

Schaeffer

Engineering Group

ACOUSTIC SERVICES DIVISION

ACOUSTIC ASSESSMENT REPORT · SAMPLE DELIVERABLE

Noise Complaint Response & Sound Transmission Assessment

Halfmast Lounge — 488 Halberd Street, New York, NY ·
311 complaint reference SR-2026-0418-XX

PROJECT NO.

SEG-AC-2026-007

SERVICE TIER

Tier 2 — Full Assessment

SITE VISIT

22 April 2026, 22:00–02:00

REPORT ISSUED

28 April 2026

PREPARED FOR

Halberd Hospitality Group LLC

PREPARED BY

Schaeffer Engineering Group

Executive Summary

On 22 April 2026, Schaeffer Engineering Group conducted an acoustic assessment of Halfmast Lounge in response to a 311 noise complaint filed by the residential occupant of Apartment 3B, located directly above the venue's main bar and DJ area. Continuous sound level measurements were collected at five positions inside and outside the venue over a four-hour observation window during peak operating conditions.

PRINCIPAL FINDINGS.

- Measured nighttime sound levels in the affected residential bedroom (L4) reached $L_{Aeq,60s}$ 47.6 dBA with sustained periods exceeding the 42 dBA nighttime threshold for music from a commercial establishment under NYC Admin Code §24-231.
- Spectral analysis identifies the 63–160 Hz band as the dominant transmission energy, consistent with structure-borne low-frequency transmission rather than airborne flanking through the building envelope.
- The primary path is the DJ booth subwoofer cabinets in direct mechanical contact with the wood-framed floor structure shared with Apartment 3B. A secondary path is airborne flanking through the building's central HVAC return shaft.
- Compliance is achievable through a phased mitigation program combining operational limits, structural decoupling of the DJ position, and a targeted HVAC modification. Estimated total mitigation cost: \$18,000 – \$32,000.

1. Project Background

Halfmast Lounge operates Thursday through Saturday, 21:00 to 04:00, with DJ-driven programming after 23:00. The venue occupies the ground floor and partial cellar of a five-story mixed-use building (1910 construction, wood-framed upper floors over masonry first floor). The unit immediately above the DJ position is Apartment 3B, occupied year-round.

A 311 noise complaint was filed by the occupant of Apartment 3B on 11 April 2026, citing recurring late-night low-frequency noise consistent with amplified music. The Department of Environmental Protection has issued no Notice of Violation as of the date of this report. Halberd Hospitality Group engaged Schaeffer Engineering Group to (a) document current acoustic conditions, (b) determine whether operations exceed applicable code limits, (c) identify transmission pathways, and (d) recommend a mitigation strategy.

2. Scope of Work

- Pre-visit site walkthrough and review of architectural plans
- Continuous sound level logging at five positions over a four-hour observation window during representative peak operations

§ 2 SCOPE OF WORK (CONTINUED)

- Background ambient measurements with venue closed
- 1/3-octave spectral analysis at the receiving residential position
- Identification of probable transmission paths
- Comparison of measured levels against applicable NYC Noise Code provisions
- Phased mitigation recommendations with cost ranges

3. Methodology & Equipment

INSTRUMENTATION

- NTI XL2 Sound Level Meter and Analyzer (Class 1 / Type 1 per IEC 61672-1), S/N redacted
- NTI M4261 measurement microphone with NTI MA220 preamplifier
- NTI CAL200 acoustic calibrator (94.0 / 114.0 dB at 1 kHz)
- Pre- and post-measurement field calibration documented in Appendix A; deviation < 0.2 dB

REFERENCE STANDARDS

- ANSI S1.4 / IEC 61672-1 (sound level meters)
- ANSI S12.9 (environmental sound measurement)
- ASTM E336 (field measurement of airborne sound attenuation between rooms)
- NYC Admin Code Title 24, Chapter 2 (Noise Code), §24-231 (music from commercial establishments)

MEASUREMENT PROTOCOL

Continuous logging at 1-second intervals over the 22:00–02:00 observation window, with concurrent 1/3-octave band data captured at L4. A 30-minute background measurement was taken at each position prior to venue opening for reference. All interior residential measurements were taken with the occupant absent and with HVAC, refrigeration, and other appliances in their normal operating state to capture realistic ambient conditions.

4. Site & Measurement Positions

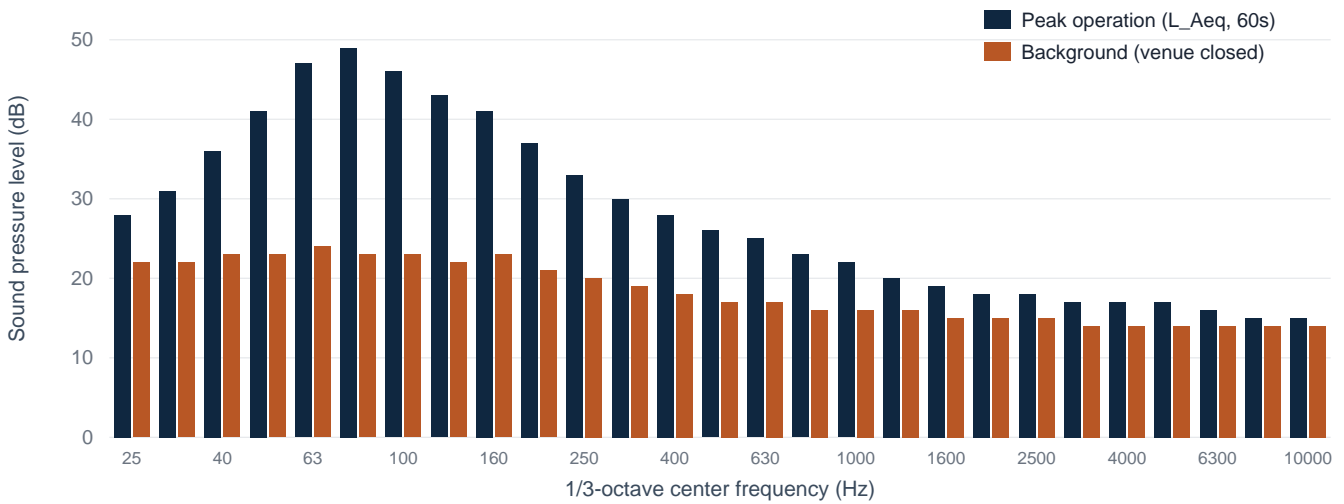
ID	LOCATION	DESCRIPTION
L1	Property line	Sidewalk, Halberd Street facade, 1.5 m AGL
L2	DJ booth	Operator position, 1.2 m above floor
L3	Dance floor center	1.5 m above floor, 4 m from booth
L4	Apt 3B bedroom	1.0 m from south boundary wall, 1.5 m AFF
L5	Apt 3B bathroom	HVAC adjacency, 1.5 m AFF

5. Measurement Results

TABLE 5.1 — A-WEIGHTED SOUND LEVELS AT EACH POSITION

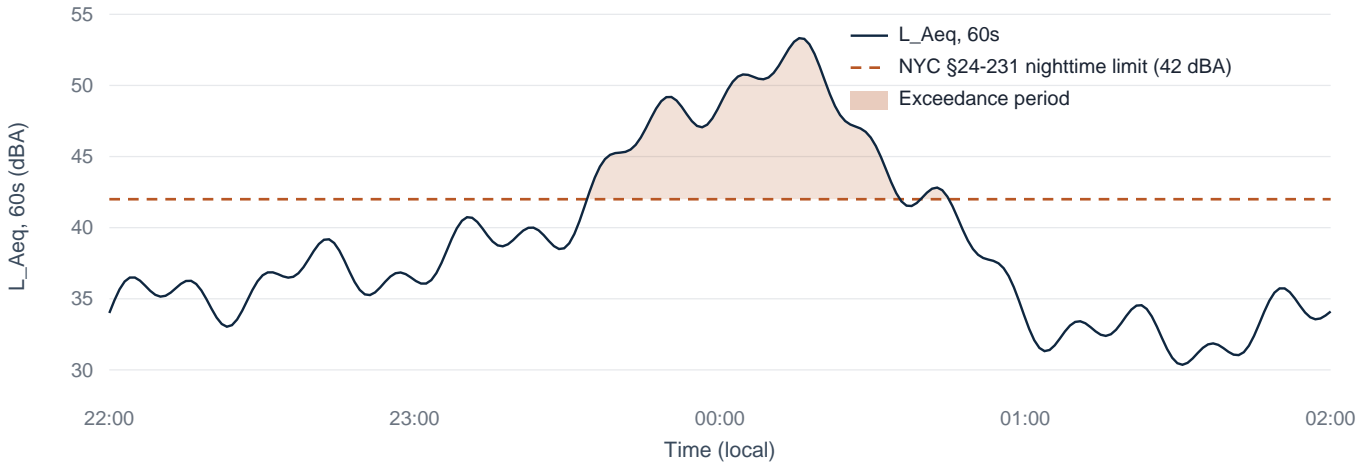
POS.	BACKGROUND, L_AEQ	PEAK OP., L_AEQ,60S	L_A10	L_A90
L1	52.3 dBA	67.8 dBA	71.2 dBA	64.5 dBA
L2	38.4 dBA	102.6 dBA	105.1 dBA	98.3 dBA
L3	38.0 dBA	96.4 dBA	99.8 dBA	93.2 dBA
L4	32.1 dBA	44.8 dBA	47.6 dBA	38.2 dBA
L5	31.5 dBA	42.3 dBA	45.1 dBA	36.8 dBA

FIGURE 6.1 — 1/3-OCTAVE SPECTRUM AT L4 (APT 3B BEDROOM)



Energy at L4 is concentrated in the 50–200 Hz region, characteristic of bass-driven music transmitted through the floor/ceiling assembly. Background levels for comparison.

FIGURE 6.2 — TIME HISTORY OF L_AEQ AT L4, 22:00–02:00



Sustained exceedance of the 42 dBA reference threshold occurs primarily between 23:30 and 01:30, coinciding with peak DJ programming.

6. Analysis & Findings

CODE COMPARISON

Measured levels at L4 exceeded the 42 dBA reference under NYC Admin Code §24-231 during sustained periods of peak operation (Figure 6.2). The exceedance is most pronounced during the 23:30–01:30 window, with measured L_Aeq,60s reaching 44.8 dBA and L_A10 reaching 47.6 dBA. The exceedance is sustained — not transient — and is therefore consistent with a finding of unreasonable noise from a commercial establishment under the cited subchapter.

TRANSMISSION PATH IDENTIFICATION

The 1/3-octave content at L4 (Figure 6.1) shows a pronounced concentration of energy in the 63–160 Hz range, characteristic of bass and kick-drum content typical of dance music. This spectral signature, combined with measured A-weighted levels at L1 (67.8 dBA at the property line) that are not unusually elevated relative to a typical downtown commercial late-night ambient, indicates that the dominant path into Apartment 3B is structure-borne rather than airborne via the building envelope.

Onsite inspection identified two contributing pathways:

- **Primary path (structural).** The DJ booth's two 18" subwoofer cabinets sit directly on a plywood riser that is in mechanical contact with the wood-framed floor structure shared with Apartment 3B. There is no isolation material between the subwoofer cabinets, the riser, and the floor.
- **Secondary path (airborne flanking).** The building's central HVAC return shaft runs vertically through a chase adjacent to the DJ position and connects to upper-floor returns including Apartment 3B. The L5 bathroom measurement (42.3 dBA) is consistent with secondary airborne flanking through this pathway.

7. Recommendations

PHASE 0 — OPERATIONAL MEASURES (IMMEDIATE, NO-COST)

- Configure the existing DJ console output limiter to engage at –6 dB below current peak, with priority on the sub-200 Hz band.
- Implement a venue policy restricting bass-heavy programming after 00:00.
- Issue a written communication to the complainant documenting interim operational changes pending Phase 1 mitigation.

PHASE 1 — TARGETED MITIGATION (~\$8,000–\$12,000)

- Install an isolated DJ booth platform with neoprene/spring isolators rated for sub-10 Hz natural frequency, decoupling the booth from the structural floor.
- Add resilient channel plus two layers of 5/8" Type X gypsum to the ceiling immediately above the DJ position, with full perimeter sealing.
- Acoustically treat the HVAC return shaft penetration adjacent to the DJ position with damped lining and a duct silencer rated for low-frequency attenuation.

PHASE 2 — STRUCTURAL DECOUPLING (~\$18,000–\$25,000)

- Full structural decoupling of the dance floor and DJ zone from the building structure (floating floor assembly).
- Relocate subwoofers to a flown configuration with proper isolation at the rigging points.
- Post-mitigation re-measurement at L4 to verify compliance under the same observation conditions.

Phase 1 alone is expected to reduce L_{Aeq} at L4 by approximately 6–9 dB based on standard-of-practice estimates for the prescribed assemblies; this is sufficient to bring measured levels into compliance under the conditions observed. Phase 2 provides additional headroom for higher-energy programming.

8. Limitations

- Measurements represent conditions on the date and time of observation. Results may vary with venue programming, occupancy, and equipment configuration.
- Sound transmission values reported are field measurements and characterize the in-situ assemblies only; they are not laboratory STC or IIC ratings and should not be substituted for laboratory data in code submissions where the latter are explicitly required.
- This report does not constitute a stamped engineering deliverable. Structural acoustic engineering elements of any Phase 1 or Phase 2 work should be verified by a New York State–licensed Professional Engineer prior to construction.
- Code interpretation is provided for technical context. Halberd Hospitality Group is advised to consult counsel regarding regulatory exposure and any DEP or SLA proceedings.

Schaeffer Engineering Group, Acoustic Services Division

Report prepared and field measurements conducted by lead practitioner. Measurement methodology, calibration logs, and raw 1-second data are retained on file under project SEG-AC-2026-007 and available on request.

How This Report Scales Across Service Tiers

The deliverable above is a Tier 2 — Full Assessment. The same scenario priced and scoped at the other tiers looks like this:

Tier 1 — Single-Site Assessment + Summary Memo \$1,200 – \$2,000

- 2–3 hour site visit, single observation window during peak operation
- 3–5 measurement positions; tables only, no spectral or time-history charts
- 4–6 page memo deliverable: methodology, results table, code comparison, brief recommendations
- No detailed transmission path analysis or phased mitigation costing
- Calibration log and photos in appendix
- Best for: first-pass assessment, internal documentation, low-stakes due diligence

Tier 2 — Full Assessment + Formal Report \$2,800 – \$5,500 ← THIS SAMPLE

- 4–6 hour site visit, single observation window during peak operation
- 5–8 measurement positions including background, property line, and receiving residential positions
- 15–25 page formal report with executive summary, methodology, results, analysis, and phased mitigation
- 1/3-octave spectral analysis and time-history charts at key positions
- Transmission path identification and Phase 1 / Phase 2 mitigation costing
- Full appendices: calibration logs, raw data, photos, site plans
- Best for: 311 complaint response, license proceedings, mitigation planning, mid-stakes disputes

Tier 3 — Multi-Day Unattended Logging Study \$4,500 – \$8,500

- Equipment deployed for 3–7 days at the most affected receiving position; unattended SPL and 1/3-octave logging
- Statistical analysis of code compliance over real operating conditions across multiple programming nights
- Day-of-week and time-of-day exceedance analysis with detailed event tagging
- 25–40 page report with extensive data appendix and statistical summary
- Optional: simultaneous monitoring at venue source position for paired source-receiver analysis
- Best for: chronic complaints, contested DEP proceedings, litigation support, post-mitigation verification, defensible documentation when isolated readings are likely to be challenged

RT60 / Room Acoustics Study

\$2,000 – \$4,000

- Reverberation time measurement at multiple positions per ISO 3382
- 1/3-octave RT60 analysis with target curves for the space type
- Treatment recommendations (absorption type, surface area, placement) with cost ranges
- Best for: restaurants, hotel lobbies, retail, venues with intelligibility or "loudness" complaints unrelated to source level

Sound System Optimization

\$1,500 – \$3,500

- 1/3-octave RTA, system EQ, time-alignment of subs and tops
- Coverage measurement across audience zones
- System notes and recommended settings; no formal compliance report
- Best for: tuning a new install, optimizing an existing system, prepping for a recurring program

311 / Complaint Emergency Response

\$1,800 minimum + report tier

- Same-week or same-day site visit; 24–48 hour memo turnaround
- Tier 1 deliverable as standard; upgradeable to Tier 2 within a week
- Premium reflects priority scheduling and rapid turnaround
- Best for: active 311 cases, imminent SLA hearings, community board appearances

SAMPLE-REPORT STATUS

All names, addresses, complaint numbers, and measurement values shown above are illustrative. The reporting structure, methodology, and deliverable depth are representative of actual Tier 2 scope. Specific NYC Noise Code provisions and dB thresholds cited should be verified against current code text before any client-facing use.