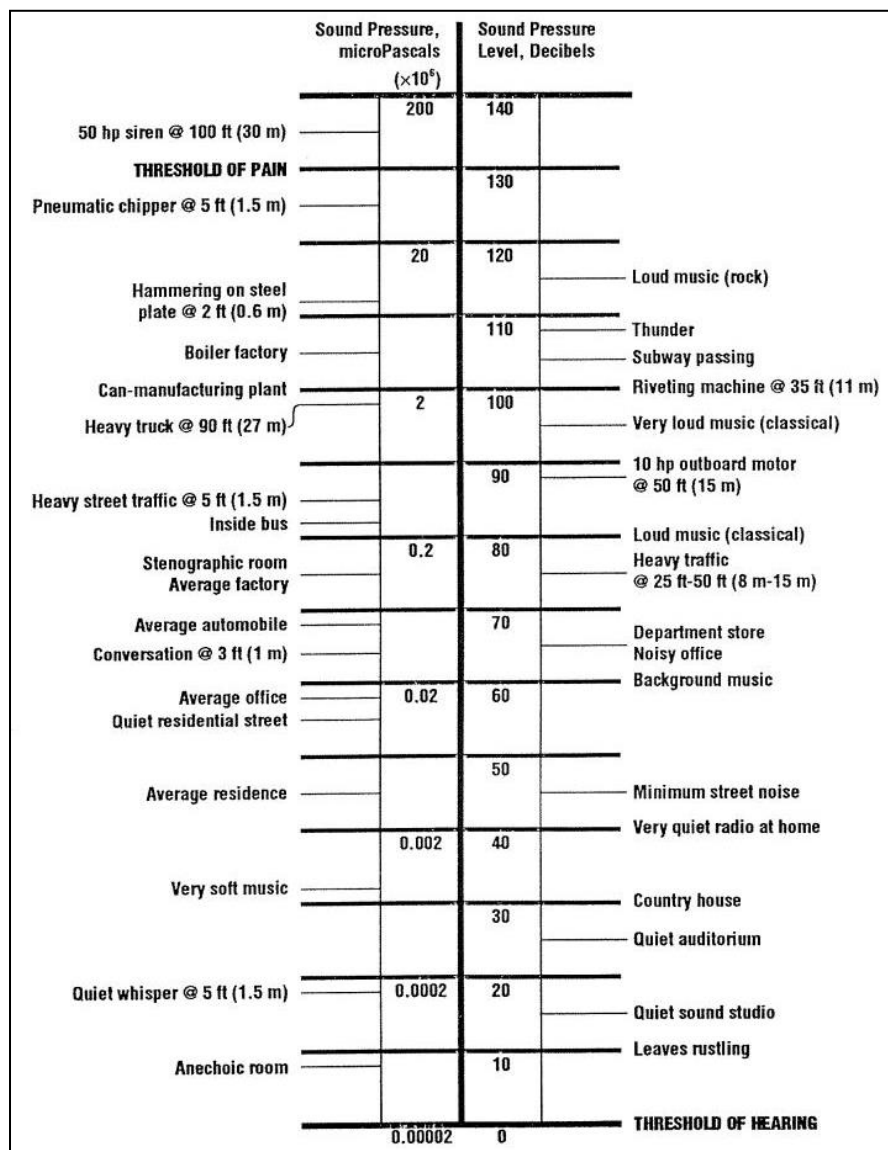


Figure 5. Decibel level comparison chart.

* Reprinted from *Acoustics and Noise Control Handbook for Architects and Builders*, by L. K. Irvine and R. L. Richards, 1998, Malabar, FL: Krieger Publishing Company. Copyright by L.K. Irvine and R.L. Richards

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REGULATORY CRITERIA

Standards for Entertainment Establishments are included in Miami Beach Code of Ordinances Division 6. Section 142-1361 defines Entertainment as *“any live show or live performance or music amplified or nonamplified,”* with the exception of *“background music, amplified or nonamplified, played at a volume that does not interfere with normal conversation.”*

Supplemental review guideline criteria to be applied by the Planning Board in addition to standard review guidelines for conditional uses are included in Section 142-1362. Specifically, Section 142-1362(7) requires review of a Noise Attenuation Plan (NAP). The NAP is to address *“how noise will be controlled to meet the requirements of the noise ordinance.”* This document is intended to be the initial draft of the NAP and will be updated as the project proceeds.

The Ordinance’s standards, included in Section 46-152, are as follows:

- *“It shall be unlawful for any person to make, continue or cause to be made or continued any unreasonably loud, excessive, unnecessary or unusual noise.”* Acts declared to be unreasonably loud, excessive, unnecessary or unusual noises are enumerated.
- *“The operation of any...device between the hours of 11:00 p.m. and 7:00 a.m. in such a manner as to be plainly audible at a distance of 100 feet from the building, structure or vehicle in which it is located shall be prima facie evidence of a violation of this section.”*

Section 6-3(b)(3)(B) prohibits entertainment from being conducted between the hours of 5:00 a.m. and 8:00 a.m. but restaurant services may continue.

DISCUSSION

The restaurant has an existing speaker system, as detailed on the attached plan provided by the Applicant. The existing distributed loudspeaker system will be expanded to provide coverage to the new seating areas on the west side of the building. The system should consist of several small loudspeakers to provide even coverage and sound levels throughout the rooftop. All loudspeakers should face inward to minimize the level of sound propagating beyond the rooftop. Televisions should also be located to keep crowds from gathering near the edges of the building.

Where possible, it is recommended that loudspeakers be surface-mounted at as close to head height as possible so that the parapet and building structures below effectively block the line-of-sight between them and head height above the ground below. If planter speakers are used, they should also be directional (not omnidirectional) and positioned to direct sound inward. The permanent house system should be used by all performers and/or DJ's and for prerecorded music. Only management should have access to any volume controls via a wireless system or panel mounted in a secure location on the rooftop. Low-frequency sounds are more likely to be audible near the ground due to increased diffraction around the edges of the building structures; therefore, it is important that the number of subwoofers be kept to a minimum and the digital signal processor (DSP) that govern the audio system's operation should be set to reduce the low-frequency output of the system so that it is not audible below.

Table 2. Lincoln Rooftop One-Hour L_{Aeq}								
Interval	Wed, 21-July	Thurs, 22-July	Fri, 23-July	Sat, 24-July	Sun, 25-July	Mon, 26-July	Tues, 27-July	Wed, 28-July
L 0000		56	73	72	69	57	55	56
L 0100		55	72	72	67	56	55	55
L 0200		55	60	59	56	56	54	54
L 0300		55	55	56	55	55	55	54
L 0400		56	55	55	55	55	54	54
L 0500		57	56	55	55	55	55	55
L 0600		57	56	56	56	56	55	55
L 0700		57	56	57	56	56	56	57
L 0800		57	56	56	56	56	56	57
L 0900		60	59	56	56	58	57	57
L 1000		56	60	57	57	57	57	57
L 1100		59	57	58	57	58	58	57
L 1200		58	57	65	58	58	58	
L 1300		56	57	64	59	58	59	
L 1400		58	58	59	58	58	59	
L 1500		60	60	58	58	58	58	
L 1600		59	61	58	58	58	58	
L 1700		58	62	62	59	58	58	
L 1800	59	59	62	62	59	58	58	
L 1900	58	59	61	61	62	60	57	
L 2000	58	64	62	65	66	57	61	
L 2100	59	67	65	67	63	57	60	
L 2200	58	69	68	69	61	57	59	
L 2300	58	72	71	70	58	57	57	
L_{Aeq}	58	63	65	65	61	57	57	56
L_{Ad}	58	60	60	62	60	58	58	57
L_{An}	58	65	68	68	62	56	56	55
DNL	64	71	74	74	68	63	63	63

Figure 6. One-hour L_{eq}

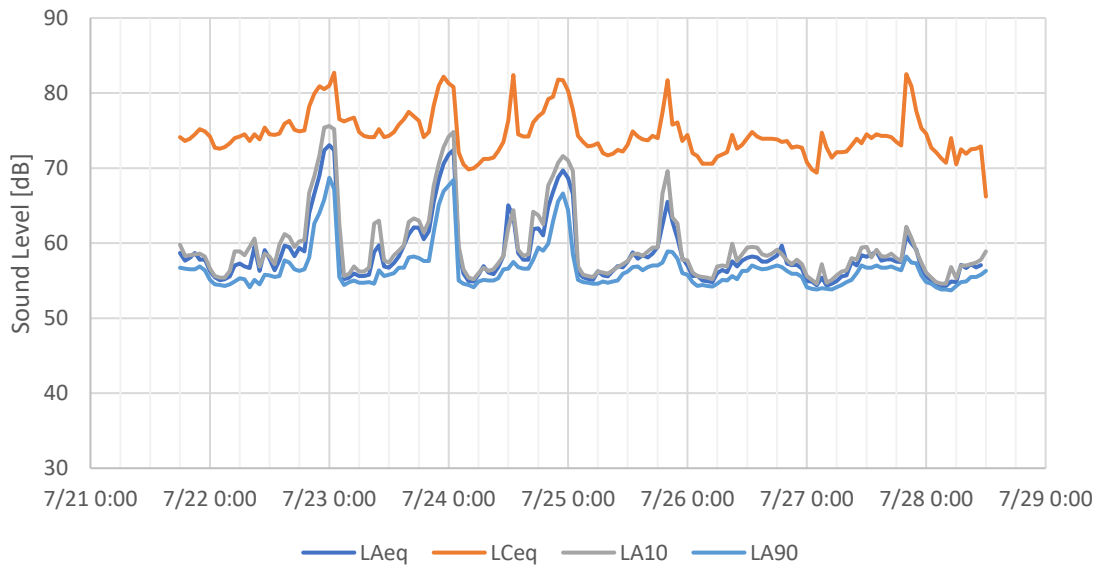
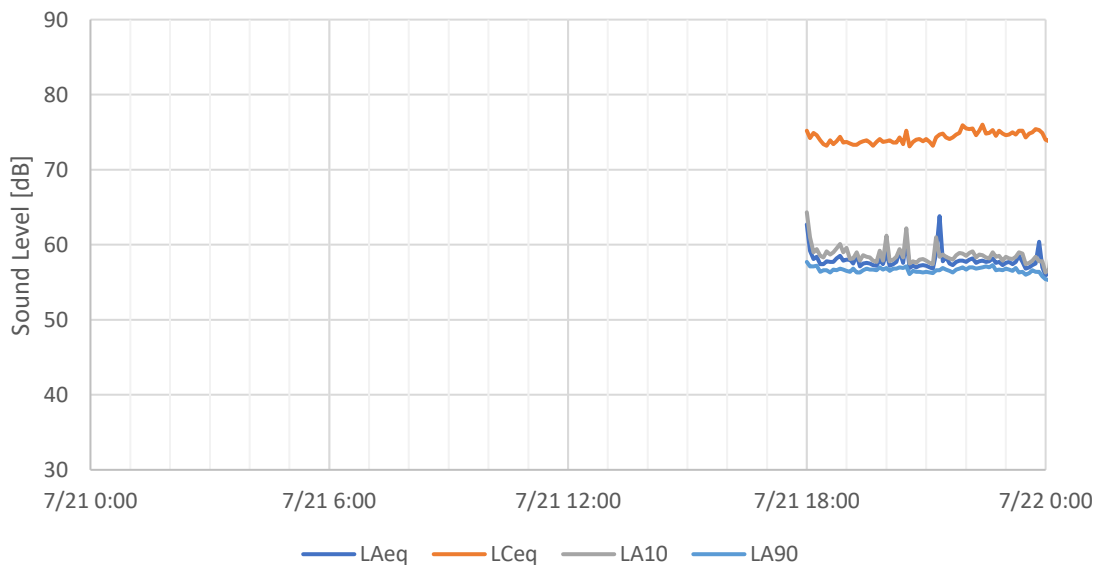


Figure 7. Five-minute L_{eq}



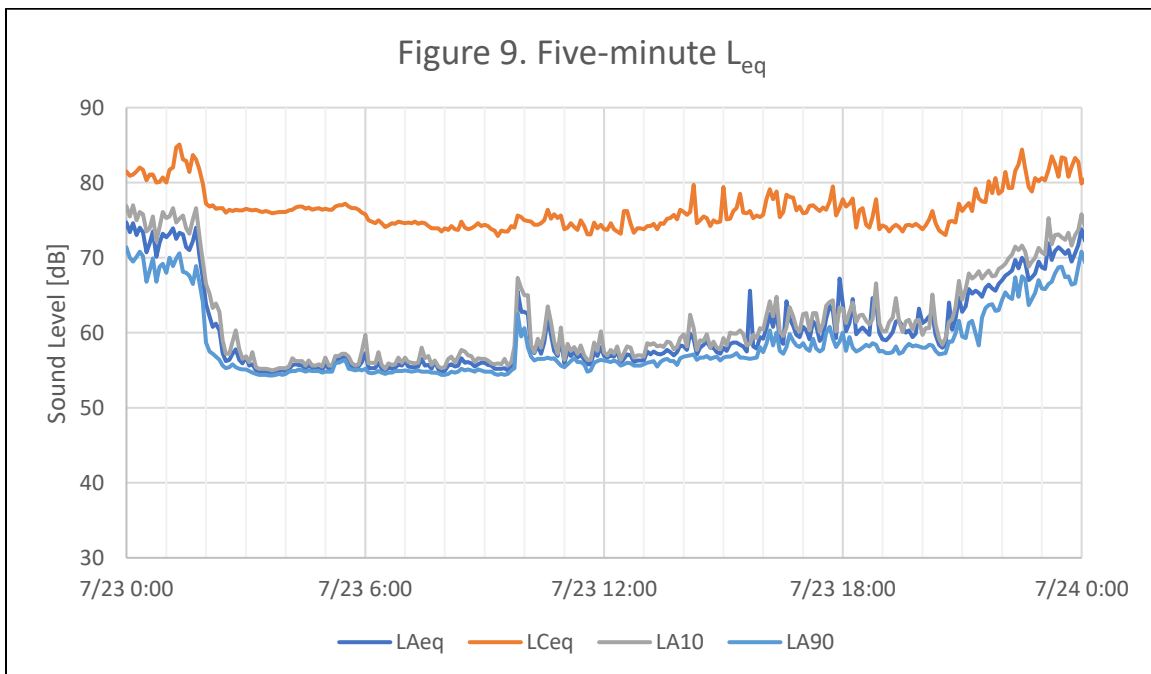
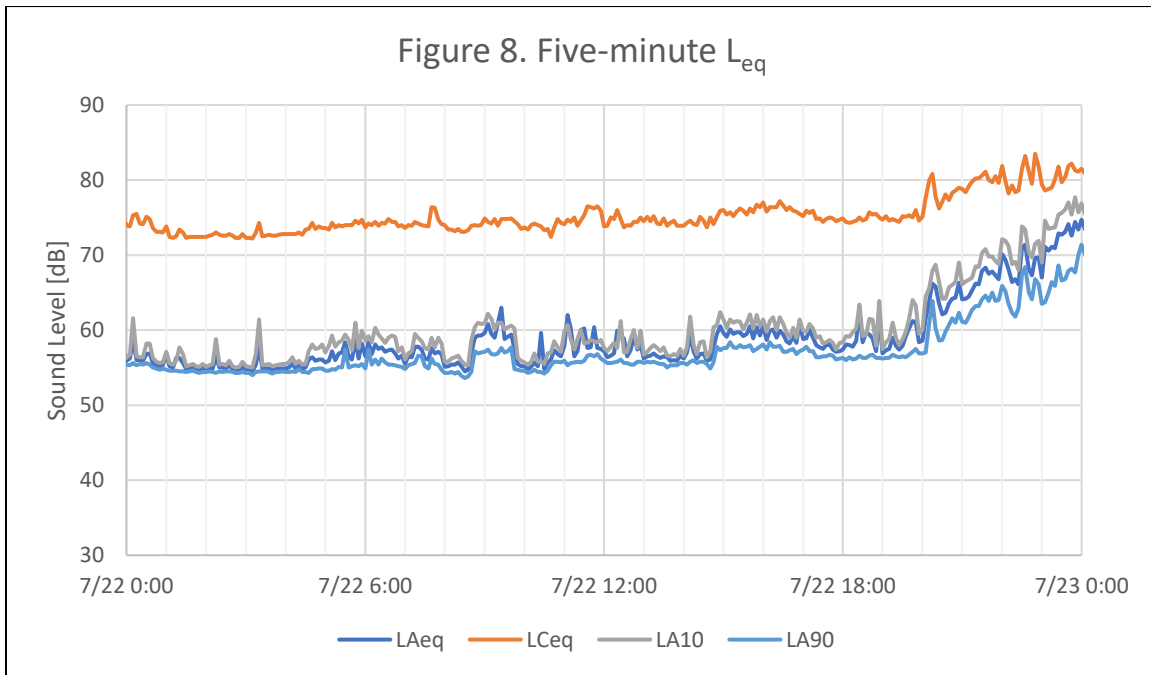


Figure 10. Five-minute L_{eq}

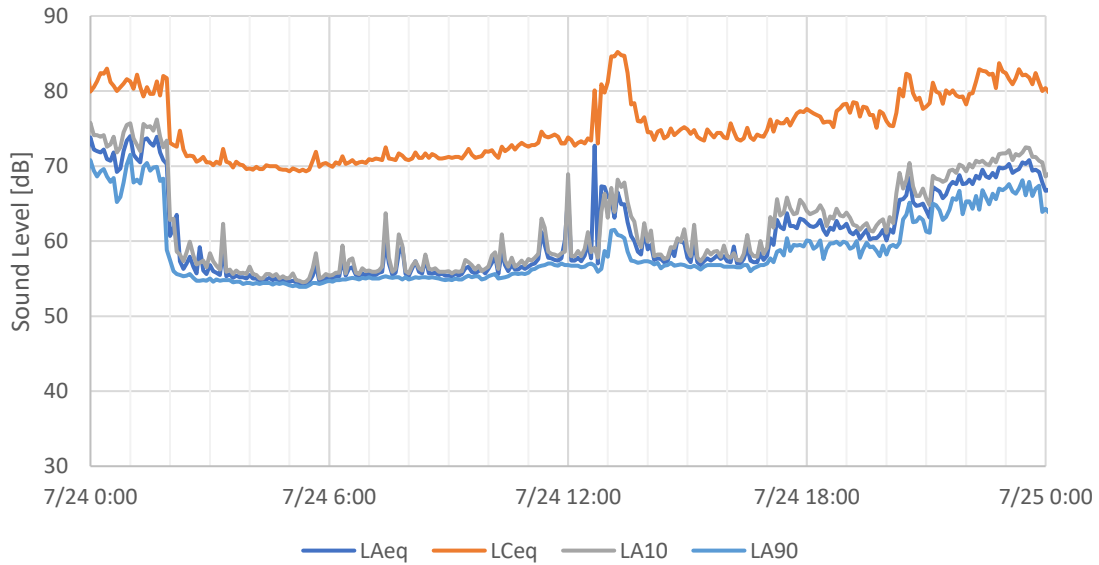


Figure 11. Five-minute L_{eq}

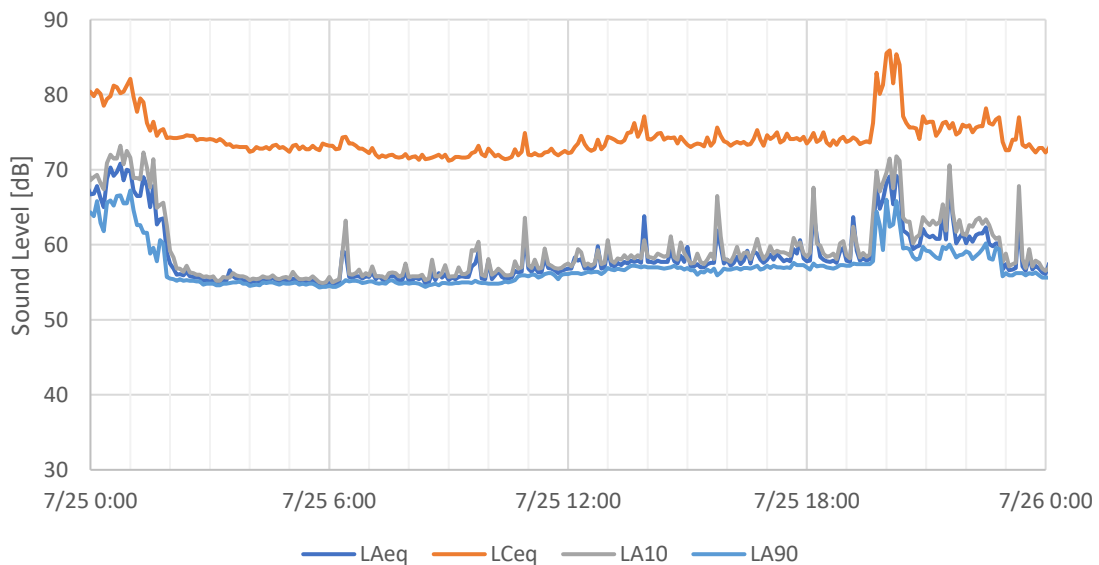


Figure 12. Five-minute L_{eq}

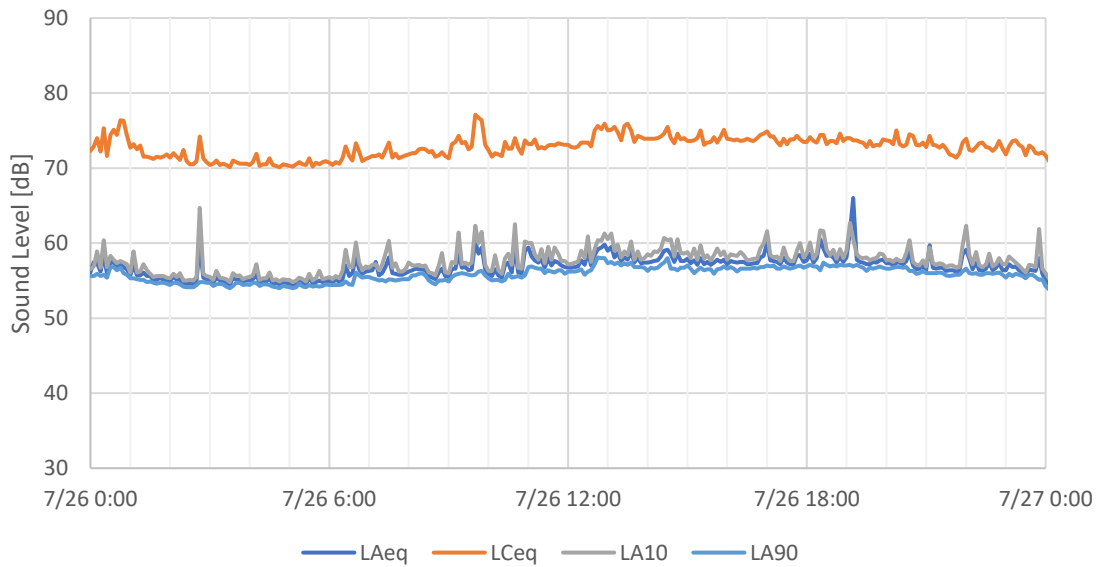
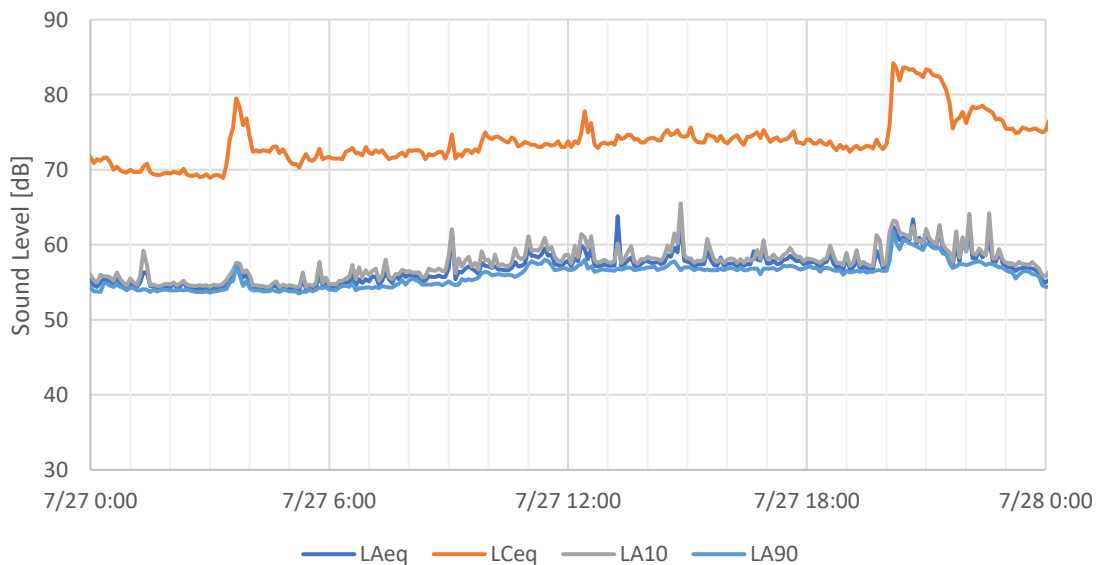
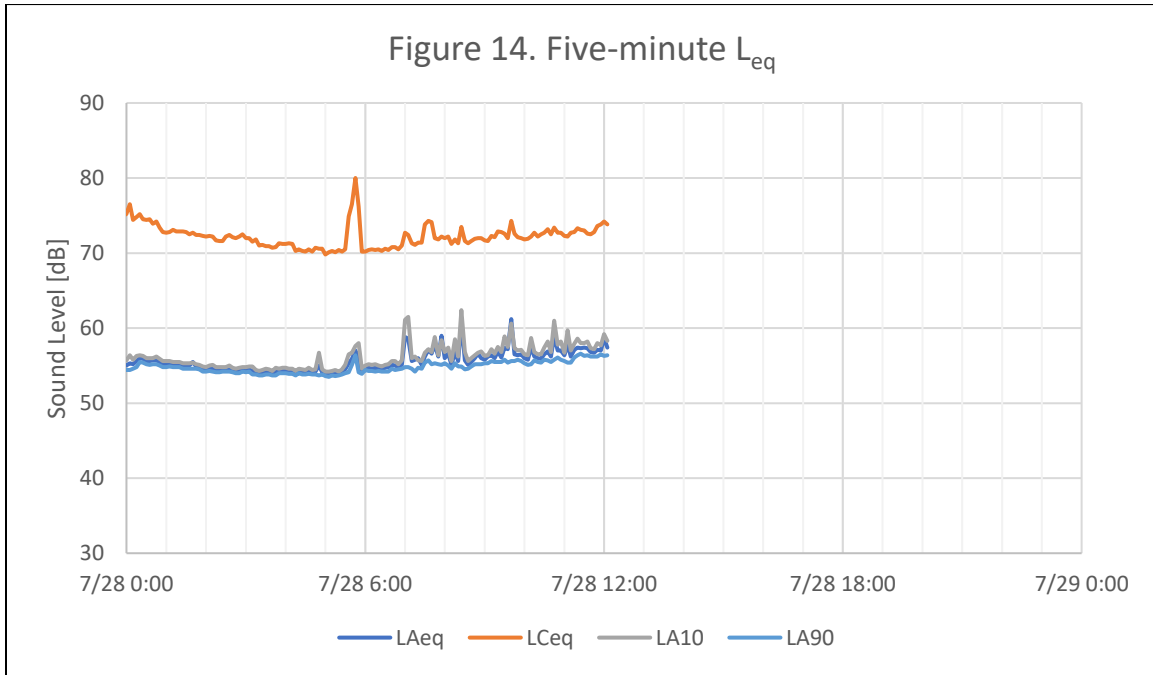


Figure 13. Five-minute L_{eq}





723 ROOFTOP
723 LINCOLN LANE NORTH
MIAMI BEACH, FL 33139

SEAL



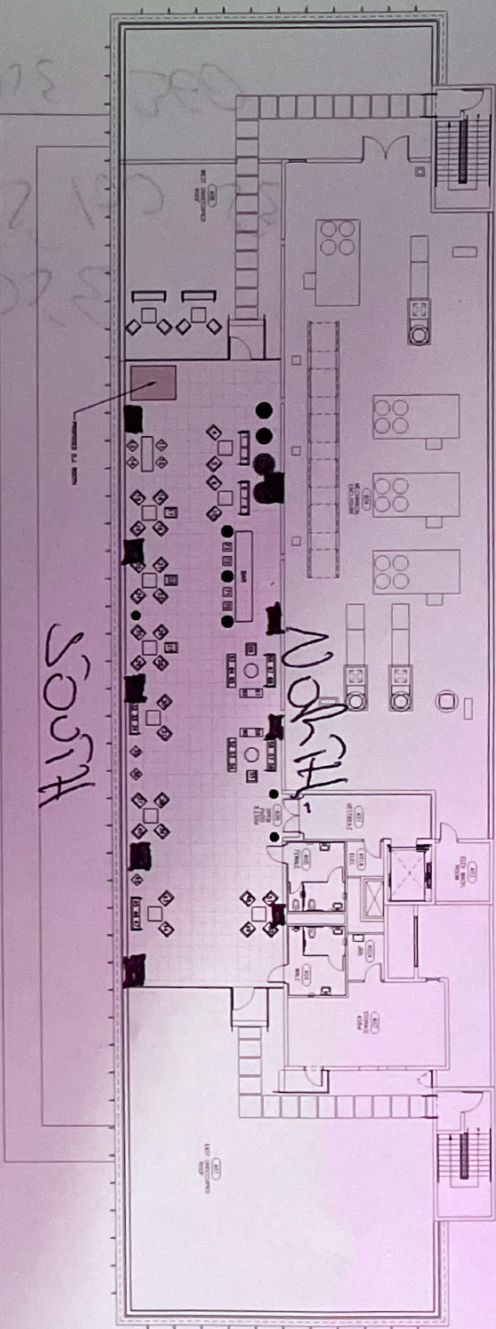
PROPOSED ROOF PLAN - PHASE 1

SCALE 1/8" = 1' - 0"

OCCUPANCY CALCULATIONS - OPEN PAVED ROOF

AREA	USE	FLOOR FINISH
OPEN PAVED ROOF	ASPH/FLT	1.250 SF / 10 = 21% PERMITTED

1
AL05 SCALE: 1/8"=1'-0"
PROPOSED ROOF PLAN - PHASE 1

[illegible]

