

September 15, 2023

Mr. Akhilesh Jha
5353 Del Moreno Drive
Woodland Hills, CA 91364

**Subject: 1848 South Gramercy Place – Cat32 Exemption Noise Impact Assessment –
Los Angeles, CA**

Dear Mr. Jha:

MD Acoustics, LLC (MD) has completed a noise impact assessment for the proposed Multi-Family Residential Development project located at 1848 South Gramercy Place in the City of Los Angeles, CA. The project has filed for a Categorical 32 Exemption (Cat32) in which an “Infill” Categorical Exemption (CEQA Guideline Section 15332), exempts infill development within urbanized areas if it meets certain criteria. The class consists of environmentally benign infill projects that are consistent with the local General Plan and Zoning requirements. This class is not intended for projects that would result in any significant traffic, noise, air quality, or water quality impacts. It may apply to residential, commercial, industrial, and/or mixed-use projects.

This noise assessment intends to demonstrate the project’s compliance with applicable noise regulations and lack of significant noise impacts. A list of definitions and terminology is located in Appendix A.

1.0 Project Description and Assessment Overview

The Project Site is approximately 37,016 square feet. The Project includes the construction of a new multi-family residential 8-story building containing 33 residential dwelling units. The Project would include a total of 20 parking stalls inside each dwelling unit’s garage. The proposed project site plan is in Exhibit B.

Land uses and the closest existing sensitive receptors surrounding the site include single-family residential uses to the north, multifamily residential uses to the east and west, and commercial to the south. The project is not within two miles of a public airport or public use airport. The proposed project location is in Exhibit A.

2.0 Local Acoustical Requirements and CEQA Guidelines

The City of Los Angeles has outlined the following within the Los Angeles Municipal Code as it relates to noise regulation:

Per Section 111.03, the minimum ambient level for all residential zones is 50 dBA from 7AM to 10PM and 40 dBA from 10PM to 7AM.

Per Section 112.02, air conditioning, refrigeration, and heating equipment cannot cause a noise level to exceed the ambient noise level on the premises of another occupied property by more than 5 dB.

Per Section 112.05(A), construction machinery must not exceed 75 dBA at 50 feet.

Per Section 41.40, construction must occur between the hours of 7 AM and 9 PM on Monday through Friday and 8 AM to 6 PM on Saturday. Construction may not occur on Sundays or national holidays.

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 groundborne vibration or groundborne 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?

3.0 Study Method and Procedure

3.1 Ambient Noise Measurements

MD performed one (1) 24-hour measurement on 9/12/23 as shown in Appendix B. NM1 was placed near the southwest edge of the project site. The main source of ambient noise throughout the project site and surrounding areas came from traffic on W Washington Boulevard. The equivalent noise level ranged from 51 to 65 dBA Leq(h) as shown in Table 1. Further notes and pictures are provided in Appendix B.

3.2 FHWA Traffic Noise Model

The traffic noise analysis utilizes the Federal Highway Administration (FHWA) Traffic Noise Model, together with several key construction parameters. Key input speed, site conditions, average daily traffic (ADT), and vehicle mix data. The modeling does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels.

The traffic noise model indicated that the noise level at the southwest corner of the site is 67 dBA Leq during the peak hour of the day, 65 dBA Leq during daytime hours, 62 dBA Leq during evening hours, and 57 dBA Leq during nighttime hours. The CNEL level is calculated to be 66 dBA. See Appendix C.

<Table 1, next page>

Table 1: Long-Term Measurement Summary, dBA

Date	Time	1-Hour dB(A)							
		L _{EQ}	L _{MAX}	L _{MIN}	L ₂	L ₈	L ₂₅	L ₅₀	L ₉₀
9/12/2023	0:00AM-1:00AM	57.0	81.1	45.7	62.0	59.2	56.4	54.0	49.3
9/12/2023	1:00AM-2:00AM	54.6	78.7	43.3	59.6	56.8	54.0	51.6	46.9
9/12/2023	2:00AM-3:00AM	53.4	77.5	42.1	58.4	55.6	52.8	50.4	45.7
9/12/2023	3:00AM-4:00AM	51.6	75.7	40.3	56.6	53.8	51.0	48.6	43.9
9/12/2023	4:00AM-5:00AM	52.6	76.7	41.3	57.6	54.8	52.0	49.6	44.9
9/12/2023	5:00AM-6:00AM	56.4	80.5	45.1	61.4	58.6	55.8	53.4	48.7
9/12/2023	6:00AM-7:00AM	62.8	86.9	51.5	67.8	65.0	62.2	59.8	55.1
9/12/2023	7:00AM-8:00AM	65.1	89.2	53.8	70.1	67.3	64.5	62.1	57.4
9/12/2023	8:00AM-9:00AM	63.2	87.3	51.9	68.2	65.4	62.6	60.2	55.5
9/12/2023	9:00AM-10:00AM	62.2	86.3	50.9	67.2	64.4	61.6	59.2	54.5
9/12/2023	10:00AM-11:00AM	62.1	86.2	50.8	67.1	64.3	61.5	59.1	54.4
9/12/2023	11:00AM-12:00PM	62.3	86.4	51.0	67.3	64.5	61.7	59.3	54.6
9/12/2023	12:00PM-1:00PM	62.4	86.5	51.1	67.4	64.6	61.8	59.4	54.7
9/12/2023	1:00PM-2:00PM	62.5	86.6	51.2	67.5	64.7	61.9	59.5	54.8
9/12/2023	2:00PM-3:00PM	62.7	86.8	51.4	67.7	64.9	62.1	59.7	55.0
9/12/2023	3:00PM-4:00PM	63.9	88.0	52.6	68.9	66.1	63.3	60.9	56.2
9/12/2023	4:00PM-5:00PM	65.5	89.6	54.2	70.5	67.7	64.9	62.5	57.8
9/12/2023	5:00PM-6:00PM	65.1	89.2	53.8	70.1	67.3	64.5	62.1	57.4
9/12/2023	6:00PM-7:00PM	63.4	87.5	52.1	68.4	65.6	62.8	60.4	55.7
9/12/2023	7:00PM-8:00PM	62.0	86.1	50.7	67.0	64.2	61.4	59.0	54.3
9/12/2023	8:00PM-9:00PM	60.9	85.0	49.6	65.9	63.1	60.3	57.9	53.2
9/12/2023	9:00PM-10:00PM	60.2	84.3	48.9	65.2	62.4	59.6	57.2	52.5
9/12/2023	10:00PM-11:00PM	59.2	83.3	47.9	64.2	61.4	58.6	56.2	51.5
9/12/2023	11:00PM-12:00AM	58.6	82.7	47.3	63.6	60.8	58.0	55.6	50.9
CNEL		65.8							
Notes:									
¹ Long-term noise monitoring location (LT1) is illustrated in Appendix B.									

3.3 FHWA Construction Noise Model

The construction noise analysis utilizes the FHWA Roadway Construction Noise Model methodology, 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. The FHWA has compiled data regarding the noise-generated characteristics of typical construction activities and is presented in Table 2.

<Table 2, next page>

Table 2: RCNM Measured Noise Emission Reference Levels¹

Type	Typical Noise Level at 50 Feet (dBA)
Concrete Saw	90
Dozer	82
Grader	85
Tractor	84
Roller	80
Crane	81
Man Lift	75
Concrete Mixer Truck	79
Air Compressor	78
Notes: ¹ Referenced Noise Levels from the FHWA RCNM.	

3.3 Construction Vibration Model

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 bulldozer. A large bulldozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is likely 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 ground)

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

4.0 Traffic Noise Level Projections

Traffic noise along W Washington Boulevard will be the main source of noise impacting the project site and the surrounding area. The project projects 219 daily trips. Per the LADOT traffic counts (data taken in 2016 and projected with a 2% annual growth), W Washington Boulevard has 29, 668 trips by the project site.

It takes a change of 3 dB or more to hear an audible difference which would occur with a doubling of traffic. The project is anticipated to not increase the existing noise level due to an increase in traffic, and therefore the impact is less than significant.

5.0 Project Operational Noise Level Projections

On-site operational noise includes a transformer and HVAC. All HVAC equipment is located on the rooftop and will be blocked by a parapet wall. Equipment will be at least 40 feet away from adjacent residences. The maximum sound power level from a single unit is 75 dBA. At 40 feet away, the sound pressure level is estimated to be 42 dBA. For all the units near the residential property operating simultaneously, the sound level is 52 dBA. This is a simplification assuming all units are at the same distance away from the receiver when in reality each unit will be distributed along the property and there will be a larger distance for each HVAC equipment. The parapet will provide a 15 dB reduction. The maximum sound level at the nearby residential receivers will be 37 dBA and will therefore not increase the overall nighttime ambient level of 47 dBA Leq. See Appendix D.

Per ANSI and NEPA requirements for transformer noise, transformers must be no louder than 65 dBA at 6 feet. Transformers should be placed at least 20 feet from the adjacent residential receptors or should be shielded to stay below the nighttime ambient level. The transformer is planned to be installed underground.

Operational noise complies with Section 122.02 of the Los Angeles Municipal Code. The impact is, therefore, less than significant.

6.0 Construction Noise Level Projections

The degree of construction noise may vary for different phases of the construction. Noise levels at sensitive receivers will vary with the different phases of construction. Table 3 presents the construction noise levels at sensitive receptors with the implementation of 15 dB mufflers on all heavy equipment and an 8’ tall noise barrier at the north property line for the demolition phase. See Appendix E for calculations.

Table 3: Projected Construction Noise Levels (dBA, Lmax)

Location	Phase	Construction Noise Level	Exceeds Significant Threshold?
Adjacent Residential Properties	Demo	86	Yes
	Grade	74	No
	Build	71	No
	Pave	70	No
	Arch Coat	62	No

Assuming the implementation of 15 dB mufflers on all heavy equipment, the regulatory noise level limit of 75 dBA is never exceeded during each phase of construction except during demolition. For the demolition phase, an 8’ barrier along the northern property line is considered to attenuate concrete saw operation; therefore, said phase is considered in compliance with the regulation. The impact is, therefore, less than significant.

7.0 Construction Vibration Level Projections

Bulldozers will get as close as 20 ft to the nearest residential buildings surrounding the project site. The vibration will be up to 0.114 in/sec PPV during construction. This is perceptible but below the threshold of

damage of 0.114 in/sec PPV for the adjacent buildings. The impact is, therefore, less than significant. See Appendix E for calculations.

8.0 Conclusions

The Project will be compliant with the City's noise ordinance and CEQA guidelines with the implementation of typical construction noise best practices. In addition, the project will not generate a noise impact during operation. The project is not within 2 miles of a private or public airport. MD is pleased to provide this noise assessment for the proposed project. If you have any questions regarding this analysis, please call our office at (805) 426-4477.

Sincerely,
MD Acoustics, LLC



Matthew Gyles
Acoustical Consultant



Francisco Irarrazabal, INCE-USA
Acoustical Consultant

Exhibit A Location Map



Appendix A
Glossary of Acoustical Terms

Glossary of Terms

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, L99, etc.

Noise: Any 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...".

Noise Criteria (NC) Method: This metric plots octave band sound levels against a family of reference curves, with the number rating equal to the highest tangent line value as demonstrated in Figure 1.

Percent Noise Levels: See L(n).

Room Criterion (RC) Method: When sound quality in the space is important, the RC metric provides a diagnostic tool to quantify both the speech interference level and spectral imbalance.

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.

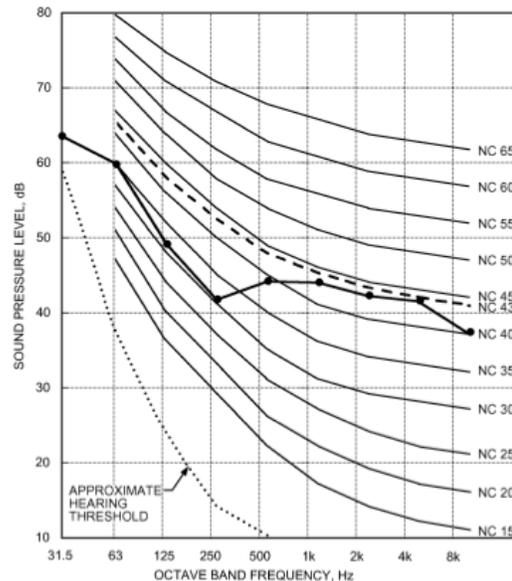
Sound Transmission Class (STC): To quantify STC, a Transmission Loss (TL) measurement is performed in a laboratory over a range of 16 third-octave bands between 125 – 4,000 Hertz (Hz). The average human voice creates sound within the 125 – 4,000 Hz $1/3^{\text{rd}}$ octave bands.

STC is a single-number rating given to a particular material or assembly. The STC rating measures the ability of a material or an assembly to resist airborne sound transfer over the specified frequencies (see ASTM International Classification E413 and E90). In general, a higher STC rating corresponds with a greater reduction of noise transmitting through a partition.

STC is highly dependent on the construction of the partition. The STC of a partition can be increased by: adding mass, increasing or adding air space, and adding absorptive materials within the assembly. The STC rating does not assess low-frequency sound transfer (e.g. sounds less than 125 Hz). Special consideration must be given to spaces where the noise transfer concern has lower frequencies than speech, such as mechanical equipment and or/or music. The STC rating is a lab test that does not take into consideration weak points, penetrations, or flanking paths.

Even with a high STC rating, any penetration, air-gap, or “flanking path can seriously degrade the isolation quality of a wall. Flanking paths are the means for sound to transfer from one space to another other than through the wall. Sound can flank over, under, or around a wall. Sound can also travel through common ductwork, plumbing, or corridors. Noise will travel between spaces at the weakest points. Typically, there is no reason to spend money or effort to improve the walls until all weak points are controlled first.

FIGURE 1: Sample NC Curves and Sample Spectrum Levels



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.

Appendix B
Field Sheet

24-Hour Continuous Noise Measurement Datasheet

Project: 1848 S Gramercy St Multi-Family Residential **Site Observations:** Alley between two residential uses. Road noise and residential noise
Site Address/Location: 1848 S Gramercy St, Los Angeles, CA
Date: 9/12/2023
Field Tech/Engineer: Jason Schuyler

General Location: Southwest Corner of the lot
Sound Meter: NTi, XL2 **SN:** A2A-07095-E0
Settings: A-weighted, slow, 1-hour, 24-hour duration
Meteorological Con.: 78F winds 1-3MPH mostly sunny, hazy
Site ID: LT-1

Site Topo: Flat
Ground Type: Pavement

Noise Source(s) w/ Distance:
1 - 120' from W Washington Blvd CL

Figure 1: LT Monitoring Locations



Figure 2: LT-1 Photo



24-Hour Noise Measurement Datasheet - Cont.

Project: 1848 S Gramercy St Multi-Family Residential
Site Address/Location: 1848 S Gramercy St, Los Angeles, CA
Site ID: LT-1

Day: 1 of 1

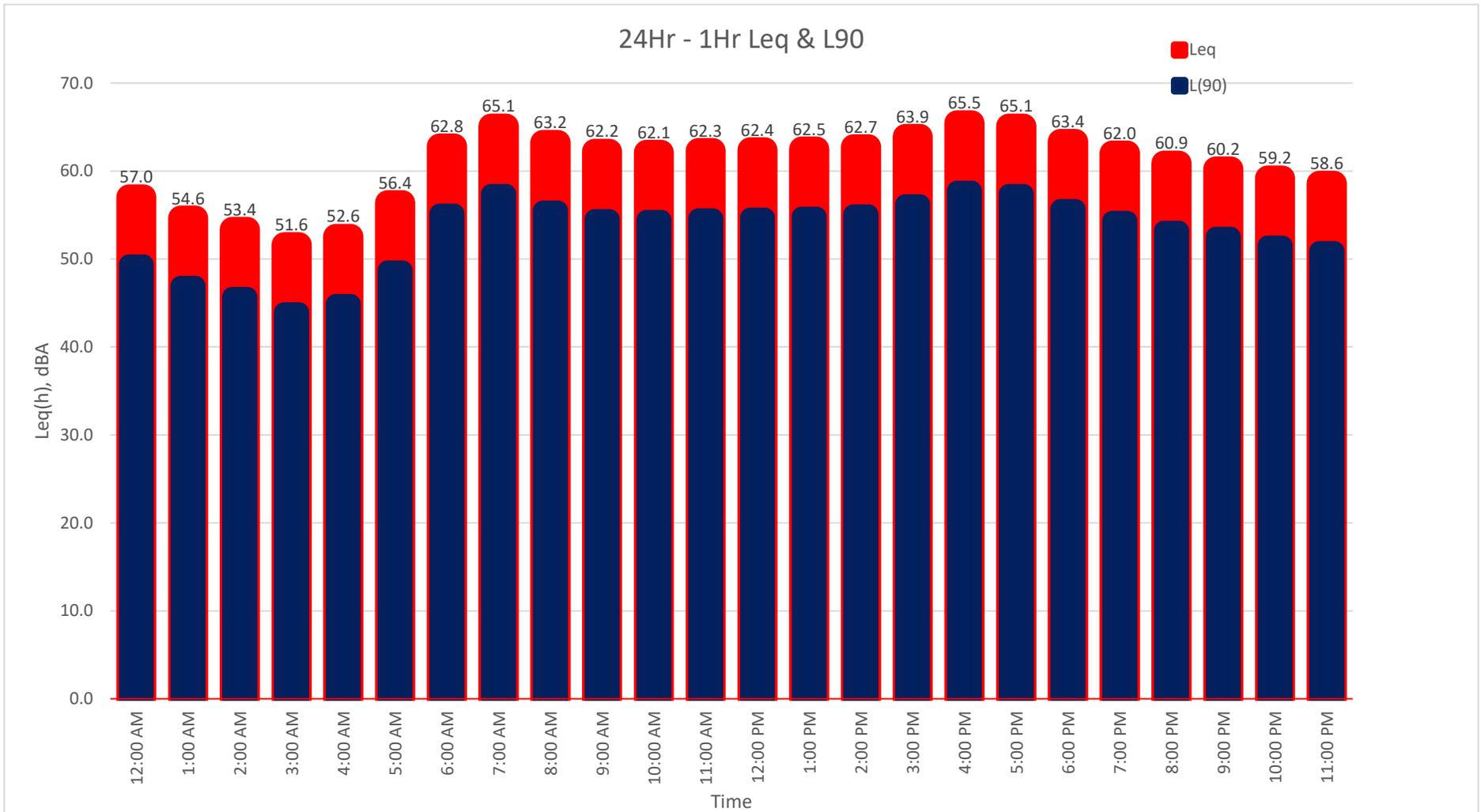
Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
9/12/2023	12:00 AM	1:00 AM	57.0	81.1	45.7	62.0	59.2	56.4	54.0	49.3
9/12/2023	1:00 AM	2:00 AM	54.6	78.7	43.3	59.6	56.8	54.0	51.6	46.9
9/12/2023	2:00 AM	3:00 AM	53.4	77.5	42.1	58.4	55.6	52.8	50.4	45.7
9/12/2023	3:00 AM	4:00 AM	51.6	75.7	40.3	56.6	53.8	51.0	48.6	43.9
9/12/2023	4:00 AM	5:00 AM	52.6	76.7	41.3	57.6	54.8	52.0	49.6	44.9
9/12/2023	5:00 AM	6:00 AM	56.4	80.5	45.1	61.4	58.6	55.8	53.4	48.7
9/12/2023	6:00 AM	7:00 AM	62.8	86.9	51.5	67.8	65.0	62.2	59.8	55.1
9/12/2023	7:00 AM	8:00 AM	65.1	89.2	53.8	70.1	67.3	64.5	62.1	57.4
9/12/2023	8:00 AM	9:00 AM	63.2	87.3	51.9	68.2	65.4	62.6	60.2	55.5
9/12/2023	9:00 AM	10:00 AM	62.2	86.3	50.9	67.2	64.4	61.6	59.2	54.5
9/12/2023	10:00 AM	11:00 AM	62.1	86.2	50.8	67.1	64.3	61.5	59.1	54.4
9/12/2023	11:00 AM	12:00 PM	62.3	86.4	51.0	67.3	64.5	61.7	59.3	54.6
9/12/2023	12:00 PM	1:00 PM	62.4	86.5	51.1	67.4	64.6	61.8	59.4	54.7
9/12/2023	1:00 PM	2:00 PM	62.5	86.6	51.2	67.5	64.7	61.9	59.5	54.8
9/12/2023	2:00 PM	3:00 PM	62.7	86.8	51.4	67.7	64.9	62.1	59.7	55.0
9/12/2023	3:00 PM	4:00 PM	63.9	88.0	52.6	68.9	66.1	63.3	60.9	56.2
9/12/2023	4:00 PM	5:00 PM	65.5	89.6	54.2	70.5	67.7	64.9	62.5	57.8
9/12/2023	5:00 PM	6:00 PM	65.1	89.2	53.8	70.1	67.3	64.5	62.1	57.4
9/12/2023	6:00 PM	7:00 PM	63.4	87.5	52.1	68.4	65.6	62.8	60.4	55.7
9/12/2023	7:00 PM	8:00 PM	62.0	86.1	50.7	67.0	64.2	61.4	59.0	54.3
9/12/2023	8:00 PM	9:00 PM	60.9	85.0	49.6	65.9	63.1	60.3	57.9	53.2
9/12/2023	9:00 PM	10:00 PM	60.2	84.3	48.9	65.2	62.4	59.6	57.2	52.5
9/12/2023	10:00 PM	11:00 PM	59.2	83.3	47.9	64.2	61.4	58.6	56.2	51.5
9/12/2023	11:00 PM	12:00 AM	58.6	82.7	47.3	63.6	60.8	58.0	55.6	50.9

CNEL 65.8

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: 1848 S Gramercy St Multi-Family Residential
Site Address/Location: 1848 S Gramercy St, Los Angeles, CA
Site ID: LT-1

Day: 1 of 1



Appendix C
Traffic

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: 1848 Gramercy Pl Multi-Family
 ROADWAY: Gramercy Place
 LOCATION: SW corner of the site lot

JOB #: 1191-23-04
 DATE: 15-Sep-23
 ENGINEER: M Gyles

NOISE INPUT DATA Existing

ROADWAY CONDITIONS

ADT = 29,668
 SPEED = 35
 PK HR % = 10
 NEAR LANE/FAR LANE DIS = 45
 ROAD ELEVATION = 0.0
 GRADE = 1.0 %
 PK HR VOL = 2,967

RECEIVER INPUT DATA

RECEIVER DISTANCE = 120
 DIST C/L TO WALL = 115
 RECEIVER HEIGHT = 5.0
 WALL DISTANCE FROM RECEIVER = 5
 PAD ELEVATION = 0.5
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS

AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = 10

WALL INFORMATION

HTH WALL: 0.0
 AMBIENT= 0.0
 BARRIER = 0 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCK	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	117.92	--
MEDIUM TRUCKS	4.0	117.88	--
HEAVY TRUCKS	8.0	117.90	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.2	63.3	61.5	55.5	64.1	64.7
MEDIUM TRUCKS	57.7	56.2	49.8	48.2	56.7	56.9
HEAVY TRUCKS	58.9	57.5	48.5	49.7	58.1	58.2
NOISE LEVELS (dBA)	66.7	64.9	62.0	57.1	65.6	66.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.2	63.3	61.5	55.5	64.1	64.7
MEDIUM TRUCKS	57.7	56.2	49.8	48.2	56.7	56.9
HEAVY TRUCKS	58.9	57.5	48.5	49.7	58.1	58.2
NOISE LEVELS (dBA)	66.7	64.9	62.0	57.1	65.6	66.1

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	49	155	491	1554
LDN	44	139	440	1392

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT: 1848 Gramercy Pl Multi-Family
 ROADWAY: Gramercy Place
 LOCATION: SW PL

JOB #: 1191-23-04
 DATE: 15-Sep-23
 ENGINEER: M Gyles

NOISE INPUT DATA Existing plus Project

ROADWAY CONDITIONS

ADT = 29,887
 SPEED = 35
 PK HR % = 10
 NEAR LANE/FAR LANE DIS = 45
 ROAD ELEVATION = 0.0
 GRADE = 1.0 %
 PK HR VOL = 2,989

RECEIVER INPUT DATA

RECEIVER DISTANCE = 120
 DIST C/L TO WALL = 115
 RECEIVER HEIGHT = 5.0
 WALL DISTANCE FROM RECEIVER : 5
 PAD ELEVATION = 0.5
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS

AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = 10

WALL INFORMATION

HTH WALL= 0.0
 AMBIENT= 0.0
 BARRIER = 0 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.9742
MEDIUM TRUCK	0.848	0.049	0.103	0.0184
HEAVY TRUCKS	0.865	0.027	0.108	0.0074

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	117.92	--
MEDIUM TRUCKS	4.0	117.88	--
HEAVY TRUCKS	8.0	117.90	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.2	63.3	61.5	55.5	64.1	64.7
MEDIUM TRUCKS	57.7	56.2	49.8	48.3	56.7	57.0
HEAVY TRUCKS	59.0	57.5	48.5	49.7	58.1	58.2
NOISE LEVELS (dBA)	66.7	64.9	62.0	57.1	65.7	66.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.2	63.3	61.5	55.5	64.1	64.7
MEDIUM TRUCKS	57.7	56.2	49.8	48.3	56.7	57.0
HEAVY TRUCKS	59.0	57.5	48.5	49.7	58.1	58.2
NOISE LEVELS (dBA)	66.7	64.9	62.0	57.1	65.7	66.2

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	50	157	495	1566
LDN	44	140	443	1402

Appendix D
Noise Calculations Input/Output

APPLICATION & ACCESSORIES

Refer to Price Manual for specific model numbers.

Standard Application Limits*		
Maximum Lineset Equivalent Length		80 Ft
Outdoor Ambient Temperature Limits		
Cooling Operation	Maximum DB	125°F
	Minimum DB	55°F
Heating Operation	Maximum DB	75°F
	Minimum DB	-10°F

* For applications such as Low Ambient, reduced linesets, and/or long linesets, see the accessories listed below.

Non-Standard Lineset Applications - For installations with reduced diameter or long linesets, refer to the current version of the Piping Application Guide P/N 247077, available in the Application Bulletins section on www.upgnet.com.

Standard Low Ambient Control Kit S1-2LA06700424: Allows the use of air conditioning at low outdoor ambient temperatures down to +20°F (-7°C). For use with all R-410A single stage AC & HP models.

Advanced Low Ambient Control Kit S1-2LA04701024: Contains the necessary components and controls to allow cooling operation down to -20°F (-29°C). For use with all R-410A single stage AC & HP models.

High Ambient Condenser Fan Motor S1-FHM**HT:** Class F 70°C motor to allow cooling operation up to 160°F air entering the condenser. For use with all R-410A single stage AC & HP models containing R-410A refrigerant only.

Outdoor Communicating Board Kit (S1-33102952310): Electronic control upgrade for standard AC & HP units to provide compatibility with the Residential Touch Screen Communicating Control.

Start Assist Kit S1-2SA067***:** Provides increased compressor starting torque for areas with low supply voltage. Required for units with recip compressors when applied with indoor TXV, and for all units when applied with long linesets or low ambient kits. May be factory installed on select AC & HP units (see Physical & Electrical Table). See Price Pages or Source1 SmartSearch for the correct kit for each application.

Compressor Crankcase Heater Kit (S1-025-***-***):** A wrap-around electrical resistance heater that warms the compressor sump, reducing the chance of liquid slugging on startup. Required on all long lineset and low ambient applications. See Price Pages or Source1 SmartSearch for the correct part for each application.

SOUND POWER RATINGS - COOLING

Cooling Model Number	Octave Band Sound Power Level (db re. 1-pW)									
	63	125	250	500	1000	2000	4000	8000	dBA	SQI
YHE18B21S	69.3	72.8	66.8	69.1	66.7	63.6	59.3	59.7	72	19.1
YHE24B21S	70.0	70.1	67.6	70.0	67.3	63.5	60.7	56.8	72	19.1
YHE30B21S	68.0	70.6	68.3	70.0	68.9	65.5	64.7	61.1	74	19.0
YHE35B21S	67.9	72.6	68.3	70.5	68.0	63.6	59.7	56.5	72	19.2
YHE36B21H	68.4	70.2	68.8	68.9	69.0	65.0	63.3	60.2	73	19.1
YHE42B21H	56.0	71.2	68.1	70.0	65.9	65.5	58.8	54.9	75	19.0
YHE48B21S	58.0	70.7	64.1	68.3	66.1	61.7	57.9	56.0	75	19.0
YHE60B21S	69.1	71.6	68.9	71.3	70.2	65.5	61.5	58.4	74	19.0

Rated in accordance with ARI Standard 270.

Indoor Blower-Off Delay Kit S1-2FD06700224: Provides a 1-minute blower-off delay at the end of the cooling cycle. May be required for retrofits with non-Johnson Controls Unitary Products indoor units. This feature is factory-provided on all JCUP indoor products.

Low Temperature Cutoff S1-2LT067224: Locks the compressor out at temperatures below -6°F, allowing the system thermostat to cycle on supplemental heat.

Support Feet S1-HPRKIT-:** Kit of 5 support feet to raise unit above snow or landscaping. Available in heights of 3", 6" or 12".

Anchor Bracket Kit S1-1HK0401: Firmly anchors unit to pad or support structure. When properly installed, approved for ground-mounted or roof-mounted applications.

Indoor TXV Kit S1-1TVM*:** Thermal expansion valves precisely meter refrigerant for optimum performance over a wide range of conditions. See System Charge Table, Price Pages, or Source1 Smart Search for TXV part number for each AC & HP model.

Wall Mount Kit (S1-ACB-):** Includes two brackets to allow outdoor unit to be securely mounted to a vertical wall. Mounting hardware is field sourced according to the specific application.

Winter Cover Kit S1-CCVRE*:** Custom fit winter cover protects AC condensing unit from debris during the off-season. Must be removed prior to unit operation. See Price Pages or Source1 SmartSearch for the correct cover for each application.

Cold Weather Charging Tent S1-CHGTENT01: Provides warm environment to accurately service AC & HP systems in ambient conditions 55°F (13°C) or colder.

Touch-up Paint S1-5130153**:** Color matched aerosol paint for touching up unit chassis and panels. See Price Pages or Source1 SmartSearch for the correct color for each application.

Compressor Sound Blanket S1-010-07xxx-000: A field installed dense foam cover that provides 2dBA sound level reduction. See Price Pages or Source1 SmartSearch for the correct blanket for each application.

Thermostat: Compatible thermostat controls are available through accessory sourcing. For optimum performance, these outdoor units are fully compatible with our [YorkColemanLuxair-residential](#) touch screen thermostat with proprietary (patent-pending) hexagon interface. For more information, see the thermostat section of the Product Equipment Catalog.

SOUND POWER RATINGS - HEATING

Heating Model Number	Octave Band Sound Power Level (db re. 1-pW)									
	63	125	250	500	1000	2000	4000	8000	dBA	SQI
YHE18B21S	69.9	73.1	68.0	69.3	66.1	63.6	59.2	58.0	72	19.0
YHE24B21S	69.7	69.7	66.7	71.2	66.9	63.2	60.3	56.5	72	19.0
YHE30B21S	70.3	74.6	70.5	71.9	68.9	66.0	60.4	58.7	74	19.2
YHE35B21S	64.3	73.7	67.7	73.6	68.0	63.4	60.2	61.1	73	19.1
YHE36B21H	69.3	70.0	70.8	71.3	70.8	67.1	62.5	61.3	75	19.0
YHE42B21H	58.0	75.1	72.2	67.1	62.4	60.7	55.3	52.3	75	19.0
YHE48B21S	61.2	69.6	65.8	68.1	65.5	60.3	55.2	52.4	74	19.0
YHE60B21S	72.6	73.4	70.8	71.9	69.0	67.2	65.4	65.5	75	19.1

Rated in accordance with ARI Standard 270.

MECHANICAL SPECIFICATIONS

MANUFACTURE AND CERTIFICATIONS

- Units shall be manufactured in an ISO 9001 certified facility.
- Units shall be certified by CSA to UL 1995 / CSA 22.2 and performance certified to ANSI/AHRI Standard 210/240.
- Units shall be sound tested according to ANSI/AHRI Standard 270.
- Certified matched system ratings will be available for download from the AHRI online directory at www.ahridirectory.org.
- Unit packaging shall be marked, "Assembled in the USA"

UNIT APPLICATION

- Units shall be approved for cooling operation between 55°F and 125°F without modification.
- Units shall be approved for heating operation between -20°F and 75°F without modification.
- Units shall be approved for linesets up to 80 feet equivalent length without modification.
- Units shall be approved for installation within 6 inches of a flat vertical wall without modification, according to the instructions in the technical literature.
- Units shall be certified to the 5th Edition (2014) of the Florida Building Code for a combined allowable lateral and uplift wind force of 200 psf and 100 psf, respectively, for both ground-mounted and rooftop-mounted applications up to 200 feet above grade with approved mounting kit
- Units shall be designed to 76dBA or less to minimize sound pollution.

UNIT ACCESS

- Units shall have a removable fan guard that can be removed independently of the top for interior access through the top of the unit without damaging the coil.
- Units shall have two removable stamped steel coil guards for exterior coil access.
- Units shall have a separate compartment for electrical controls that can be accessed without disturbing the unit airflow.
- Units shall have a blockoff panel that can be removed to provide interior unit access through the side of the unit.
- Units shall have a removable blockoff panel and a swing away removable electrical panel that provides sufficient interior unit access for removing the compressor through the side of the unit.

UNIT CONSTRUCTION

- Units shall be shipped completely wired, piped and assembled. Wiring pigtails shall be provided for field control wiring connections. Service valves shall be provided for field refrigerant line connections.

- Units shall be factory leak checked, run tested, and shipped with a holding charge of R-410A refrigerant.
- Unit cabinet components shall be G90 equivalent steel finished with powder-coat paint rated at a minimum of 500 hours under ASTM B117 testing.
- Unit base pan shall be stamped G90 equivalent steel finished with powder-coat paint rated at a minimum of 500 hours under ASTM B117 testing.
- Units shall have a single corner post opposite the electrical control box and two independently removable steel coil guard panels to optimize cabinet strength and serviceability.
- Units shall have L-shaped stamped sheet metal coil guards with punched and extruded slots for maximum panel durability and stiffness.
- Units shall have a factory installed filter-drier for faster installation and improved system reliability.
- Unit base valves shall be mounted diagonally on the unit base pan with service ports that provide sufficient clearance for low-loss hose fittings.
- Units shall be constructed with a high pressure switch for system protection.
- Units shall be constructed with all badging and labels applied at the factory.

UNIT COMPONENTS

- Compressor shall be hermetic with internal electrical overload protection and internal overpressure protection.
- Compressor shall be mounted on rubber vibration isolators that do not require the removal of transportation clips or brackets.
- Units shall be constructed with internally sprung reciprocating compressors for low vibration. (Applies to select models).
- Condenser fan shall be direct drive with vertical air discharge for low sound levels.
- Condenser fan motor shall be totally enclosed with permanently lubricated ball bearings motors approved for vertical shaft applications.
- Condenser coil shall be air cooled and constructed of enhanced aluminum fins mechanically bonded to internally enhanced Ø 7mm copper tubing.

UNIT WARRANTIES

- Unit manufacturer shall provide a 10-Year compressor warranty without a requirement for unit registration.
- Unit manufacturer shall provide a 5-Year parts warranty without a requirement for unit registration.

Appendix E
Construction Noise and Vibration Calculations

Receptor - Residences to the North

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	Receptor Item Leq, dBA
DEMO ³									
Concrete Saw	1	75	31	36	20	0	0.2	79.2	70.9
Dozer	1	67	31	36	40	0	0.4	71.2	65.9
Tractor	1	69	31	36	40	0	0.4	73.2	67.9
								79.2	73.5
GRADE ⁴									
Grader	1	70	31	36	40	0	0.40	74.2	68.9
Dozer	1	67	31	36	40	0	0.40	71.2	65.9
Tractor	2	69	31	36	40	0	0.40	73.2	67.9
								74.2	73.8
BUILD									
Crane	1	66	31	36	16	0	0.16	70.2	60.9
Man lift	1	60	31	36	20	0	0.20	64.2	55.9
Generator	1	66	31	36	50	0	0.50	70.2	65.8
Tractor	1	69	31	36	40	0	0.40	73.2	67.9
Welder/Torch	3	59	31	36	40	0	0.40	63.2	57.9
								73.2	71.3
PAVE									
Paver	1	62	31	36	50	0	0.50	66.2	61.8
Tractor	1	69	31	36	40	0	0.40	73.2	67.9
Roller	1	65	31	36	20	0	0.20	69.2	60.9
Concrete Mixer Truck	1	64	31	36	40	0	0.40	68.2	62.9
								73.2	69.5
ARCH COAT									
Compressor (air)	1	63	31	36	40	0	0.40	67.2	61.9
								67.2	61.9

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

²FTA Transit Noise and Vibration Impact Assessment Manual Section 7.1, 0.66 for soft ground and 0 for hard ground

³ 8' tall noise Barrier considered for the demolition phase

⁴ A 15 dB reduction muffler shall be included for all construction phases for off-road equipment

VIBRATION LEVEL IMPACT

Project: 1848 S Gramercy Pl Multi-Family

Date: 9/15/23

Source: Large Bulldozer

Scenario: Unmitigated

Location: Adjacent residences

Address: 1848 S Gramercy Pl, Los Angeles CA

PPV = $PPV_{ref}(25/D)^n$ (in/sec)

DATA INPUT

Equipment = **2** Large Bulldozer INPUT SECTION IN BLUE
Type

PPVref = 0.089 Reference PPV (in/sec) at 25 ft.

D = **20.00** 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 = **0.114** IN/SEC OUTPUT IN RED