ATTACHMENT 5

Padel Up – 2045 Harbor Blvd

Noise Impact Study

City of Costa Mesa, CA

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2045 Harbor Blvd.
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MD ACOUSTICS
Sound Solutions for Planning and Design

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This noise assessment was prepared to evaluate the potential noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to the noise standards set forth by the Federal, State, and Local agencies. Consistent with the City's Noise Guidelines, the project must demonstrate compliance with the applicable noise criterion as outlined within the City's Noise Element and Municipal Code.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An analysis of traffic noise impacts to and from the project site
- An analysis of operational noise impacts
- An analysis of construction noise impacts

1.2 Site Location and Study Area

The project site is located at 2045 Harbor Boulevard in the City of Costa Mesa, CA, as shown in Exhibit A. Land uses directly around the site include residential uses directly to the northwest, 50 feet to the south, and 55 feet to the west, and commercial uses directly to the northeast and south, and 105 feet to the east. Harbor Boulevard is to the east and Charle Street is to the west.

1.3 Proposed Project Description

The project proposes to develop 5 padel courts on approximately 0.82 acres. The padel courts will be situated close to residential uses on the west side of the property. The project will also construct a parking lot with 13 parking spaces. The project's maximum operational hours are expected to be from 7AM to 11PM, which falls within the City's daytime hours.

This study assesses the operational noise to and from the project site and compares the results to the applicable City noise standards. In addition, the study reviews noise generated by construction activities.

Exhibit A

Location Map

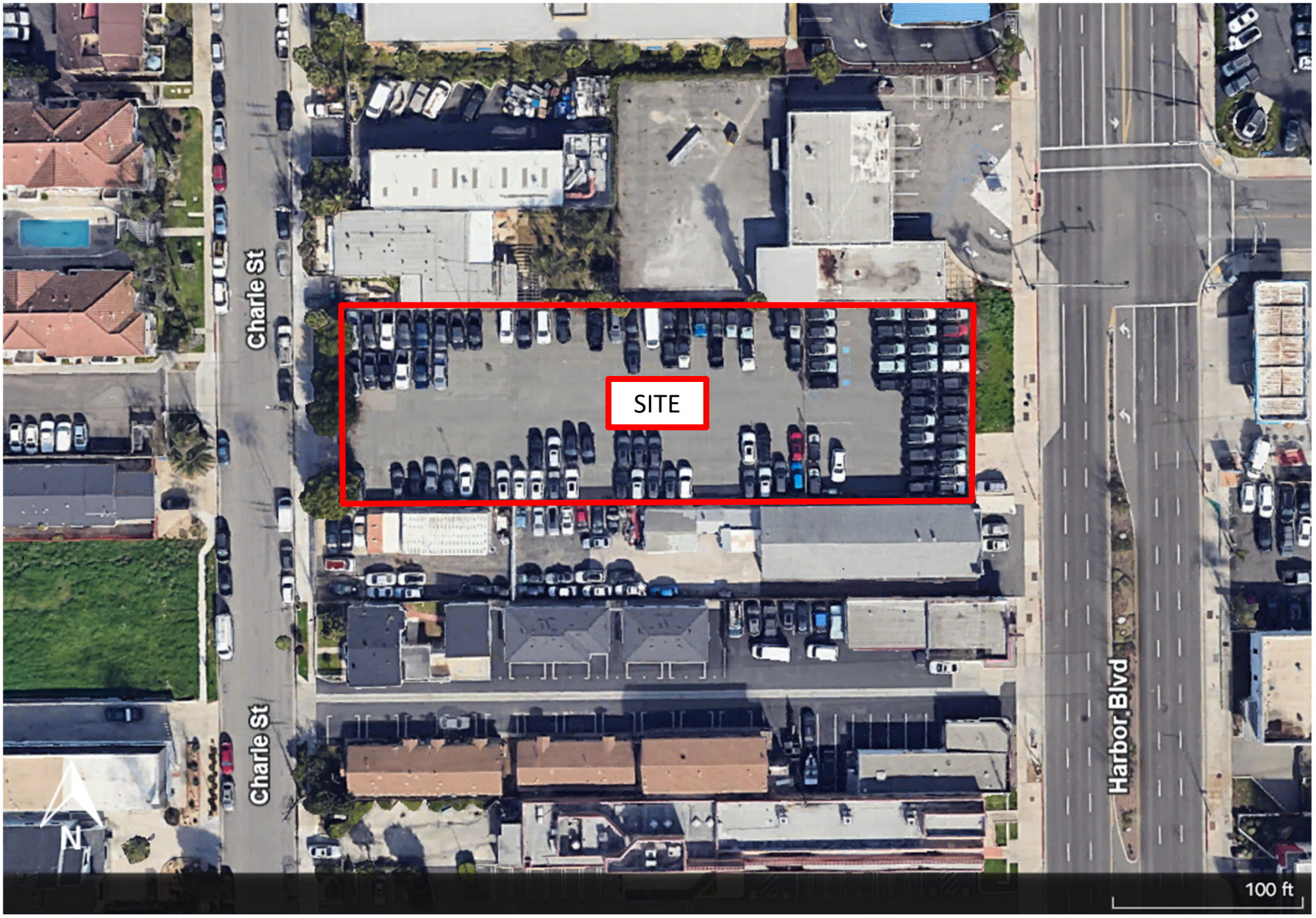
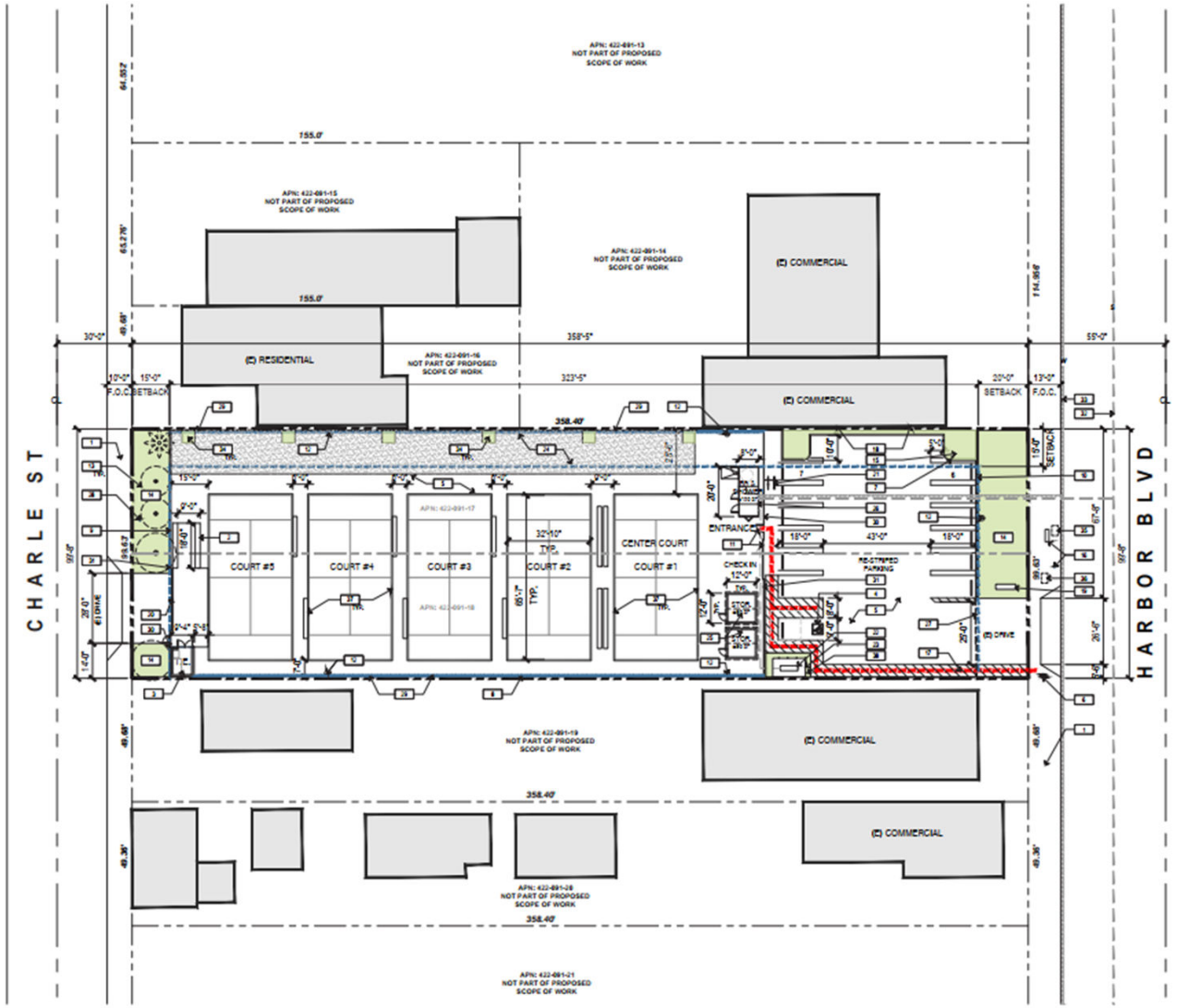


Exhibit B

Site Plan





VICINITY MAP N.T.S.

SITE SUMMARY

ADDRESS	2045 HARBOR BLVD., COSTA MESA, CA 92627	
ZONING	C3-GENERAL BUSINESS DISTRICT W (HARBOR MIXED USE OVERLAY)	
HOURS OF OPERATION	7:00 AM - 11:00 PM	
ASSESSOR PARCEL NO.	422-091-17, 422-091-18	
PROPOSED USE	COMMERCIAL RECREATION	
OCCUPANCY	M - MERCANTILE	
SITE GROSS AREA	435,861 SF / 10.00 AC	
SETBACKS:	REQUIRED	PROVIDED
FRONT	20'-0"	-
REAR	15'-0"	-
SIDE	15'-0" (NORTH) / 0'-0" (SOUTH)	
BUILDING AREAS:		
STORAGE SHED (E)	600 SF	
STORAGE SHED (E)	600 SF	
RESTROOM BUILDING (N)	0150 SF	
BICYCLE PARKING	REQUIRED	PROVIDED
	-	2
VEHICLE PARKING (LOCATED IN ADJACENT AREA) PER CMMC § 13-46 AND CMMC § 13-66		
	REQUIRED	PROVIDED
STANDARD (9' x 18'	NONE REQUIRED FOR TRANSIT ZONE	13
ADA (11' VAN)		1
TOTAL	0 SPACES	14 SPACES

KEY NOTES:

1. EXISTING SIDEWALK
2. EMPLOYEE PARKING
3. TRASH ENCLOSURE PER CITY STANDARDS
4. ACCESSIBLE PARKING, SIGNAGE AND STRIPING PER CITY STANDARDS
5. EXISTING ASPHALT PAVING "ENTIRE SITE
6. EXISTING FIRE HYDRANT
7. NEW 6" CURB
8. EXISTING 6" CURB
9. EXISTING 6' MASONRY WALL TO REMAIN
10. EXISTING 2' MASONRY WALL W/ 5' STEEL FENCE TO REMAIN
11. EXISTING STEEL FENCE W/ 3' MAN GATE AND 16' ROLLING ELECTRIC GATE
12. EXISTING 25' FLOOD LIGHTING
13. EXISTING MATURE TREES TO REMAIN
14. EXISTING LANDSCAPING TO REMAIN
15. NEW LANDSCAPING (SEE LANDSCAPING PLAN)
16. EXISTING BUS STOP SIGN AND BENCH
17. ACCESSIBLE PATH OF TRAVEL
18. EXISTING WALL MURAL TO REMAIN
19. NEW MONUMENT SIGN (UNDER SEPARATE PERMIT)
20. EXISTING 6' ELECTRIC STEEL GATE W/ DOOR
21. BICYCLE PARKING
22. EXISTING ELECTRICAL BOX CONNECTIONS TO BE COORDINATED WITH CIVIL & ELECTRICAL
23. NEW BOLLARDS
24. NEW ARTIFICIAL TURF
25. EXISTING STORAGE SHED TO BE RELOCATED
26. PREFAB BATHROOM W/ CONNECTIONS TO PLUMBING & ELECTRICAL SERVICE
27. STEEL GATE TO BE REMOVED
28. EXISTING BLACKFLOW PREVENTER
29. ADDED 6' NOISE-REDUCING FENCE
30. NEW KNOX BOX LOCATION
31. NEW KNOX SWITCH LOCATION
32. EXISTING SEWER LINE CONNECTIONS TO BE COORDINATED WITH CIVIL
33. EXISTING WATER LINE CONNECTIONS TO BE COORDINATED WITH CIVIL
34. IN-GROUND TREES (SEE LANDSCAPING PLAN)
35. EXISTING EDISON VAULT
36. EXISTING VAULT
37. PADEL COURT PERIMETER FENCING
38. LANDSCAPE SCREENING

*ALL DRIVEWAYS AND SIDEWALKS ARE COMPLIANT WITH CITY STANDARDS AND ADA.
*ALL UTILITIES TO BE UNDER GROUND AND LOCATED OUTSIDE OF SETBACKS.

PADEL UP

PADEL UP - COSTA MESA
2045 HARBOR BLVD | COSTA MESA, CA - 92627

SITE PLAN
SCALE: 1" = 20'-0"

AO Architecture. Design. Relationships.

A-02

2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

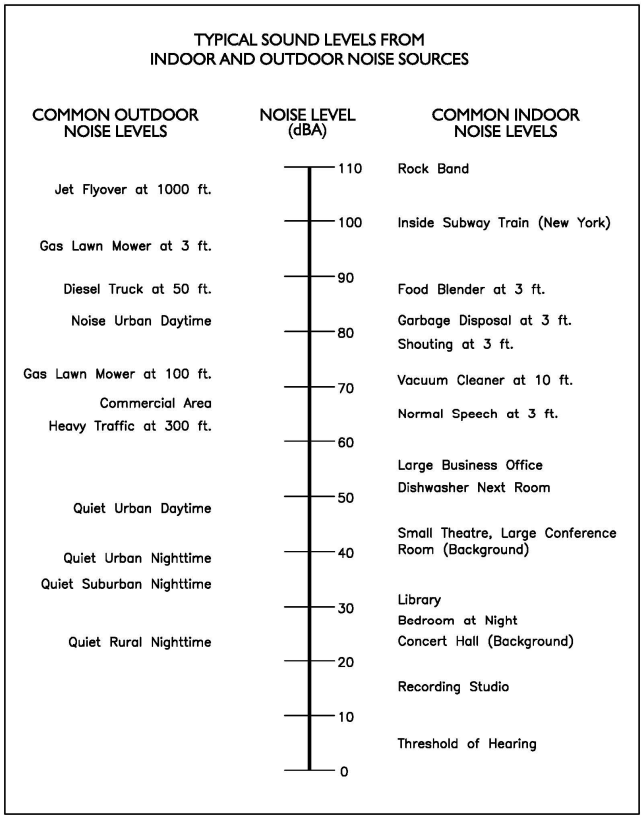
2.1 Sound, Noise, and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as the mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding), and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch of 20 Hz to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter (N/m2), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels, abbreviated dB. Exhibit C illustrates reference sound levels for different noise sources.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz (A-weighted scale), and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report, as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive a change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud

https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns; others are random. Some noise levels are constant, while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after the addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly, L50, L90 and L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

2.7 Traffic Noise Prediction

Noise levels associated with traffic depend on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2 axle), and heavy truck percentage (3 axle and greater), and sound propagation. The greater the volume of traffic, the higher the speeds, and the truck percentages equate

to a louder volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

2.8 Sound Propagation

As sound propagates from a source, it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading, versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt, or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet or more from a noise source. Wind, temperature, air humidity, and turbulence can further impact how far sound can travel.

3.0 Ground-Borne Vibration Fundamentals

3.1 Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors, where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room, and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude.

PPV – Known as the peak particle velocity (PPV), which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS), can be used to denote vibration amplitude.

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration. To counter the effects of ground-borne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, fragile buildings can be exposed to ground-borne vibration levels of 0.3 inches per second without experiencing structural damage.

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wavefront, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wavefront. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wavefront. However, unlike P-waves, the particle motion is transverse, or side-to-side, and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

The proposed project is located in the City of Costa Mesa and noise regulations are addressed through the efforts of various federal, state and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Publicize noise emission standards for interstate commerce
- Assist state and local abatement efforts
- Promote noise education and research

The Federal Office of Noise Abatement and Control (ONAC) originally was tasked with implementing the Noise Control Act. However, it was eventually eliminated, leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows: The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies. The Federal Aviation Agency (FAA) is responsible for regulating noise from aircraft and airports. The Federal Highway Administration (FHWA) is responsible for regulating noise from the interstate highway system. The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers.

The federal government advocates that local jurisdiction use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being constructed adjacent to a highway or that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix.” The matrix allows the local jurisdiction to clearly delineate the compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 of the California Building Code (CBC), which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan.

4.3 City of Costa Mesa Noise Regulations

The City of Costa Mesa outlines its noise regulations and standards within the Noise Element from the General Plan and the Noise Ordinance from the Municipal Code.

City of Costa Mesa General Plan

The Costa Mesa General Plan describes major noise sources within the City and defines goals, objectives, and policies to maintain compatible land uses with acceptable environmental noise levels. The Noise Element outlines the land use compatibility guidelines, which are modified from the U.S. Department of Housing and Urban Development Guidelines and the State of California Standards. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable, as illustrated in Exhibit D (Table N-3 from the General Plan).

Exhibit D: Land Use Compatibility Guidelines

Table N-3: Noise and Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure Ldn or CNEL, dBA			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential: Low-Density	50-60	60-70	70-75	≥75
Residential: Multiple Family	50-65	65-70	70-75	≥75
Mixed use	50-65	65-70	70-75	≥75
Transient Lodging-Motel, Hotels	50-65	65-70	70-80	≥80
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-60	60-65	65-80	≥80
Auditoriums, Concert Halls, Amphitheaters	NA	50-70	NA	≥80
Sports Arenas, Outdoor Spectator Sports	NA	50-75	NA	≥80
Playgrounds, Neighborhood Parks	50-67.5	NA	67.5-75	≥75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-70	NA	70-80	≥80
Office Buildings, Business Commercial and Professional	50-67.5	67.5-77.5	77.5-85	≥85 unless appropriately insulated
Industrial, Manufacturing, Utilities, Agriculture	50-70	70-80	80-85	NA

Normally Acceptable. *Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.*

Conditionally Acceptable. *New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction but with closed windows and fresh air supply systems or air conditioning will normally suffice.*

Normally Unacceptable. *New Construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.*

Clearly Unacceptable. *New construction or development should generally not be undertaken.*

NA: *Not Applicable.*

Source: Modified from U.S. Department of Housing and Urban Development Guidelines and State of California Standards.

In addition to the Land Use Compatibility Matrix, the City's interior and exterior noise standards are identified in Exhibit E (Table N-2: Residential Exterior and Interior Standards from the General Plan), which represents daytime and nighttime noise limits for exterior and interior areas within residential uses. These residential noise standards can also be found in Section 13-280 of the City's Municipal Code.

Exhibit E: Residential Exterior and Interior Standards

Table N-2: Residential Exterior and Interior Standards

Exterior Noise Standards	Interior Noise Standards
55 dBA: 7:00 A.M. to 11:00 P.M.	55 dBA: 7:00 A.M. to 11:00 P.M.
50 dBA: 11:00 P.M.to 7:00 A.M.	45 dBA: 11:00 P.M. to 7:00 A.M.

Note: These represent the basic standards applicable for time periods exceeding 15 minutes each hour. Higher levels may be generated for specified shorter time periods.

Source: Costa Mesa Zoning Code, Chapter XIII

Goals, Objectives, and Policies

Goals, objectives, and policies from the Noise Element that would mitigate potential impacts on noise include the following.

Goal N-1: **Noise Hazards and Conditions**. The City of Costa Mesa aims to protect residents, local workers, and property from injury, damage, or destruction from noise hazards and to work toward improved noise abatement.

Objective N-1A: **Control noise levels within the City for the protection of residential areas, park areas, and other sensitive land uses from excessive and unhealthful noise.**

Policy N-1.1: Enforce the maximum acceptable exterior noise levels for residential areas at 65 CNEL.

Goal N-2: **Noise and Land Use Compatibility.** Integrate the known impacts of excessive noise on aspects of land use planning and siting of residential and non-residential projects.

Objective N-2A: **Plan for the reduction in noise impacts on sensitive receptors and land uses.**

Policy N-2.2: Require, as a part of the environmental review process, that full consideration be given to the existing and projected noise environment.

Policy N-2.4: Require that all proposed projects are compatible with adopted noise/land use compatibility criteria.

Policy N-2.5: Enforce applicable interior and exterior noise standards.

Policy N-2.7: Encourage effective site planning in mixed-use areas that provides the optimal distance between source of excessive sound and residents.

Policy N-2.9: Limit hours and/or require attenuation of commercial/entertainment operations adjacent to residential and other noise sensitive uses in order to minimize excessive noise to these receptors.

City of Costa Mesa Code of Ordinances – Chapter XIII: Noise Control

Chapter XIII of the City's Code of Ordinances prohibits unnecessary, excessive and annoying noises and describes various noise generators, such as construction equipment and amplification. The restrictions relevant to the project are outlined below.

Section 13-278 Definitions.

Exterior residential noise environment. The exterior environs of a residential development which include private yard of single-family residence, multi-family private patio or balcony which is served by means of exit from inside the dwelling, private balconies greater than six feet in depth, and common open space areas containing resident-serving amenities (i.e. pool, spa, tennis courts).

Impact noise. The noise produced by the collision of one mass in motion with a second mass which may be either in motion or at rest.

Residential property. A lot of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

Section 13-279 – Exceptions for construction.

The provisions of this chapter shall not apply to the following:

(a) Emergency machinery, vehicles, or work; or

(b) Construction equipment, vehicles, or work between the following approved hours, provided that all required permits for such construction, repair, or remodeling have been obtained from the appropriate city departments.

Hours for Construction Activities	
7:00 a.m. through 7:00 p.m.	Mondays through Fridays
9:00 a.m. through 6:00 p.m.	Saturdays

Prohibited all hours	Sundays and the following specified federal holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

(c) *Waiver procedure.* An applicant may request approval of a minor modification for a temporary waiver for construction equipment, vehicles, or work outside these permitted hours. The minor modification may be granted by the development services director or his/her designee. Any temporary waiver shall take into consideration the unusual circumstances requiring construction activity outside the permitted hours and the short-term impacts upon nearby residential and business communities.

Minor modification findings shall indicate whether or not the extended construction hours will be materially detrimental to the health, safety, and general welfare of persons residing or working within the immediate vicinity of the construction site.

Unless a temporary waiver is approved, construction activity outside the permitted hours shall still be subject to the city's noise regulations.

Section 13-280 – Exterior noise standards.

(a) The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within the city:

RESIDENTIAL EXTERIOR NOISE STANDARDS	
Noise Level	Time Period
55 dB(A)	7:00 a.m. – 11:00 p.m.
50 dB(A)	11:00 p.m. – 7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five dB(A).

(b) It is unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either within or outside the city, to exceed:

(1) The noise standard for a cumulative period of more than 30 minutes in any hour; *(L50)*
(2) The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour; *(L25)*
(3) The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour; *(L8)*
(4) The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour; or *(L2)*

(5) The noise standard plus 20 dB(A) for any period of time. *(Lmax)*

(c) In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

13-283 – Loud, unnecessary noise.

It is unlawful for any person to willfully make or continue, or cause to be made or continued, any loud, unnecessary and unusual noise which disturbs the peace or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area, regardless of whether the noise level exceeds the standards specified in section 13-280, Exterior noise standards, and section 13-281, Interior noise standards. The standard which may be considered in determining whether a violation of the provisions of this section exists may include, but not be limited to, the following:

(a) The level of noise;
(b) Whether the nature of the noise is usual or unusual;
(c) Whether the origin of the noise is natural or unnatural;
(d) The level and intensity of the background noise, if any;
(e) The proximity of the noise to residential sleeping facilities;
(f) The nature and zoning of the area within which the noise emanates;
(g) The density of the inhabitation of the area within which the noise emanates;
(h) The time of the day and night the noise occurs;
(i) The duration of the noise;
(j) Whether the noise is recurrent, intermittent or constant;
(k) Whether the noise is produced by a commercial or noncommercial activity; and
(l) The density of the inhabitation of the area affected.

4.4 CEQA Guidelines

According to CEQA guidelines, the project would have a potential impact if it resulted in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Generation of excessive ground-borne vibration or ground-borne noise levels?

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

5.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

5.1 Noise Measurement Procedure and Criteria

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as the first row of houses
- Locations that are acoustically representative and equivalent to the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance to the County's and Caltrans (TeNS) technical noise specifications. All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5 feet above the ground for all measurements
- Sound level meters were calibrated (Larson Davis CAL 200) before and after each measurement
- Following the calibration of the equipment, a windscreen was placed over the microphone
- Frequency weighting was set on "A" and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements, any noise contaminations such as barking dogs, local traffic, lawnmowers, or aircraft fly-overs were noted
- Temperature and sky conditions were observed and documented

5.2 Noise Measurement Locations

Noise measurements were taken at the proposed project site and at an existing Padel Up location at Westfield Century City in Los Angeles, CA. These two sets of noise measurements were taken to obtain the existing noise environment at the proposed project site and reference sound levels from a padel game at the existing Padel Up location.

Four (4) 15-minute noise measurements were conducted at the proposed project site, and six (6) 5-minute noise measurements were conducted at the existing Padel Up location with games in session at the padel courts and without (ambient conditions). The padel game reference noise measurements were taken mid-court at the perimeter netting; these measurements were then used to represent a typical padel game as an area source covering the entirety of a padel court. Appendix A includes photos, the field sheet, and measured noise data. Exhibit F illustrates the location of the noise measurements at the proposed project site.

On July 15, 2026, MD obtained three (3) 2-hour noise measurements at the existing Padel Up location (with games in session at the padel courts) to obtain additional noise data. The data collected during this site visit was used to further improve the accuracy of the sound model in representing Lmax levels from future padel ball activities.

MD used a compilation of traffic data from RK Engineering to predict the ambient noise level throughout the operational period. This histogram includes thousands of 24-hour traffic counts on arterial roadways throughout Southern California.

5.3 FHWA Traffic Noise Prediction Model

Per the project's trip generation and VMT screening letter, as prepared by LIN Consulting, Inc., the project is expected to generate approximately 152 new weekday daily trips. However, the project is located within a City-designated low VMT area by the City of Costa Mesa and is presumed to have a less-than-significant traffic impact. An increase of 152 trips to any roadway would not constitute a noise impact, either. Thus, the traffic noise level projections were not analyzed for this project.

5.4 SoundPLAN Noise Model (Operational Noise)

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP's software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using referenced sound level data for the stationary on-site sources (parking spaces, padel game noise). As a worst-case scenario, the model assumes that the site has 1 parking movement per space per hour and a padel doubles game being played on each court. The model also assumes constant loudspeakers at every court edge and in the northern turf area, along with constant loud male talkers in the northern turf area (representing a lively conversation between two people) and loud male talkers at each end of each court. The 10-foot-tall glass surrounding the edges of each court and the 6-foot-tall western property line CMU wall are also included in the model. The L50 model includes the glass, and the Lmax model does not include the glass to account for the Lmax impact on the glass. **The project plans include, and this study modeled, 6-foot-tall noise-reducing fences (see recommendations in Appendix D) along the northern and southern property lines near the padel courts.** The model represents worst-case L50 and Lmax levels during 5 simultaneous padel doubles games. Input and output calculations are provided in Appendix C.

The loudspeakers and loud male talkers are represented by point sources. The parking lot and Padel courts are represented by area sources. SoundPLAN uses the Lmax of the Padel court and calculates the worst-case location of a point source within the area source in relation to each individual receptor. Please refer to the SoundPLAN manual for more details on parking lots and area sources.

This model includes the L50 level, which is the noise present for a cumulative 30 minutes or more in an hour, and the Lmax level, which is the maximum level for any period of time. To accurately model a padel doubles game, the L50 level is shown to represent more continuous activity from the players (such as talking, court movement, and background music), and the Lmax level is shown to represent the impact noise from each hit during a game. Note that while L50 includes the cumulative effect of all 5 padel games, the Lmax level does not, as a SoundPLAN standard. Lmax levels typically don't combine as it's very rare, for instance, for two padel ball impacts to occur at precisely the same time. The L50 levels, however, are much more likely to combine, and so they are combined in the model as a worst-case scenario.

The ball collision noise can be characterized as "impact noise" defined in Section 13-278, and the L50 noise contains speech and music, and therefore the project Lmax and L50 levels will be subject to the 5 dBA noise limit reduction stated in Section 13-280(a).

The Lmax noise levels are the primary source of potential noise nuisance. The reference measurement includes racket impacts, glass impacts, fence impacts, and player vocalizations.

Table 1: SoundPLAN Reference Levels

Equipment	Reference Level	Descriptor
Loudspeaker[2]	61.4 dBA Lp @ 6'	L50
Talking person[1]	70 dBA Lw	L50
Padel hit[2]	88.9 dBA Lp @ 6'	Lmax
Parking lot[1]	1	Movements per hour
[1] Source: SoundPLAN [2] Source: Section 6		

Additionally, these noise levels have been compared with the levels found in "Buller från padelbanor utomhus-En jämförelse mellan padel och tennis." (2021) and Leroy T, Kaiser X, SGS BELGIUM SA. Étude acoustique bruit généré par les activités de padel en Wallonie - Service public de Wallonie. Étude acoustique CSC N° O3.09.01-22-4659. Belgique: Service public de Wallonie; 2023. The model presented in this report is either equal to or louder than the levels presented in these studies and is therefore a worst-case model.

5.5 FTA Roadway Construction Noise Model

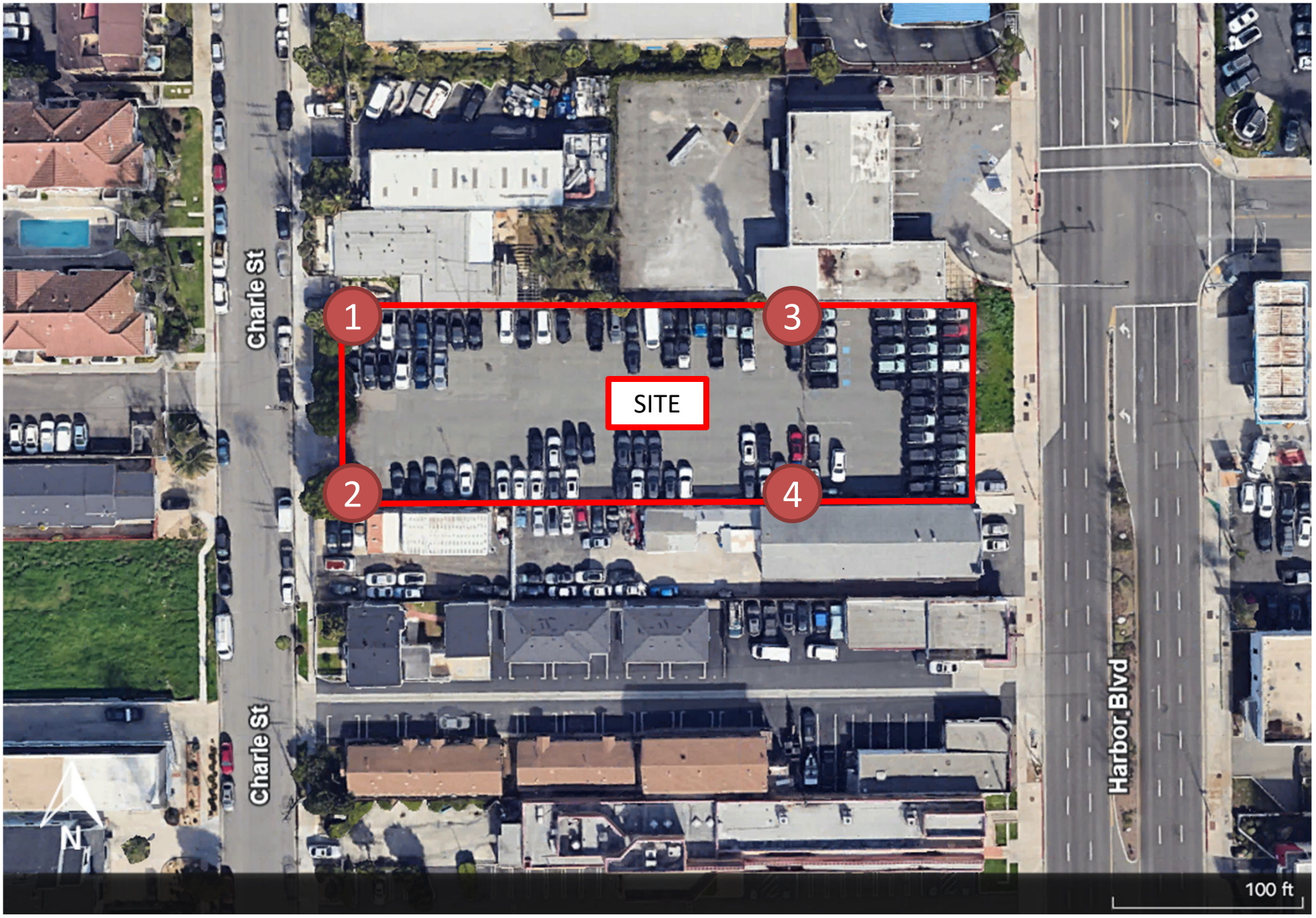
The construction noise analysis utilizes the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual, together with several key construction parameters. Key inputs include distance to the sensitive receiver, equipment usage, % usage factor, and baseline parameters for the project site.

The project was analyzed based on the different construction phases. MD utilized the General Assessment methodology. The noise emission levels are taken from Table 7-1 of the FTA manual. The usage factor is 1. The distance is the center of the project to the nearest property line. The ground factor is 0. The construction noise calculation output worksheet is in Appendix E.

X = Short-Term Measurement Location

Exhibit E

Measurement Locations



6.0 Existing Noise Environment

Four (4) 15-minute noise measurements were conducted at the proposed project site, and six (6) 5-minute noise measurements were conducted at the existing Padel Up location (three (3) with games in session and three (3) without games in session (ambient condition)). The measurements include the Leq, Lmin, Lmax, and other statistical data (e.g., L2, L8). Noise measurement field sheets are provided in Appendix A.

6.1 Costa Mesa Project Site Noise Ambient Measurements

The results of the 15-minute noise measurements at the proposed project site are presented in Table 2. Measurement locations are in Exhibit F.

Table 2: 15-Minute Ambient Noise Measurement Data[1]

Location	Start	Stop	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
NM1	1:48 PM	2:03 PM	51.5	65.1	44.0	59.0	55.2	51.1	48.6	46.2
NM2	2:09 PM	2:24 PM	54.2	67.2	43.8	63.6	57.8	53.3	49.8	46.6
NM3	2:26 PM	2:41 PM	58.3	69.6	48.4	64.0	61.7	59.2	56.8	52.1
NM4	2:43 PM	2:58 PM	55.4	63.7	46.5	61.4	59.2	56.2	53.2	49.6

Notes:
1. The noise monitoring locations are illustrated in Exhibit F.

Noise data indicates that the ambient noise levels at the proposed project site range from 49 to 53 dBA L50 and 64 to 70 dBA Lmax. Additional field notes are provided in Appendix A.

The project is anticipated to operate between the hours of 7 AM to 11 PM. Between those times, the minimum ambient noise level is anticipated to be 45 dBA L50 at NM1 and 46 dBA L50 at NM2.

6.2 Padel Up Reference Noise Measurements

The results of the 5-minute noise measurements at the existing Padel Up location at Century City are presented in Tables 3 and Appendix A. Table 3 shows data from three (3) noise measurements taken directly adjacent to the courts while games were in session. NM1 and NM2 occurred during games, and NM3 was a training session. NM2 is 6 feet from the loudspeaker playing music throughout the measurements. The ambient noise was about 60 dBA.

Table 3: 2/12/2026 Padel Game Noise Measurement Data[1]

Location	Start Time	Stop Time	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
NM1	5:54 PM	5:59 PM	68.3	88.9	53.9	75.1	69.0	63.7	60.1	56.2
NM2	6:08 PM	6:13 PM	66.5	80.4	56.9	74.9	70.6	65.6	61.4	57.6
NM3	6:27 PM	6:32 PM	62.9	71.7	58.6	67.1	65.7	63.7	62.0	59.7

Notes:
1. See the field sheets in Appendix A for photos of the noise measurement locations and ambient readings.
2. NM1 and NM2 were taken while a total of 4 players were playing on the padel court. NM3 was taken during a training lesson with a coach.

The results of the 2-hour noise measurements at the existing Padel Up location at Century City are presented in Tables 4 and Appendix A. Table 4 shows data from three (3) noise measurements taken 12 to 15 feet adjacent to the courts while games were in session. The ambient noise was about 60 dBA.

Table 4: 7/15/2026 Reference Padel Game Noise Data[1]

Location	Start Time	Stop Time	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
NM1	8:26 AM	11:01 AM	61.4	76.3	55.1	67.4	63.9	61.4	60.0	57.9
NM2	8:26 AM	11:01 AM	61.5	76.5	55.1	67.4	64.0	61.5	60.1	58.0
NM3	8:40 AM	11:00 AM	60.1	73.2	58.0	62.9	61.3	60.3	59.7	58.9

Notes:
1. See the field sheets in Appendix A for photos of the noise measurement locations and ambient readings.
2. NM1 and NM2 were taken on the long end at 15 feet. NM3 was taken on the short end at 12 feet.

The Lmax sound power levels for the SoundPLAN model were obtained by calibrating a single court at the distances measured in Table 3 and Table 4. As a worst case, MD used the maximum Lmax levels to ensure that these calibration points were at or above the levels measured at the existing Padel Up location.

As mentioned in Section 5.4, this study utilizes the L50 level to represent more continuous activity from the site (talking and music) and the Lmax level to represent the impact noise from each hit during a game.

7.0 Future Noise Environment Impacts and Mitigation

This assessment analyzes future noise impacts to the project and compares the results to the City's Noise Standards. The analysis details the estimated exterior noise levels associated with stationary sources from the proposed project site.

7.1 Noise Impacts to Off-Site Receptors Due to Stationary Sources

Sensitive receptors that may be affected by project operational noise include existing residences to the northwest, south, and west. The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes that all 5 padel courts are in use simultaneously, that there is someone speaking loudly in the lounge area, and that.

A total of five (5) receptors were modeled to evaluate the proposed project's operational impact. A receptor is denoted by a yellow dot. All yellow dots represent either a property line or a sensitive receptor, such as a building facade. All receptors represent existing residential uses surrounding the project site. Tables 5 and 6 demonstrate the project plus the ambient L50 and Lmax noise levels, respectively, during the quietest daytime condition.

L50 Noise Levels

Exhibit G shows the L50 "Project-Only" noise levels and contours at the nearest sensitive receptors. The project-only hourly noise levels during daytime operation range from 40 to 46 dBA L50 at the various adjacent residential receptors. Project plus ambient noise level projections during daytime operation are anticipated to be 36 to 46 dBA L50 at the various adjacent residential receptors. The change in noise level is up to 4 dBA.

Table 5: Worst-Case Predicted Daytime Operational L50 Noise Levels (dBA)

Receptor[1]	Existing Ambient Noise Level[2]	Project Noise Level[3]	Total Combined Noise Level	Allowable Noise Limit by the City[4]	Change in Noise Level as Result of Project
1	45	46	49	50	4
2	46	36	46		0
3	46	41	47		1
4	45	40	46		1
5	46	41	47		1

Notes:
1. Receptors 1 through 5 represent existing residential uses.
2. See Appendix A for the ambient noise measurement at the project site.
3. See Exhibit G for the operational noise level projections at said receptors.
4. L50 level includes noise from speech and music. Therefore, a -5 dB penalty is applied to the City's L50 noise limit.

Exhibit F

Daytime Operational Noise Levels dBA, L50

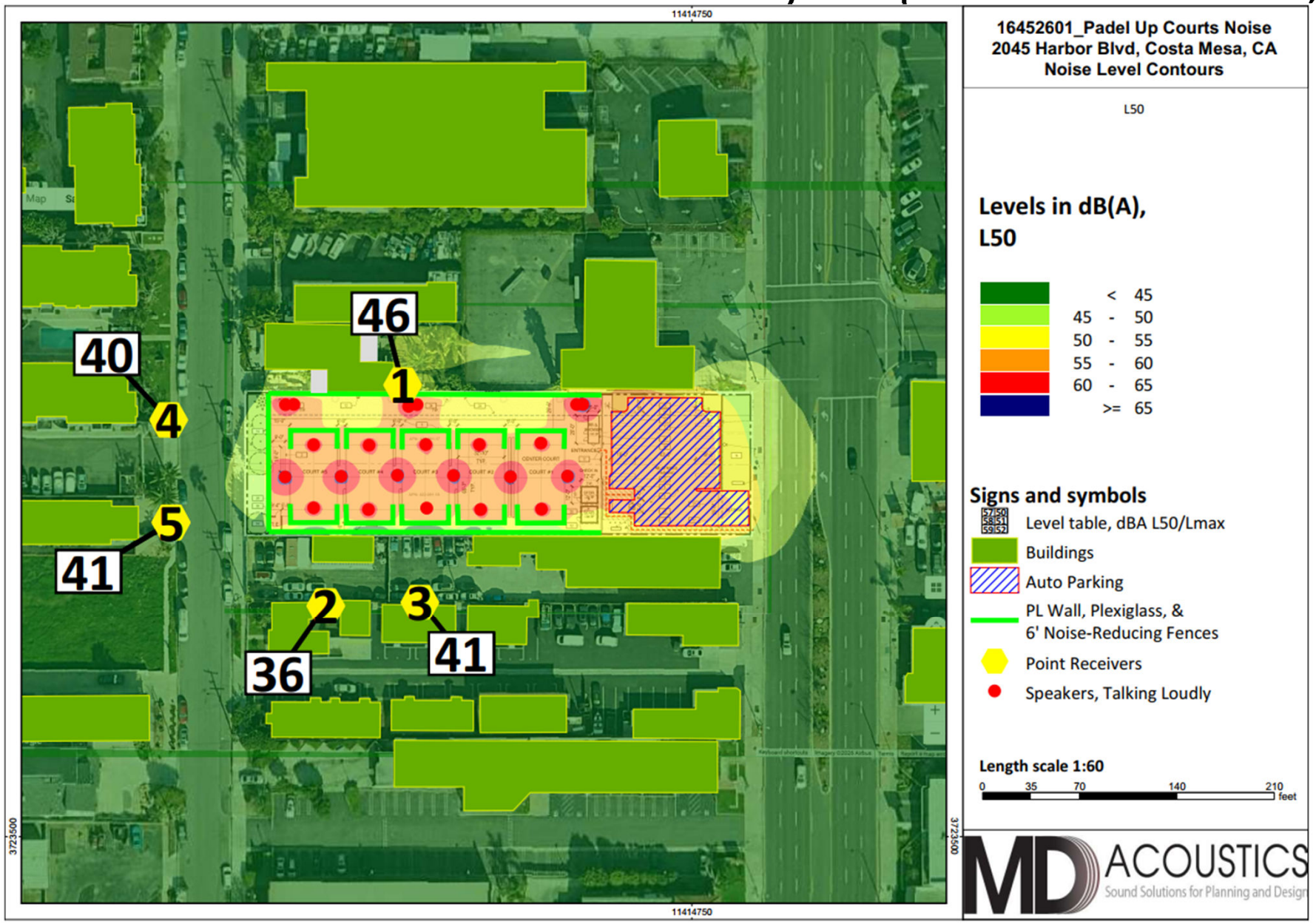
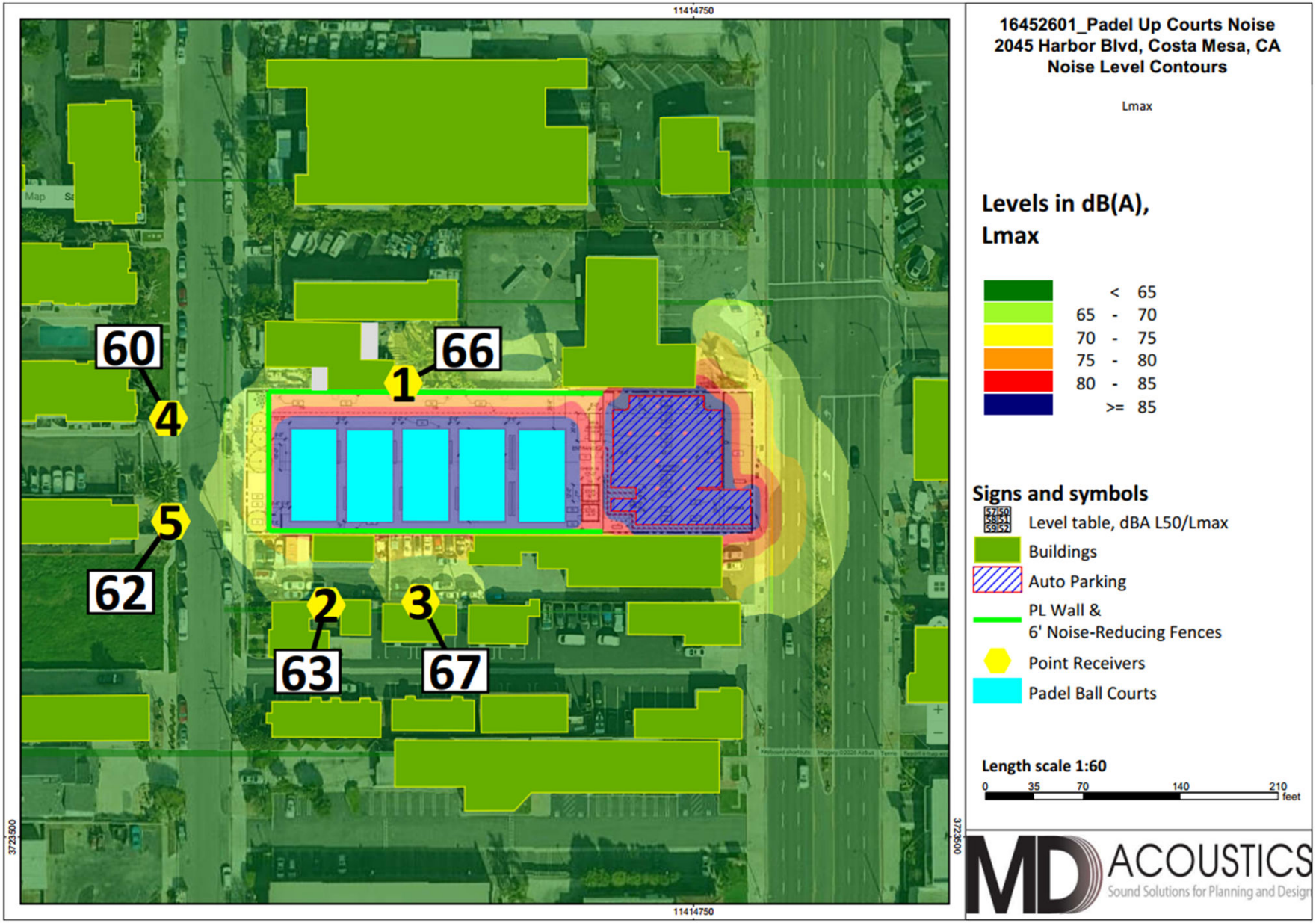


Exhibit F

Daytime Operational Noise Levels dBA, Lmax



Lmax Noise Levels

Exhibit H shows the Lmax "Project-Only" noise levels and contours at the nearest sensitive receptors. The project-only hourly noise levels during daytime operation range from 63 to 67 dBA Lmax at the various adjacent residential receptors. Project plus ambient noise level projections during daytime operation are anticipated to be 65 to 67 dBA Lmax at the various adjacent residential receptors. The change in noise level is up to 1 dBA.

Table 6: Worst-Case Predicted Daytime Operational Lmax Noise Levels (dBA)

Receptor[1]	Existing Ambient Noise Level[2]	Project Noise Level[3]	Future Noise Level	Allowable Noise Limit by the City[4]	Change in Noise Level as Result of Project
1	65	66	66	70	1
2	67	63	67		0
3	67	67	67		0
4	65	60	65		0
5	67	62	67		0

Notes:
[1.] Receptors 1 through 5 represent existing residential uses.
[2.] See Appendix A for the ambient noise measurement at the project site.
[3.] See Exhibit G for the operational noise level projections at said receptors.
[4.] Lmax level is from impact noise. Therefore, a -5 dB penalty is applied to the City's Lmax noise limit.

As shown in Tables 5 and 6, project-only noise levels will meet the daytime exterior noise limits for residential uses as defined in Section 13-280(a) of the City's Code of Ordinances, with a 5 dBA reduction for both the L50 and Lmax noise limits.

Qualitative Consistency Analysis

The area is zoned C2: "C2 General Business District. This district is intended to provide for those uses which offer a wide range of goods and services which are generally less compatible with more sensitive land uses of a residential or institutional nature." The site previously operated as auto storage and borders auto body and storage uses along Harbor Boulevard. The zoning to the north and south of the project is C2, with listed land uses of "commercial". There are nonconforming residential units to the east of Charle Street, which this report treats as residential despite their listed commercial land uses and zoning. The zoning across Harbor Boulevard is C1, with a listed land use of "commercial". The zoning across Charle Street is R3, which is high-density residential.

As with the previous use of auto storage and the surrounding auto uses, the rate of recurrence of the noise will depend on customer usage. This report models the worst-case scenario in which all courts are at 100% occupancy, though Padel Up typically has about 35% occupancy. The exception for 35% occupancy could apply during special events & tournaments, when all courts may be in use with limited spectator presence. These events would occur five to six times per year and generally end by 6 PM.

Sport activity noise, including paddle-based sport noise, is frequently found in residential areas and is a residential activity when included as part of a residential development. Balearic Park, Tanager Park, and

Halecrest Park have pickleball courts surrounded by low-density residential uses. All are within 200 feet of residential properties with no noise-blocking features (but do not have lighting for playing after dark). By contrast, the project is on commercially zoned property, with 90% of the surrounding property zoned for commercial use and 10% zoned for high-density residential use. The project site includes noise-blocking features.

The project is located on a major arterial. Harbor Boulevard is identified as a significant noise source in the Costa Mesa General Plan Noise Element. The predicted project noise levels fall below the City's residential standards for both short- and long-term duration limits, even at the commercially zoned residential units. The project operates within the City's defined daytime hours. The project noise at its loudest will be similar to or below the existing ambient noise level in the area at its quietest during operational hours.

Based on these findings, the project would not qualify as loud, unnecessary noise.

8.0 Construction Noise Impact

The degree of construction noise may vary for different areas of the project site and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction. The construction noise and vibration level projections are provided in the sections below.

8.1 Construction Noise

The Environmental Protection Agency (EPA) has compiled data regarding the noise characteristics of typical construction activities. The data is presented in Table 5.

Table 5: Typical Construction Noise Levels[1]

Equipment Powered by Internal Combustion Engines

Type	Noise Levels (dBA) at 50 Feet
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86

Impact Equipment

Type	Noise Levels (dBA) at 50 Feet
Saws	71 - 82
Vibrators	68 - 82

Notes:
[1] Referenced Noise Levels from the Environmental Protection Agency (EPA)

Construction is anticipated to occur during the permissible hours as described in the City's Code of Ordinances Section 13-279(b). Construction noise is considered a short-term impact and would be considered significant if construction occurs outside the allowable times as described in the City's Code of Ordinances. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing noise level within the project's vicinity. Construction noise level projections are provided below.

Sensitive land uses surrounding the site include existing residential to the northwest, south, and west. These uses are an average of 50 feet away from construction activities (center of project site to northwest residential use) and as close as 18 feet (edge of project site paving area to northwest residential use) from construction activities. The parking lot to the east is not undergoing repaving, and no heavy equipment is proposed for use there.

CalEEMod methodology was utilized to determine the construction equipment. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels are in Table 6. A likely worst-case construction noise scenario assumes equipment operating as close as 18 feet and an average of 50 feet from the nearest sensitive receptor (residential use to the northwest). Leq levels represent the average construction noise level during each phase.

Table 6: Construction Noise Levels at Existing Adjacent Residences

Phase	dBA Leq(1hr)
Grading	88
Paving	88
Arch Coating	80
Trenching	82

Construction noise will range from 80 to 88 dBA Leq(h) at the nearest sensitive receptors. This is below the 90 dBA Leq(1hr) residential daytime criterion from Table 7-2 of the FTA Transit Noise and Vibration Impact Assessment Manual.

8.2 Construction Vibration

Construction activities can produce vibration that may be felt by adjacent land uses. The construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The primary vibration source during construction may be from a vibratory roller. A vibratory roller has a vibration impact of 0.210 inches per second peak particle velocity (PPV) at 25 feet, which is perceptible but below any risk of architectural damage.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (25/D_{rec})^{n}$$

Where: PPV_{ref} = reference PPV at 25ft.
D_{rec} = distance from equipment to receiver in ft.
n = 1.1 (the value related to the attenuation rate through the ground)

The thresholds from the Caltrans Transportation and Construction Induced Vibration Guidance Manual in Table 7 provide general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

Table 7: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Table 19, Transportation and Construction Vibration Guidance Manual, Caltrans, Sept. 2013.
Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 8 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 8: Vibration Source Levels for Construction Equipment[1]

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (dVB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill	0.008 in soil	66
(slurry wall)	0.017 in rock	75
Vibratory Roller	0.21	94
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

[1] Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

A vibratory roller could operate as close as 18 feet from the nearest existing residential building to the northwest. At a distance of 18 feet, a vibratory roller would yield a worst-case 0.3 PPV (in/sec), which

may be perceptible, but below any risk of damage (0.3 in/sec PPV is the threshold of old residential structures). The impact is less than significant, and no mitigation is required.

9.0 References

State of California General Plan Guidelines: 1998. Governor's Office of Planning and Research

City of Costa Mesa: General Plan, Noise Element.

City of Costa Mesa: Code of Ordinances, Chapter XIII

Caltrans Noise Technical Manual. 2013

Federal Highway Administration. Noise Barrier Design Handbook. June 2017.

Federal Transit Administration. Transit Noise and Vibration Impact Assessment Manual. September 2018

Appendix A:

Field Measurement Data

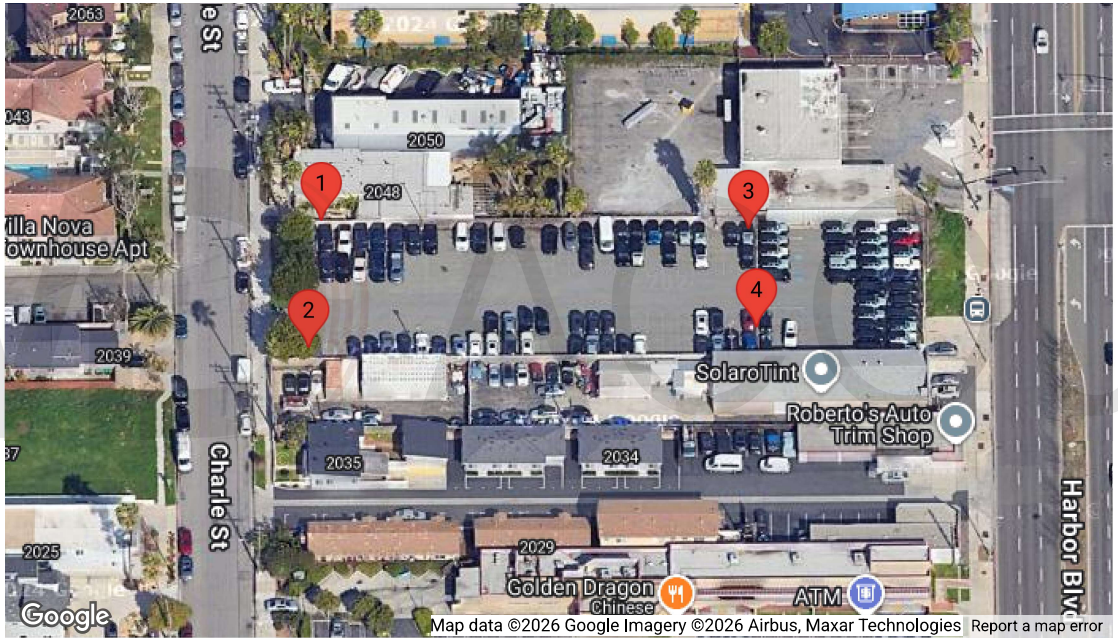
15-Minute Continuous Noise Measurement Datasheet - NM1, NM2, NM3, NM4

Project Name:	Padel Courts Noise
Project: #/Name:	1645-2026-001
Site Address/Location:	2045 Harbor Blvd
Date:	02/12/2026
Field Tech/Engineer:	Jason Schuyler / Bethany Wu

Site Observations:

This field Sheet is designed to feature the noise found at the proposed site in Costa Mesa. Temps in the high 60's F. Winds 6 MPH coming from the SW, sunny, clear skies. The site is a parking lot for a car dealership. it backs up to residential, but the sites are separated by a street.

Sound Meter:	XL2, NTI	**SN:**	A2A-07095-E0
Settings:	A-weighted, slow, 1-sec, 15-minute interval		
Site Id:	NM1, NM2, NM3, NM4		



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - NM1, NM2, NM3, NM4

Project Name:	Padel Courts Noise	**Calibrator:**	Larson Davis Cal 200	
Site Address/Location:	2045 Harbor Blvd	**Cal Check: Pre-test:**	0 **Post Test:**	0
Site Id:	NM1, NM2, NM3, NM4			

Figure 1: NM1

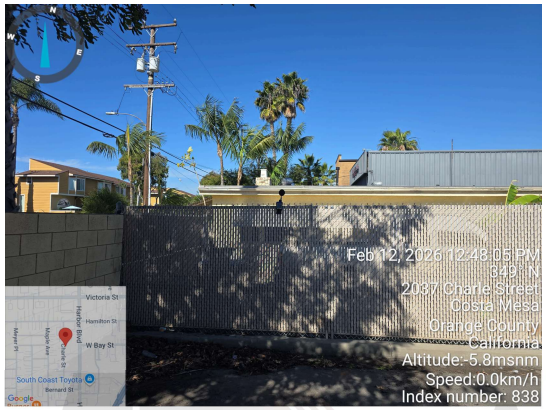


Figure 2: NM2

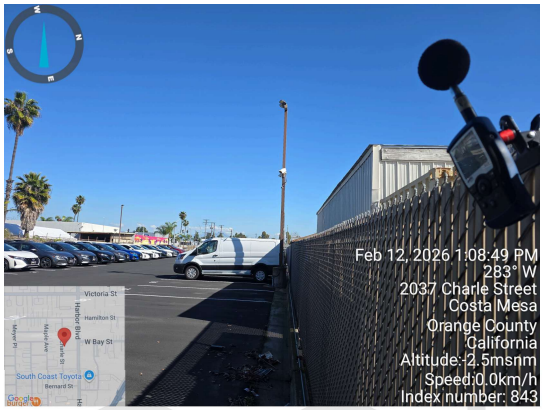


Figure 3: NM3

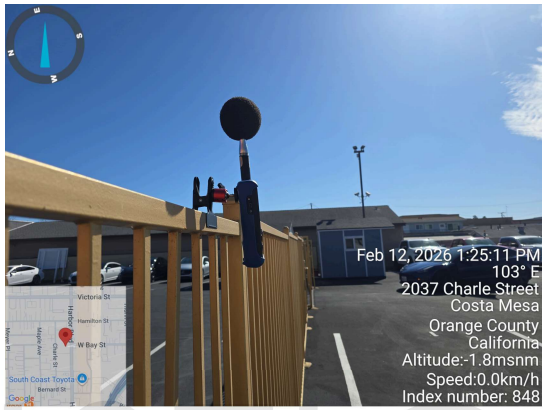


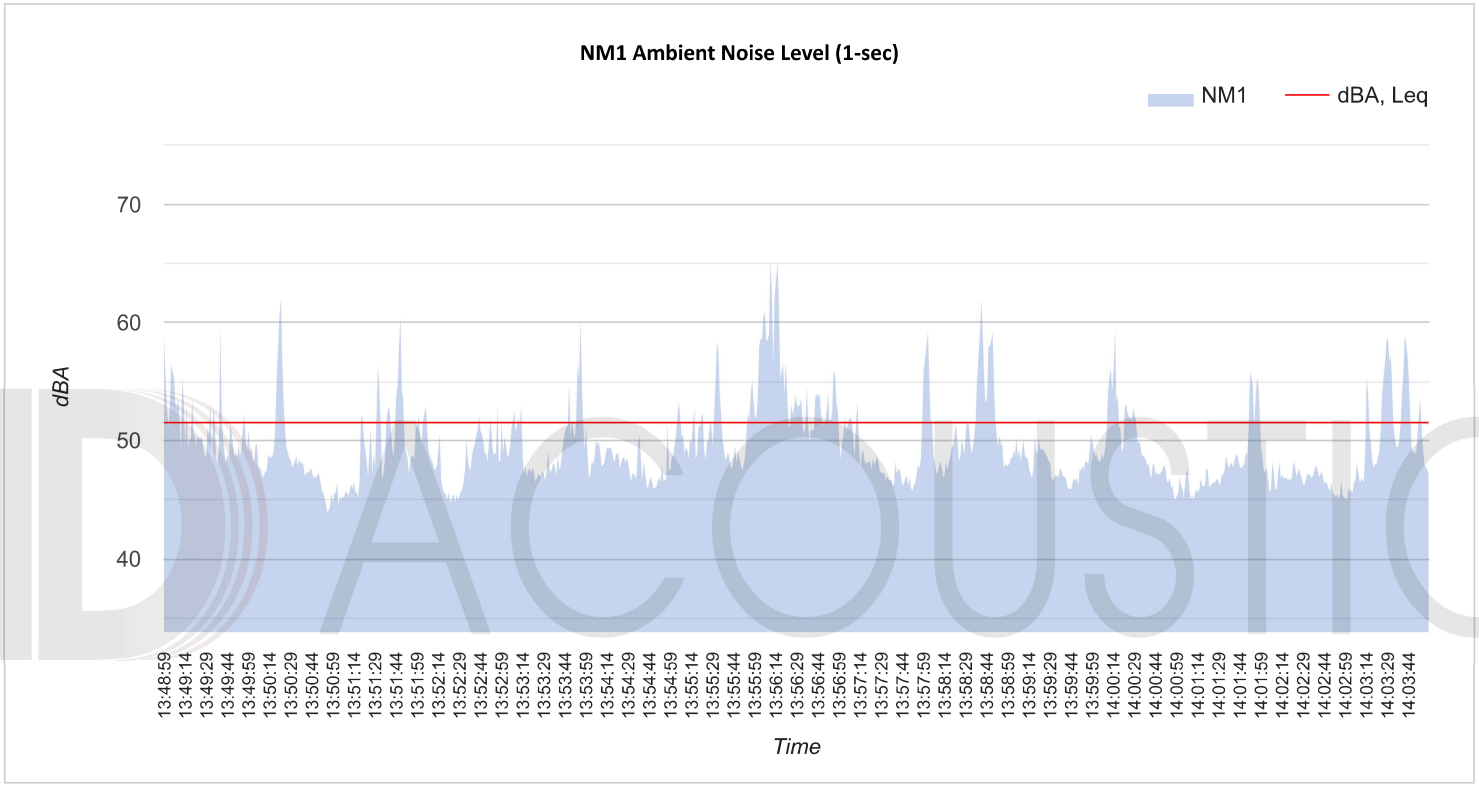
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
NM1	1:48 PM	2:03 PM	51.5	65.1	44.0	59	55.2	51.1	48.6	46.2
NM2	2:09 PM	2:24 PM	54.2	67.2	43.8	63.6	57.8	53.3	49.8	46.6
NM3	2:26 PM	2:41 PM	58.3	69.6	48.4	64	61.7	59.2	56.8	52.1
NM4	2:43 PM	2:58 PM	55.4	63.7	46.5	61.4	59.2	56.2	53.2	49.6

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15-Minute Continuous Noise Measurement Datasheet - Cont. - NM1

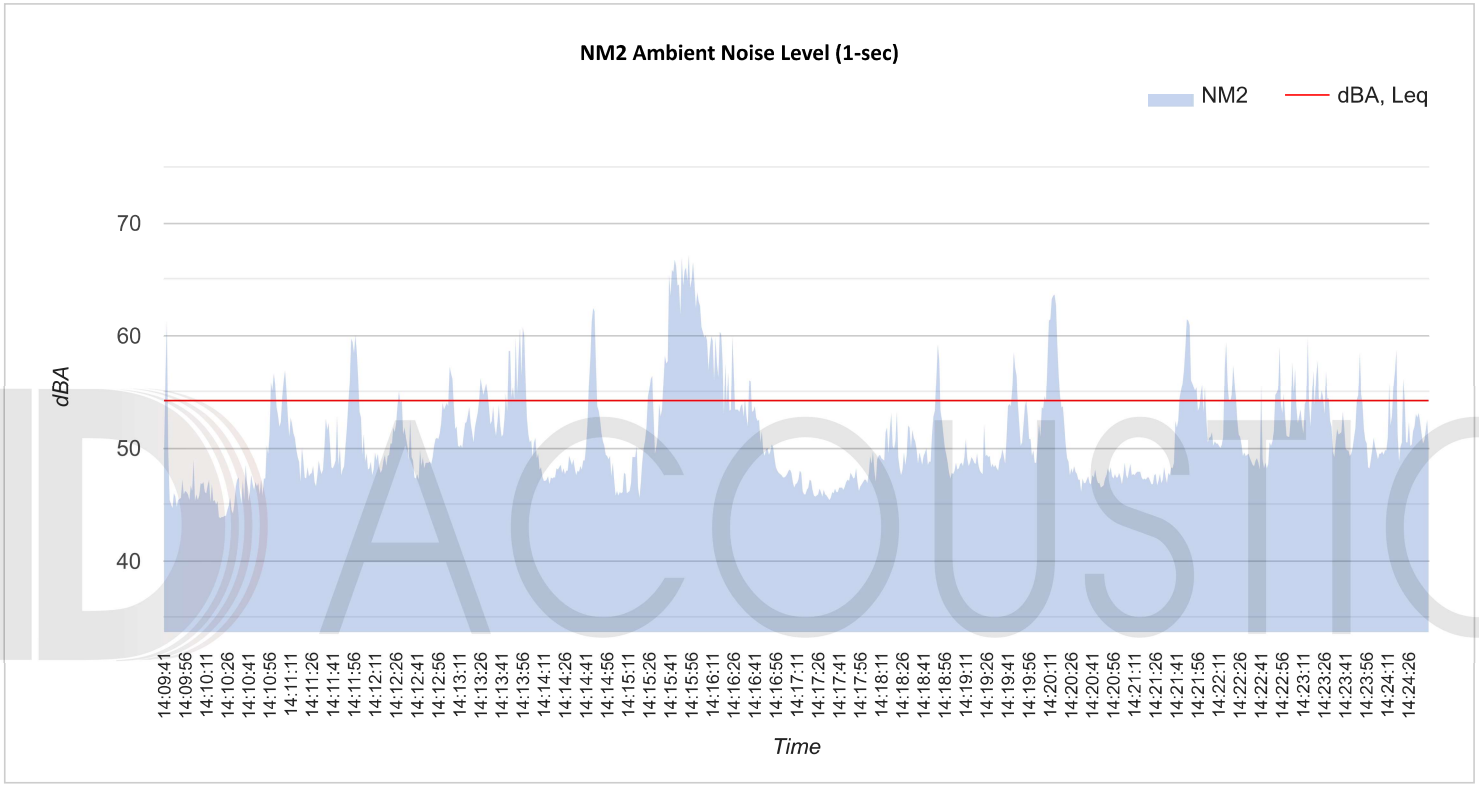
Project Name:	Padel Courts Noise	**Site Topo:**	Buildings 1-2 stories tall site	**Noise Source(s) w/ Distance:**
Site Address/Location:	2045 Harbor Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	road noise and residential noise
Site Id:	NM1	**Ground Type:**	Asphalt and Buildings	



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - NM2

Project Name:	Padel Courts Noise	**Site Topo:**	Buildings 1-2 stories tall site	**Noise Source(s) w/ Distance:**
Site Address/Location:	2045 Harbor Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	road noise and residential noise
Site Id:	NM2	**Ground Type:**	Asphalt and Buildings	

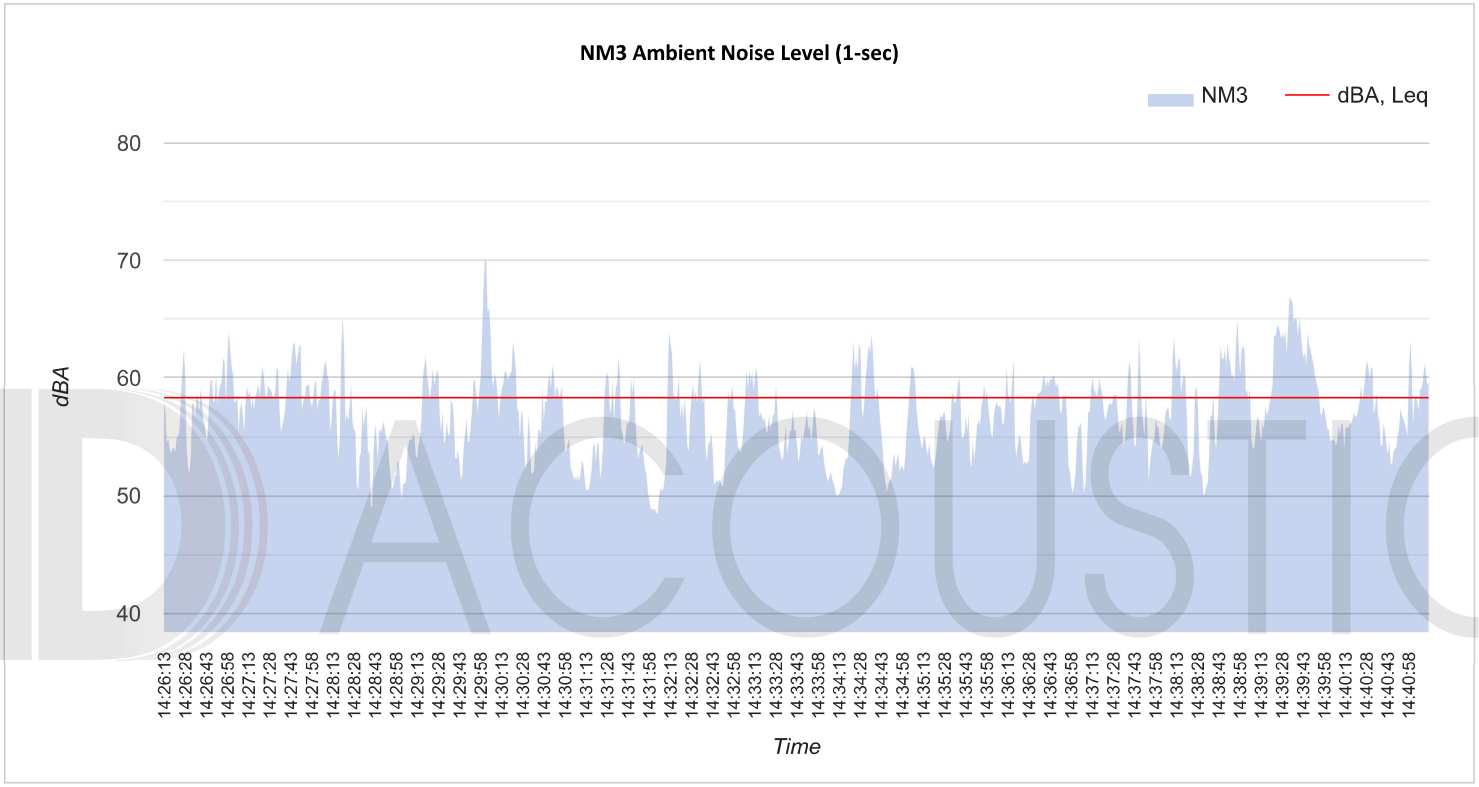


MD ACOUSTICS

MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - NM3

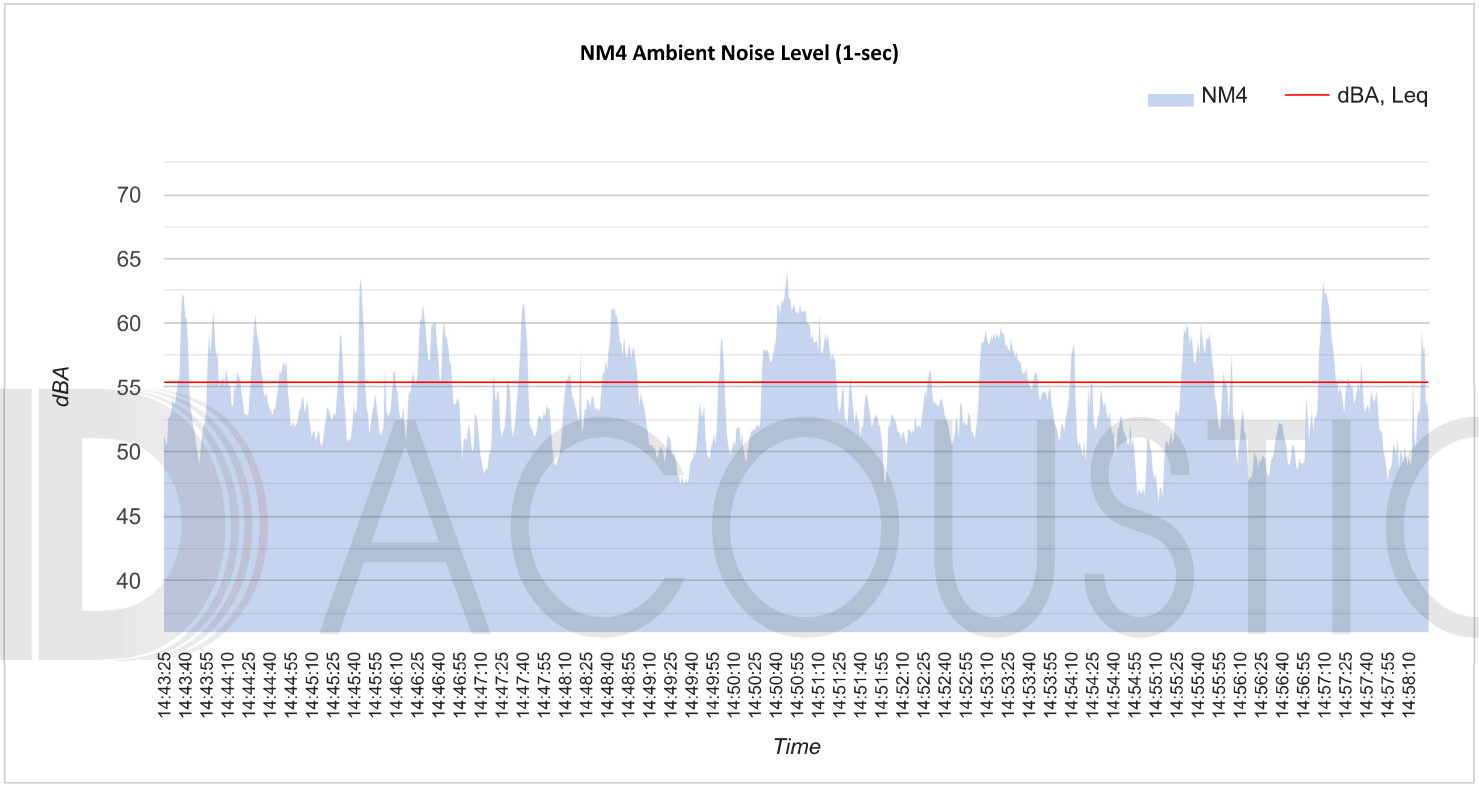
Project Name:	Padel Courts Noise	**Site Topo:**	Buildings 1-2 stories tall site	**Noise Source(s) w/ Distance:**	
Site Address/Location:	2045 Harbor Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	road noise and residential noise	
Site Id:	NM3	**Ground Type:**	Asphalt and Buildings		



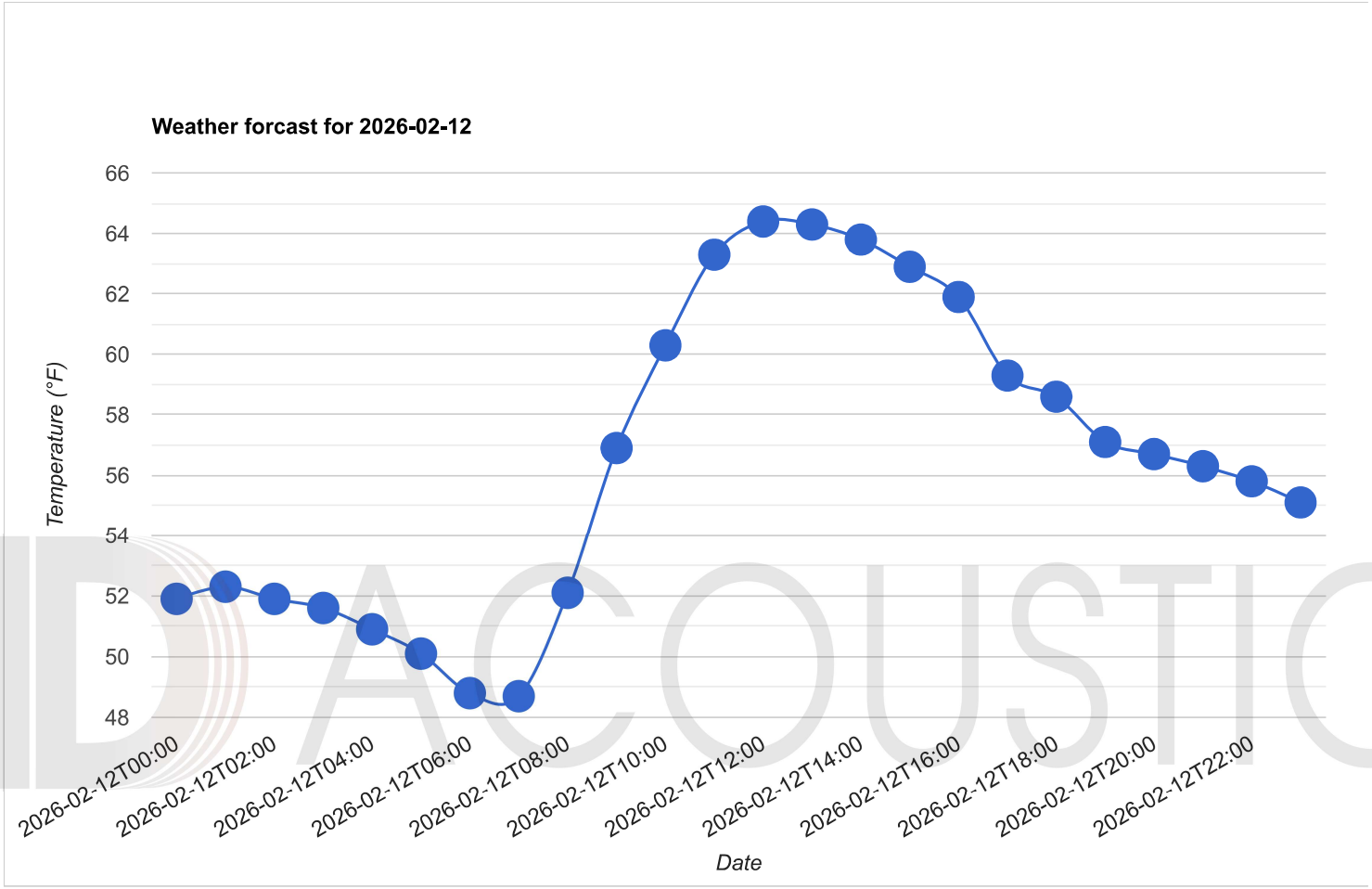
MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont. - NM4

Project Name:	Padel Courts Noise	**Site Topo:**	Buildings 1-2 stories tall site	**Noise Source(s) w/ Distance:**	
Site Address/Location:	2045 Harbor Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	road noise and residential noise	
Site Id:	NM4	**Ground Type:**	Asphalt and Buildings		

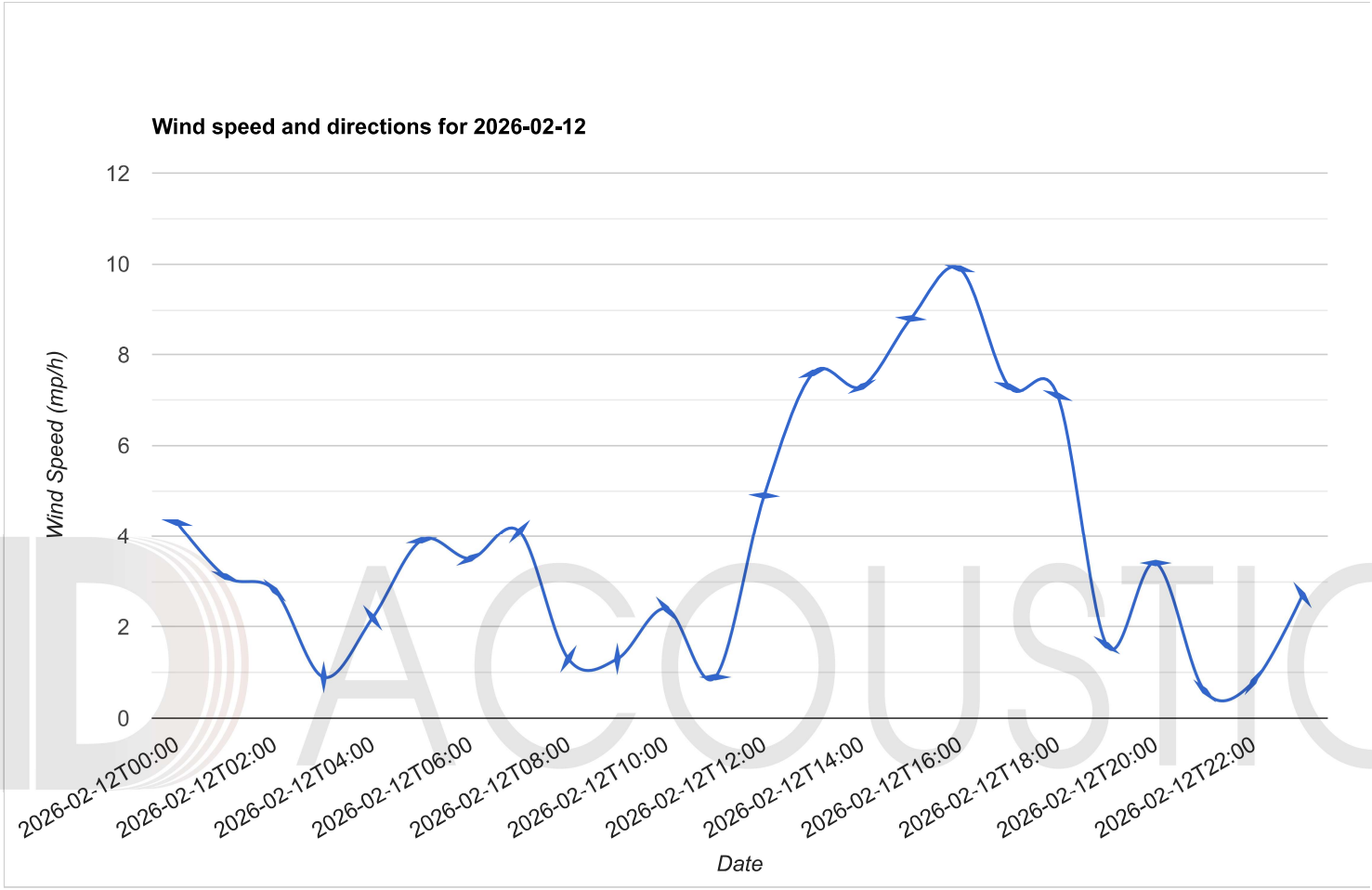


MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model

MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model

MD ACOUSTICS

5-Minute Continuous Noise Measurement Datasheet - Indoor Ambient, NM1, NM2

Project Name:	Padel Courts Noise
Project: #/Name:	1645-2026-001
Site Address/Location:	10250 Santa Monica Blvd
Date:	02/12/2026
Field Tech/Engineer:	Jason Schuyler / Bethany Wu

Site Observations:

These tests were conducted at the existing Padel Up location at Westfield Century City Mall. This field sheet focuses on the ambient noise levels. The measurements taken outside behind the glass surrounding the padel courts were extremely quiet and more accurately reflect the true ambient noise levels at the existing site. Music was playing through speakers outside at the site during all measurements. The indoor ambient noise reading was taken on Level 2 of the mall.

Sound Meter:	XL2, NTI	**SN:**	A2A-26016-E1
Settings:	A-weighted, slow, 1-sec, 5-minute interval		
Site Id:	Indoor Ambient, NM1, NM2		



MD ACOUSTICS

5-Minute Continuous Noise Measurement Datasheet - Cont. - Indoor Ambient, NM1, NM2

Project Name:	Padel Courts Noise	**Calibrator:**	Larson Davis Cal 200	
Site Address/Location:	10250 Santa Monica Blvd	**Cal Check: Pre-test:**	0 **Post Test:**	0
Site Id:	Indoor Ambient, NM1, NM2			

Figure 1: NM1 7' from padel court glass



Figure 2: NM2 5' from padel court glass



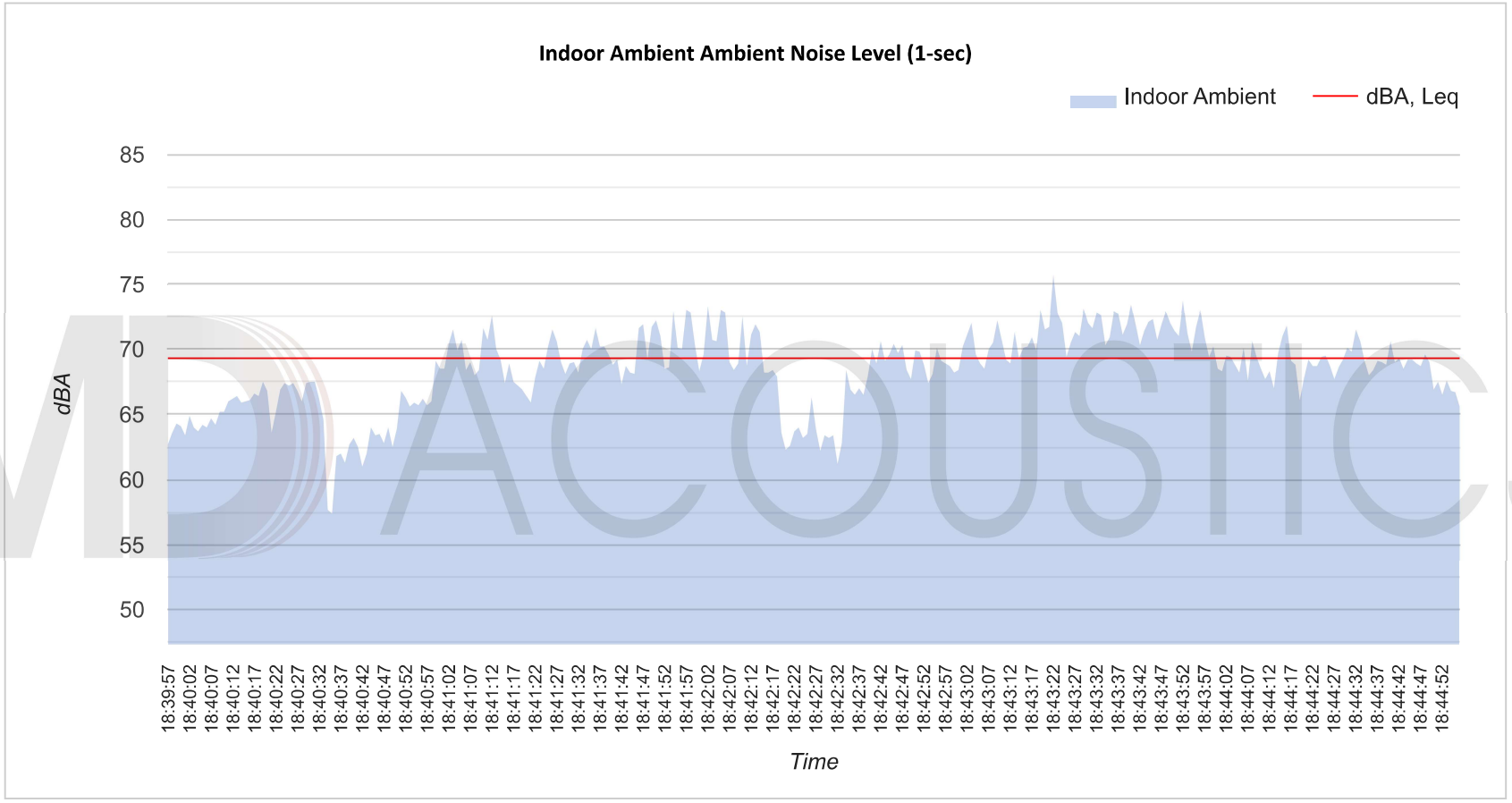
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
Indoor Ambient	6:39 PM	6:44 PM	69.3	74.7	59.5	73	72	70.4	68.9	63.7
NM1	5:47 PM	5:52 PM	61.5	75.1	54.8	69.4	63.4	60.9	59.4	57
NM2	6:19 PM	6:24 PM	61.9	73.2	58.1	65.5	63.4	61.9	61.1	59.5

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5-Minute Continuous Noise Measurement Datasheet - Cont. - Indoor Ambient

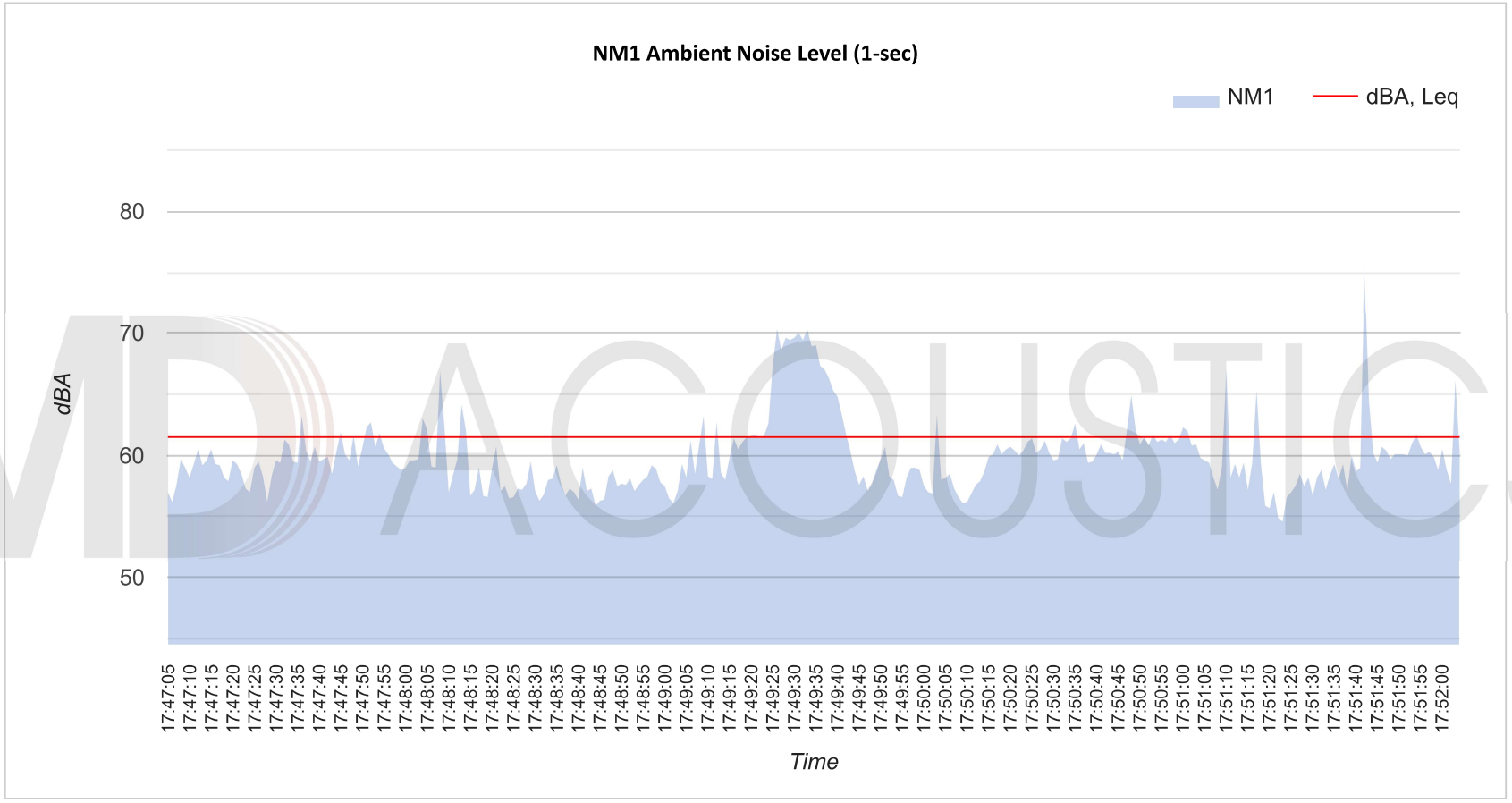
Project Name:	Padel Courts Noise	**Site Topo:**	Buildings 1-4 stories tall site	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	Shopping noise and music from speakers	
Site Id:	Indoor Ambient	**Ground Type:**	Tile and roof top floating grid panels		



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5-Minute Continuous Noise Measurement Datasheet - Cont. - NM1

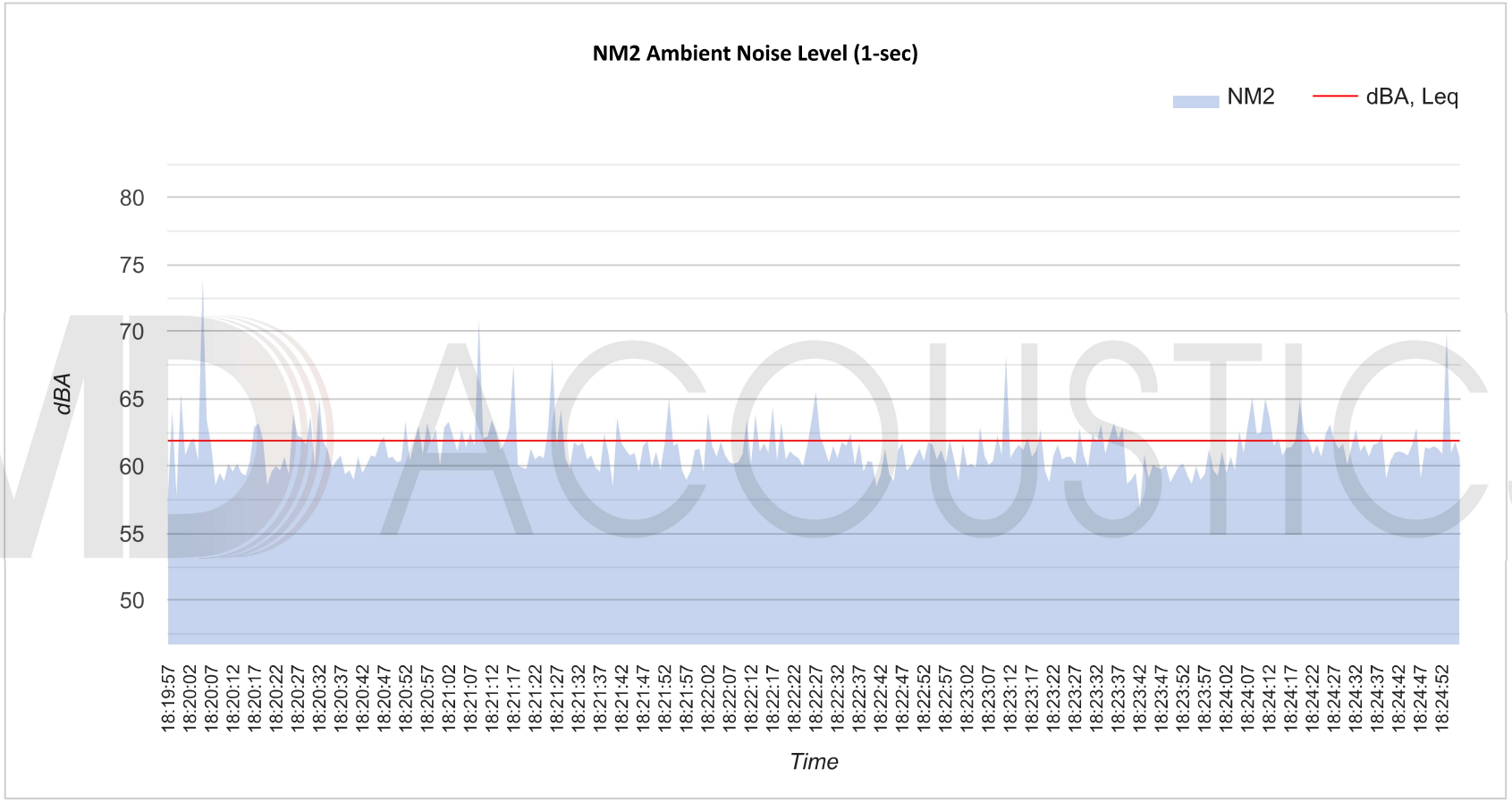
Project Name:	Padel Courts Noise	**Site Topo:**	Buildings 1-4 stories tall site	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	7' from padel court glass	
Site Id:	NM1	**Ground Type:**	Tile and roof top floating grid panels		



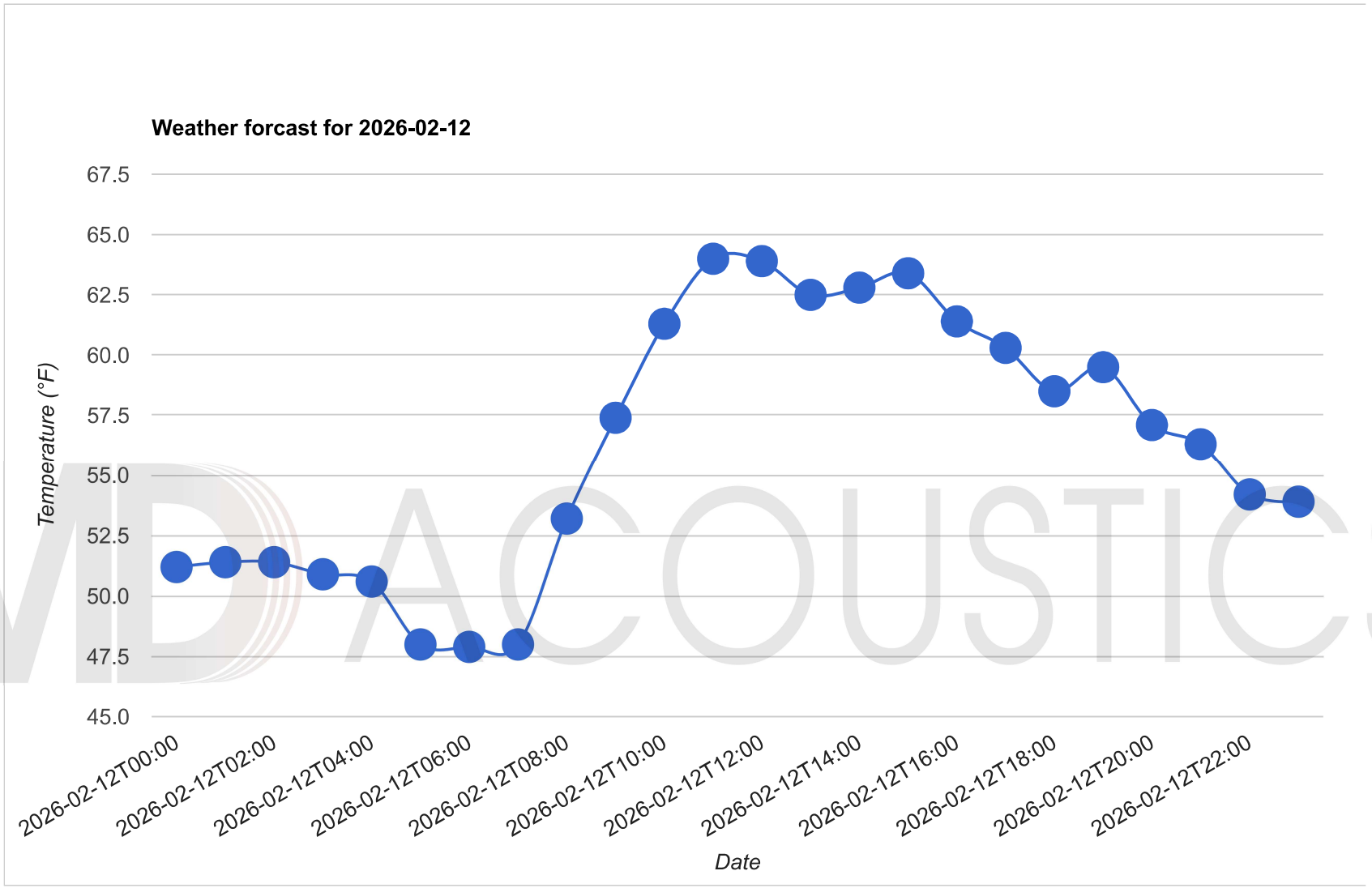
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5-Minute Continuous Noise Measurement Datasheet - Cont. - NM2

Project Name:	Padel Courts Noise	**Site Topo:**	Roof top Padel court in CC Mall	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	5' from padel court glass	
Site Id:	NM2	**Ground Type:**	panels on a gradated roof base		

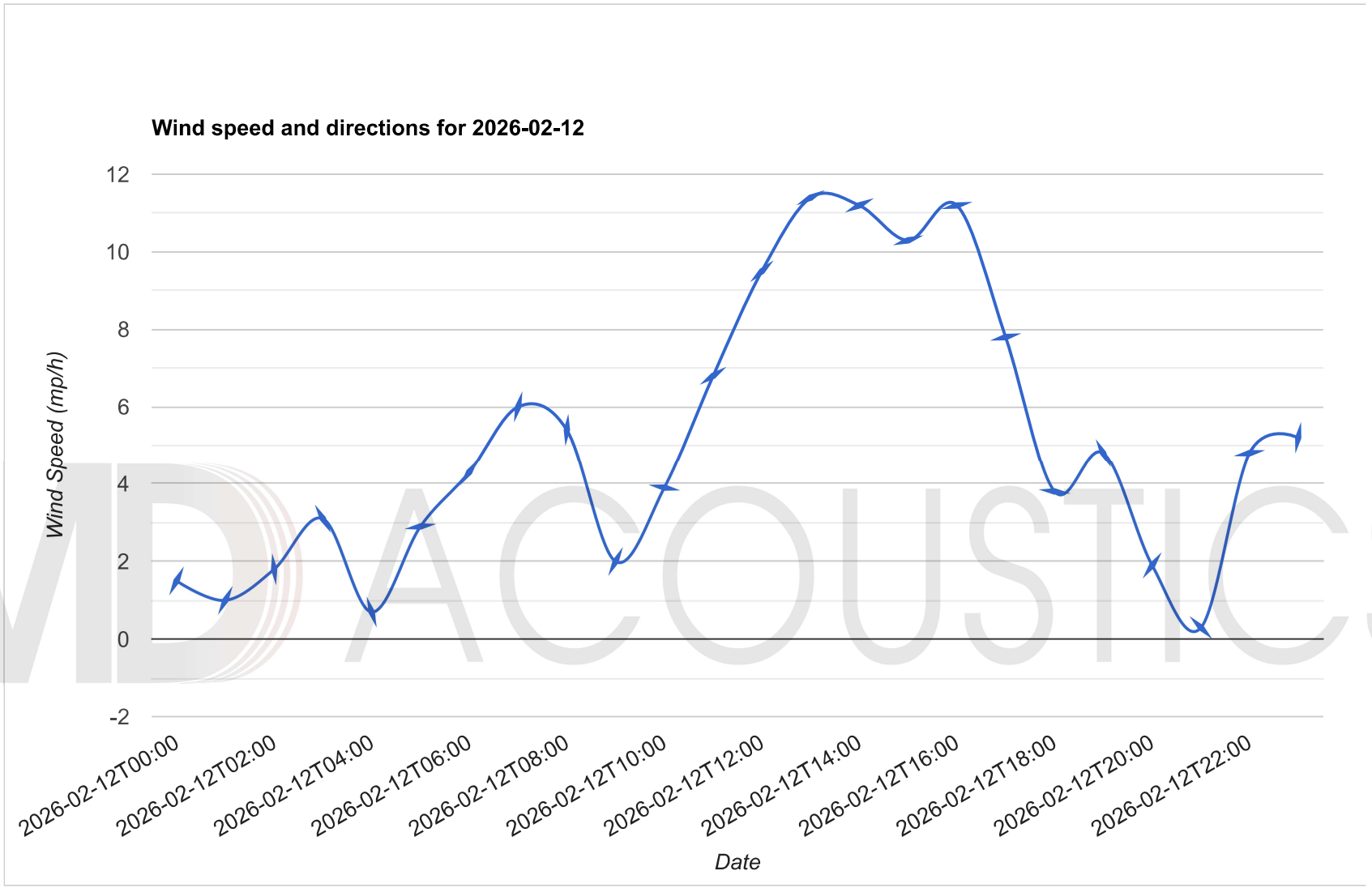


MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model

MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model

5-Minute Continuous Noise Measurement Datasheet - NM1, NM2, NM3

Project Name:	Padel Courts Noise
Project: #/Name:	1645-2026-001
Site Address/Location:	10250 Santa Monica Blvd
Date:	02/12/2026
Field Tech/Engineer:	Jason Schuyler / Bethany Wu

Site Observations:

68F partly cloudy, winds 1-6MPH. The readings were all taken at mid court on the "grated, or netted portion of the walls of the courts. One court had 4 men playing competitively (NM1 & NM2), and the other court had a lesson with a coach (NM3).

Sound Meter:	XL2, NTI	**SN:**	A2A-26016-E1
Settings:	A-weighted, slow, 1-sec, 5-minute interval		
Site Id:	NM1, NM2, NM3		



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5-Minute Continuous Noise Measurement Datasheet - Cont. - NM1, NM2, NM3

Project Name:	Padel Courts Noise	**Calibrator:**	Larson Davis Cal 200
Site Address/Location:	10250 Santa Monica Blvd	**Cal Check: Pre-test:**	0 **Post Test:** 0
Site Id:	NM1, NM2, NM3		

Figure 1: NM1: 6' from edge. mid-court

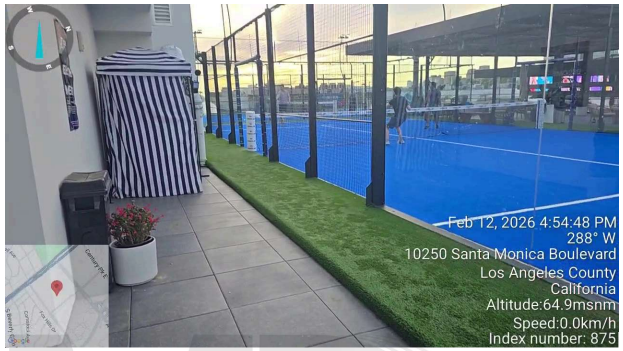


Figure 2: NM2

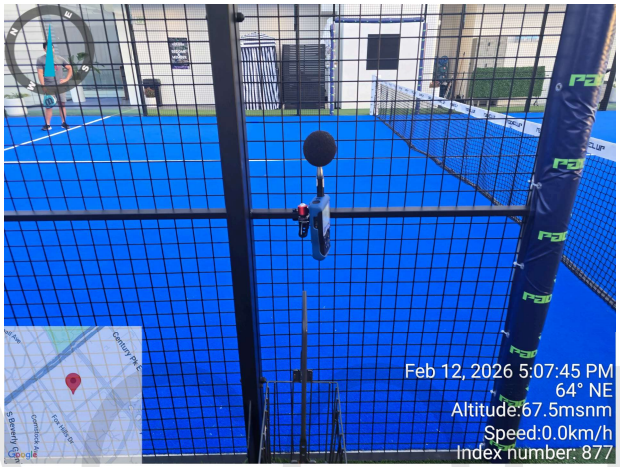


Figure 3: NM3



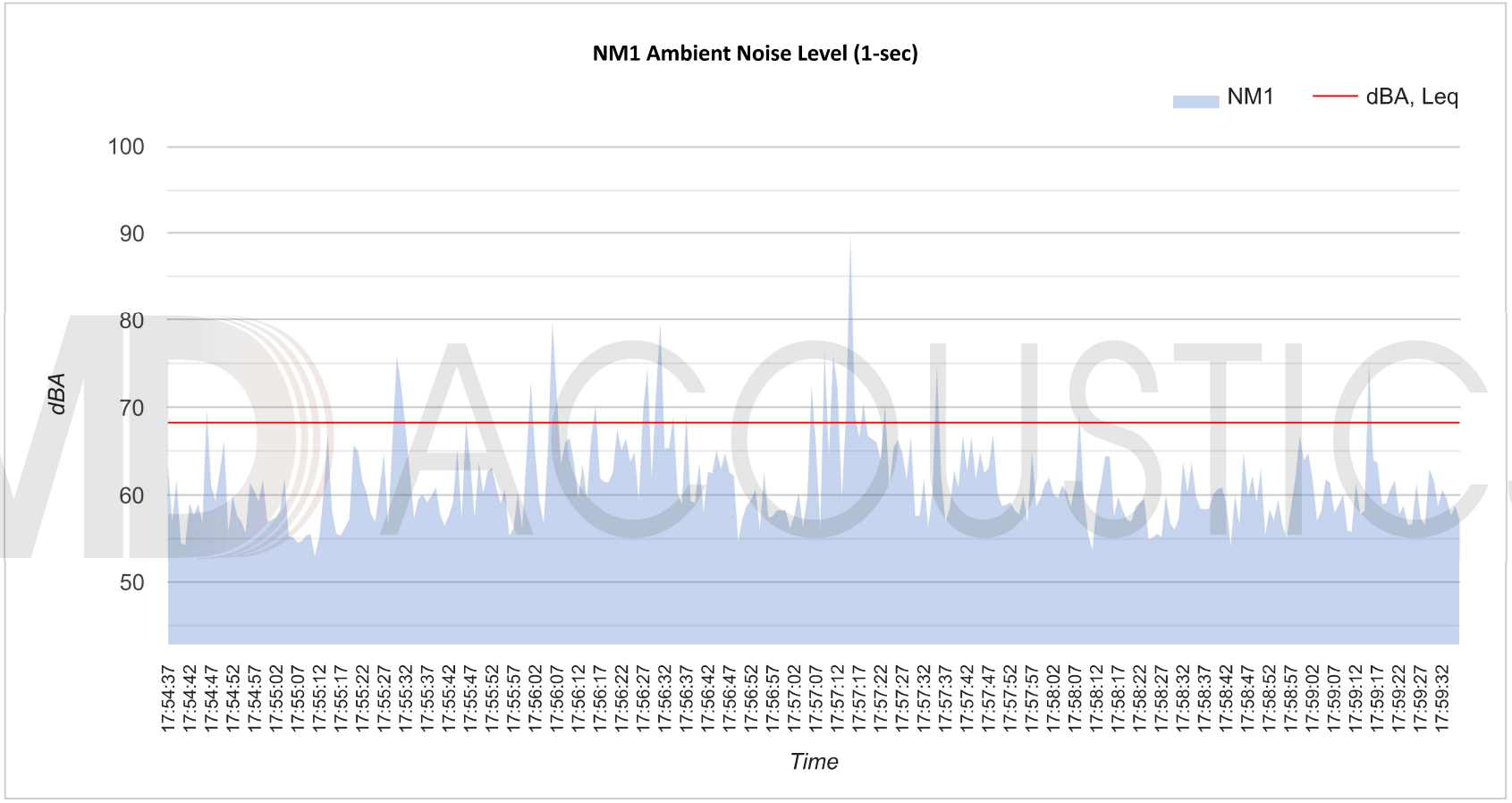
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90	LAF max
NM1	5:54 PM	5:59 PM	68.3	88.9	53.9	75.1	69	63.7	60.1	56.2	93.6
NM2	6:08 PM	6:13 PM	66.5	80.4	56.9	74.9	70.6	65.6	61.4	57.6	85.3
NM3	6:27 PM	6:32 PM	62.9	71.7	58.6	67.1	65.7	63.7	62	59.7	78.6

MD ACOUSTICS

5-Minute Continuous Noise Measurement Datasheet - Cont. - NM1

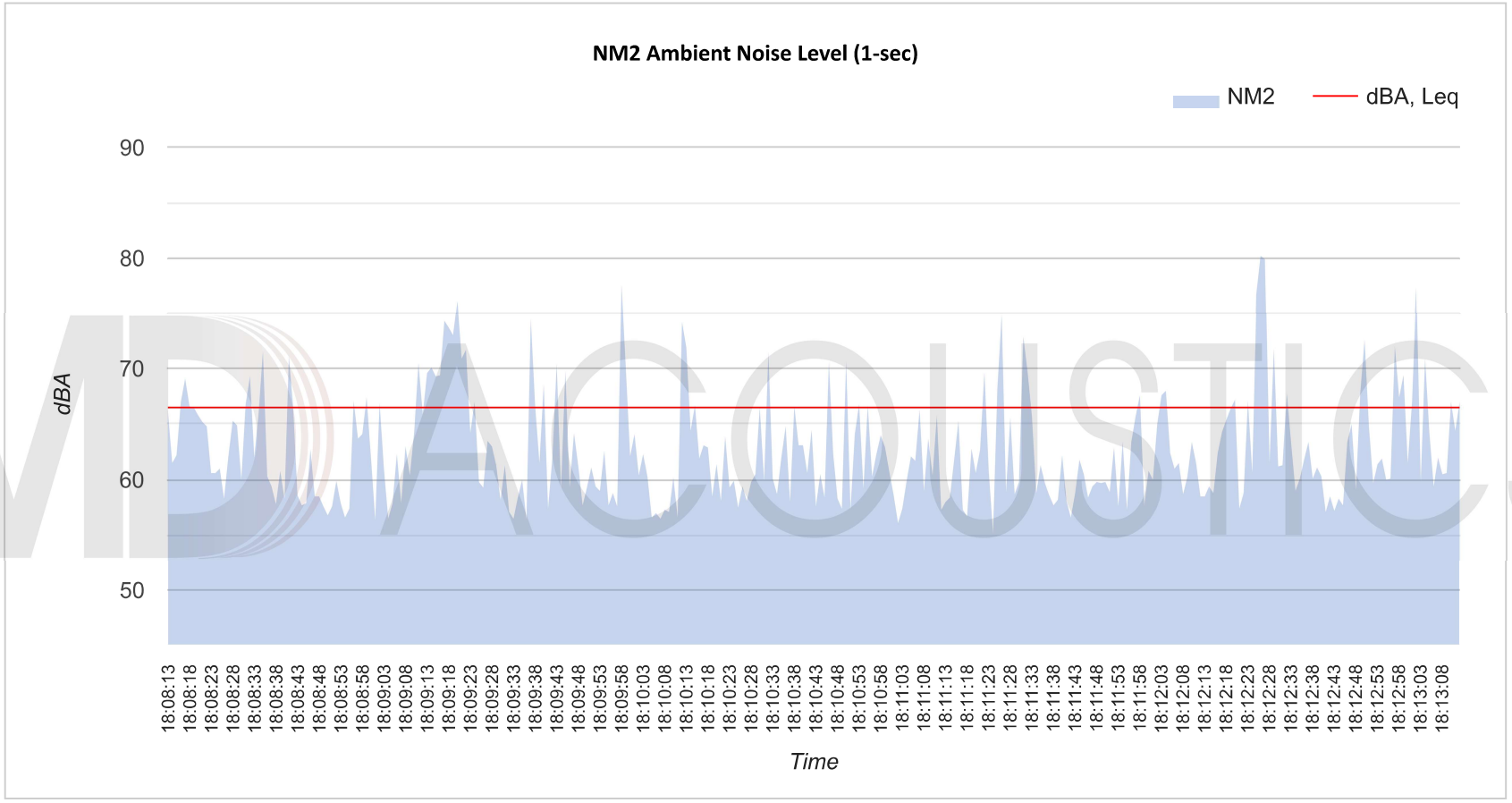
Project Name:	Padel Courts Noise	**Site Topo:**	Roof top Padel court in CC Mall	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	6' from edge, mid-court	
Site Id:	NM1	**Ground Type:**	elevated floor built on top of roof with plastic panels as top l		



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5-Minute Continuous Noise Measurement Datasheet - Cont. - NM2

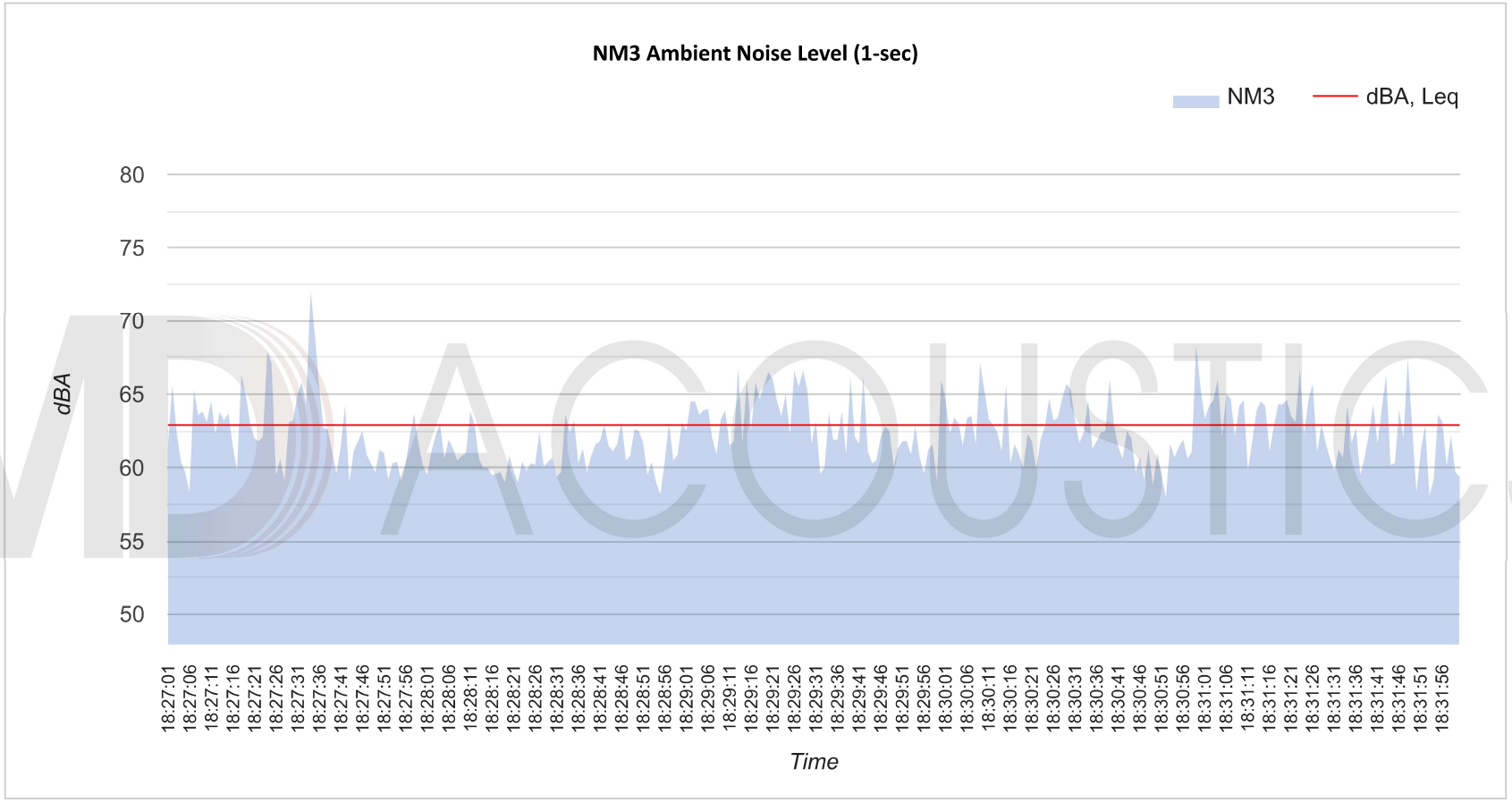
Project Name:	Padel Courts Noise	**Site Topo:**	Roof top Padel court in CC Mall	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	Mid-court at perimeter netting	
Site Id:	NM2	**Ground Type:**	Tile and roof top floating grid panels		



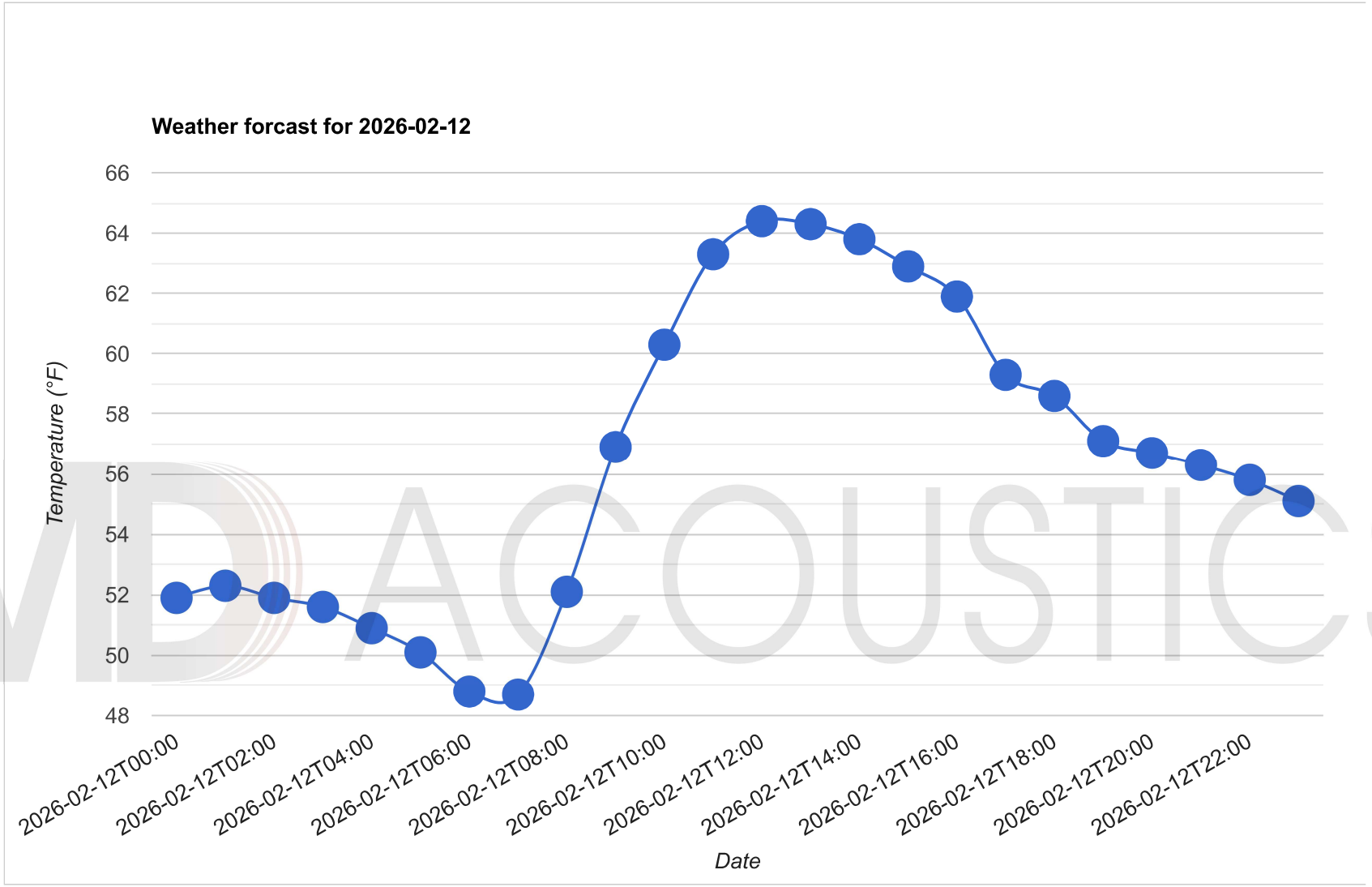
MD ACOUSTICS

5-Minute Continuous Noise Measurement Datasheet - Cont. - NM3

Project Name:	Padel Courts Noise	**Site Topo:**	Roof top Padel court in CC Mall	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	68F Sunny Winds 0-7MPH	Mid-court at perimeter netting	
Site Id:	NM3	**Ground Type:**	Tile and roof top floating grid panels		

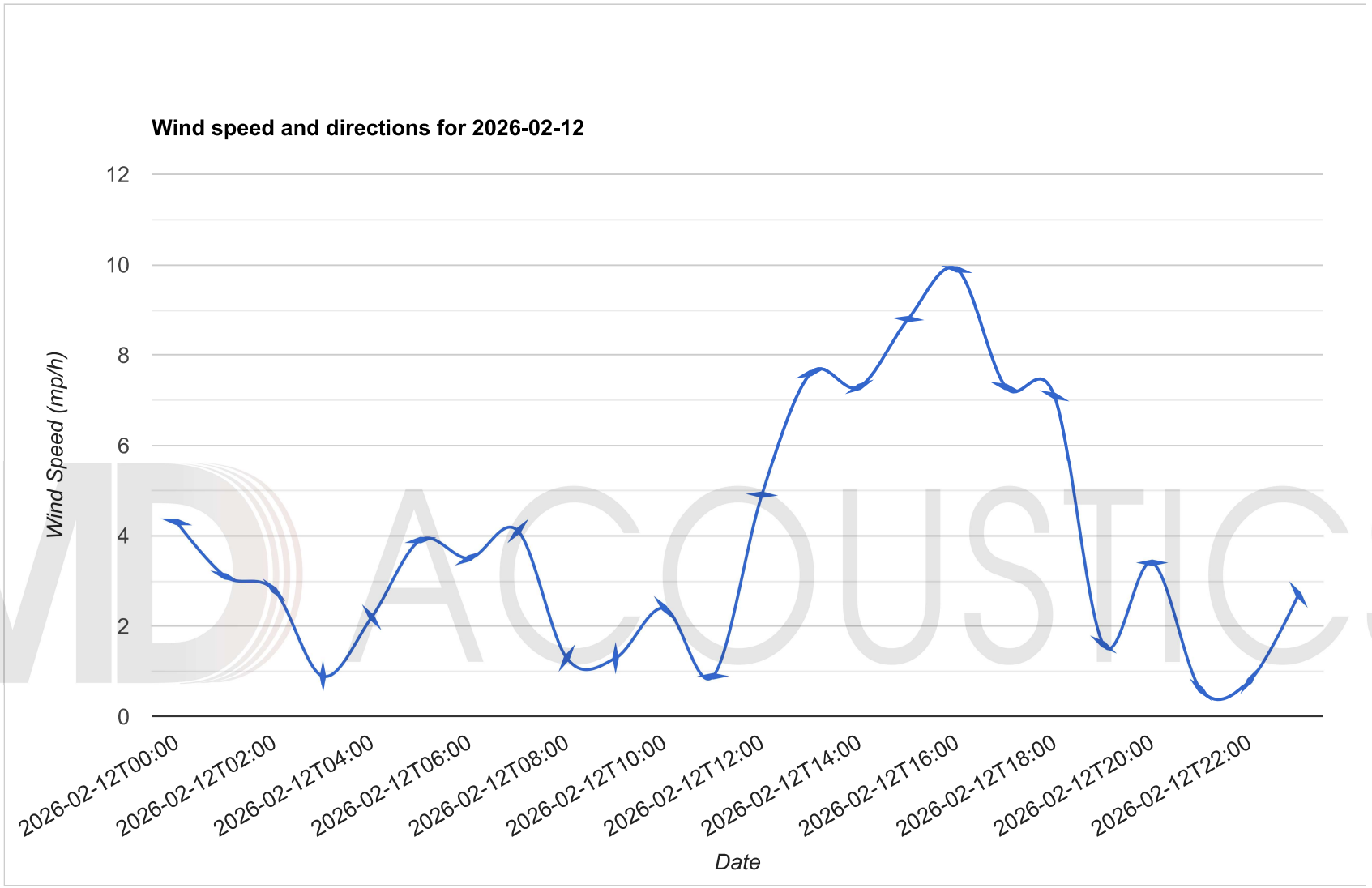


MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model

MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model

1-Hour Noise Measurement Datasheet - NM1 - Fence Side, NM2 - Fence Side, NM3 - Glass Side

Project Name:	Padel Courts Noise
Project: #/Name:	1645-2026-001
Site Address/Location:	10250 Santa Monica Blvd
Date:	07/15/2026
Field Tech/Engineer:	Dennis Jordan / Claire Pincock

Site Observations:

84°, sunny and clear, winds 0 to 5 mph, no traffic.

Sound Meter:	XL2, NTI	**SN:**	A2A-05967-E0
Settings:	A-weighted, slow, 1-sec, 1-hour interval		
Site Id:	NM1 - Fence Side, NM2 - Fence Side, NM3 - Glass Side		



MD ACOUSTICS

1-Hour Noise Measurement Datasheet - Cont. - NM1 - Fence Side, NM2 - Fence Side, NM3 - Glass Side

Project Name: Padel Courts Noise

Site Address/Location: 10250 Santa Monica Blvd

Site Id: NM1 - Fence Side, NM2 - Fence Side, NM3 - Glass Side

Calibrator:

Cal Check: Pre-test: **Post Test:**

Figure 1: NM3



Figure 2: NM2

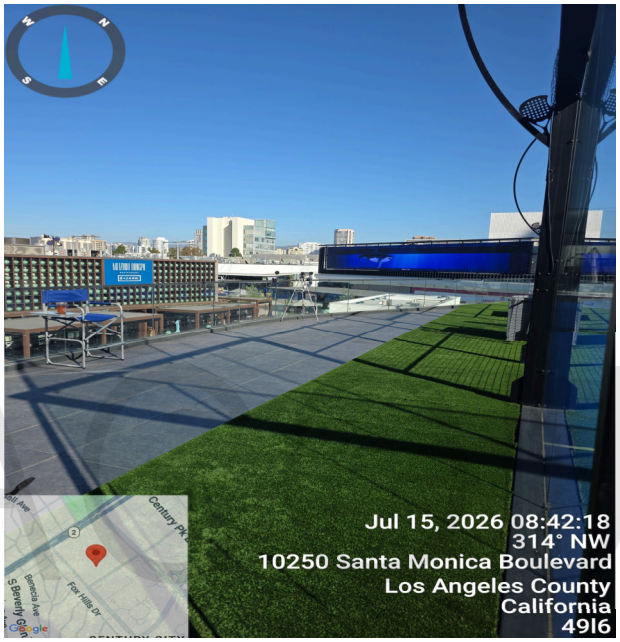


Figure 3: NM1



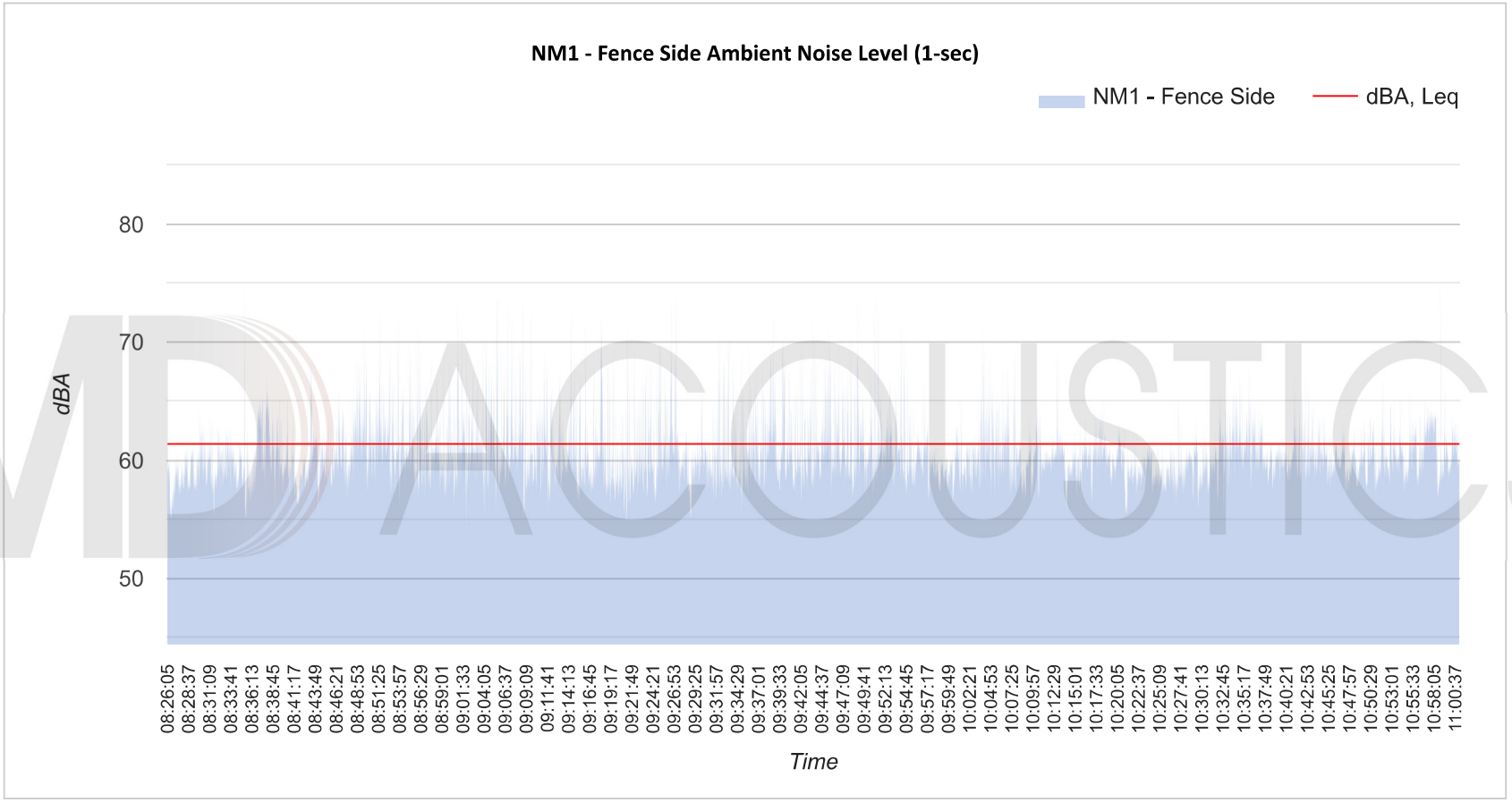
Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90	LAF max
NM1 - Fence Side	8:26 AM	11:01 AM	61.4	76.3	55.1	67.4	63.9	61.4	60.0	57.9	84.4
NM2 - Fence Side	8:26 AM	11:01 AM	61.5	76.5	55.1	67.4	64.0	61.5	60.1	58.0	84.6
NM3 - Glass Side	8:40 AM	11:00 AM	60.1	73.2	58.0	62.9	61.3	60.3	59.7	58.9	80.7

MD ACOUSTICS

1-Hour test Noise Measurement Datasheet - Cont. - NM1 - Fence Side

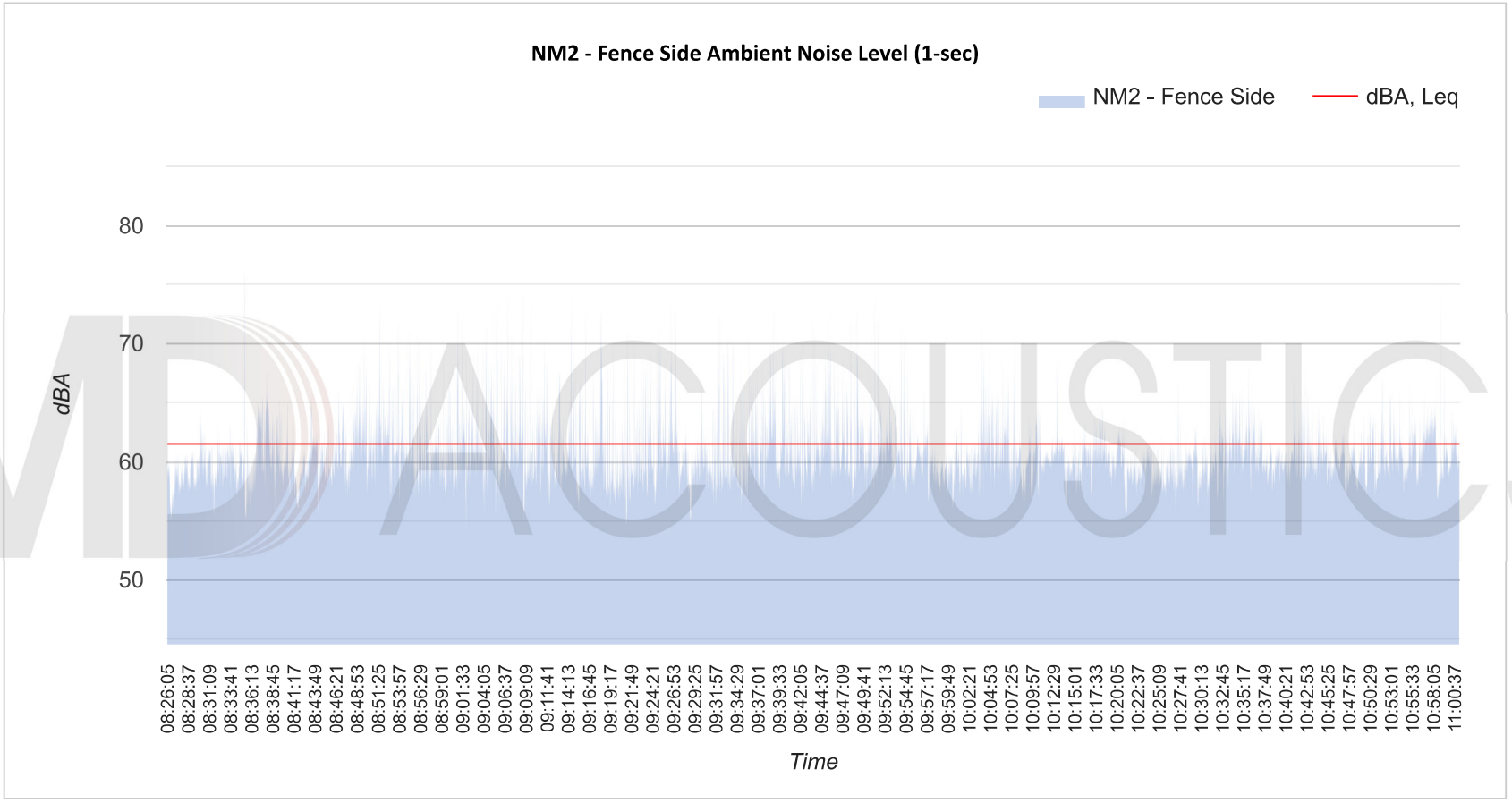
Project Name:	Padel Courts Noise	**Site Topo:**	Roof top Paddle Ball Court	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	84°, winds 0 to 5 mph, sunny and clear	Fence Side of Court / 15 ft	
Site Id:	NM1 - Fence Side	**Ground Type:**	Cement with rubber matting and fake grass		



MD ACOUSTICS

1-Hour test Noise Measurement Datasheet - Cont. - NM2 - Fence Side

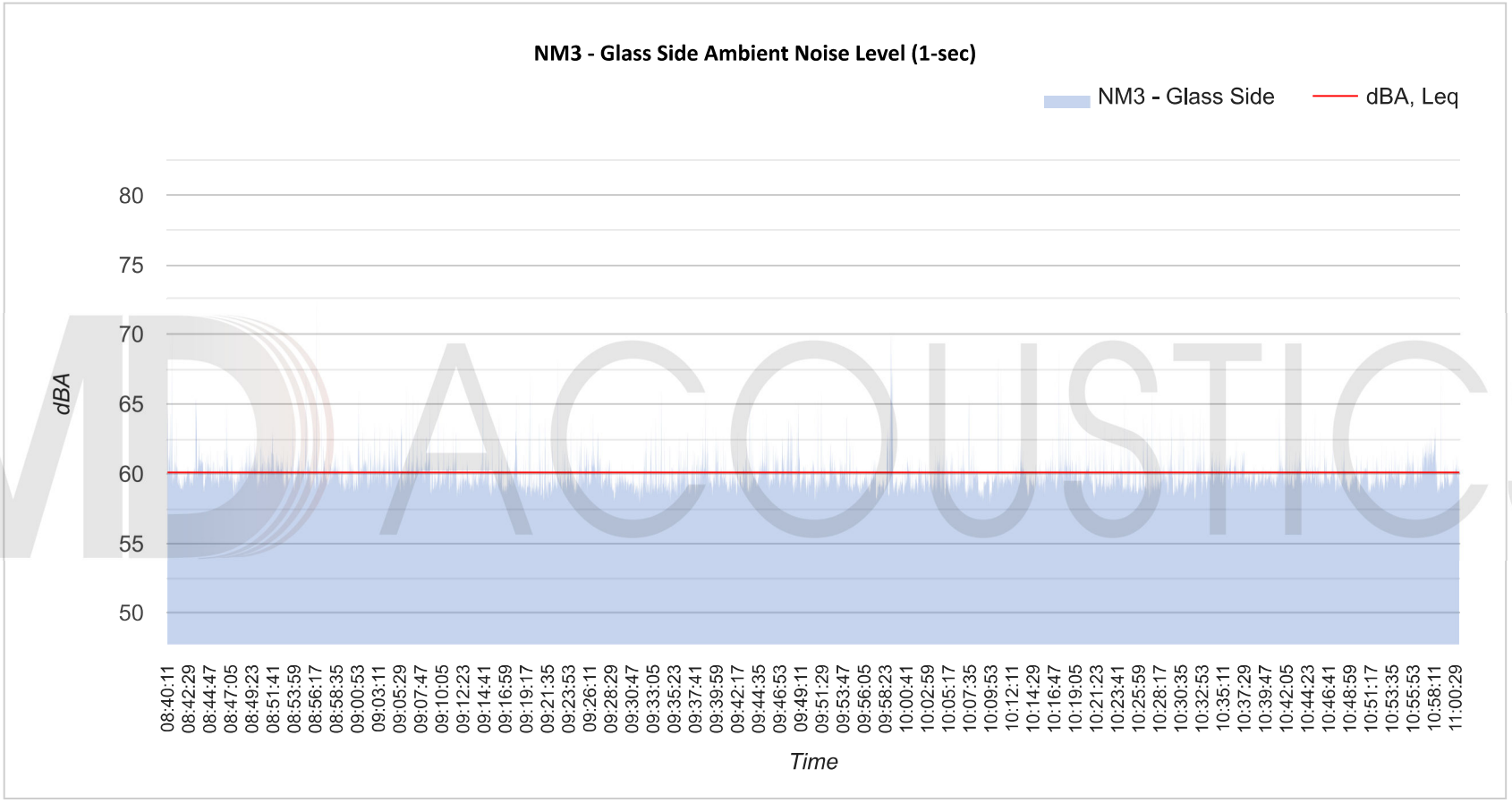
Project Name:	Padel Courts Noise	**Site Topo:**	Roof top Paddle Ball Court	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	84°, winds 0 to 5 mph, sunny and clear	Fence Side of Court / 15 ft	
Site Id:	NM2 - Fence Side	**Ground Type:**	Cement with rubber matting and fake grass		



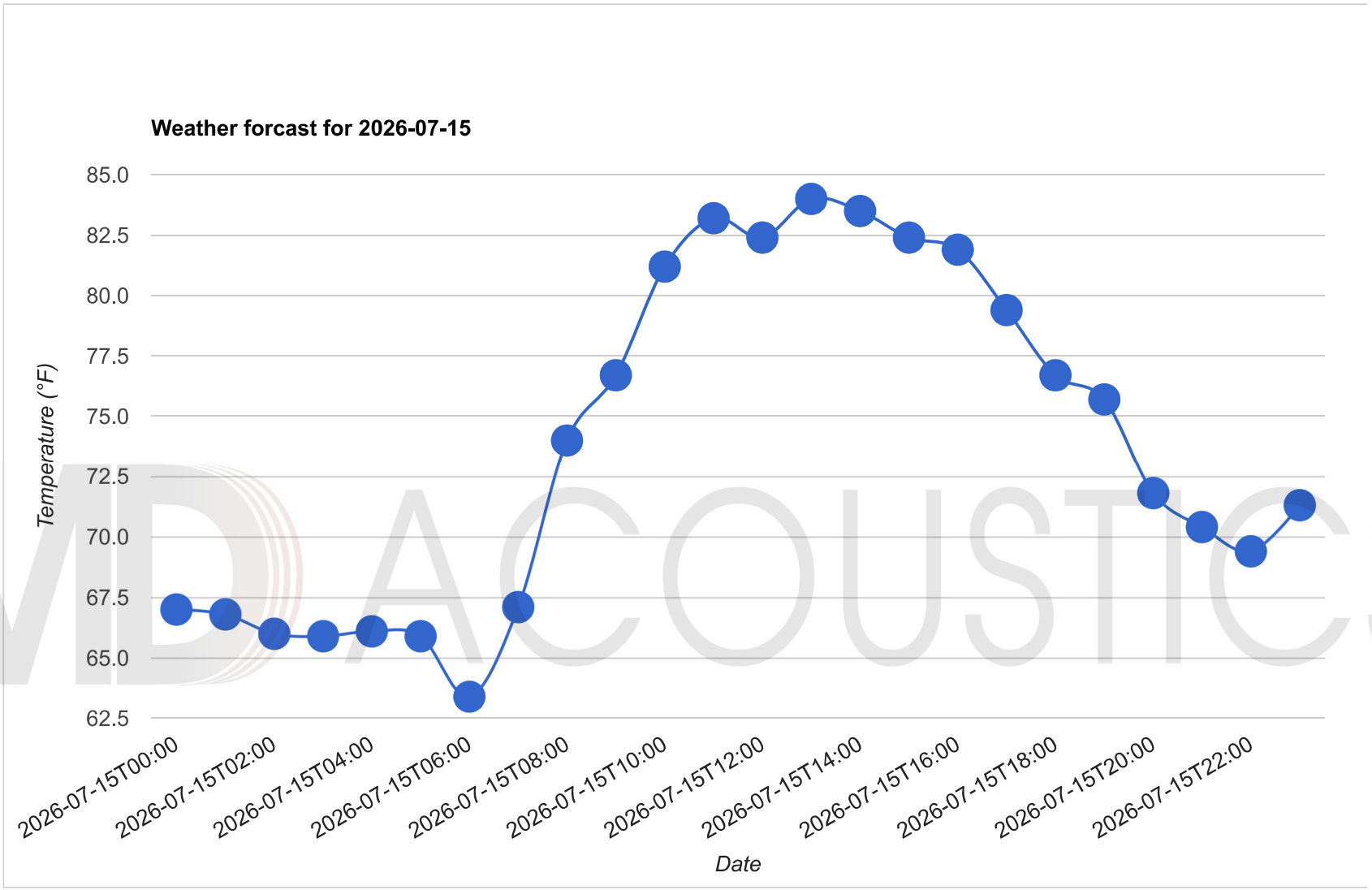
MD ACOUSTICS

1-Hour test Noise Measurement Datasheet - Cont. - NM3 - Glass Side

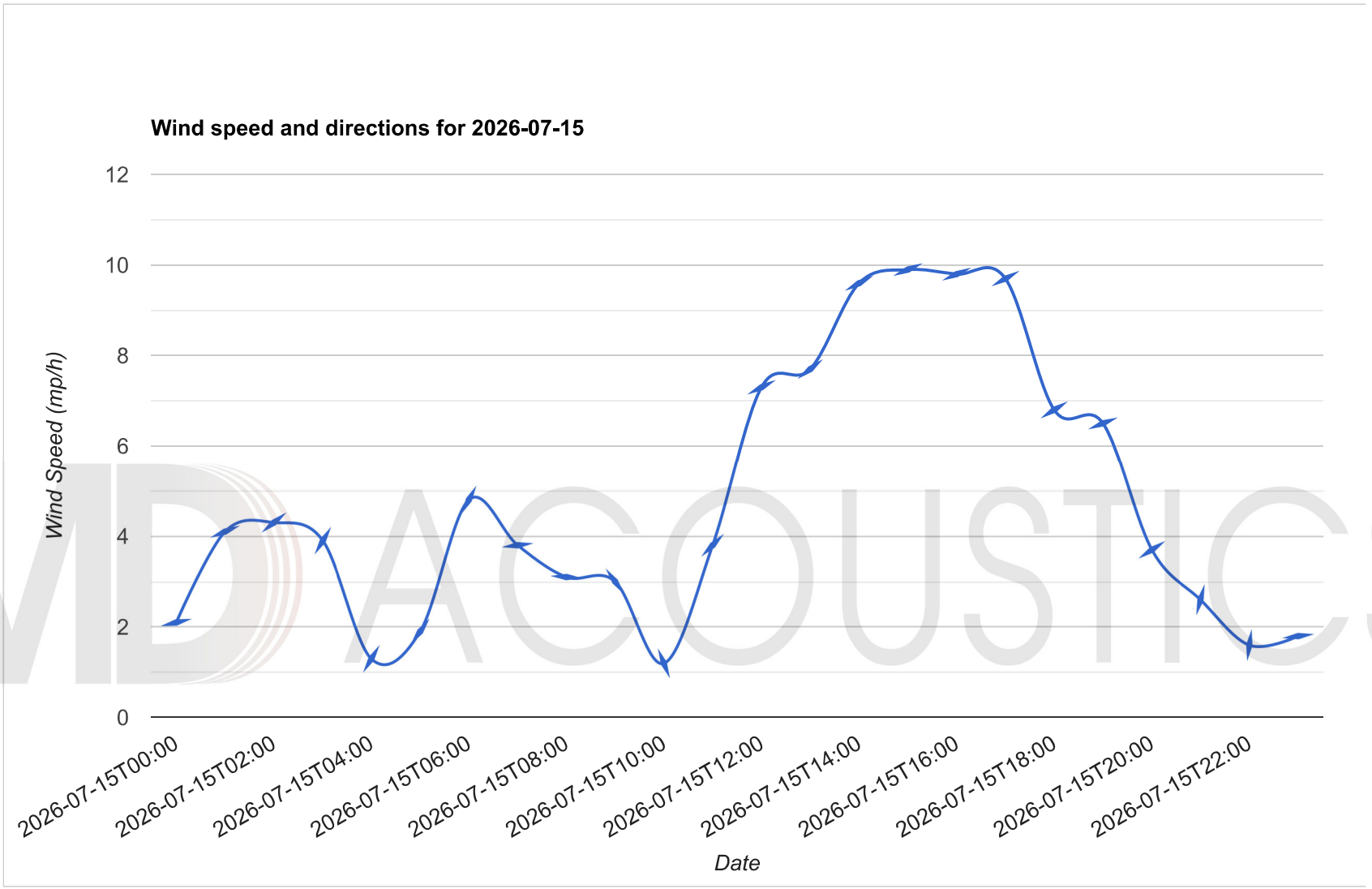
Project Name:	Padel Courts Noise	**Site Topo:**	Roof top Paddle Ball Court	**Noise Source(s) w/ Distance:**	
Site Address/Location:	10250 Santa Monica Blvd	**Meteorological Cond.:**	84°, winds 0 to 5 mph, sunny and clear	Glass Side of Court / 12 ft	
Site Id:	NM3 - Glass Side	**Ground Type:**	Cement with rubber matting and fake grass		



MD ACOUSTICS



Source: Global Forecast System (GFS) weather forcast model



Source: Global Forecast System (GFS) weather forcast model

Reading Stats:
Date: 07/15/2026
Start Time: NM1 & NM2 8:26am
  End Time: 11:01am
Start Time: NM3   8:40am
  End Time: 11:00AM

 840am to 945am:
        4 persons playing
           (2 against 2)

 955am to 1005am:
         3 persons playing
            (1 against 2)

 1005am to 11am: Lessons
          2 persons playing in each
          court. Trainer and Student (1 against 1)

Far Court (not metered)

Close Court (metered)

xxxxxxxxxxxxxxxxxxxxx
Below are totals for entire reading:
  Excel spreadsheet attached to Field Data File for impact times

 # Impacts Glass (metered):
  LD:14, N:153, Top:1, Body:3
       Total = 171
 # Impacts Glass (no meter):
  LD:8, N:37, Top:0, Body:2
       Total = 47
 # Impacts Fence (metered):
  LD:1, N:18, Top:0, Body:0
        Total = 19
 # Impacts Fence (no meter):
  LD:1, N:14, Top:1, Body:0
        Total = 16

Temperature: 84
Wind: 0-5 mph
Skies: clear
Air Traffic: none

_____
NM1 - Dennis main meter

Fence side
15 ft from court at side entrance and centered
Meter hooked on rail and 4 ft from ground

_____
NM2 - Jason's meter - Test

same measurements as NM1

_____
NM3 - Dennis extra meter

Glass Side
12 ft from court centered
Meter hooked on rail and 4 ft from ground

_____

Appendix B:
Traffic Study

LIN Consulting, Inc.
Traffic, Civil, Electrical Consulting Engineers

1432 Edinger Ave, Suite 230
Tustin, CA 92780-6293
Tel:(714) 258-8411 Fax:(714) 258-8511

TECHNICAL MEMORANDUM

Date: **February 10, 2026**

To: **Albert Blanck, Padel Up**

From: **Sihua Song (ssong@linconsulting.com, ext. 255)**

Subject: **Trip Generation and VMT Screening Letter for Padel Up located at 2045 Harbor Boulevard, Costa Mesa, California**

PROJECT OVERVIEW

This letter summarizes the trip generation analysis and Vehicle Miles Traveled (VMT) screening evaluation prepared for the proposed Padel Up project located at 2045 Harbor Boulevard in the City of Costa Mesa, California. The purpose of this letter is to document the project's anticipated traffic generation and evaluate its eligibility for VMT screening.

PROJECT DESCRIPTION

The proposed project includes the development of five padel courts within an existing developed site along Harbor Boulevard. Padel courts are a recreational land use similar in operation and traffic characteristics to tennis courts, with trips generally distributed throughout the day and concentrated during peak recreational hours rather than commuter peak periods.

TRIP GENERATION ANALYSIS

Trip generation estimates for the proposed project were developed using data from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition. Because padel courts are not listed in the ITE database, Tennis Courts (Land Use Code 490) were selected as the appropriate comparable land use. The average weekday daily trip generation rate is 30.32 trips per court. Based on the proposed five courts, the project is estimated to generate approximately 152 weekday daily trips.

The project site is currently occupied by an existing use identified as Truck and Trailer Parking (Land Use Code 035). A trip credit was applied to account for removal of the existing use. Based on a weekday trip generation rate of 14.43 trips per acre and a site area of 0.82 acre, an estimated credit of 12 daily trips was applied.

VEHICLE MILES TRAVELED (VMT) SCREENING

VMT screening for the proposed project was conducted in accordance with the City of Costa Mesa Transportation Impact Analysis Guidelines dated October 2020. Under these guidelines, projects located within areas identified by the City as low VMT areas are presumed to result in less-than-significant VMT impacts. The project site at 2045 Harbor

Boulevard is located within a City-designated low VMT area. The proposed project qualifies for VMT screening and is presumed to have a less-than-significant traffic impact.

CONCLUSION

Based on the trip generation analysis and VMT screening evaluation, the proposed project is not expected to result in significant traffic impacts.

Appendix C:
SoundPLAN Inputs/Outputs

Padel Harbor Blvd Noise
Assessed contribution level - 001 - Padel Harbor Blvd: Outdoor

Source	Source type	L50 dB(A)	
Receiver R1 Fl G L50,lim dB(A) L50 45.9 dB(A)			
Speaker	Point	41.9	
Talking person	Point	40.6	
Speaker	Point	35.0	
Speaker	Point	33.1	
Auto Parking	PLot	31.3	
Speaker	Point	29.6	
Speaker	Point	28.4	
Speaker	Point	27.1	
Talker	Point	26.5	
Speaker	Point	25.4	
Speaker	Point	25.3	
Talker	Point	24.7	
Talker	Point	24.3	
Talker	Point	23.8	
Talker	Point	23.5	
Talker	Point	23.5	
Talker	Point	23.1	
Speaker	Point	22.9	
Talker	Point	22.8	
Talker	Point	21.8	
Talker	Point	21.1	
Talker	Point	20.4	
Talker	Point	15.8	
Receiver R2 Fl G L50,lim dB(A) L50 36.4 dB(A)			
Speaker	Point	30.4	
Speaker	Point	27.4	
Speaker	Point	26.2	
Speaker	Point	25.1	
Auto Parking	PLot	24.8	
Speaker	Point	24.2	
Speaker	Point	23.8	
Talker	Point	21.8	
Talker	Point	21.4	
Talker	Point	20.3	
Speaker	Point	20.1	
Talker	Point	20.0	
Speaker	Point	19.1	
Talker	Point	18.6	
Talker	Point	18.3	
Speaker	Point	17.8	
Talker	Point	16.9	
Talker	Point	16.9	
Talker	Point	16.8	

Source	Source type	L50 dB(A)	
Talker	Point	16.7	
Talker	Point	16.5	
Talker	Point	15.3	
Talking person	Point	12.6	
Receiver R3 Fl G L50,lim dB(A) L50 41.0 dB(A)			
Speaker	Point	32.2	
Speaker	Point	32.0	
Speaker	Point	30.2	
Talker	Point	30.0	
Speaker	Point	29.8	
Auto Parking	PLot	28.5	
Talker	Point	28.5	
Talker	Point	28.2	
Talker	Point	28.2	
Speaker	Point	26.9	
Talker	Point	26.8	
Talker	Point	26.4	
Speaker	Point	26.0	
Talker	Point	26.0	
Talker	Point	25.3	
Speaker	Point	24.2	
Speaker	Point	23.2	
Speaker	Point	23.1	
Talker	Point	21.2	
Talker	Point	20.8	
Talker	Point	19.9	
Talker	Point	19.6	
Talking person	Point	18.4	
Receiver R4 Fl G L50,lim dB(A) L50 39.6 dB(A)			
Speaker	Point	32.1	
Speaker	Point	30.7	
Speaker	Point	30.3	
Speaker	Point	29.6	
Speaker	Point	28.5	
Talker	Point	27.7	
Talker	Point	26.3	
Speaker	Point	25.9	
Talker	Point	25.4	
Auto Parking	PLot	24.8	
Speaker	Point	24.5	
Talker	Point	24.3	
Speaker	Point	22.6	
Talker	Point	22.4	
Speaker	Point	21.3	

Source	Source type	L50 dB(A)	
Talking person	Point	20.9	
Talker	Point	20.8	
Talker	Point	19.8	
Talker	Point	18.8	
Talker	Point	18.8	
Talker	Point	17.8	
Talker	Point	15.9	
Talker	Point	15.7	
Receiver R5 Fl G L50,lim dB(A) L50 41.4 dB(A)			
Speaker	Point	32.9	
Speaker	Point	32.8	
Speaker	Point	32.8	
Speaker	Point	31.3	
Speaker	Point	29.9	
Talker	Point	29.1	
Talker	Point	28.2	
Speaker	Point	27.6	
Speaker	Point	27.6	
Auto Parking	PLot	26.6	
Talker	Point	26.2	
Talker	Point	26.1	
Speaker	Point	25.8	
Talker	Point	24.3	
Talker	Point	22.7	
Talker	Point	22.0	
Speaker	Point	21.9	
Talker	Point	21.5	
Talking person	Point	20.7	
Talker	Point	19.9	
Talker	Point	19.2	
Talker	Point	17.8	
Talker	Point	16.7	

Source	Source type	Lmax dB(A)	
Receiver Fence Fl G Lmax,lim dB(A) Lmax 83.8 dB(A)			
PB	Area	83.8	Measured 76.5
PB	Area	74.0	
PB	Area	69.2	
PB	Area	66.2	
PB	Area	63.4	
Auto Parking	PLot	57.4	
Receiver Glass Fl G Lmax,lim dB(A) Lmax 82.8 dB(A)			
PB	Area	82.8	Measured 73.2
PB	Area	76.4	
PB	Area	69.2	
PB	Area	66.3	
PB	Area	63.4	
Auto Parking	PLot	57.2	
Receiver NM1 Fl G Lmax,lim dB(A) Lmax 88.9 dB(A)			
PB	Area	88.9	Measured 88.9
PB	Area	73.9	
PB	Area	68.9	
PB	Area	65.7	
PB	Area	63.0	
Auto Parking	PLot	56.7	
Receiver NM2&3 Fl G Lmax,lim dB(A) Lmax 103.3 dB(A)			
PB	Area	103.3	Measured 80.4
PB	Area	74.3	
PB	Area	68.9	
PB	Area	65.6	
PB	Area	63.2	
Auto Parking	PLot	57.1	
Receiver R1 Fl G Lmax,lim dB(A) Lmax 66.2 dB(A)			
PB	Area	66.2	
PB	Area	65.8	
PB	Area	65.4	
PB	Area	63.4	
PB	Area	62.5	
Auto Parking	PLot	58.7	
Receiver R2 Fl G Lmax,lim dB(A) Lmax 62.7 dB(A)			
PB	Area	62.7	
PB	Area	60.4	
PB	Area	58.7	
PB	Area	56.8	
PB	Area	54.0	
Auto Parking	PLot	51.3	
Receiver R3 Fl G Lmax,lim dB(A) Lmax 66.7 dB(A)			

Source	Source type	Lmax dB(A)	
PB	Area	66.7	
PB	Area	66.3	
PB	Area	65.5	
PB	Area	62.7	
PB	Area	61.7	
Auto Parking	PLot	51.1	
Receiver R4 Fl G Lmax,lim dB(A) Lmax 60.3 dB(A)			
PB	Area	60.3	
PB	Area	58.5	
PB	Area	57.4	
PB	Area	56.5	
PB	Area	54.2	
Auto Parking	PLot	48.4	
Receiver R5 Fl G Lmax,lim dB(A) Lmax 61.8 dB(A)			
PB	Area	61.8	
PB	Area	60.2	
PB	Area	58.4	
PB	Area	57.0	
PB	Area	56.0	
Auto Parking	PLot	50.4	

Padel Harbor Blvd Noise
Octave spectra of the sources in dB(A) - 002 - Padel Harbor Blvd: Outdoor SP - Lmax

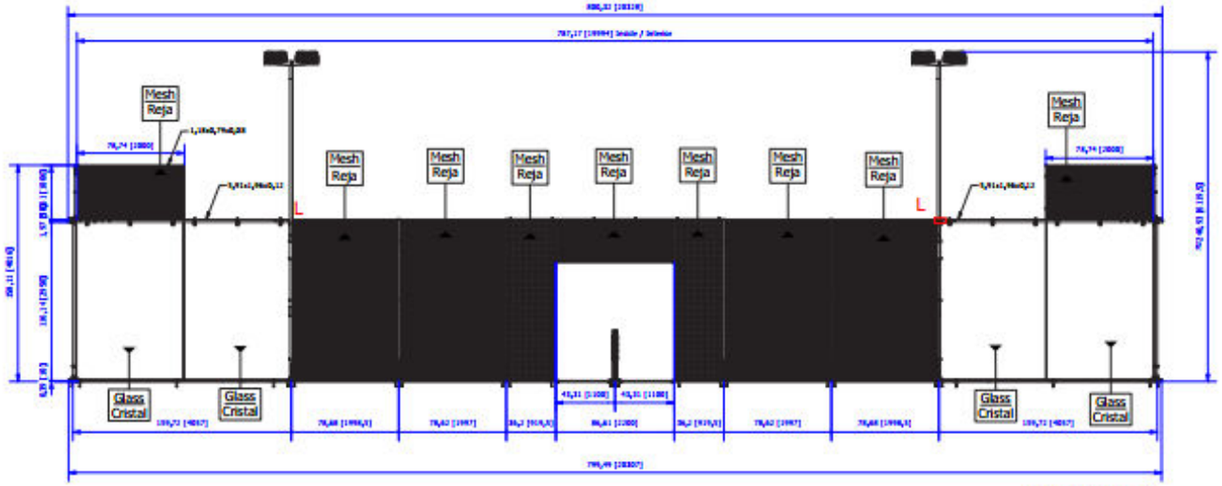
Name	Source type	l or A	Li	Rw	L'w	Lw	KI	KT	DO-Wall	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Auto Parking	PLot	665.18			51.4	79.6	0.0	0.0	0	Typical spectrum	63.0	74.6	67.1	71.6	71.7	72.1	69.4	63.2	50.4	
PB	Area	195.92			60.6	83.5	0.0	0.0	0	PB Court - L50	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	191.19			60.7	83.5	0.0	0.0	0	PB Court - L50	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	194.04			60.6	83.5	0.0	0.0	0	PB Court - L50	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	193.65			60.6	83.5	0.0	0.0	0	PB Court - L50	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	190.70			60.7	83.5	0.0	0.0	0	PB Court - L50	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	

Padel Harbor Blvd Noise
Octave spectra of the sources in dB(A) - 002 - Padel Harbor Blvd: Outdoor SP - Lmax

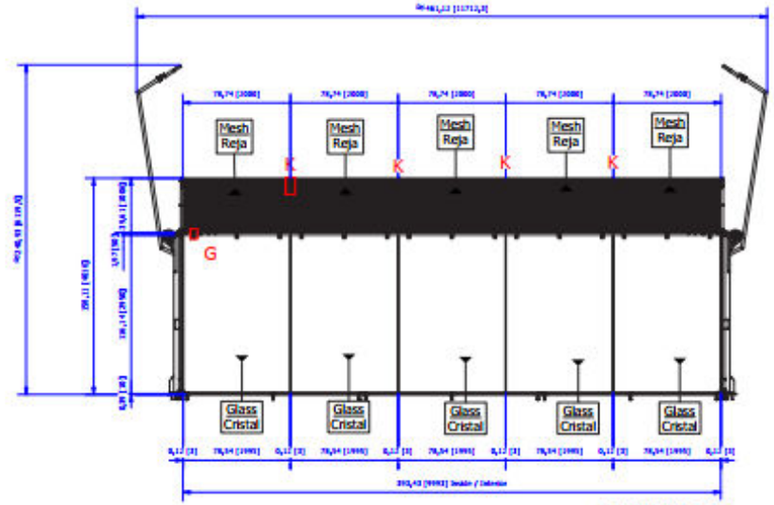
Name	Source type	l or A	LwMax	DO-Wall	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz	
		m,m²	dB(A)	dB		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Auto Parking	PLot	665.18	99.6	0	Typical spectrum	63.0	74.6	67.1	71.6	71.7	72.1	69.4	63.2	50.4	
PB	Area	195.92	103.2	0	PB Court	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	191.19	103.2	0	PB Court	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	194.04	103.2	0	PB Court	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	193.65	103.2	0	PB Court	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	
PB	Area	190.70	103.2	0	PB Court	61.6	67.4	70.7	77.3	80.5	74.7	69.4	57.7	40.7	

Appendix D:

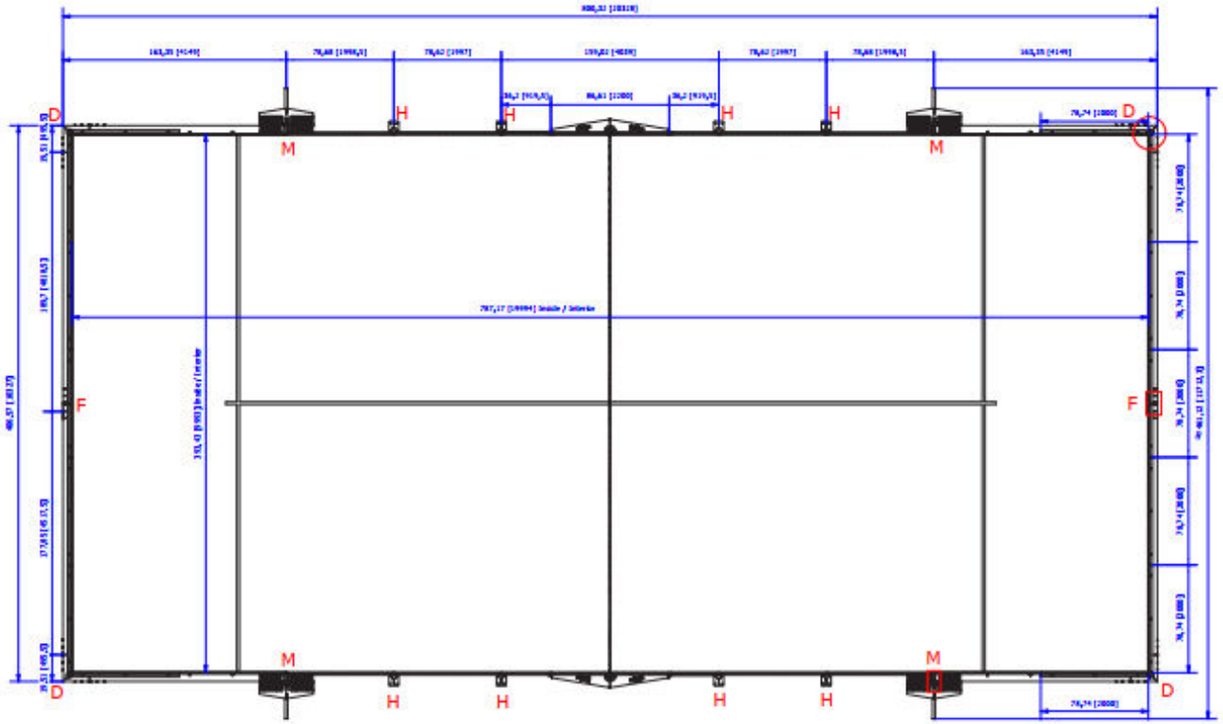
Noise-Reducing Fence Recommendation: AcoustiFence



ELEVATION
(EAST/WEST)



ELEVATION
(NORTH/SOUTH)



COURT PLAN

ECT ADA+ 2- Stall 1-restroom Shower Lowering Trailer 20' x 8'
230-Gallon Fresh Water Tank | 475-Gallon Holding Tank

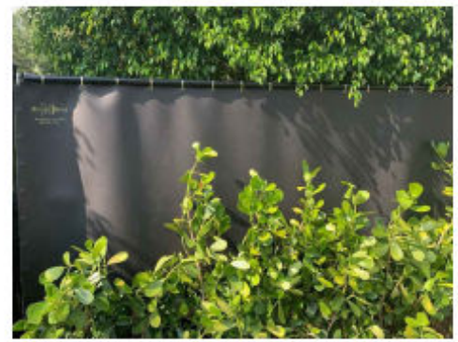


RESTROOM FLOOR PLAN
N.T.S.

RAMP TO MEET ADA REQUIREMENTS AT 8.33%



BATHROOM AND SHOWER UNIT SHALL BE SECURE IN PLACE WITH FOUNDATION.FLOOR-OUTLET OR FLOOR-MOUNTED FIXTURES SHALL BE RIGIDLY SECURED TO THE DRAINAGE CONNECTION AND TO THE FLOOR BY SCREWS OR BOLTS OF COPPER, COPPER ALLOY, OR OTHER EQUALLY CORROSION-RESISTANT MATERIAL.





6' NOISE-REDUCING FENCE
(@ NORTH & SOUTH PROPERTY LINES)

*IMAGERY FOR REFERENCE ONLY

PADEL UP

PADEL UP - COSTA MESA
2045 HARBOR BLVD | COSTA MESA, CA - 92627

PADEL COURT PLAN & ELEVATIONS / NOISE-REDUCING FENCE
RESTROOM FLOOR PLAN & IMAGERY

SCALE: 1/8" = 1'-0"

AO Architecture. Design. Relationships.

A-04

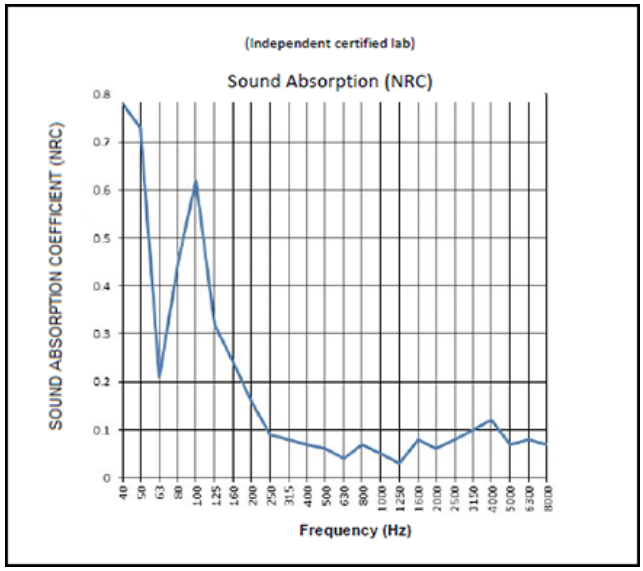
Product Data Sheet

Product Name

AcoustiFence® Noise Reducing Fences

For Manufacturer Info:

Contact:
Acoustiblok, Inc.
6900 Interbay Boulevard
Tampa, FL 33616
Call - (813) 980-1400
Fax - (813)849-6347
Email - sales@acoustiblok.com
www.acoustiblok.com



Sound Absorption Test Results

Product Description

Basic Use

AcoustiFence was originally developed by Acoustiblok, Inc. for noise isolation on offshore oil rigs, but has since proven successful in many other demanding outdoor settings, such as construction sites, commercial/industrial facilities, and residential communities.

AcoustiFence Noise Reducing Fences

AcoustiFence is a unique, heavy-mineral filled, barium free, viscoelastic acoustical material that is made in the U.S.A. Unlike fences or shrubs, this material does extraordinarily well in blocking direct sound, and a unique characteristic of the material sets it apart from other sound barriers when dealing with very low frequencies.

Benefits:

- Effectively reduces exterior noise
- Over 300 UL Classifications
- Easy to install
- Resistant to UV, dirt and water
- Resistant to corrosion, mold and mildew

Product Data Sheet

Product Name

AcoustiFence® Noise Reducing Fences

AcoustiFence Noise Reducing Fences continued…

In frequencies of 50Hz and below, the heavy limp AcoustiFence material actually begins to vibrate from low frequency sound waves. In essence it is transforming these low frequency sound waves into mechanical movement and internal friction energy. Laboratory tests indicate that this transformation process inhibits these lower frequencies from penetrating AcoustiFence, reducing their level by over 60 percent relative to the human ear. In addition, AcoustiFence becomes an absorbent material in these frequencies with test results show an NRC (noise reduction coefficient) as high as 0.78 (with 1.00 being the max). As such it is clear that AcoustiFence not only reduces sound as a barrier, but also acts as an acoustical absorbent material in very low frequencies, as opposed to reflecting those frequencies back like most other barriers. It is worth noting that lead sheets (which are toxic) work in the same manner.

Green AcoustiFence

One of Acoustiblok's most popular products, designed as an advanced sound barrier that easily attaches to most types of fencing, is now available in a new green shade that easily blends into the environment. This makes it ideal for landscaping projects, residential home use and any outdoor applications where blending into the natural foliage is a concern.

Green AcoustiFence has the same sound deadening properties and features as our original black AcoustiFence. In addition, this new version features advanced reinforced edging and stainless steel cable ties. Made and sourced in the USA, It comes in 6x30 foot sections and is one of the most effective first steps in reducing noise for industrial, commercial and residential projects.

Product Data Sheet

Product Name

AcoustiFence® Noise Reducing Fences

Sound Transmission Class (STC)

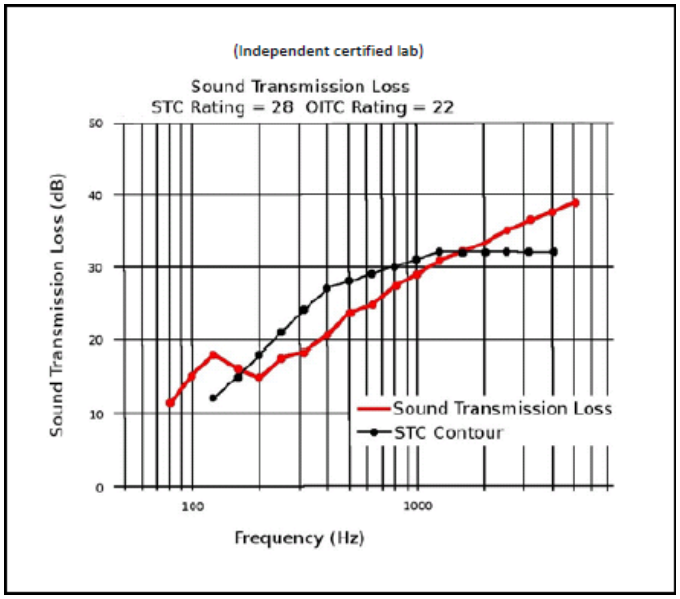
Sound Transmission Class (STC) is a single number that represents the sound blocking capacity of a partition such as a wall or ceiling.

STC numbers are often called out in architectural specifications, to assure that partitions will reduce noise levels adequately. For performance similar to laboratory test numbers, it is necessary to adhere closely to the construction materials and techniques used in the tested partition.

STC is calculated by comparing the actual sound loss measured when 18 test frequencies pass through a partition, with fixed values for each STC level. The highest STC curve that the measured sound loss numbers fit under, determines the STC rating of the partition.

STC calculations emphasize sound frequencies that match the human voice. A high STC partition will block the sound of human speech and block noise that interferes with human speech. To estimate high and low frequency performance, consult the Sound Transmission Loss graph included in STC test reports. Impact Insulation Class (IIC) measure transmitted impact noise and are specified for floor-ceiling assemblies only.

Acoustical test reports for numerous wall and floor/ceiling designs are available from Acoustiblok on request. All our test data is taken directly from independent 3rd party laboratories under NVLAP certification.



Sound Transmission Loss Test Results

Product Data Sheet

Product Name

AcoustiFence® Noise Reducing Fences

Physical Properties

- Barium free
- Minimum STC 28 per ASTM E90-02 & ASTM E413-87
- Minimum sound attenuation 24 dBA @ 100Hz & 16dBA @ 40Hz
- Size - 6 ft.(1.83m) x 30 ft.(9.14m) x 0.125 in. (.3mm) – 180 ft² (16.83m²)
- Color - black or green
- High UV resistance
- Heat tolerance: 200°F (93°C) for 7 days, less than 1% shrinkage with no deformation.
- Freezes at -40°F (-40°C). Do not unroll or flex frozen material. Properties not affected by freeze/thaw cycles.
- No fungal or algal growth and no visible disfigurement, per ASTM D3273 and ASTM D3274 (rating=10)
- Tensile Strength - min. 365 PSI
- Weight per section: 185 lbs. (84Kg)

Material Specifications – Part # "Acoustifence 6x30 Industrial"

Acoustical Rating	STC 28 / OITC 22
Size	6 ft. (1.83m) x 30 ft. (9. 14m) x 0.125 in .(3mm) 180 ft² (16.72m²)
Weight	185 lbs. (84Kg)
Fastening	Black brass grommets every 6 in. (152mm) along top edge with four grommets spaced along the bottom edge. Commonly installed horizontally.
Color	Black
(This is an industrial product and minor surface blemishes are a possibility.)	

6900 Interbay Blvd
Tampa, Florida USA 33616
Telephone: (813)980-1440
www.Acoustiblok.com
sales@acoustiblok.com

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Appendix E:

Construction Noise Modeling Output

Receptor - Residences to the Northwest

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Edge of Site to Receptor, feet	Center of Site to Receptor, feet	Item Usage Percent[1]	Ground Factor[2]	Usage Factor	Receptor Item Lmax, dBA	Recptor. Item Leq, dBA
GRADE									
Grader	1	85	18	50	100	0	1.00	93.9	85.0
Dozer	1	85	18	50	100	0	1.00	93.9	85.0
							Log Sum	93.9	88.0
PAVE									
Paver	1	85	18	50	100	0	1.00	93.9	85.0
Roller	1	85	18	50	100	0	1.00	93.9	85.0
								93.9	88.0
ARCH COAT									
Compressor (air)	1	80	18	50	100	0	1.00	88.9	80.0
								88.9	80.0
TRENCHING									
Slurry Trenching Machine	1	82	18	50	100	0	1.00	90.9	82.0
								90.9	82.0

[1]FHWA Construction Noise Handbook: Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

VIBRATION LEVEL IMPACT

Project:	Padel Up Courts	Date: 2/27/26
Source:	Vibratory Roller	
Scenario:	Unmitigated	
Location:	Northern residential building	
Address:	2045 Harbor Blvd, Costa Mesa, CA	

PPV = PPVref(25/D)^n (in/sec)

DATA INPUT

Equipment = Type	1	Vibratory Roller	INPUT SECTION IN BLUE
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	18.00	Distance from Equipment to Receiver (ft)	
n =	1.10	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

DATA OUT RESULTS

PPV =	**0.30**	IN/SEC	OUTPUT IN RED