



19 November 2025

Ian-Gasco Wiggin  
Project Director JMC/SVP Old River Road LLC100  
Grandview Road Suite 205  
Braintree, MA 02184

Attention: Ian Gasco-Wiggin \*\*\* (via email: IGascoWiggin@jmcandco.com) \*\*\*

Subject: Noise Consulting Services  
100 Old River Road  
Andover, MA  
Acentech Project Number 639530.01 – V2 DRAFT

Dear Mr. Gasco-Wiggin:

We present here our report for the proposed residential building located at 100 Old River Road, Andover, MA, near Interstate 93 (I93) relating to measurements, evaluation, and recommendations for the impact of exterior air-borne noise on the proposed dwelling units. The environmental noise source of concern is the traffic noise from I93.

In undertaking this task, we have: 1) determined the exterior noise exposure at the façade of future dwelling units; 2) considered appropriate criteria for interior noise exposure levels from these exterior sources, and 3) recommended upgrades to the acoustical performance of building envelope elements (walls and windows)

## **SITE MEASUREMENTS**

The project's north-west corner is the closest, about 340 feet, to the northbound lanes of I93, at the project's south-west corner it is about 740 feet to the northbound lanes of I93. Figure 1 illustrates the noise measurement locations during our study. Location 1 was located near the project's southern façade, about 850 feet to I93. Location 2 was located near the project's south western façade, about 690 feet to I93, Location 3 was located near the project's west façade, about 720 feet to I93. Location 4 was also located near the project's west façade and was about 670 feet to I93. Location 5 was located near the north-west façade and was about 470 feet to I93 and Location 6 was located near the north façade about 370 feet from I93. At each location, a microphone was mounted on a tripod at a height of about 5 feet to measure noise with a Rion NL-52 sound level meter. Our measurement study lasted approximately 7 days.



Figure 1: Noise Measurement Locations

## AIRBORNE NOISE

### Summary of Findings

In summary, a majority of the units in the project will meet HUD's normally acceptable noise exposure criteria by utilizing industry standard design details. The northern side of the building, however, will require windows that meet certain acoustical criteria for those units to meet acceptable interior noise exposure criteria. We have reviewed the architect's proposed windows, the Intus Supera CW Casement, and find them satisfactory to meet the HUD normally acceptable noise exposure criteria.

### Noise Exposure Criterion

$L_{dn}$  is a 24-hour average noise level, in dBA, with a night-time penalty of 10 decibels (from 10:00 pm to 7:00 am, to reflect increased occupant sensitivity during these hours). The  $L_{dn}$  is the most commonly accepted metric for evaluation of exterior noise relating to community noise exposure, and it is the standard metric currently applied to housing projects for determining acceptable interior sound levels. Exterior noise exposure levels of  $L_{dn}$  65 and below are considered by HUD to be "Normally Acceptable" and no further noise reduction measures are warranted. Noise exposure levels above  $L_{dn}$  65 suggest the need for improved noise reduction by the building envelope to the degree that the  $L_{dn}$  levels exceed  $L_{dn}$  65. (This approach is based on

achieving an interior equivalent  $L_{dn}$  of no greater than  $L_{dn}$  45, and assumes that most normal constructions provide typically 20 dBA of noise reduction.)

### Noise Data Collection and Field Measurements

In order to determine the exterior noise exposure at the face of the future dwelling units, we set up six (6) long-term acoustical measurement systems to record noise exposure data; the measurement period was from October 15, 2025 through October 22, 2025. The data was compiled as a series of A-weighted sound levels that were sampled and stored every ten minutes. From this data, we were able to determine statistically the energy average sound level ( $L_{EQ}$ ), and then with further processing determine the  $L_{dn}$  over the measurement period.

### Air-borne Noise Evaluation, Analysis and Recommendations

$L_{dn}$  levels ranged from 63-65 dBA at the site. At Locations 1-3, we measured  $L_{dn}$  levels of 63 dBA. At Location 4 and 5, we measured  $L_{dn}$  levels of 64 dBA. At Location 6 we measured an  $L_{dn}$  of 65 dBA. A plot of the sound levels used to arrive at the  $L_{dn}$  metric is shown in the attached Figures 2-7.

Location 6 recorded the highest levels, which is not surprising since it was the closest measurement location to I93.

To provide improvement in the noise reduction of the building's northern façades, it is necessary to treat the weakest sound path, and this is the windows. We assume that the current design might specify an operable sash with a 5/8" insulating glass (quite standard for new residential construction). To achieve acceptable indoor noise levels the base window should have 1" thick insulating glass, and there should be a separate storm sash (inside or outside) with a 1-2" space between the layers of glass. Windows of this type should have an STC rating of 32 to 36. Another appropriate metric for windows is the Outdoor-Indoor Transmission Class (OITC), which addresses low frequency noise. We recommend windows with an OITC rating of 26. If a window vendor only lists an STC rating, then we recommend that you choose a design with an STC 35 or better to account for the STC metric's poor handling of low frequency noise. The recommended façades for these windows is highlighted in yellow in figure 8.

### Limitations of Treatments

1. If these noise reduction treatments are installed, this does not mean that exterior noise will be inaudible, just that the interior noise exposure levels will meet currently accepted standards for market-rate rental units.
2. When residents open the windows, the noise exposure levels will increase.
3. It is assumed that the regular building envelope will provide at least 20 dB of noise reduction; this requires normal wood framing with plywood sheathing on the outside, gypsum board finish on the inside, insulation in the cavity. Construction systems that use just light-weight insulation and no dense exterior sheathing are unacceptable.
4. Avoid any untreated sound paths from the exterior to the interior; avoid duct openings, if duct openings are necessary they should be reviewed on a case by case basis and treated appropriately; avoid window air-conditioners, avoid any doors to the outside that would have exposure to the road. These penetrations will reduce the noise reduction significantly.
5. Criteria are described in terms of dBA Noise Reduction, although detailed acoustical analysis reflects other standards such as Outside-to-Inside Transmission Class (OITC) and exterior-wall noise rating (EWNr).
6. The analysis has also been simplified to disregard minor differences related to room size and window size.

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Please let me know if you have any questions; you can reach me by telephone at: 617-499-8000 or by e-mail at: [rgomez@acentech.com](mailto:rgomez@acentech.com).

Sincerely yours,  
ACENTECH INCORPORATED

A handwritten signature in black ink, appearing to read 'R Gomez', written in a cursive style.

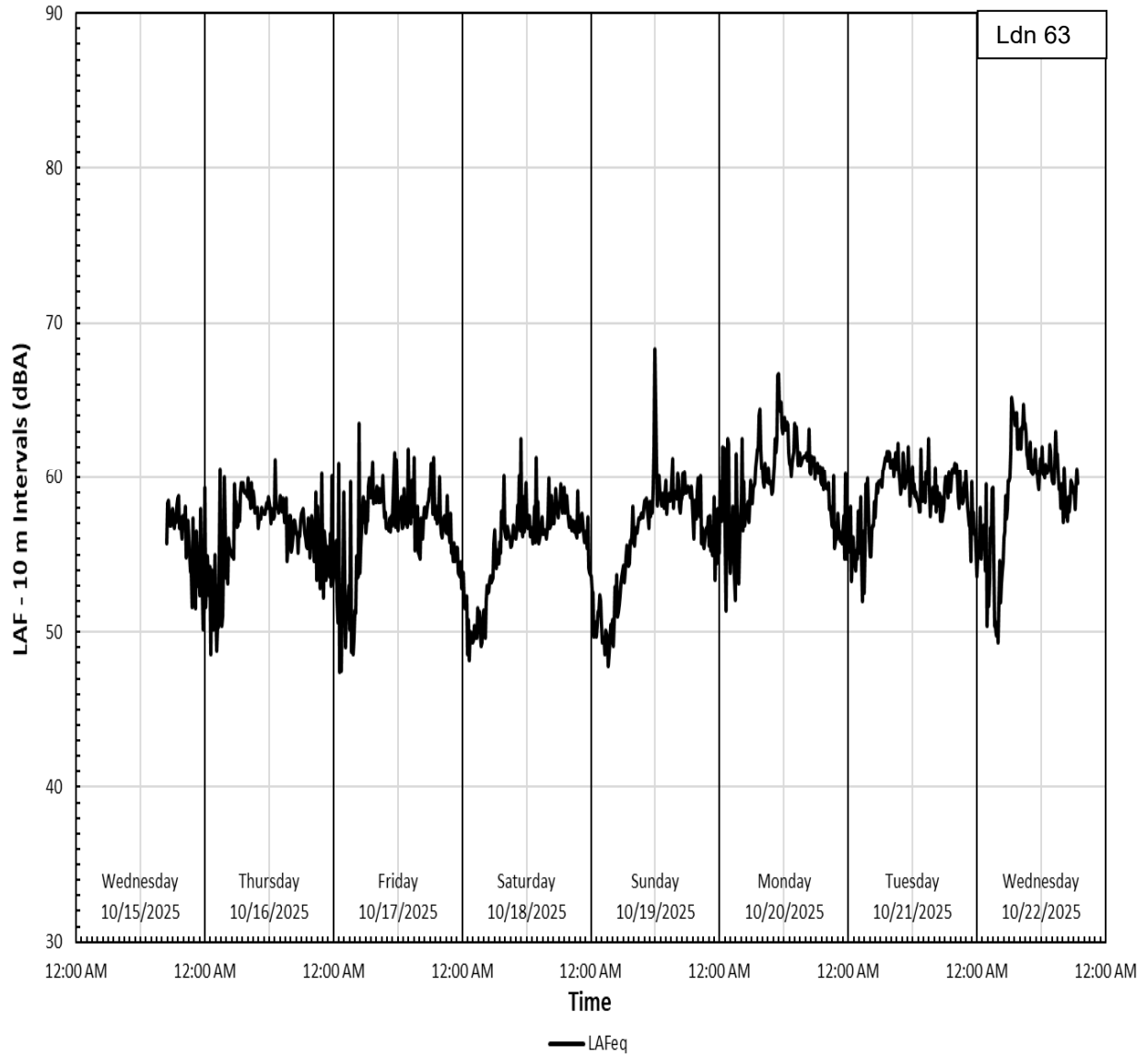
Roberto Gomez  
*Consultant*

Attached: Figures 2 to 8

**Figure 2.**

**Sound Levels Measured at 100 Old River Rd. - Andover, MA**

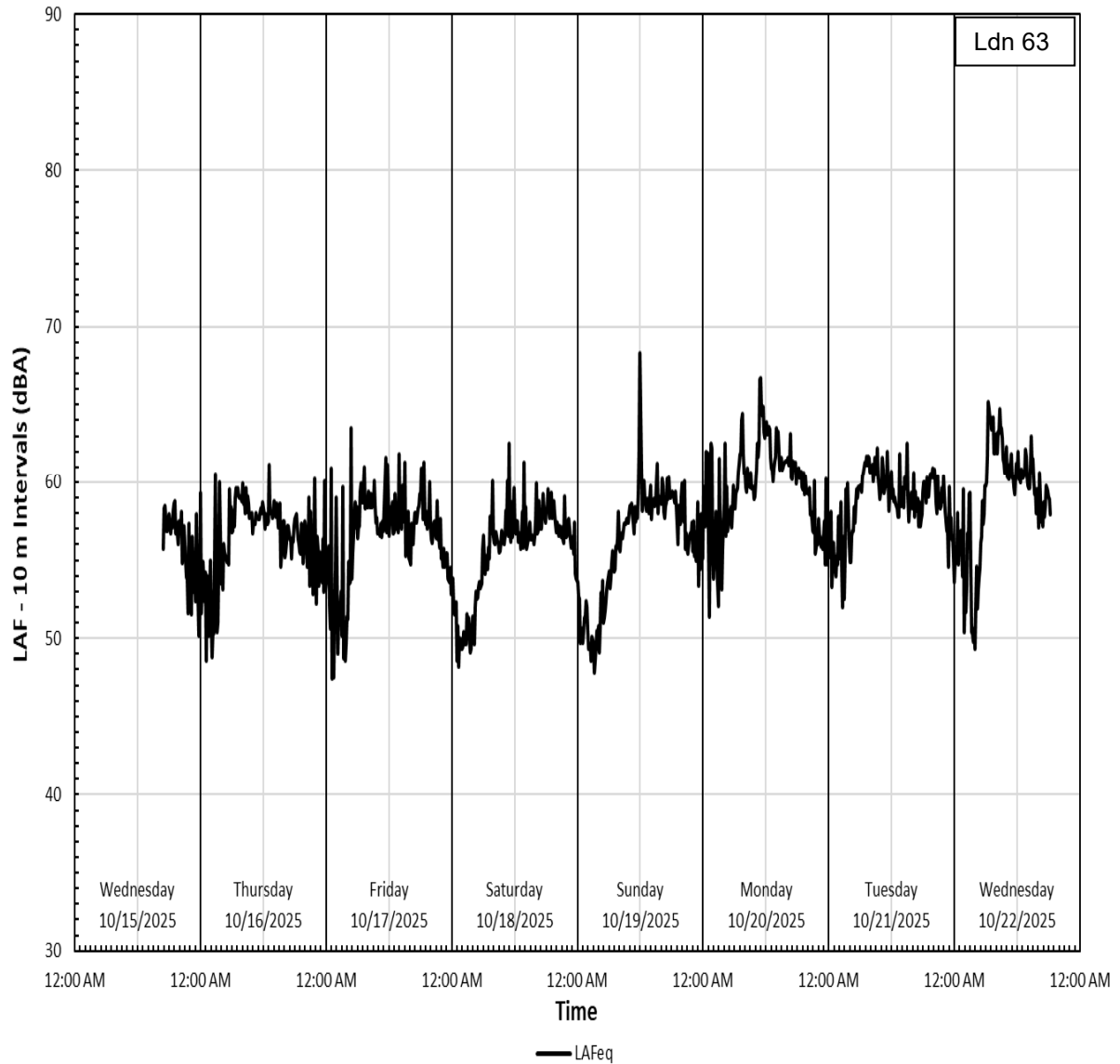
Location 1



**Figure 3.**

**Sound Levels Measured at 100 Old River Rd. - Andover, MA**

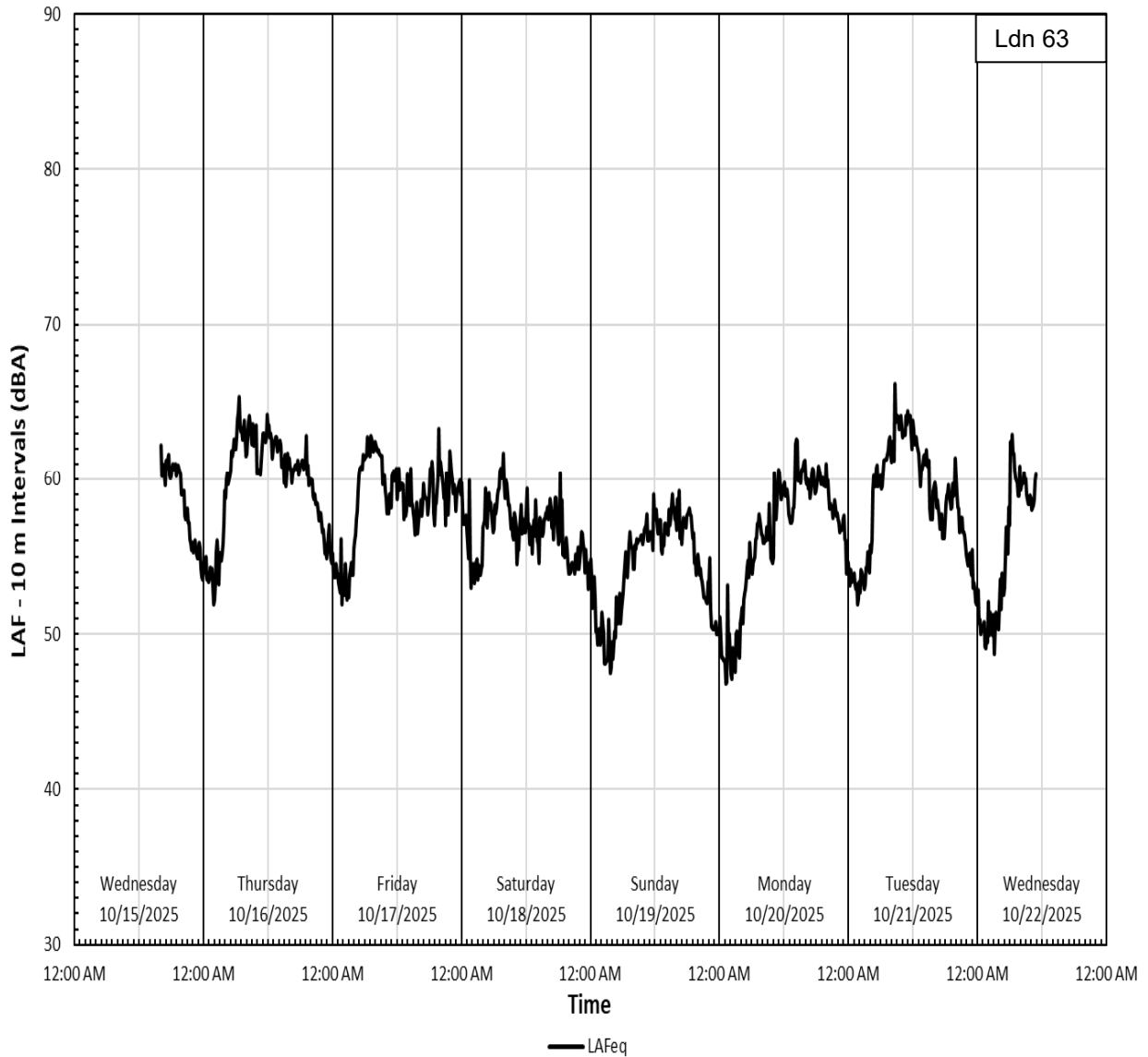
Location 2



**Figure 4.**

**Sound Levels Measured at 100 Old River Rd. - Andover, MA**

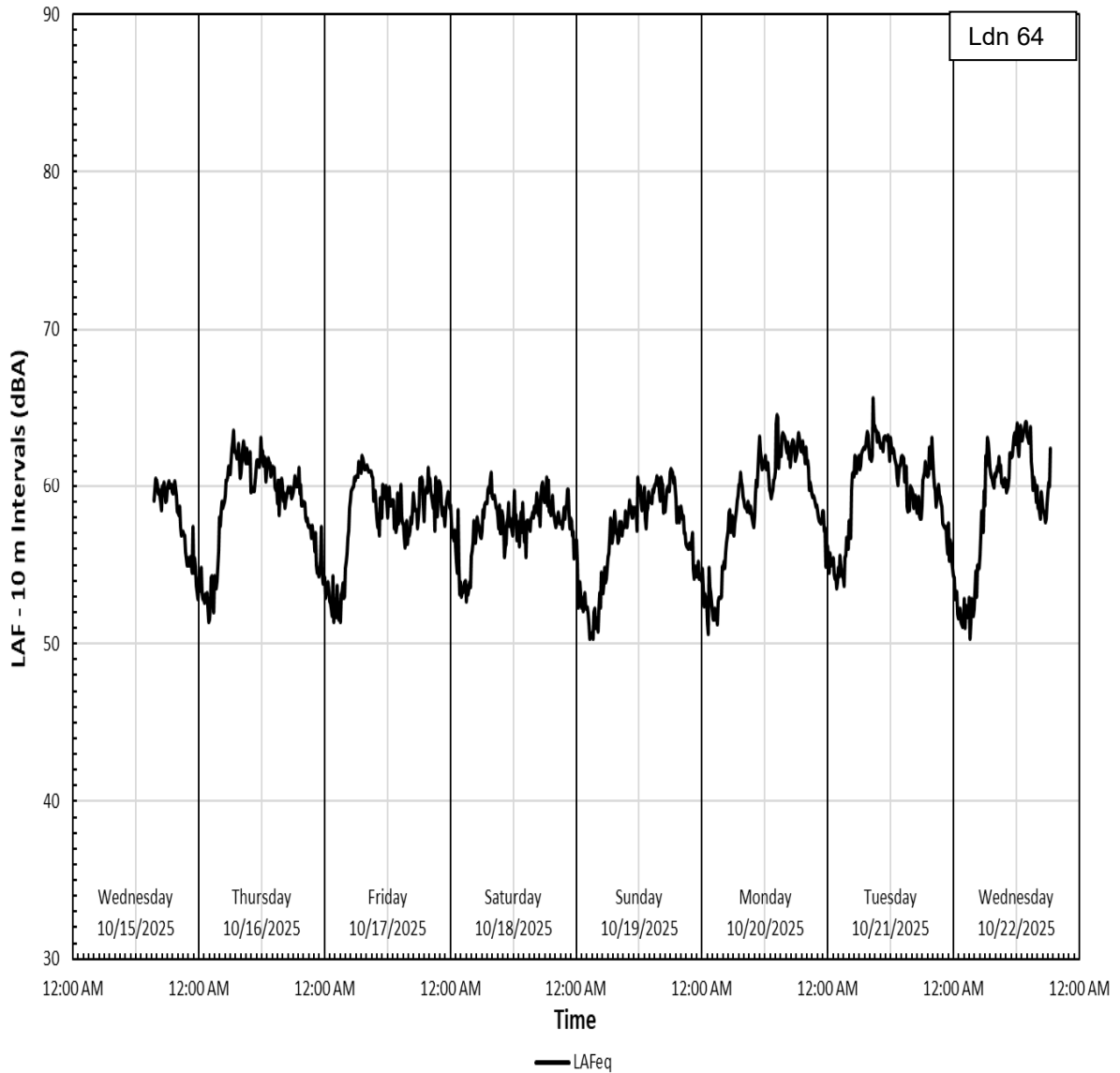
Location 3



**Figure 5.**

**Sound Levels Measured at 100 Old River Rd. - Andover, MA**

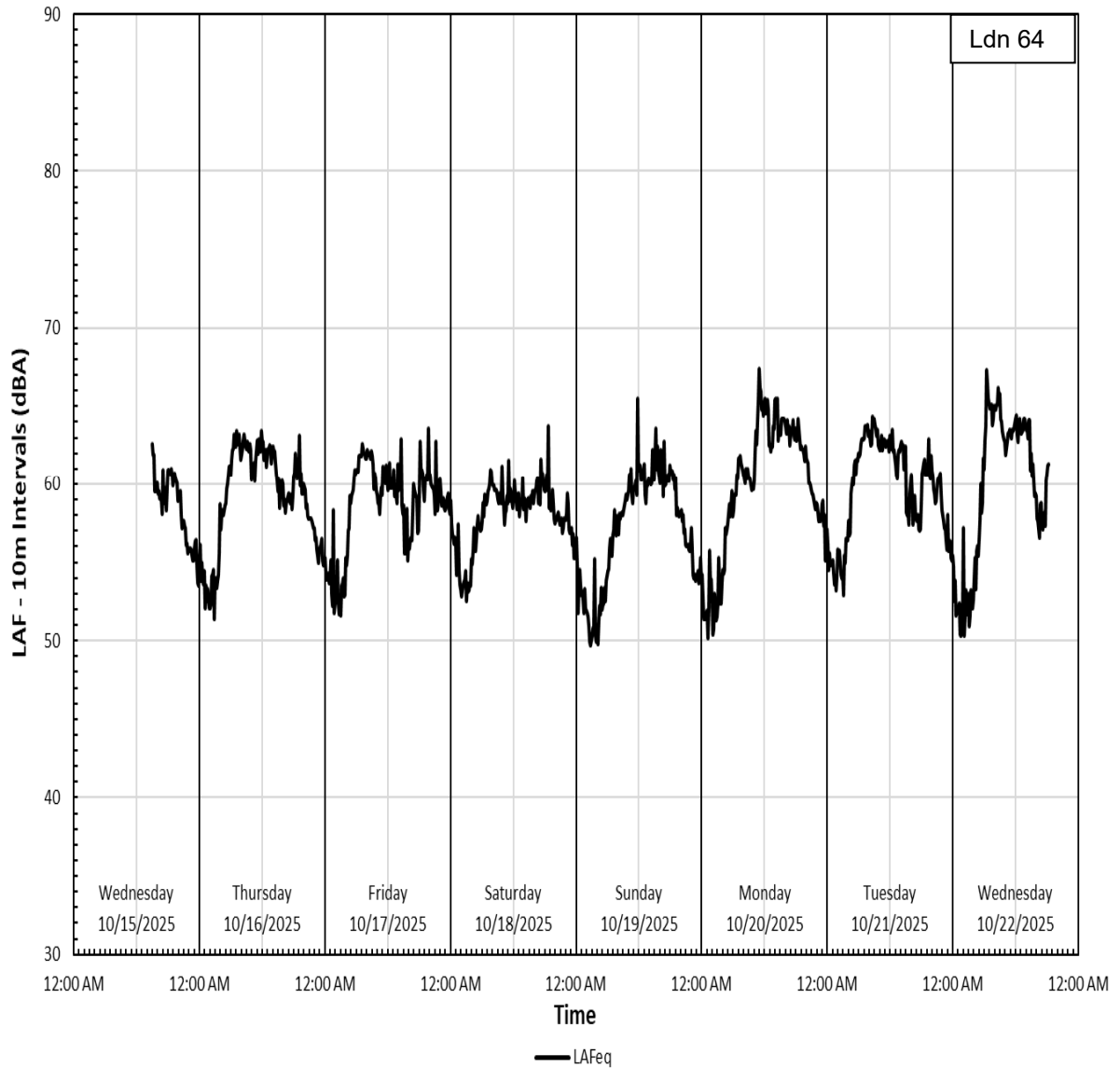
Location 4



**Figure 6.**

**Sound Levels Measured at 100 Old River Rd. - Andover, MA**

Location 5





**Figure 8.  
Facades to Treat**

