APPENDIX 9.10

NOISE REPORT

APPENDIX 9.10.1

NOISE AND VIBRATION TECHNICAL REPORT

Noise and Vibration Impact Assessment Technical Report

CORE 5 – MENIFEE COMMERCE CENTER MENIFEE, CA

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1.0 INTRODUCTION AND SUMMARY

This Noise and Vibration Impact Assessment Technical Report assesses potential operational and construction noise and vibration impacts associated with the proposed Menifee Commerce Center project. The applicant proposes to develop two distribution center buildings, east and west of Sherman Road, between Ethanac Road and McLaughlin Road, in the City of Menifee, California. The project vicinity is shown on Figure 1.

Onsite operations would generate noise levels up to 42 dBA at offsite residential land uses, less than the Menifee nighttime limit of 45 dBA and the Perris nighttime limit of 60 dBA. Operational noise impacts as a result of the project would be less than significant.

Along all but two roadway segments, project traffic would generate less-than-significant noise increases. Along one segment, project traffic would increase the noise level to over 70 dBA CNEL, but interior noise levels would not exceed California limits. Along the other segment, project traffic would increase the noise level by 9-10 dBA CNEL. Along this segment, existing-plus-project traffic noise levels would exceed those considered Normally Acceptable, but would be lower than those considered Conditionally Acceptable by the City of Menifee, and interior noise levels would not exceed California limits. The impact of project-generated traffic noise is less than significant.

Operation and construction of the project would generate vibration levels below 0.2 inches per second at vibration-sensitive receptors in the project area. Operational vibration impacts as a result of the project would be less than significant.

Construction would occur on the days and within the hours proscribed by the Menifee and Perris Municipal Codes, and would not exceed 80 dBA in Perris residential zones. Construction noise impacts as a result of the project would be less than significant.

The project site is not located within the 60 dBA CNEL noise contours of any airport.

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FIGURE 1
Vicinity Map

1.1 PROJECT DESCRIPTION

The project is the development of two concrete tilt-up distribution center buildings. The project site is generally bounded by Ethanac Road, McLaughlin Road, Trumble Road, and Dawson Road, in the City of Menifee. Surrounding land uses include single-family residences and commercial properties. The properties to the west across Trumble Road are in the City of Perris.

Building 1 would total 1,254,160 square feet and proposes a structural height of 49 feet and includes 663 automobile parking spaces and 286 truck trailer parking spaces. Building 2 would total 385,970 square feet and proposes a structural height of 49 feet and includes 211 automobile parking spaces and 168 truck trailer parking spaces.

Refer to Figure 3 for the site plan.

1.2 NOISE DESCRIPTORS

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and that interferes with or disrupts normal activities. Human environments are characterized by a generally consistent noise level which varies with each area. This is called ambient noise. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, perceived importance of the noise and its appropriateness in the setting, time of day and type of activity during which the noise occurs, sensitivity of the individual, and change from ambient conditions.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and intensity. Frequency describes the sound's pitch and is measured in cycles per second, or hertz (Hz), whereas intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually as pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. The average person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness; this relation holds true for sounds of any loudness. Sound levels of typical noise sources and environments are provided in Table 1.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. A simple rule is useful, however, in dealing with sound levels: if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example, 60 dB + 60 dB = 63 dB, and 80 dB + 80 dB = 83 dB.

The normal human ear can detect sounds that range in frequency from about 20 Hz to 20,000 Hz. However, all sounds in this wide range of frequencies are not heard equally well by the human ear, which is most sensitive to frequencies in the range of 1,000 Hz to 4,000 Hz. This frequency dependence can be taken into account by applying a correction to each frequency range to approximate the sensitivity of the human ear within each range. This is called A-weighting and is commonly used in measurements of community environmental noise. The A-weighted sound pressure level (abbreviated as dBA) is the sound level with the "A-weighting" frequency correction. In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Community noise levels usually change continuously during the day. The equivalent continuous A-weighted sound pressure level (Leq) is normally used to describe community noise. The Leq is the energy-averaged A-weighted sound level during a measured time interval, and is equal to the level of a continuous steady sound containing the same total acoustical energy over the averaging time period as the actual time-varying sound. Additionally, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the Lmax and Lmin indicators, which represent the root-mean-square maximum and minimum noise levels obtained during the measurement interval. The Lmin value obtained for a particular monitoring location is often called the "acoustic floor" for that location.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10, 50, and 90 percent of a stated time, respectively. Sound levels associated with L10 typically describe transient or short-term events, whereas levels associated with L90 describe the steady-state (or most prevalent) noise conditions.

Another sound measure known as the Community Noise Equivalent Level (CNEL) is an adjusted average A-weighted sound level for a 24-hour day. It is calculated by adding a 5-dB adjustment to sound levels during evening hours (7:00 p.m. to 10:00 p.m.) and a 10-dB adjustment to sound levels during nighttime hours (10:00 p.m. to 7:00 a.m.). These adjustments compensate for the increased sensitivity to noise during the typically quieter evening and nighttime hours. The CNEL is used by the State of California and City of Menifee to evaluate land-use compatibility with regard to noise.

Table 1. Sound Levels of Typical Noise Sources and Noise Environments

Noise Source (at Given Distance)	Noise Environment	A-Weighted Sound Level	Human Judgment of Noise Loudness (Relative to Reference Loudness of 70 Decibels*)
Military Jet Takeoff with Afterburner (50 ft)	Carrier Flight Deck	140 Decibels	128 times as loud
Civil Defense Siren (100 ft)		130	64 times as loud
Commercial Jet Take-off (200 ft)		120	32 times as loud **Threshold of Pain**
Pile Driver (50 ft)	Rock Music Concert Inside Subway Station (New York)	110	16 times as loud
Ambulance Siren (100 ft) Newspaper Press (5 ft) Gas Lawn Mower (3 ft)		100	8 times as loud **Very Loud**
Food Blender (3 ft) Propeller Plane Flyover (1,000 ft) Diesel Truck (150 ft)	Boiler Room Printing Press Plant	90	4 times as loud
Garbage Disposal (3 ft)	Higher Limit of Urban Ambient Sound	80	2 times as loud
Passenger Car, 65 mph (25 ft) Living Room Stereo (15 ft) Vacuum Cleaner (10 ft)		70	Reference Loudness **Moderately Loud**
Normal Conversation (5 ft) Air Conditioning Unit (100 ft)	Data Processing Center Department Store	60	1/2 as loud
Light Traffic (100 ft)	Large Business Office Quiet Urban Daytime	50	1/4 as loud
Bird Calls (distant)	Quiet Urban Nighttime	40	1/8 as loud **Quiet**
Soft Whisper (5 ft)	Library and Bedroom at Night Quiet Rural Nighttime	30	1/16 as loud
	Broadcast and Recording Studio	20	1/32 as loud **Just Audible**
		10	1/64 as loud
		0	1/128 as loud **Threshold of Hearing**

Source: Compiled by dBF Associates, Inc.

1.3 VIBRATION DESCRIPTORS

Vibration is defined as any oscillatory motion induced in a structure or mechanical device as a direct result of some type of input excitation. Input excitation, generally in the form of an applied force or displacement, is the mechanism required to start some type of vibratory response. Sources of earthborne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or manmade (explosions, machinery, traffic, construction equipment, etc.).

Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second (in/sec). Table 2 describes human and structural responses to ground-borne vibration.

Table 2. Reaction of People and Damage to Buildings at Various Continuous Vibration Levels

Vibration Level (in/sec PPV)	Human Reaction	Possible Damage to Building Types
0.01	Barely perceptible	None
0.04 – 0.08	Distinctly perceptible	Extremely fragile historic buildings, ruins, ancient monuments
0.10	Strongly perceptible	Fragile buildings
0.25 – 0.30	Annoying	Older residential structures
0.40 – 0.50	Severe	Newer residential structures, modern industrial / commercial buildings

Source: Caltrans 2020

2.0 IMPACT CRITERIA

This section presents the guidelines, criteria, and regulations used to assess noise and vibration impacts associated with the proposed project.

2.1 CITY OF MENIFEE

2.1.1 General Plan

The Noise Element of the Menifee General Plan [2013] provides policies to protect noise-sensitive land uses. Policies applicable to this project are reproduced below.

> Policy N-1.7: Mitigate exterior and interior noises to the levels listed in the table below to the extent feasible, for stationary sources adjacent to sensitive receptors:

Menifee General Plan Table N-1
Stationary Source Noise Standards

Land Use (Residential)	Interior Standards	Exterior Standards
10 p.m. – 7 a.m.	40 Leq (10 minute)	45 Leq (10 minute)
7 a.m. – 10 p.m.	55 Leq (10 minute)	65 Leq (10 minute)

> Policy N-1.11: Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation.

> Policy N-2.1: Require that new developments abutting residentially designated properties that operate stationary noise sources such as industrial, commercial, entertainment, institutional uses, hospitals, or large hotels, be designed to minimize noise impacts generated by loading areas, parking lots, trash enclosures, mechanical equipment, and any other noise-generating features to the extent feasible.

> Policy N-2.2: Require commercial or industrial truck delivery hours to be limited when adjacent to noise-sensitive land uses unless there is no feasible alternative or there are overriding transportation benefits.

> Policy N-2.3: Limit the hours and/or require attenuation of commercial/entertainment operations adjacent to residential and other noise-sensitive uses.

The City of Menifee Noise Background Document & Definitions [2013] provides noise / land use compatibility criteria. Criteria applicable to this Project are reproduced below.

> At the Residential – Low Density land use category, noise levels up to 60 dBA CNEL are considered Normally Acceptable. Noise levels between 55 – 70 dBA CNEL are considered Conditionally Acceptable, with an analysis of noise reduction requirements. Noise levels above 70 dBA CNEL are considered Normally or Clearly Unacceptable.
>
> At the Commercial land use category, noise levels up to 70 dBA CNEL are considered Normally Acceptable. Noise levels between 67.5 – 77.5 dBA CNEL are considered Conditionally Acceptable, with an analysis of noise reduction requirements. Noise levels above 75 dBA CNEL are considered Normally Unacceptable.

The City of Menifee General Plan Draft Environmental Impact Report, Section 5.12 Noise [The Planning Center | DC&E 2013] states that "… the following would be considered significant:

- Project-related traffic would increase the CNEL at any noise-sensitive receptor by an audible amount of 5 dBA."

2.1.2 Municipal Code

The City of Menifee Code of Ordinances provides noise standards; relevant portions are reproduced below.

§8.01.010 HOURS OF CONSTRUCTION.

> Any construction within the city located within one-fourth mile from an occupied residence shall be permitted Monday through Saturday, except nationally recognized holidays, 6:30 a.m. to 7:00 p.m. There shall be no construction permitted on Sunday or nationally recognized holidays unless approval is obtained from the City Building Official or City Engineer.

§9.09.030 CONSTRUCTION-RELATED EXEMPTIONS.

> Exceptions may be requested from the standards set forth in §9.09.040 or 9.09.060 of this chapter and may be characterized as construction-related, single event or continuous events exceptions.
>
> (A) Private construction projects, with or without a building permit, located one-quarter of a mile or more from an inhabited dwelling.

(B) Private construction projects, with or without a building permit, located within one-quarter of a mile from an inhabited dwelling, provided that:

(1) Construction does not occur between the hours of 6:00 p.m. and 6:00 a.m. the following morning during the months of June through September; and

(2) Construction does not occur between the hours of 6:00 p.m. and 7:00 a.m. the following morning during the months of October through May.

Therefore, construction may occur between 6:30 a.m. and 7:00 p.m. on any day except Sundays or nationally recognized holidays. The municipal code does not regulate noise levels produced by construction provided it occurs during the timeframe mentioned above.

City of Menifee Code §9.09.050 specifies noise standards for stationary noise sources identical to General Plan Policy N-1.7.

2.2 CITY OF PERRIS

2.2.1 General Plan

The City of Perris establishes exterior transportation noise level standards in the Noise Element of its General Plan [City of Perris 2016].

Noise levels up to 60 dBA CNEL are considered Normally Acceptable at exterior usable open spaces of commercial land uses; noise levels up to 70 dBA CNEL are considered Conditionally Acceptable.

2.2.2 Municipal Code

The City of Perris Municipal Code provides noise limits for project-generated noise.

Section 7.34.040 – Sound amplification – states:

No person shall amplify sound using sound amplifying equipment contrary to any of the following:

(1) The only amplified sound permitted shall be either music or the human voice, or both.

(2) The volume of amplified sound shall not exceed the noise levels set forth in this subsection when measured outdoors at or beyond the property line of the property from which the sound emanates.

Time Period	Maximum Noise Level
10:01 p.m.—7:00 a.m.	60 dBA
7:01 a.m.—10:00 p.m.	80 dBA

Section 7.34.050 – General prohibition – states:

> It is unlawful for any person to willfully make, cause or suffer, or permit to be made or caused, any loud excessive or offensive noises or sounds which unreasonably disturb the peace and quiet of any residential neighborhood or which are physically annoying to persons of ordinary sensitivity or which are so harsh, prolonged or unnatural or unusual in their use, time or place as to occasion physical discomfort to the inhabitants of the city, or any section thereof. The standards for dBA noise level in section 7.34.040 shall apply to this section. To the extent that the noise created causes the noise level at the property line to exceed the ambient noise level by more than 1.0 decibels, it shall be presumed that the noise being created also is in violation of this section.

Section 7.34.060 – Construction noise – states:

> It is unlawful for any person between the hours of seven p.m. of any day and seven a.m. of the following day, or on a legal holiday, with the exception of Columbus Day and Washington's birthday, or on Sundays to erect, construct, demolish, excavate, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. Construction activity shall not exceed eighty dBA in residential zones in the city. (Ord. 1082 § 2(part), 2000).

3.0 EXISTING NOISE ENVIRONMENT

Many land uses are considered sensitive to noise. Noise-sensitive receptors are land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise, such as residential dwellings, transient lodging (hotels/motels), dormitories, hospitals, educational facilities, and libraries. Industrial and commercial land uses are generally not considered sensitive to noise. The existing sound level at any given location depends on the distance to a roadway, proximity to commercial and neighborhood noise sources, and intervening structures and topography.

The project properties are currently vacant or used for agriculture. There are no structures on the project site.

Noise-sensitive land uses potentially affected by the project consist of single-family residential properties adjacent on the northwest, north, and southwest.

The project site and all adjacent properties to the north, south, and east are in the City of Menifee. The adjacent properties to the west across Trumble Road, and the properties to the north of Ethanac Road west of Sherman Road, are in the city of Perris.

3.1 SOUND LEVEL MEASUREMENTS

A project site visit and ambient noise level survey was conducted on Thursday, May 20, 2021 to observe the existing noise environment near noise-sensitive areas in the project area. Sound level measurement locations (MLs) were selected at or near project property lines. Attended short-term (15-20-minute) measurements were conducted during the daytime period (7:00 a.m. – 7:00 p.m.).

The data collection device was a RION Model NL-31 American National Standards Institute (ANSI) Type 1 Integrating Sound Level Meter (SLM). The meter was field-calibrated with a Larson Davis Model CAL200 acoustic calibrator. The meter was set for “slow” time response and A-weighting for all measurements. The microphone was equipped with a windscreen and placed five feet above the ground to simulate the average height of the human ear. Weather conditions during the measurements were approximately 75°F, 40% relative humidity, calm wind, and clear skies. The results of the measurements are summarized in Table 3 and correspond to the locations depicted on Figure 2.

Table 3. Sound Level Measurements (dBA)

Measurement	Location	Time	Leq	Lmin	Lmax	L10	L50	L90
ML1	Near 26340 Trumble Road, 50' from Trumble Road ℄	2021-05-20 10:50 – 11:05	52.1	41.7	67.4	55.7	47.0	43.5
ML2	Sherman Road bridge over aqueduct	2021-05-20 11:10 – 11:25	50.1	42.7	64.6	50.7	46.0	44.2
ML3	Near 26375 Dawson Road, 50' from Dawson Road ℄	2021-05-20 11:30 – 11:45	44.2	39.9	73.8	46.2	42.4	41.2
ML4	Near 27625 Ethanac Road, ~350' from Ethanac Road ℄	2021-05-20 11:50 – 12:10	48.0	39.3	62.7	49.3	43.8	40.9
ML5	Near 26227 Sherman Road, 50' from Sherman Road ℄	2021-05-20 12:20 – 12:35	55.3	41.6	78.0	53.3	49.1	45.6

Noise sources observed during the site visit included: vehicular traffic on surface streets and Interstate 215, occasional aircraft, birds, commercial activity, and domestic activity.

All sound level measurements were in accordance with ISO 1996-1, -2, and -3. The accuracy of the equipment is maintained through a program established by the manufacturer, and is traceable to the National Institute of Standards and Technology (NIST).

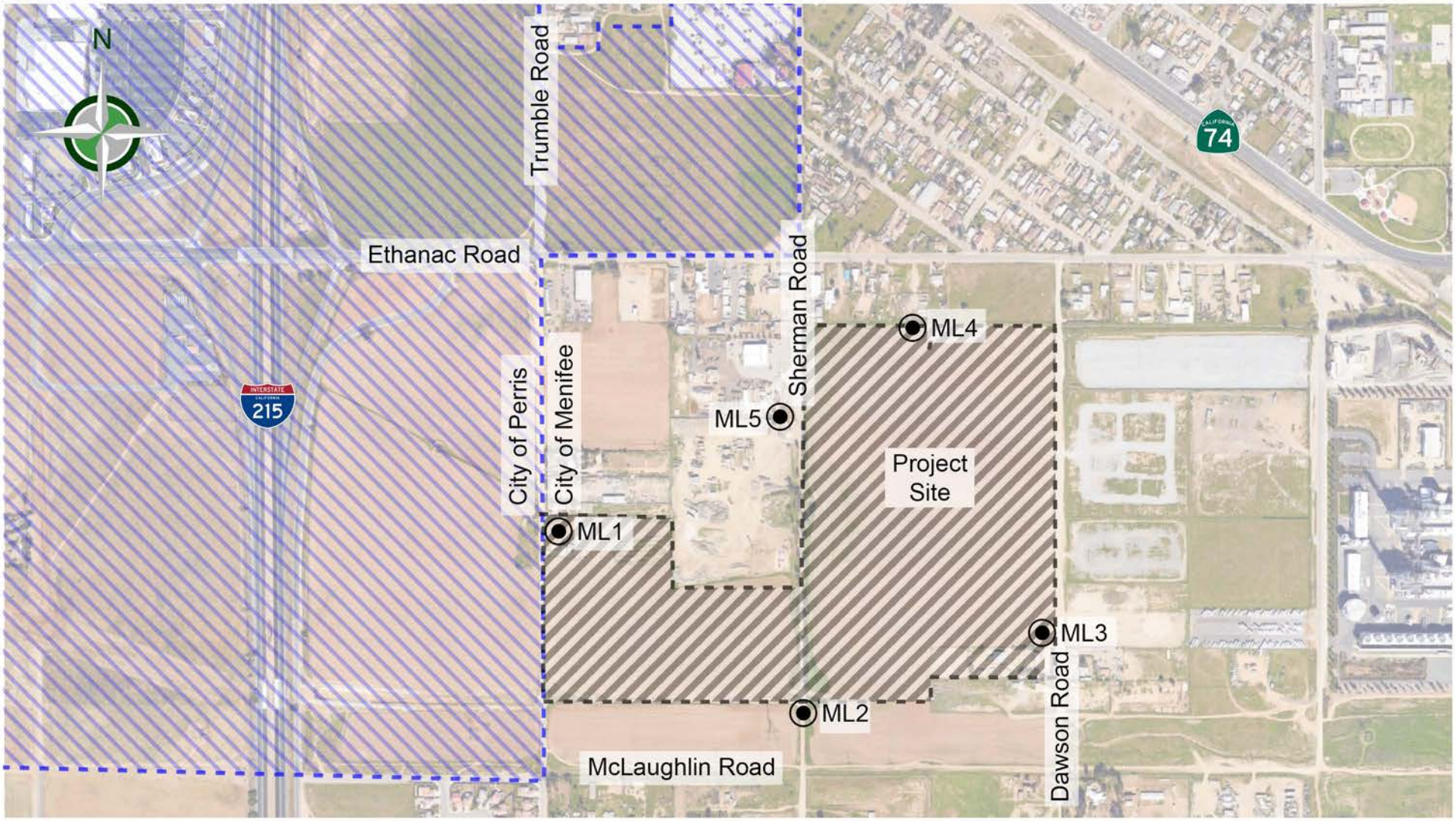

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FIGURE 2
Noise Measurement Locations

4.0 IMPACTS

4.1 OPERATION

4.1.1 Onsite Operations Noise

The proposed project would result in a significant increase in existing ambient noise levels if onsite operations would generate more than 65 / 45 dBA Leq at a Menifee residence or 80 / 60 dBA at a Perris residence during the daytime / nighttime.

The Datakustik Cadna/A industrial noise prediction model was used to estimate property line noise levels from noise sources on the project site, which are expected to include vehicle traffic and rooftop mechanical units. The locations of the project buildings and screen walls were imported from the site plan [WEBB 2021a]. The assumptions made for source input into the noise model are detailed below. The project would not include exterior emergency generators, cooling towers, or trash compactors.

Onsite project traffic would consist of tractor-trailer trucks in the truck yards and passenger cars in the employee parking lots. The TIA indicates a daily truck volume of 40 / 198 medium (2-axle) / heavy (3+-axle) trucks at Building 1 and 39 / 193 at Building 2 [WEBB 2021b].

The truck traffic was assumed to be evenly distributed over a 24-hour period. Heavy truck traffic at 15 mph generates an hourly noise level of approximately 64.3 dBA Leq(h) at a distance of 50 feet from a frequency of one truck per minute (46.5 dBA Leq(h) from one truck per hour) [FHWA 1978].

The TIA also reports 1,480 peak-hour passenger cars at Building 1 and 62 cars at Building 2. Passenger car traffic at a frequency of one car per minute at 15 mph generates an hourly average noise level of approximately 42.2 dBA Leq(h) at a distance of 50 feet [FHWA 1978].

All onsite vehicles were treated as areas of moving point sources, and were assumed to be active for a period of 5 minutes per hour.

Two 5- to 10-ton rooftop HVAC units are expected to be positioned over each office area. Each HVAC unit was assumed to produce a sound power level of approximately 91 dBA. Rooftop HVAC units were treated as stationary point sources and assumed to be constantly operational. HVAC units were assumed to be 5 feet in height above rooftop level.

Onsite operations would generate noise levels ranging from approximately 27 dBA at the southern property line near Building 2 to 42 dBA at the north property line near Building 1. These noise levels are below the most-restrictive nighttime limit of 45 dBA. Refer to Figure 3 for details. The impact from onsite operations is less than significant.

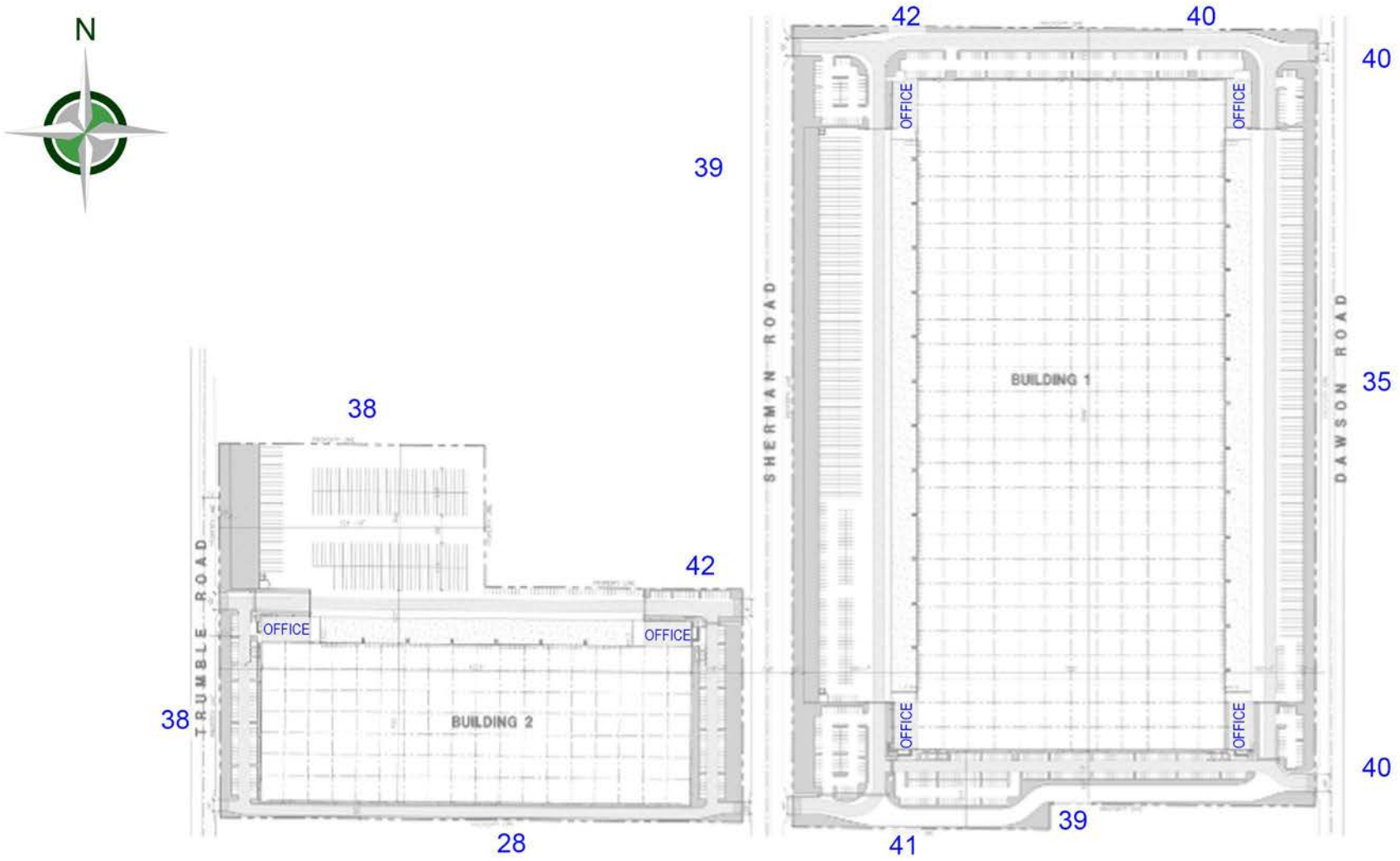

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FIGURE 3
Future Sound Levels

4.1.2 Offsite Traffic Noise

The proposed project would generate traffic on roadways in the project area. Land uses along project area roadways include single-family residences, businesses / commercial establishments, and vacant land.

The proposed project could result in a significant increase in existing ambient noise levels if:

- Project traffic would increase the noise level by 5 dBA CNEL in the City of Menifee; or
- Project traffic would increase the noise level to over 70 dBA CNEL at an outdoor use area of a commercial land use in the City of Perris.

An analysis was conducted of the project's effect on traffic noise conditions at offsite land uses. Without-project traffic noise levels were compared to with-project traffic noise levels. The environmental baseline is the without-project condition.

The Federal Highway Administration (FHWA) Traffic Noise Model (TNM) version 2.5 was used to estimate traffic noise levels at a general reference distance of 50 feet from the centerline of the nearest roadway. The modeling effort considered the peak-hour traffic volume, average estimated vehicle speed, and estimated vehicle mix, i.e., percentage of cars, medium trucks, heavy trucks, buses, and motorcycles. The peak hour traffic noise level was considered equivalent to the CNEL [24 CFR 51 Subpart B].

Sound levels caused by line sources (i.e., variable or moving sound sources such as traffic) generally decrease at a rate of 3 to 4.5 dBA when the distance from the road is doubled, depending on the ground surface hardness between the source and the receiving property [Caltrans 2013a]. The model assumed "hard soil" propagation conditions, which corresponds to a drop-off rate of approximately 3 dBA per doubling of distance. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures (walls and buildings), barriers, and topography. The noise attenuating effects of changes in elevation, topography, and intervening structures were not included in the model. Therefore, the modeling effort is considered a worst-case representation of the roadway noise.

The Existing (year 2021) and proposed project-generated traffic volumes on project roadway segments were obtained from the TIA [WEBB 2021b]. The project vehicle mix was also obtained from the TIA. Roadway segments projected to experience less than a doubling of Passenger Car Equivalent (PCE) volume would generate less than a 3-dBA noise increase, and would not result in a significant noise increase. Roadway segments projected to experience a doubling of Passenger Car Equivalent (PCE) volume or more were studied in detail with individual TNM models; refer to Table 4.

Table 4. Project Traffic Noise at 50 Feet from Roadway Centerlines

Segment	Condition	Existing Traffic Volume	Speed	Existing Noise Level	Project Traffic Volume †	Existing + Project Noise Level	Project-Generated Noise Increase	Normally Acceptable Threshold	Conditionally Acceptable Threshold	Impact?
I-215 Southbound Off-Ramp to Ethanac Road	AM	322 cars	65 mph	67.2 dBA CNEL	324 / 2 / 9	70.7 dBA CNEL	3.5 dBA CNEL	60 dBA CNEL	70 dBA CNEL	Potential; see discussion below
Ethanac Road – I-215 NB Ramps to Encanto Drive	PM	1,174 cars	45 mph	67.6 dBA CNEL	1,087 / 7 / 31	71.2 dBA CNEL	3.6 dBA CNEL	N/A	N/A	No
Ethanac Road – Encanto Road to Trumble Road	PM	1,035 cars	45 mph	67.1 dBA CNEL	1,087 / 7 / 31	70.9 dBA CNEL	3.8 dBA CNEL	70 dBA CNEL	77.5 dBA CNEL	No
Ethanac Road – Trumble Road to Sherman Road	PM	879 cars	45 mph	66.4 dBA CNEL	1,086 / 7 / 31	70.6 dBA CNEL	4.2 dBA CNEL	60 dBA CNEL (Res) 70 dBA CNEL (Comm)	70 dBA CNEL (Res) 77.5 dBA CNEL (Comm)	No
McLaughlin Road – Encanto Road to Alta Avenue	AM	92 cars	35 mph *	53.2 dBA CNEL	104 cars	56.5 dBA CNEL	3.3 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No
	PM	113 cars	35 mph *	54.1 dBA CNEL	144 cars	57.7 dBA CNEL	3.6 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No
McLaughlin Road – Alta Avenue to Trumble Road	AM	63 cars	35 mph *	51.6 dBA CNEL	104 cars	55.8 dBA CNEL	4.2 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No
	PM	74 cars	35 mph *	52.2 dBA CNEL	145 cars	57.0 dBA CNEL	4.8 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No
McLaughlin Road – Trumble Road to Sherman Road	AM	1 car	35 mph *	50.1 dBA CNEL	82 cars	52.7 dBA CNEL	2.6 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No
	PM	1 car	35 mph *	50.1 dBA CNEL	113 cars	54.1 dBA CNEL	4.0 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No
Trumble Road – South Driveway to McLaughlin Road	AM	12 cars	35 mph *	52.1 dBA CNEL	22 cars	52.1 dBA CNEL	0.0 dBA CNEL	N/A	N/A	No
	PM	19 cars	35 mph *	52.1 dBA CNEL	32 cars	52.1 dBA CNEL	0.0 dBA CNEL	N/A	N/A	No
Sherman Road – Ethanac Road to North Driveway	AM	36 cars	35 mph *	55.3 dBA CNEL	737 / 6 / 21	64.3 dBA CNEL	9.0 dBA CNEL	60 dBA CNEL (Res) 70 dBA CNEL (Comm)	70 dBA CNEL (Res) 77.5 dBA CNEL (Comm)	Potential; see discussion below
	PM	51 cars	35 mph *	55.3 dBA CNEL	1,012 / 6 / 24	65.4 dBA CNEL	10.1 dBA CNEL	60 dBA CNEL (Res) 70 dBA CNEL (Comm)	70 dBA CNEL (Res) 77.5 dBA CNEL (Comm)	Potential; see discussion below
Sherman Road – South Driveway to McLaughlin Road	AM	-	35 mph *	50.1 dBA CNEL	82 cars	52.7 dBA CNEL	2.6 dBA CNEL	N/A	N/A	No
	PM	10 cars	35 mph *	50.1 dBA CNEL	113 cars	54.5 dBA CNEL	4.4 dBA CNEL	N/A	N/A	No
Dawson Road – Ethanac Road to McLaughlin Road	AM	6 cars	25 mph *	44.2 dBA CNEL	282 / 1 / 7	56.9 dBA CNEL	12.7 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No
	PM	6 cars	25 mph *	44.2 dBA CNEL	385 / 1 / 7	57.6 dBA CNEL	13.4 dBA CNEL	60 dBA CNEL	70 dBA CNEL	No

* assumed

† cars / medium trucks / heavy trucks

Along the I-215 southbound off-ramp to Ethanac Road, there are multiple commercial buildings. The closest is roughly 175 feet from the ramp. At this distance, the existing + project noise level of 70.7 dBA CNEL at 50 feet would be reduced to approximately 65 dBA CNEL, between the 60 dBA Normally Acceptable level and the 70 dBA CNEL Conditionally Acceptable level. Standard construction provides at least 20 dBA of exterior-to-interior noise reduction. Therefore, the interior noise level would be less than the California Green Code limit of 50 dBA.

Along Sherman Road between Ethanac Road and the north project driveway, there are two residences, at 26026 and 26061 Sherman Road. The existing + project noise level at 50 feet from the Sherman Road centerline near the residences would be higher than the Normally Acceptable level, but below the Conditionally Acceptable level.

At 26026 Sherman Road, along the east side of Sherman Road, the front yard appears to be the primary outdoor usable space. The front yard is between 35-125 feet from the centerline; at these distances, the front yard would be exposed to between 60-67 dBA CNEL. These noise levels are considered Conditionally Acceptable. The closest living area of the home is 125 feet from the centerline, and would be exposed to 60 dBA CNEL or below. This noise level is considered Normally Acceptable. In addition, standard construction provides at least 20 dBA of exterior-to-interior noise reduction. Therefore, the interior noise level would be less than the California Building Code limit of 45 dBA CNEL.

At 26061 Sherman Road, along the west side of Sherman Road, the back yard appears to be the primary outdoor usable space. The back yard is 125 feet or more from the centerline; at this distance, the back yard would be exposed to 60 dBA CNEL or below. This noise level is considered Normally Acceptable. The closest living area of the home is 88 feet from the centerline; at this distance, the façade would be exposed to 62 dBA CNEL or below. This noise level is considered Conditionally Acceptable. Standard construction provides at least 20 dBA of exterior-to-interior noise reduction. Therefore, the interior noise level would be less than the California Building Code limit of 45 dBA CNEL.

Along this segment, there are also three commercial properties. The existing + project noise level at the commercial properties would be within the Normally Acceptable range.

Along all but two roadway segments, project traffic would generate less-than-significant noise increases. Along one segment, project traffic would increase the noise level to over 70 dBA CNEL, but interior noise levels would not exceed California limits. Along the other segment, project traffic would increase the noise level by 9-10 dBA CNEL. Along this segment, existing-plus-project traffic noise levels would exceed those considered Normally Acceptable, but would be lower than those considered Conditionally Acceptable by the City of Menifee, and interior

noise levels would not exceed California limits. The impact of project-generated traffic noise is less than significant.

4.1.3 Operational Vibration

Vibration associated with operation of the project would be generated by vehicular traffic and mechanical equipment operation.

Vehicles traveling on a smooth pavement surface are rarely, if ever, the source of perceptible ground vibration. All vehicles on the project site would have rubber tires and suspension systems that isolate vibration from the ground, and would generally travel at a maximum speed of approximately 10 miles per hour. All vehicular traffic would operate over 25 feet from vibration-sensitive land uses. Vibration from vehicles is expected to be negligible.

All mechanical equipment would be located over 100 feet from vibration-sensitive land uses. Groundborne vibration levels resulting from mechanical equipment are dependent of the design of the equipment. All ground-mounted mechanical equipment would be installed using vibration-dampening resilient isolators designed to ensure that vibration levels would be lower than 0.2 in/sec PPV at project property lines adjacent to vibration-sensitive land uses.

No significant operational vibration impacts would be expected.

4.2 CONSTRUCTION

Project construction would result in a temporary increase in noise levels in the project vicinity. Construction noise varies depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

The primary noise and vibration from project construction would be from site preparation. Grading would require the use of heavy equipment such as bulldozers, loaders, and scrapers. No blasting, pile driving, or vibratory equipment would be necessary.

Mass site grading is expected to produce the highest construction noise and vibration levels. Grading of the site is estimated to require up to eight Caterpillar (CAT) 637 scrapers, one CAT D8 dozer, one CAT 824 rubber-tire dozer, one CAT 637 water pull, and one motor grader. Construction activity and delivery of construction materials and equipment would not occur on Sundays or holidays, and would be limited to between 7:00 a.m. and 6:00 p.m. Construction is expected to last approximately 22 months, beginning no sooner than January 2023.

Construction equipment generally produces noise levels of 85 dBA at 50 feet. The closest Perris residence is over 3,000 feet from the project site. At this distance, construction noise levels would be below 80 dBA.

Full-size excavators, dozers, loaders, backhoes, etc. produce a vibration level of 0.089 inches per second (in/sec) peak particle velocity (PPV) at 25 feet. Small bulldozers and similar equipment produce 0.003 in/sec PPV.

Vibration levels were estimated using the following Caltrans formula:

$$PPV_{Equipment} = PPV_{Ref}\,(25/D)^{n} \quad (in/sec) \qquad (Eq.\ 12)$$

Where:

PPV_{Ref} = *reference PPV at 25 ft.*

D = *distance from equipment to the receiver in ft.*

n = *1.1 (the value related to the attenuation rate through ground)*

The closest inhabited dwelling to construction activity is at 26230 Trumble Road, 15 feet from the north property line near Building 2. At this distance, project construction would generate vibration levels up to approximately 0.07 in/sec, which are not expected to be readily perceptible and pose virtually no risk of damage.

Construction is not expected to generate significant vibration levels.

Construction would occur during days and times proscribed by the City of Menifee and the City of Perris, and would not exceed 80 dBA in Perris residential zones.

The impact of project construction noise and vibration is less than significant.

4.3 MITIGATION

This section discusses the possible mitigation measures that can be implemented to either reduce or mitigate the impacts generated by the construction of the proposed project.

4.3.1 Operation

4.3.1.1 Onsite Operations Noise

No impacts were identified. No mitigation is necessary.

4.3.1.2 Offsite Traffic Noise

No impacts were identified. No mitigation is necessary.

4.3.1.3 Operational Vibration

No impacts were identified. No mitigation is necessary.

4.3.2 Construction

4.3.2.1 Construction Noise

No impacts were identified. No mitigation is necessary. However, to avoid unnecessary annoyance from construction noise, the following construction noise control measures should be implemented:

- Perform all construction in a manner to minimize noise and vibration. The contractor should be required to select construction processes and techniques that create the lowest noise levels.
- Equip all internal combustion engines with a muffler of a type recommended by the manufacturer.
- Turn off idling equipment.
- Perform noisier operations during the times least sensitive to receptors.
- Implement a noise control monitoring program to limit the impacts.
- The construction contractor should be required by contract specification to comply with all local noise ordinances and obtain all necessary permits and variances.

4.3.2.2 Construction Vibration

No impacts were identified. No mitigation is necessary.

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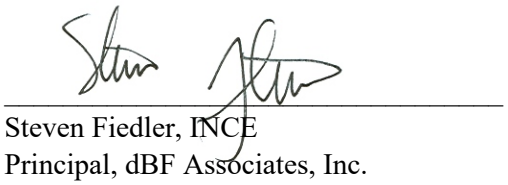
6.0 LIST OF PREPARERS



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APPENDICES

APPENDIX A
FIELD DATA SHEETS

FIELD NOISE MEASUREMENT DATA

Project Name: MENIFEE COMMERCE CENTER
Day / Date: THURS 5/20/2021
Page 1 of
My Name: FIEDLER

Sound Level Meter
Model # RION NL-31
Serial # 00593619
Weighting: A / C / Flat
Response: Slow / Fast / Impl
Windscreen: Yes / No

Calibrator
Model # LD CAL 200
Serial # 0111
Pre-Test: 113.9 dBA SPL
Post-Test: 113.9 dBA SPL

Weather Meter
Model # Serial #
Terrain: Hard / Soft / Mixed
Topo: Flat / Hilly (describe)
Wind: Steady / Gusty

ID	Time Start	Time Stop	Leq	Lmin	Lmax	L10	L50	L90	Wind Spd/ Dir (mph)	Temp (°F)	RH (%)	Bar Psr (in Hg)	Cloud Cover (%)
ML1	10:50	11:05	52.1	41.7	67.4	55.7	47.0	43.5	0-2 W	70	40		50
ML2	11:10	11:25	50.1	42.7	64.6	50.7	46.0	44.2					
ML3	11:30	11:45	44.2	39.9	73.8	46.2	42.4	41.2					
ML4	11:50	12:10	48.0	39.3	62.7	49.3	43.8	40.9					
ML5	12:20	12:35	55.3	41.6	78.0	53.3	49.1	45.6					

Roadway Name: TRUMBLE ROAD
Speed (post/obs): — / 35
Number of Lanes: 1+1
Width (pave/row): 24
1- or 2- way: 2
Grade: —
Bus Stops: —
Stoplights: —
Street Parking: —

	NB	SB
Automobiles	HHT II	HHT I
Medium Trucks	I	I
Heavy Trucks		
Buses		
Motorcycles		

NB →→→→→ ←←←←←SB

Count Duration: 15 MIN

Location(s) / GPS Reading(s):

ML1: 50' E OF TRUMBLE CL
AIRPLANE - PROP - II
DISTANT FREEWAY

ML2: 5 PL, MIDPOINT
BIRDS, DISTANT TRAFFIC
DISTANT JET
ONE TRUCK

ML3: DISTANT TRAFFIC
BIRDS
DISTANT JET
DOG BARKING
50' W OF DAWSON CL

ML4: N PL, EAST PARCEL
BIRDS
DISTANT TRAFFIC

ML5: 50' W OF SHERMAN CL
BIRDS, TRUCK ON SHERMAN, ACTIVITY AT EQUIPMENT YARD

Other Noise Sources: distant: aircraft / roadway traffic / trains / landscaping / rustling leaves / children playing / dogs barking / birds vocalizing