Appendix F: Noise Impact Study

Prepared by MD Acoustics

CEQ 220011

Salvador Solar

Uniun Energy Management Services

Nobles Solar Project
Noise Impact Study
County of Riverside, CA

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MD ACOUSTICS
Sound Solutions for Planning and Design

Noise Study Reports | Vibration Studies | Air Quality | Greenhouse Gas | Health Risk Assessments

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

The purpose of this noise impact study is to evaluate the potential noise impacts for the project study area and compare results to County of Riverside and CEQA thresholds. The assessment was conducted and compared to the noise standards set forth by the Federal, State, and Local agencies. Consistent with the California Environmental Quality Act (CEQA) and CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable agencies.
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

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 evaluation of the existing ambient noise environment
- An analysis of stationary noise impacts from the project site to adjacent land uses
- Construction noise and vibration evaluation

1.2 Project Summary

1.2.1 Site Location

The project site is located near the southeast corner of Monterey Avenue and Ramon Road in Riverside County, California, as shown in Exhibit A. The site is currently zoned as Medium Density Residential and Rural Residential uses. The project will be seeking to zone as a W-2 Controlled Development Area. The Project borders vacant land on all sides with residential uses to the southwest.

1.2.2 Project Description

The Project proposes the construction and operation of a 400-megawatt (MW) battery and 60-150 MW solar facility on about 165.2 acres connecting into the Southern California (SCE) Mirage Substation located on the north side of Ramon Road. Exhibit B demonstrates the site plan for the project. Construction activities within the Project area will consist of site preparation and solar facility building, which consists of Site Foundations, Panel Installation, Platform Installation, and Invertor Installation.

Exhibit A
Location Map

- Medium Density Residential
- Medium High Density Residential
- Mixed Use Planning Area
- Open Space Recreation
- Rural Residential
- Public Facilities

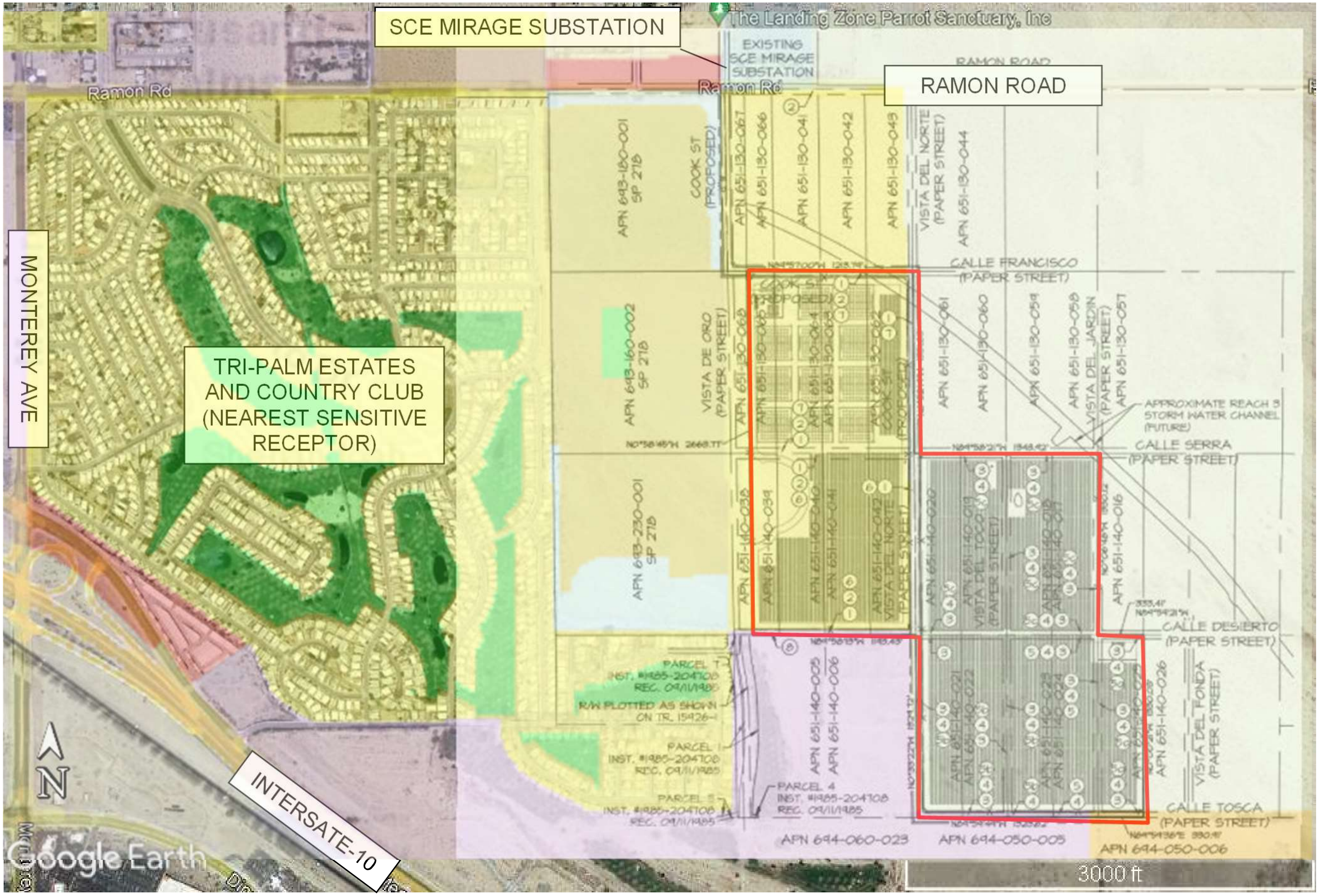
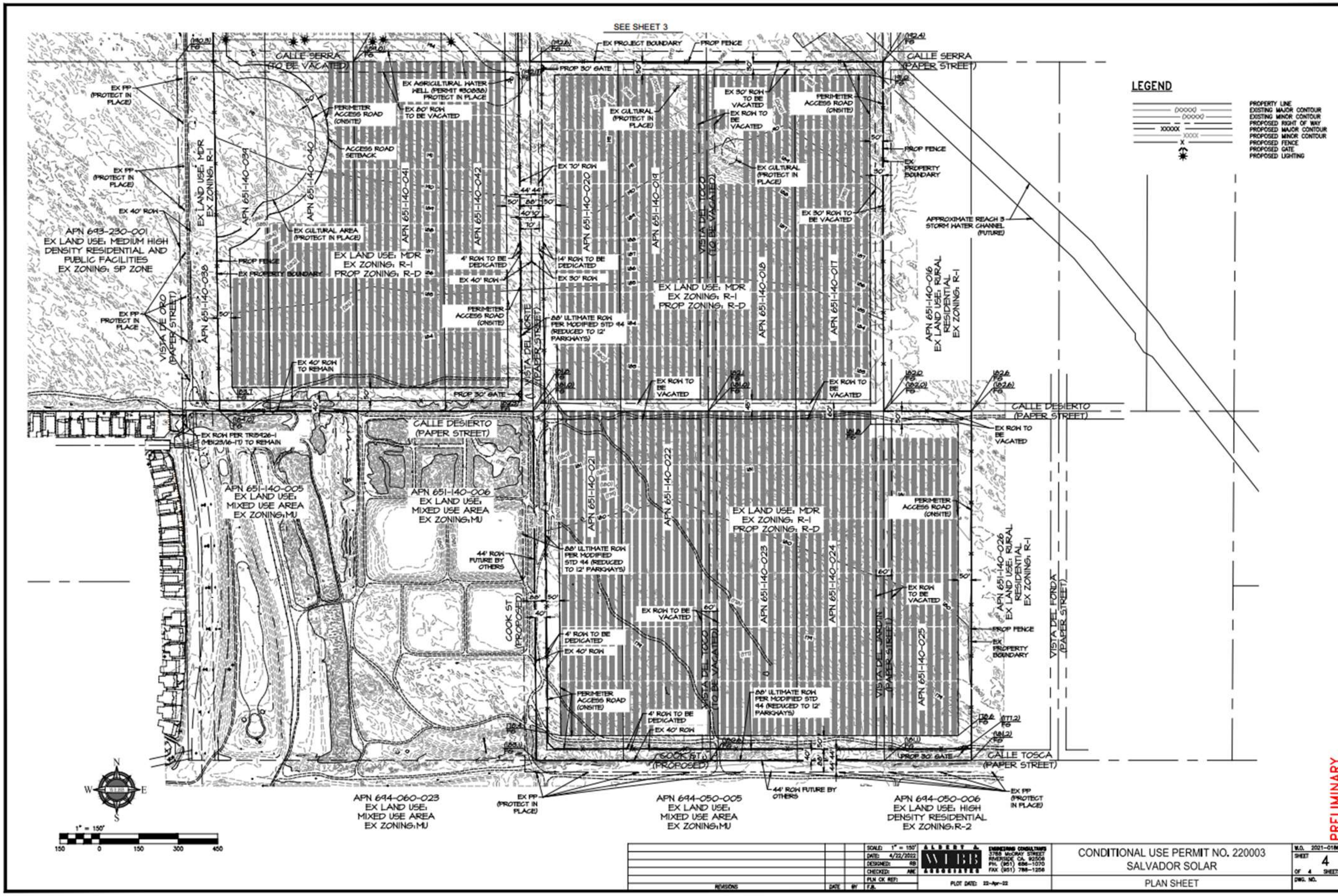


Exhibit B

Site Plan



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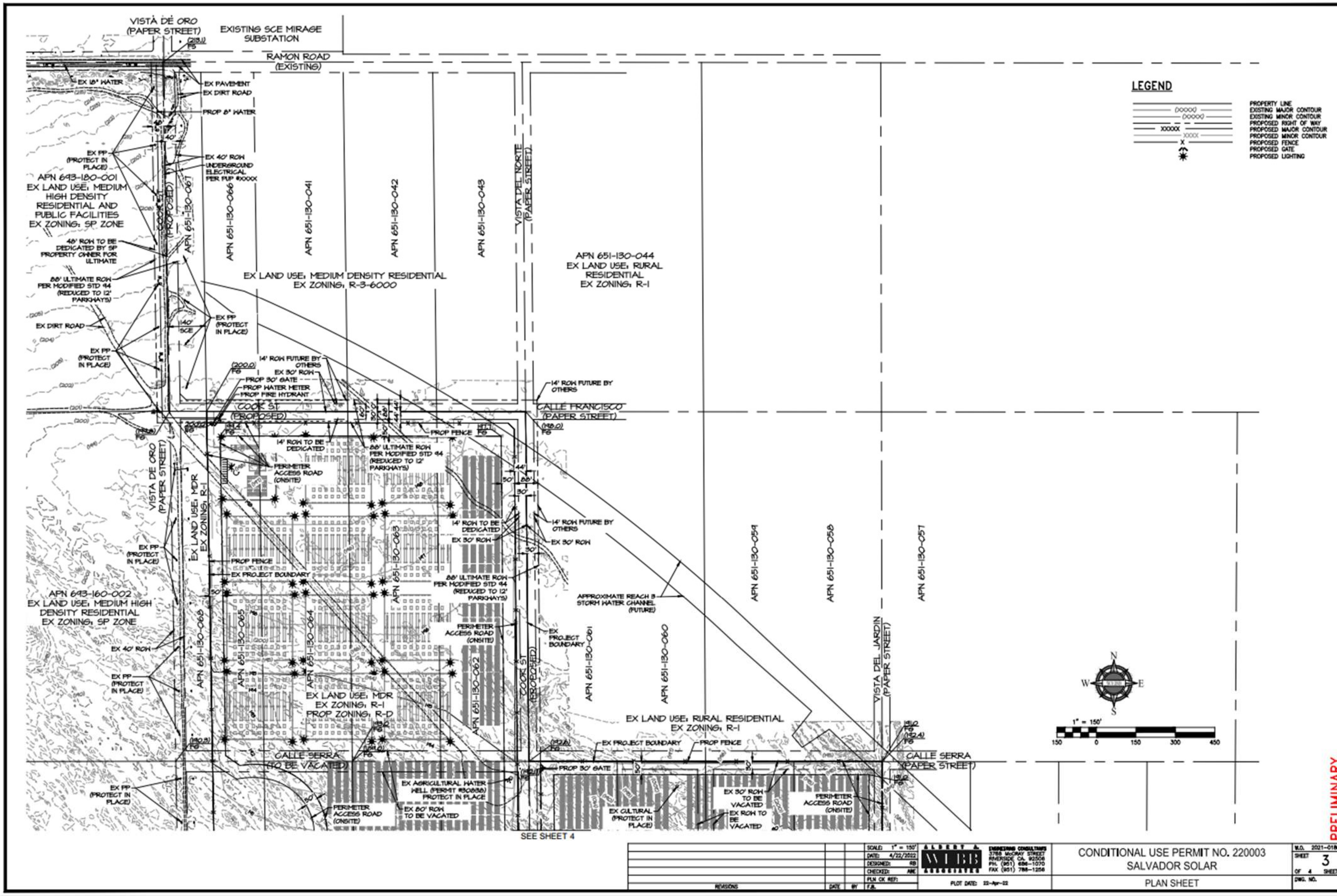


2.0 Fundamentals of Noise

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

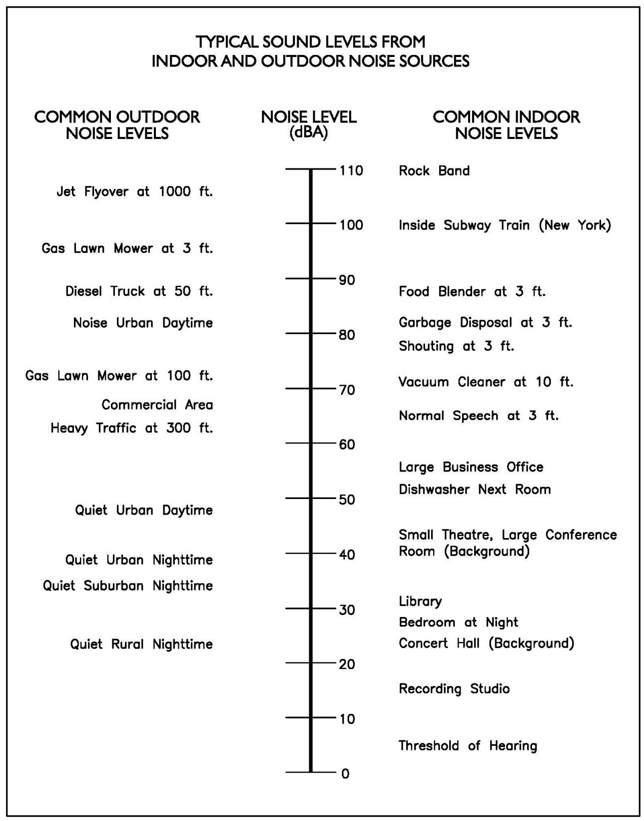
2.1 Sound, Noise, and Acoustics

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 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 starting at 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 ($\mu N/m^2$), 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 references 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, 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), a scale designed to account for the frequency-dependent sensitivity of the ear. 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.

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, 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 depends 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. A greater volume of traffic, higher speeds, and larger 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 from a noise source. Wind, temperature, air humidity, and turbulence can further impact have 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.

3.3 Vibration Propagation

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 Riverside County, California, 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 Housing and Urban Development (HUD) is responsible for establishing noise regulations as it relates to exterior/interior noise levels for new HUD-assisted housing developments near high noise areas.

The federal government advocates that local jurisdictions 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.

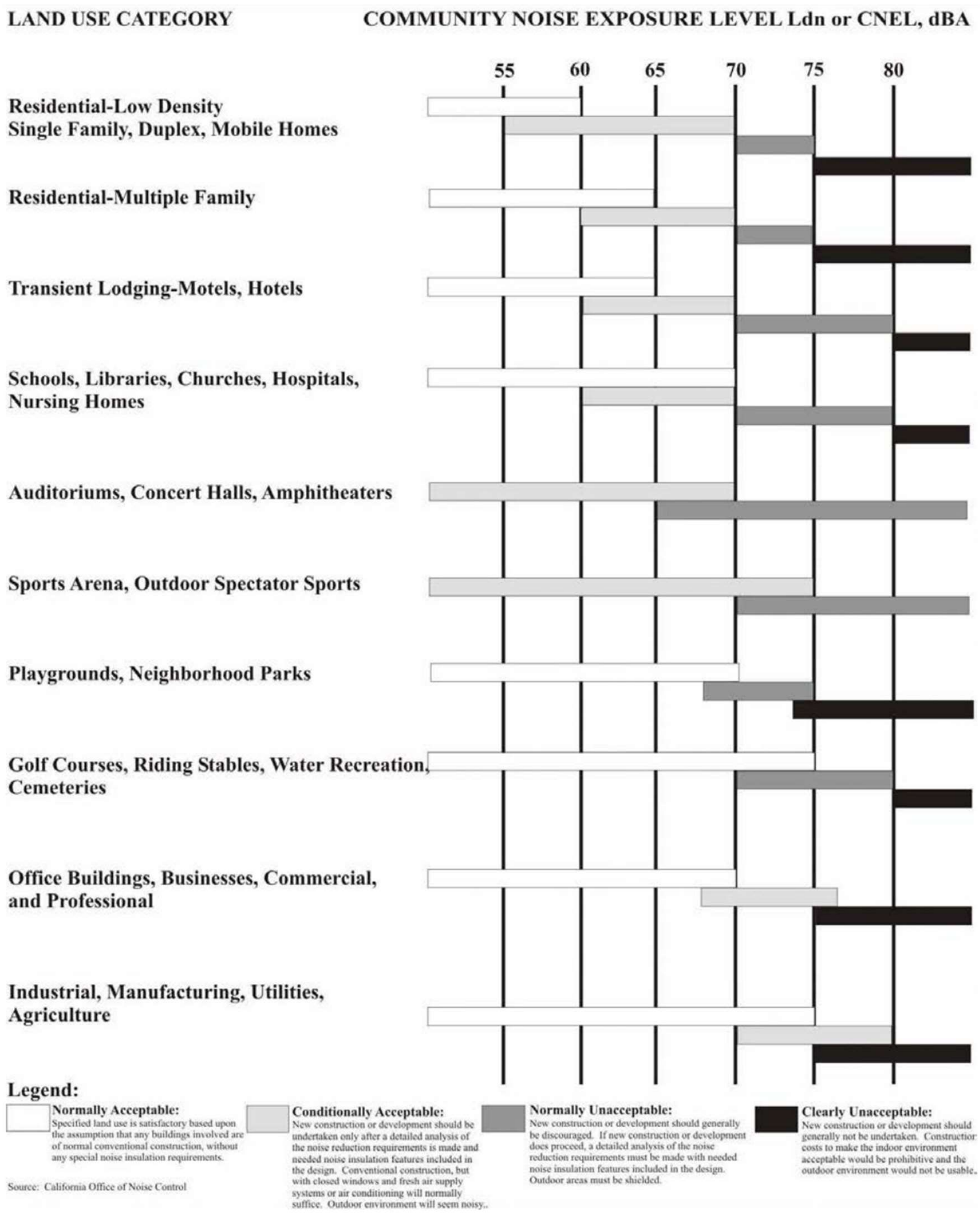
Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City (or in this case County) is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

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 and the Uniform Building Code (UBC) 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. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable as illustrated in Exhibit D which is from the county's general plan noise element.

Exhibit D: Land Use Compatibility Guidelines



Source: Riverside County General Plan Noise Element

4.3 County of Riverside Noise Regulations

The County of Riverside outlines their noise regulations and standards within the Municipal Code and the Noise Element of the County of Riverside General Plan.

County of Riverside Municipal Code

CHAPTER 9.52 –Noise Regulations

9.52.010. - Intent

At certain levels, sound becomes noise and may jeopardize the health, safety, or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the board of supervisors declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish county-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.
(Ord. 847 § 1, 2006)

9.52.020. - Exemptions

A. Sound emanating from the following sources is exempt from the provisions of this chapter:
B. Facilities owned or operated by or for a governmental agency;
C. Capital improvement projects of a governmental agency;
D. The maintenance or repair of public properties;
E. Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile;
F. Public or private schools and school-sponsored activities;
G. Agricultural operations on land designated "Agriculture" in the Riverside County general plan, or land zoned A-l (light agriculture), A-P (light agriculture with poultry), A-2 (heavy agriculture), A-D (agriculture-dairy) or C/V (citrus/vineyard), provided such operations are carried out in a manner consistent with accepted industry standards. This exemption includes, without limitation, sound emanating from all equipment used during such operations, whether stationary or mobile;
H. Wind energy conversion systems (WECS), provided such systems comply with the WECS noise provisions of Riverside County Ordinance No. 348;
I. Private construction projects located one-quarter of a mile or more from an inhabited dwelling;
J. Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that:
   1. Construction does not occur between the hours of six p.m. and six a.m. during the months of June through September, and
   2. Construction does not occur between the hours of six p.m. and seven a.m. during the months of October through May;

K. Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of seven a.m. and eight p.m.;
L. Motor vehicles, other than off-highway vehicles. This exemption does not include sound emanating from motor vehicle sound systems;
M. Heating and air conditioning equipment;
Safety, warning and alarm devices, including, but not limited to, house and car alarms, and other warning devices that are designed to protect the public health, safety, and welfare;
N. The discharge of firearms consistent with all state laws.

(Ord. 847 § 2, 2006)

County of Riverside – Noise Ordinance

No person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied property to exceed the sound level standards set forth in Table 1.

Table 1: Riverside County Allowable Exterior Noise Level

Sound Level Standards (dBA Lmax)

General Plan Land Use Designation	Maximum Decibel Level	
	7 a.m. - 10 p.m.	10 p.m. - 7 a.m.
Rural Residential	45	45
Medium Density Residential	55	45
Medium High Density Residential	55	45

(Ord. 847 § 4, 2006)

County of Riverside General Plan

Goals, Policies, and Implementation Measures

Policies, goals and implementation program measures from the Noise Element that would mitigate potential impacts on noise include the following.

N 1.1 Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.

N 1.2 Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports.

N 1.4 Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.

N 1.5 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.

N 1.6 Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or noise-sensitive uses.

N 1.7 Require proposed land uses, affected by unacceptably high noise levels, to have an acoustical specialist prepare a study of the noise problems and recommend structural and site design features that will adequately mitigate the noise problem.
N 2.2 Require a qualified acoustical specialist to prepare acoustical studies for proposed noise-sensitive projects within noise impacted areas to mitigate existing noise.
N 2.3 Mitigate exterior and interior noises to the levels listed in the table below to the extent feasible, for stationary sources.

Stationary Source Land Use Noise Standards[1]

Land Use	Interior Standards	Exterior Standards
Residential		
10:00 p.m. to 7:00 a.m.	40 L_{eq} (10 minute)	45 L_{eq} (10 minute)
7:00 a.m. to 10:00 p.m.	55 L_{eq} (10 minute)	65 L_{eq} (10 minute)

1 These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

N 3.2 Require acoustical studies and subsequent approval by the Planning Department and the Office of Industrial Hygiene, to help determine effective noise mitigation strategies in noise-producing areas.
N 3.3 Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses.
N 3.4 Identify point-source noise producers such as manufacturing plants, truck transfer stations, and commercial development by conducting a survey of individual sites.
N 3.5 Require that a noise analysis be conducted by an acoustical specialist for all proposed projects that are noise producers. Include recommendations for design mitigation if the project is to be located either within proximity of a noise-sensitive land use, or land designated for noise sensitive land uses.
N 3.6 Discourage projects that are incapable of successfully mitigating excessive noise.
N 4.1 Prohibit facility-related noise received by any sensitive use from exceeding the following worstcase noise levels:

a. 45 dBA-10-minute Leq between 10:00 p.m. and 7:00 a.m.
b. 65 dBA-10-minute Leq between 7:00 a.m. and 10:00 p.m.

N 4.2 Develop measures to control non-transportation noise impacts.
N 4.3 Ensure any use determined to be a potential generator of significant stationary noise impacts be properly analyzed and ensure that the recommended mitigation measures are implemented.
N 4.4 Require that detailed and independent acoustical studies be conducted for any new or renovated land uses or structures determined to be potential major stationary noise sources.
N 4.5 Encourage major stationary noise-generating sources throughout the County of Riverside to install additional noise buffering or reduction mechanisms within their facilities to reduce noise generation levels to the lowest extent practicable prior to the renewal of conditional use permits or business licenses or prior to the approval and/or issuance of new conditional use permits for said facilities.
N 4.7 Evaluate noise producers for the possibility of pure-tone producing noises. Mitigate any pure tones that may be emitted from a noise source.

N 4.8 Require that the parking structures, terminals, and loading docks of commercial or industrial land uses be designed to minimize the potential noise impacts of vehicles on the site as well as on adjacent land uses.
N 6.3 Require commercial or industrial truck delivery hours be limited when adjacent to noise-sensitive land uses unless there is no feasible alternative or there are overriding transportation benefits.
N 9.3 Require development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide for appropriate mitigation measures.
N 9.4 Require that the loading and shipping facilities of commercial and industrial land uses, which abut residential parcels be located and designed to minimize the potential noise impacts upon residential parcels.
N 13.1 Minimize the impacts of construction noise on adjacent uses within acceptable practices.
N 13.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
N 13.3 Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3) by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as: a. Temporary noise attenuation fences; b. Preferential location of equipment; and c. Use of current noise suppression technology and equipment.
N 13.4 Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.
N 14.5 Consider the issue of adjacent residential land uses when designing and configuring all new, nonresidential development. Design and configure on-site ingress and egress points that divert traffic away from nearby noise-sensitive land uses to the greatest degree practicable. (AI 106, 107)
N 14.8 Review all development applications for consistency with the standards and policies of the Noise Element of the General Plan.
N 16.2 Consider the following land uses sensitive to vibration:

- Hospitals;
- Residential areas;
- Concert halls;
- Libraries;
- Sensitive research operations;
- Schools; and
- Offices

N 19.5 Require new developments that have the potential to generate significant noise impacts to inform impacted users on the effects of these impacts during the environmental review process.

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 of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance with 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 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 monitoring locations were selected based on the nearest sensitive receptors relative to the proposed onsite noise sources. two (2) long-term 5-hour noise measurements were conducted at or near the project site and are illustrated in Exhibit E. Appendix A includes photos, field sheets, and measured noise data.

5.3 Stationary Noise Modeling

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 various stationary on-site sources (DC-DC converters, inverters, and HVAC). The model assumes 144 converters, inverters, and HVAC units. The inverters and converters will be shielded by enclosures. The model assumes a 22 dB reduction for the converters and inverters from the enclosure.

The inverters were modeled as point sources with a reference level of 44 dBA at 10 meters (33 feet). The converters were modeled as point sources with a reference level of 43 dBA at 10 meters (33 feet). The HVAC units were modeled as point sources with a references level of 74.3 dBA at 3 ft. The reference equipment sound level data is provided in Appendix B.

The SP model assumes that all noise sources are operating simultaneously at full load (worst-case scenario) when in actuality the noise will be intermittent and lower in noise level. SP modeling inputs and outputs ate provided in Appendix B.

5.4 FHWA Traffic Noise Prediction Model

Traffic noise from vehicular traffic was projected using a computer program that replicates the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Roadway volumes and percentages correspond to the project's traffic scoping agreement as prepared by Integrated Engineering Group, the County's traffic counts, and roadway classification. County traffic counts are from 2016. As a worst-case scenario, MD assumed that traffic has not increased since 2016 and the entire trip generation was modeled onto Ramon Road. The referenced traffic data was applied to the model and is in Appendix C. The following outlines the key adjustments made to the REMEL for the roadway inputs:

- Roadway classification – (e.g. freeway, major arterial, arterial, secondary, collector, etc),
- Roadway Active Width – (distance between the center of the outermost travel lanes on each side of the roadway)
- Average Daily Traffic Volumes (ADT), Travel Speeds, Percentages of automobiles, medium trucks, and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g. soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period

Table 2 indicates the roadway parameters and vehicle distribution utilized for this study.

<Table 2 Next Page>

Table 2: Roadway Parameters and Vehicle Distribution

Roadway	Segment	Existing ADT	Existing Plus Project ADT	Speed (MPH)	Site Conditions
Ramon Road	East of Monterey Ave	7755	7870	40	Hard
Vehicle Distribution (Truck Mix)[2]					
Motor-Vehicle Type		**Daytime % (7AM to 7 PM)**	**Evening % (7 PM to 10 PM)**	**Night % (10 PM to 7 AM)**	**Total % of Traffic Flow**
Automobiles		75.5	14.0	10.4	92.00
Medium Trucks		48.0	2.0	50.0	3.00
Heavy Trucks		48.0	2.0	50.0	5.00

Notes:
[1] Integrated Engineering Group Scoping Agreement and 2016 County traffic counts.
[2] Riverside County Arterial Mix

The following outlines key adjustments to the REMEL for project site parameter inputs:

- Vertical and horizontal distances (Sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (Noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

5.5 FHWA Roadway Construction Noise Model

The construction noise analysis utilizes the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RNCM), 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. Equipment list has been provided by Albert A. Webb Associates.

The project was analyzed based on the different construction phases. Construction noise is expected to be loudest during the site preparation phase of construction. The construction noise calculation output worksheet is located in Appendix D. It’s assumed that construction will occur over a period of 5 months.

Exhibit E
Measurement Locations

X = Measurement location

6.0 Existing Noise Environment

Two five (5) hour ambient noise measurement was conducted at the property site. The noise measurements were taken to determine the existing ambient noise levels. Noise data indicates that traffic along I10 and Ramon Road is the primary source of noise impacting the site and the adjacent uses. This assessment utilizes the ambient noise data as a basis and compares project operational levels to said data.

6.1 Long-Term Noise Measurement Results

The results of the Long-term noise data are presented in Tables 3 and 4.

Table 3: Long-Term Noise Measurement Data[1]

Date	Time	dB(A)							
		L_{EQ}	L_{MAX}	L_{MIN}	L_2	L_8	L_{25}	L_{50}	L_{90}
12/15/2021	4PM-5PM	54.2	85.8	39.4	64.0	59.9	53.1	42.9	41.6
12/15/2021	5PM-6PM	47.8	65.2	41.0	52.8	52.2	49.3	47.0	44.0
12/15/2021	6PM-7PM	47.1	69.0	39.1	51.5	50.8	50.4	43.6	41.7
12/15/2021	7PM-8PM	47.9	55.1	45.7	53.2	50.1	49.0	47.1	45.4
12/15/2021	8PM-9PM	49.1	59.9	43.0	53.7	53.0	50.3	48.4	47.0

Notes:
[1] Long-term noise monitoring location (LT1) is illustrated in Exhibit E. The quietest hourly noise interval is highlighted in blue.

Noise data indicates the ambient noise level at the northern property line ranged from 47.1 dBA Leq(h) to 54.2 dBA Leq(h) at the project site. Maximum levels reached 85.8 dBA as a result of traffic along Ramon Road. Additional field notes and photographs are provided in Appendix A. For this evaluation, MD has utilized the quietest measured hourly level and has compared the project's projected noise levels to the said ambient level. The quietest (lowest) hourly level occurred between 6PM to 7PM (47 dBA, Leq(h)).

Table 4: Long-Term Noise Measurement Data[1]

Date	Time	dB(A)							
		L_{EQ}	L_{MAX}	L_{MIN}	L_2	L_8	L_{25}	L_{50}	L_{90}
12/15/2021	4PM-5PM	45.9	64.9	38.6	51.6	50.3	48.3	44.5	43.0
12/15/2021	5PM-6PM	46.1	62.6	38.1	52.3	51.8	49.2	43.8	41.3
12/15/2021	6PM-7PM	45.0	56.6	38.6	48.8	48.5	47.5	43.9	42.2
12/15/2021	7PM-8PM	47.1	57.9	45.4	51.7	50.6	49.4	45.2	43.4
12/15/2021	8PM-9PM	46.6	59.3	40.8	50.4	49.6	48.9	45.8	44.1

Notes:
[1] Long-term noise monitoring location (LT2) is illustrated in Exhibit E. The quietest hourly noise interval is highlighted in blue.

Noise data indicates the ambient noise level at the southern property line ranged from 45.0 dBA Leq(h) to 47.1 dBA Leq(h) at the project site. Maximum levels reached 64.9 dBA as a result of traffic along I10. For this evaluation, MD has utilized the quietest measured hourly level and has compared the project's projected noise levels to the said ambient level. The quietest (lowest) hourly level occurred between 6PM to 7PM (45 dBA, Leq(h)).

7.0 Future Noise Environment Impacts and Mitigation

This assessment analyzes future noise impacts as a result of the project. The analysis details the estimated exterior noise levels. Stationary noise impacts are analyzed from the on-site noise sources such as converters, inverters, and HVAC units.

7.1 Future Exterior Noise

The following outlines the exterior noise levels associated with the proposed project.

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

Sensitive receptors that may be affected by project operational noise include residential zoned areas surrounding the site, existing residential to the southwest, and the Coachella Valley Nations Wildlife Refuge and Thousand Palms Conservation Area to the east. The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes that all project equipment is always operating at full load when in reality the noise will be intermittent and cycle on/off depending on customer usage. The full-load operational levels are compared to the County's nighttime limit although the project will not be full-load at night.

A total of four (4) receptors were modeled to evaluate the proposed project's operational impact as shown in Exhibit F. A receptor is denoted by a yellow dot. All yellow dots represent either a property line or a sensitive receptor such as an outdoor sensitive area (courtyard, patio, backyard, etc.).

This study compares the Project's operational noise levels to two (2) different noise assessment scenarios: 1) Project Only operational noise level projections, 2) Project plus ambient noise level projections.

<u>Project Operational Noise Levels</u>

Exhibit F shows the "project only" operational noise levels at the project site and illustrates how the noise will propagate at the property lines and/or sensitive receptor area. Operational noise levels at the adjacent uses are anticipated to range between 34 dBA to 45 dBA Lmax (depending on the location). The project noise level at the Coachella Valley National Wildlife Refuge area, which has been designated "conservation habitat" in the county land use plan, will be below 45 dBA.

<u>Project Plus Ambient Operational Noise Levels</u>

Table 5 demonstrates the project plus the ambient noise levels. Project plus ambient noise level projections are anticipated to range between 45 to 49 dBA Leq depending on location. Therefore, the project has been compared to the quietest hourly average ambient noise level for comparative purposes.

<Table 5 on Next Page>

Table 5: Worst-case Predicted Noise Level (dBA, Lmax)

Receptor[1]	Floor	Existing Ambient Noise Level (dBA, Leq)[2]	Project Noise Level (dBA, Lmax)[3]	Nighttime (10PM – 7AM) Stationary Noise Limit (dBA, Lmax)[4]	Combined Noise Level (dBA, Lmax)[4]	Change in Noise Level as Result of Project
1	1	47	45	45	49	2
2	1	47	45	45	49	2
3	1	45	34	45	45	0
4	1	47	43	45	48	1

Notes:
1. Receptors 1-4 represent residential uses.
2. Existing ambient taken as one-hour measurement.
3. See Exhibit F for the operational noise level projections at said receptors.
4. Per the County of Riverside noise ordinance Chapter 9.52.

As shown in Table 5, the project noise level does not exceed the County of Riverside stationary exterior noise limits. Project operations are anticipated to remain below the County noise limits and will not change at the existing residential sites to the southwest and west of the project. Therefore, the impact is less than significant.

When comparing the baseline plus project condition the change in noise level will be between 0 to 2 dBA, Leq as shown in Table 5.

Table 6 provides the characteristics associated with changes in noise levels.

Table 6: Change in Noise Level Characteristics[1]

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

The change in noise level at all receptors would fall within the "Not Perceptible" acoustic characteristic. Therefore, the impact would be considered less than significant.

7.1.2 Noise Impacts to Off-Site Receptors Due to Project Generated Traffic

A worst-case project-generated traffic noise level was modeled utilizing the FHWA Traffic Noise Prediction Model - FHWA-RD-77-108. Traffic noise levels were calculated 50 feet from the centerline of the analyzed roadway. The modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, the levels are shown for comparative purposes only to show the difference with and without project conditions. In addition, the noise contours for 60, 65, and 70 dBA CNEL were calculated. The potential off-site noise impacts caused by an increase of traffic from the operation of the proposed project on the nearby roadways were calculated for the following scenarios:

Existing Year (without Project): This scenario refers to existing year traffic noise conditions.

Existing Year (Plus Project): This scenario refers to existing year + project traffic noise conditions.

Table 7 compares the without and with project scenario and shows the change in traffic noise levels as a result of the proposed project. It takes a change of 3 dB or more to hear a perceptible difference. As demonstrated in Table 7, the project is anticipated to change the noise 0.1 dBA CNEL.

Although there is an increase in traffic noise levels the impact is considered less than significant as the noise levels at or near any existing proposed sensitive receptor would be 71.2 dBA CNEL or less and the change in noise level is 3 dBA or less. No mitigation is required.

Table 7: Existing Scenario - Noise Levels Along Roadways (dBA CNEL)

Existing Without Project Exterior Noise Levels

Roadway	Segment	CNEL at 50 Ft (dBA)	Distance to Contour (Ft)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Ramon Road	East of Monterey Ave	71.1	64	203	643	2032

Existing With Project Exterior Noise Levels

Roadway	Segment	CNEL at 50 Ft (dBA)	Distance to Contour (Ft)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Ramon Road	East of Monterey Ave	71.2	65	206	652	2062

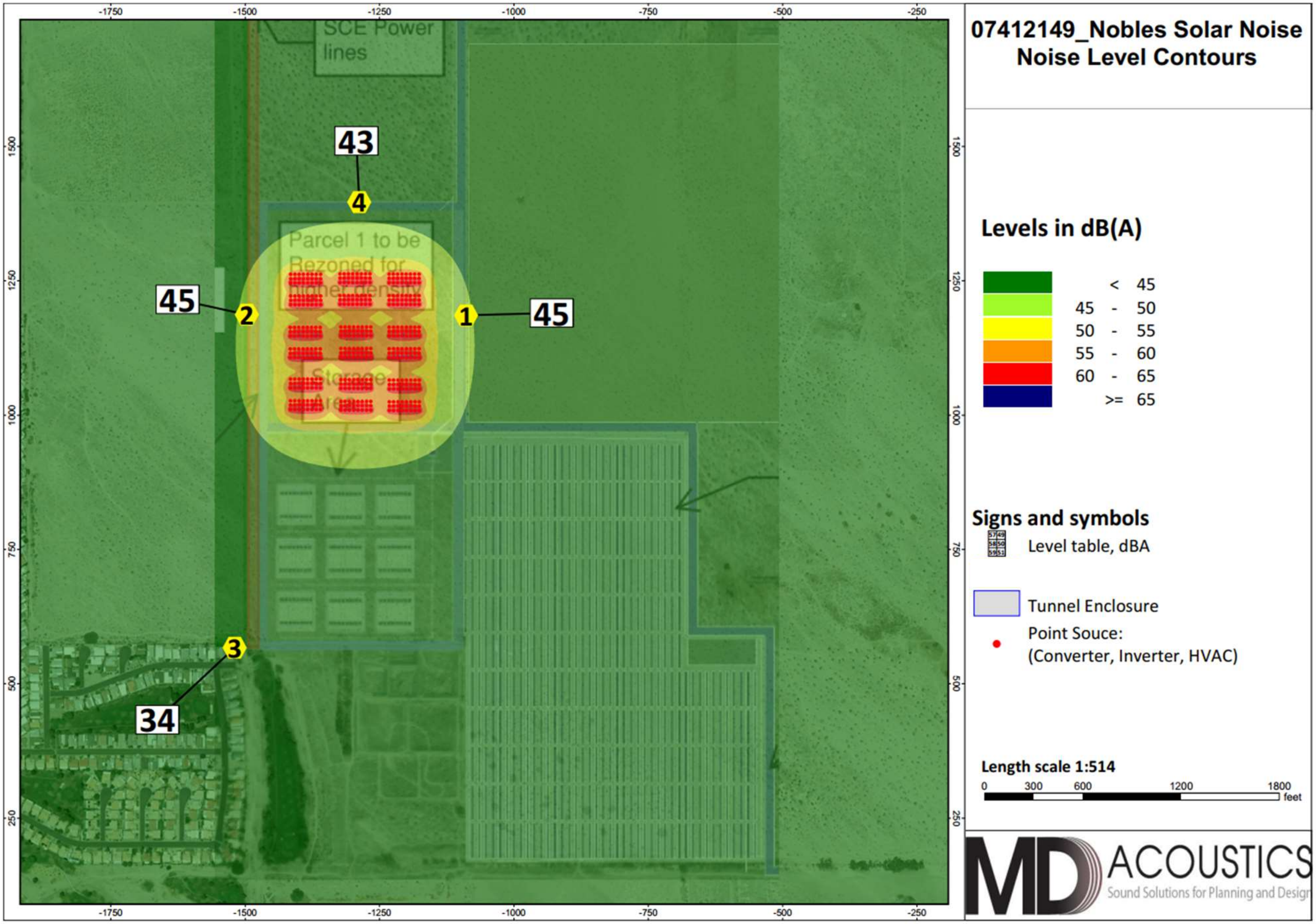
Change in Existing Noise Levels as a Result of Project

Roadway[1]	Segment	CNEL at 50 Feet dBA[2]			
		Existing Without Project	Existing With Project	Change in Noise Level	Potential Significant Impact
Ramon Road	East of Monterey Ave	71.1	71.2	0.1	No

Notes:
[1] Exterior noise levels calculated at 5 feet above ground level.
[2] Noise levels calculated from the centerline of the subject roadway.

Exhibit F

Operational Noise Levels Lmax



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.

8.1 Construction Noise

The FHWA has compiled data regarding the noise-generated characteristics of typical construction activities. The data is presented in Table 8.

Table 8: Construction Equipment Noise Levels[1]

Type	Measured L_{max} (dBA) at 50 Feet
Loader	79
Grader	85
Scraper	84
Drill Rig	79
Pump	76
Dump Truck	76
Track Crane	81

Notes:
[1] Referenced noise levels from the FHWA Construction Noise Handbook.

Construction noise is considered a short-term impact and would be considered significant if construction activities are taken outside the allowable times as described in the County of Riverside's Municipal Code Section 9.52.20. Construction is anticipated to occur during the permissible hours according to the County's Municipal Code. Construction noise will have a temporary or periodic increase in the ambient noise level above the existing within the project vicinity. Furthermore, noise reduction measures are provided to further reduce construction noise. The impact is considered less than significant however construction noise level projections are provided.

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 will be the loudest during the grading phase. Grading will consist of the use of 2 graders, 2 loaders, and 2 scrapers operating as close as 250 feet from the nearest property line.

Unmitigated noise levels have the potential to reach 47.8 dBA L_{eq} and 66.4 L_{max} at the nearest sensitive receptors during building construction. Noise levels for the other construction phases would be lower, approximately 36-40 dBA L_{eq} and 60-62 dBA L_{max}.

The project will result in less than 50 daily trips including up to 10 heavy trucks. Ramon Road has an estimated 388 heavy trucks and 7755 total trips a day. Construction traffic will not be significant.

8.2 Construction Noise Reduction Policies

Construction operations must follow the County's Noise Ordinance County of Riverside's Municipal Code Section 9.52.20, which states that construction, repair, or excavation work performed must occur within the permissible hours. To further ensure that construction activities do not disrupt the adjacent land uses, the following policies should be adhered to:

1. During construction, the contractor shall ensure all construction equipment is equipped with appropriate noise attenuating devices.
2. The contractor shall locate equipment staging areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.
3. Idling equipment shall be turned off when not in use.
4. Equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.

8.3 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 bulldozer. A large bulldozer has a vibration impact of 0.089 inches per second peak particle velocity (PPV) at 25 feet which is perceptible but below any risk to architectural damage.

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

$$PPV_{equipment} = PPV_{ref}\ (100/D_{rec})^{n}$$

Where: PPV_{ref} *= reference PPV at 100ft.*
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 in Table 9 (below) provide general thresholds and guidelines as to the vibration damage potential from vibratory impacts.

<Table 9, next page>

Table 9: 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 10 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

Table 10: 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.

At a distance of 250 feet, a large bulldozer would yield a worst-case 0.007 PPV (in/sec) which is below the level and perception and is below any threshold of damage. 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

County of Riverside: Traffic Counts

Integrated Engineering Group, Nobles Solar Scoping Agreement

County of Riverside Municipal Code Chapter 9.52-Noise Regulations

Appendix A:

Photographs and Field Measurement Data

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AZ Office
4960 S. Gilbert Rd, Ste 1-461
Chandler, AZ 85249

CA Office
1197 E Los Angeles Ave, C-256
Simi Valley, CA 93065

5-Hour Continuous Noise Measurement Datasheet

Project: Noble Solar

Site Address/Location: APNs 651-130-062

Date: 12/15/2021

Field Tech/Engineer: Jason Schuyler

Site Observations: Partially cloudy, winds 3-5mph, daytime templow 70s F.

General Location:

Sound Meter: Piccolo 2 **SN:** 80206

Settings: A-weighted, slow, 1-min, 24-hour duration

Meteorological Con.: 3 to 5 mph wind, from W. to E.

Site ID: LT1

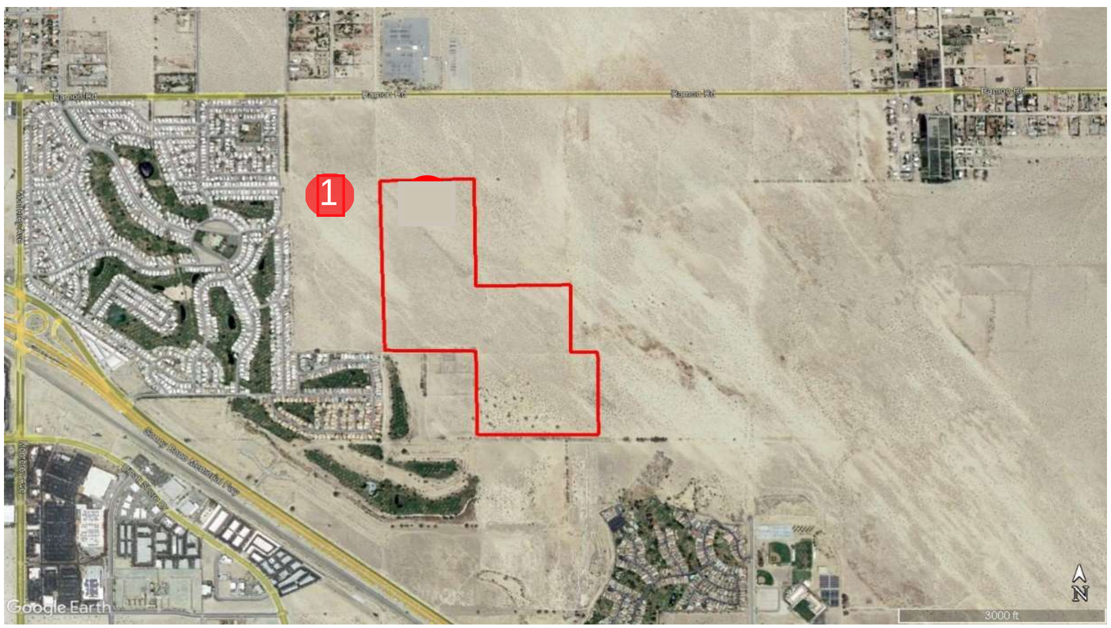
Site Topo: Flat

Ground Type: Soft site, Open raw ground with a road

Noise Source(s) w/ Distance:

Meter is in line with access road and 129' from homes

Figure 1: LT-1 Monitoring Location



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5-Hour Noise Measurement Datasheet - Cont.

Project: Noble Solar
Day: 1 of 1
Site Address/Location: APNs 651-130-062
Site ID: LT1

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
12/15/2021	4:00 PM	5:00 PM	54.2	85.8	39.4	64.0	59.9	53.1	42.9	41.6
12/15/2021	5:00 PM	6:00 PM	47.8	65.2	41.0	52.8	52.2	49.3	47.0	44.0
12/15/2021	6:00 PM	7:00 PM	47.1	69.0	39.1	51.5	50.8	50.4	43.6	41.7
12/15/2021	7:00 PM	8:00 PM	47.9	55.1	45.7	53.2	50.1	49.0	47.1	45.4
12/15/2021	8:00 PM	9:00 PM	49.1	59.9	43.0	53.7	53.0	50.3	48.4	47.0

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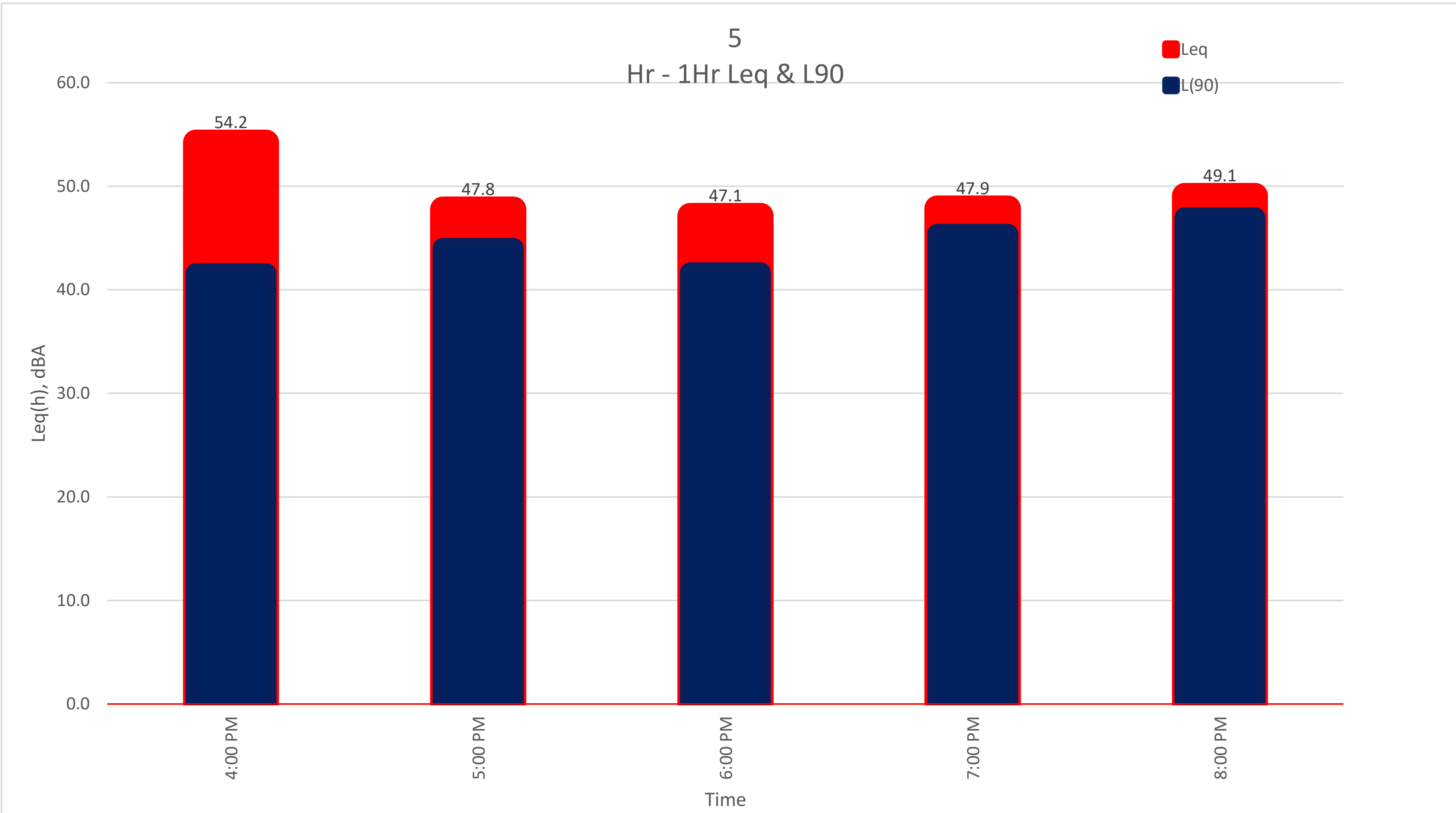
5-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Noble Solar
Site Address/Location: APNs 651-130-062
Site ID: LT1
Day: 1 of 1



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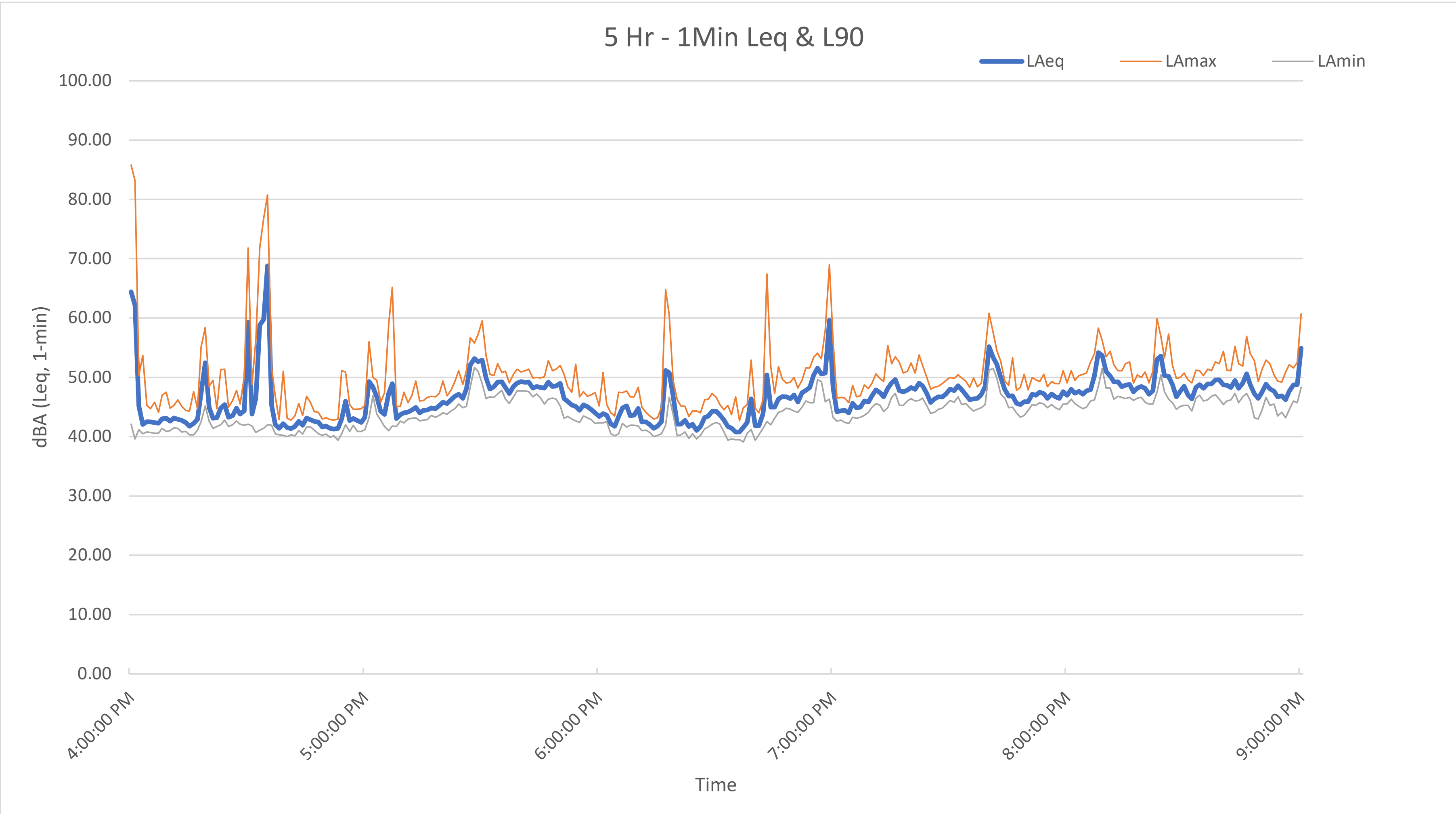
5-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Noble Solar **Day:** 1 of 1

Site Address/Location: APNs 651-130-062

Site ID: LT1



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5-Hour Continuous Noise Measurement Datasheet

Project: Noble Solar
Site Address/Location: APNs 651-130-062
Date: 12/15/2021
Field Tech/Engineer: Jason Schuyler

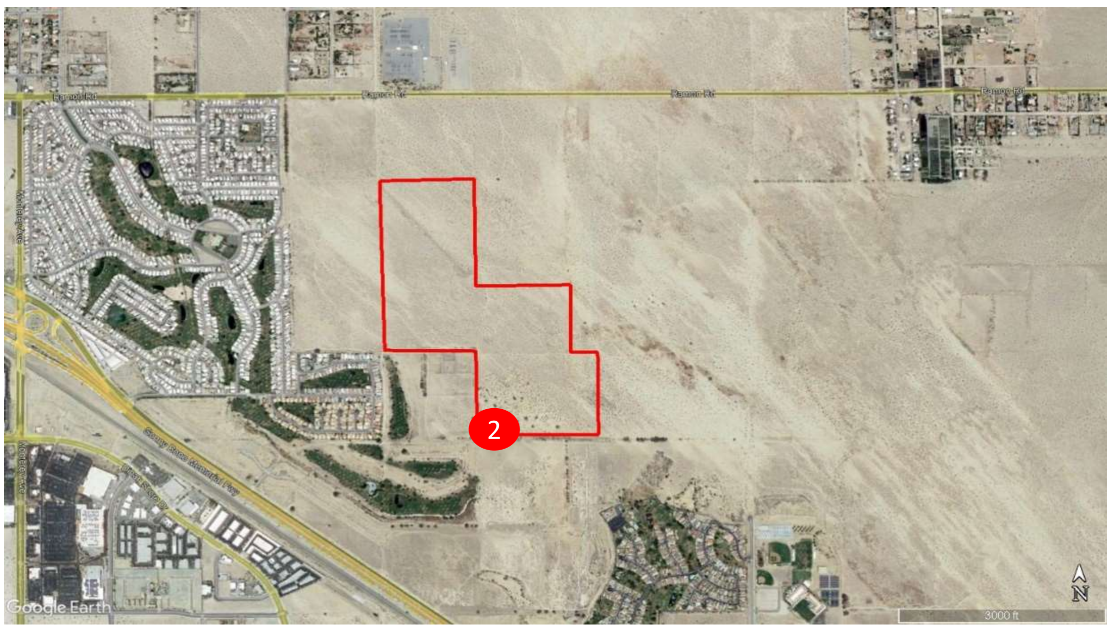
Site Observations: Winds 3-5 MPH, Clear skys at drop off, cloudy at pick up . Temps in low 70's durring the day and 40's at night F.

General Location:
Sound Meter: Piccolo 2 **SN:** 80206
Settings: A-weighted, slow, 1-min, 24-hour duration
Meteorological Con.: 3 to 5 mph wind mostly clear skys
Site ID: LT2

Site Topo: Flat
Ground Type: Soft site, Open raw ground with a road

Noise Source(s) w/ Distance:
Meter is 225' from residenthomes

Figure 1: LT-2 Monitoring Location



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5-Hour Noise Measurement Datasheet - Cont.

Project: Noble Solar **Day:** 1 of 1
Site Address/Location: APNs 651-130-062
Site ID: LT2

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
12/15/2021	4:00 PM	5:00 PM	45.9	64.9	38.6	51.6	50.3	48.3	44.5	43.0
12/15/2021	5:00 PM	6:00 PM	46.1	62.6	38.1	52.3	51.8	49.2	43.8	41.3
12/15/2021	6:00 PM	7:00 PM	45.0	56.6	38.6	48.8	48.5	47.5	43.9	42.2
12/15/2021	7:00 PM	8:00 PM	47.1	57.9	45.4	51.7	50.6	49.4	45.2	43.4
12/15/2021	8:00 PM	9:00 PM	46.6	59.3	40.8	50.4	49.6	48.9	45.8	44.1

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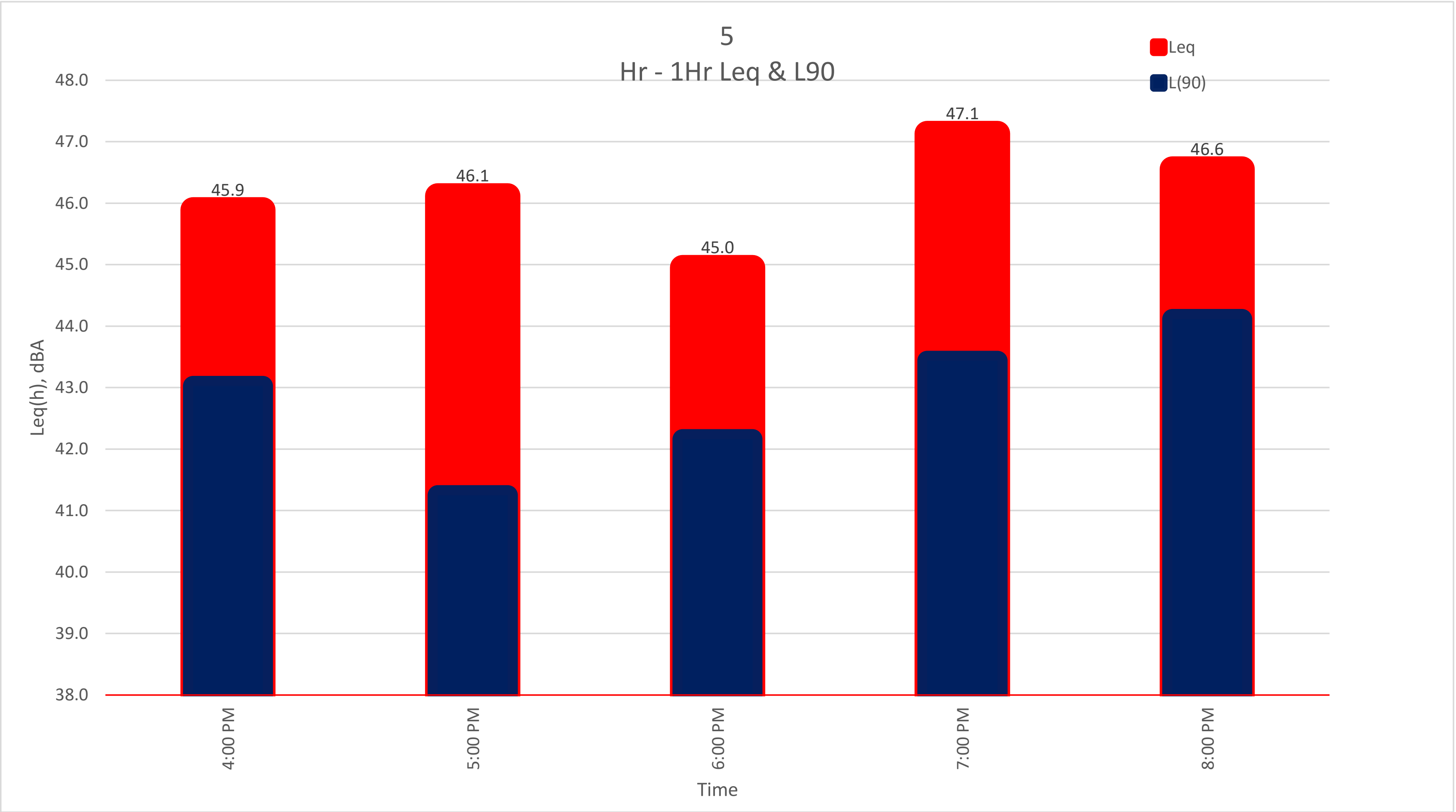
5-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Noble Solar **Day:** 1 of 1
Site Address/Location: APNs 651-130-062
Site ID: LT2



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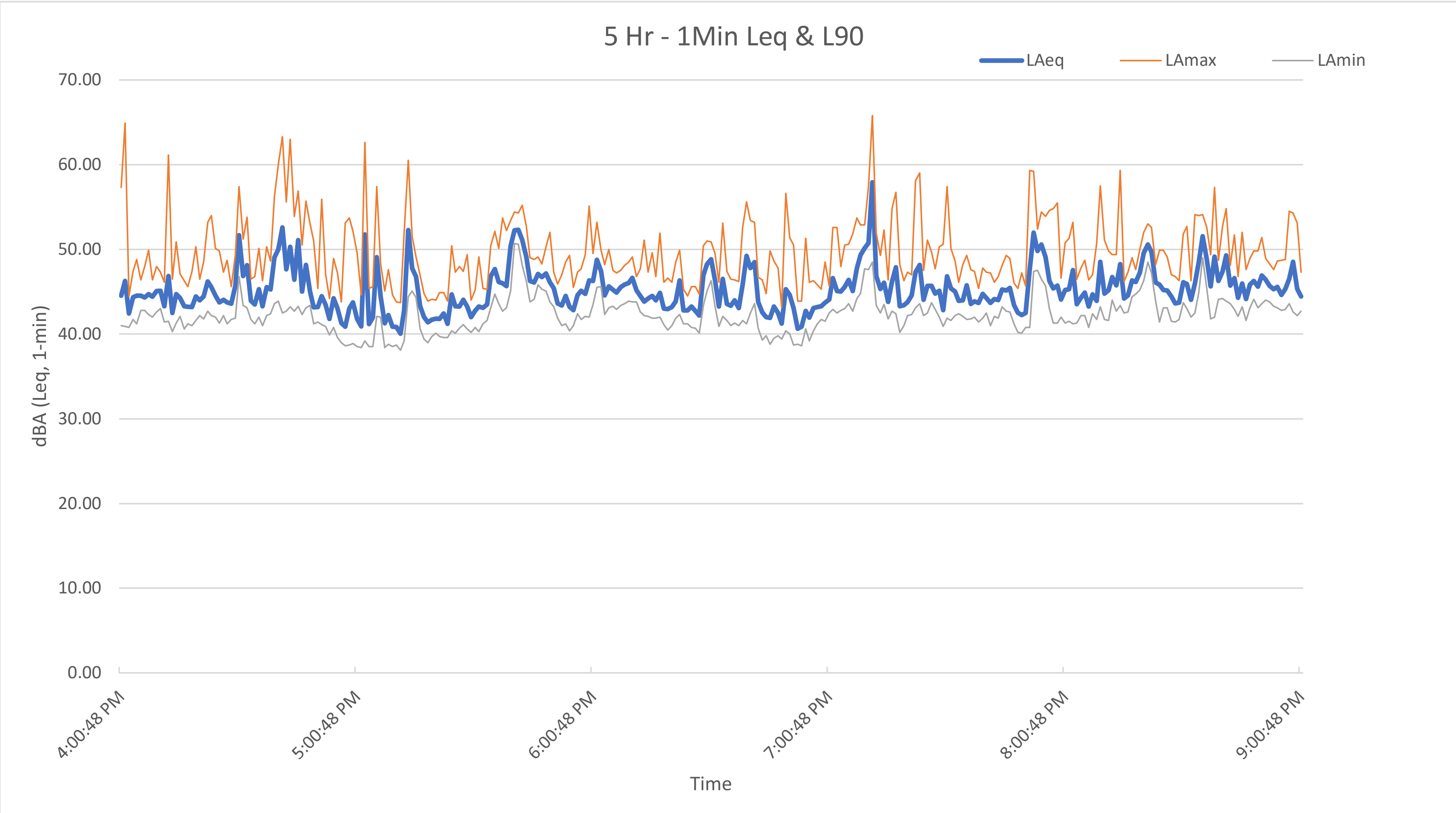
5-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Noble Solar **Day:** 1 of 1
Site Address/Location: APNs 651-130-062
Site ID: LT2



Appendix B:
SoundPlan Input/Output

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
Receiver R1 Fl G dB(A) Leq,d 45 dB(A) Sigma(Leq,d) 0.0 dB(A)		
HVAC	Point	30
HVAC	Point	29
HVAC	Point	29
HVAC	Point	28
HVAC	Point	28
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HVAC	Point	27
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HVAC	Point	23
HVAC	Point	22

Source	Source ty	Leq,d dB(A)
HVAC	Point	22
HVAC	Point	22
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HVAC	Point	22
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HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
Inverter	Point	20
Inverter	Point	20
HVAC	Point	20

Source	Source ty	Leq,d dB(A)
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
Inverter	Point	19
HVAC	Point	19
Inverter	Point	19
DC-DC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
DC-DC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
Inverter	Point	18
Inverter	Point	18
HVAC	Point	18
DC-DC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
DC-DC	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
Inverter	Point	18

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
DC-DC	Point	18
HVAC	Point	18
Inverter	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
DC-DC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
DC-DC	Point	17
HVAC	Point	17
HVAC	Point	17
Inverter	Point	17
Inverter	Point	17
HVAC	Point	17
Inverter	Point	17
Inverter	Point	17
HVAC	Point	17
DC-DC	Point	17
HVAC	Point	17
DC-DC	Point	17
HVAC	Point	17
HVAC	Point	17
DC-DC	Point	17
HVAC	Point	17
DC-DC	Point	17
Inverter	Point	17
Inverter	Point	17
Inverter	Point	17
Inverter	Point	17
HVAC	Point	16
DC-DC	Point	16
DC-DC	Point	16
HVAC	Point	16
DC-DC	Point	16
Inverter	Point	16

Source	Source ty	Leq,d dB(A)
Inverter	Point	16
Inverter	Point	16
Inverter	Point	16
DC-DC	Point	16
DC-DC	Point	16
DC-DC	Point	16
DC-DC	Point	16
Inverter	Point	16
Inverter	Point	16
Inverter	Point	16
Inverter	Point	16
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
Inverter	Point	15
DC-DC	Point	15
Inverter	Point	15
Inverter	Point	15
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
Inverter	Point	15
Inverter	Point	15
Inverter	Point	15
DC-DC	Point	15
DC-DC	Point	14
Inverter	Point	14
DC-DC	Point	14
DC-DC	Point	14
DC-DC	Point	14
Inverter	Point	14
DC-DC	Point	14
DC-DC	Point	14
DC-DC	Point	14
Inverter	Point	14
DC-DC	Point	14
Inverter	Point	14
Inverter	Point	14
DC-DC	Point	14
Inverter	Point	14
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13

Source	Source ty	Leq,d dB(A)
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12

Source	Source ty	Leq,d dB(A)
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
DC-DC	Point	11
Inverter	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10

Source	Source ty	Leq,d dB(A)
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	8
Inverter	Point	8

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7

Source	Source ty	Leq,d dB(A)
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
Receiver R2 Fl G dB(A) Leq,d 45 dB(A) Sigma(Leq,d) 0.0 dB(A)		
HVAC	Point	30
HVAC	Point	30
HVAC	Point	29
HVAC	Point	29
HVAC	Point	29
HVAC	Point	29
HVAC	Point	28
HVAC	Point	28
HVAC	Point	28
HVAC	Point	28
HVAC	Point	27
HVAC	Point	27
HVAC	Point	27
HVAC	Point	27
HVAC	Point	27
HVAC	Point	27

Source	Source ty	Leq,d dB(A)
HVAC	Point	27
HVAC	Point	26
HVAC	Point	26
HVAC	Point	26
HVAC	Point	26
HVAC	Point	26
HVAC	Point	26
HVAC	Point	26
HVAC	Point	26
HVAC	Point	26
HVAC	Point	25
HVAC	Point	25
HVAC	Point	25
HVAC	Point	25
HVAC	Point	25
HVAC	Point	24
HVAC	Point	24
HVAC	Point	24
HVAC	Point	24
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HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
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HVAC	Point	22
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HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22

Source	Source ty	Leq,d dB(A)
HVAC	Point	22
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
Inverter	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
Inverter	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
Inverter	Point	20
DC-DC	Point	20
Inverter	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
DC-DC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
Inverter	Point	19

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
HVAC	Point	19
HVAC	Point	19
Inverter	Point	19
DC-DC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
Inverter	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
DC-DC	Point	19
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
Inverter	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
HVAC	Point	18
DC-DC	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
DC-DC	Point	18
HVAC	Point	18
HVAC	Point	18
DC-DC	Point	18
HVAC	Point	18
Inverter	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
Inverter	Point	18
HVAC	Point	18

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
HVAC	Point	18
Inverter	Point	18
HVAC	Point	17
HVAC	Point	17
DC-DC	Point	17
HVAC	Point	17
HVAC	Point	17
Inverter	Point	17
HVAC	Point	17
DC-DC	Point	17
HVAC	Point	17
DC-DC	Point	17
DC-DC	Point	17
HVAC	Point	17
Inverter	Point	17
HVAC	Point	17
Inverter	Point	17
Inverter	Point	17
HVAC	Point	17
Inverter	Point	17
HVAC	Point	17
DC-DC	Point	17
HVAC	Point	17
DC-DC	Point	17
DC-DC	Point	17
HVAC	Point	17
Inverter	Point	17
DC-DC	Point	17
Inverter	Point	16
Inverter	Point	16
Inverter	Point	16
HVAC	Point	16
DC-DC	Point	16
DC-DC	Point	16
DC-DC	Point	16
Inverter	Point	16
Inverter	Point	16
Inverter	Point	16
DC-DC	Point	16
Inverter	Point	16
DC-DC	Point	16
DC-DC	Point	16
DC-DC	Point	16
Inverter	Point	16
Inverter	Point	15

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
DC-DC	Point	15
DC-DC	Point	15
Inverter	Point	15
DC-DC	Point	15
Inverter	Point	15
DC-DC	Point	15
Inverter	Point	15
Inverter	Point	15
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
Inverter	Point	15
DC-DC	Point	15
Inverter	Point	14
DC-DC	Point	14
DC-DC	Point	14
DC-DC	Point	14
Inverter	Point	14
DC-DC	Point	14
DC-DC	Point	14
Inverter	Point	14
Inverter	Point	14
Inverter	Point	14
DC-DC	Point	14
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
DC-DC	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11

Source	Source ty	Leq,d dB(A)
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
Inverter	Point	10

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
Inverter	Point	10
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
DC-DC	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
Receiver R3 Fl G dB(A) Leq,d 34 dB(A) Sigma(Leq,d) 0.0 dB(A)		
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	14
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
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HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13

Source	Source ty	Leq,d dB(A)
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
HVAC	Point	13
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
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HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	12
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11

Source	Source ty	Leq,d dB(A)
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
HVAC	Point	11
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HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10

Source	Source ty	Leq,d dB(A)
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	10
HVAC	Point	9
HVAC	Point	9
HVAC	Point	9
HVAC	Point	9
HVAC	Point	9
HVAC	Point	9
HVAC	Point	9
Inverter	Point	5
Inverter	Point	5
Inverter	Point	5
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4
Inverter	Point	4

Source	Source ty	Leq,d dB(A)
DC-DC	Point	3
DC-DC	Point	3
DC-DC	Point	3
DC-DC	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
Inverter	Point	3
Inverter	Point	3
Inverter	Point	3
Inverter	Point	3
Inverter	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
Inverter	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
Inverter	Point	3
DC-DC	Point	3
DC-DC	Point	3
Inverter	Point	3
Inverter	Point	3
DC-DC	Point	3
Inverter	Point	3
DC-DC	Point	3
DC-DC	Point	3
Inverter	Point	3
DC-DC	Point	3

Source	Source ty	Leq,d dB(A)
DC-DC	Point	2
DC-DC	Point	2
Inverter	Point	2
DC-DC	Point	2
DC-DC	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
Inverter	Point	2
Inverter	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
DC-DC	Point	2
Inverter	Point	2
DC-DC	Point	2
DC-DC	Point	2
DC-DC	Point	2
DC-DC	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2

Source	Source ty	Leq,d dB(A)
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
DC-DC	Point	2
DC-DC	Point	2
Inverter	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
DC-DC	Point	2
DC-DC	Point	2
Inverter	Point	2
DC-DC	Point	2
Inverter	Point	2
DC-DC	Point	2
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
DC-DC	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
Inverter	Point	1
DC-DC	Point	1
DC-DC	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
DC-DC	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
DC-DC	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
DC-DC	Point	1
Inverter	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	1
Inverter	Point	1
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
DC-DC	Point	0

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
Inverter	Point	0
DC-DC	Point	0
DC-DC	Point	0
Inverter	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
Inverter	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
Inverter	Point	0
Inverter	Point	0
Inverter	Point	0
Inverter	Point	0
Inverter	Point	0
DC-DC	Point	0
DC-DC	Point	0
Inverter	Point	0
Inverter	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
Inverter	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
DC-DC	Point	0
Inverter	Point	0

Source	Source ty	Leq,d dB(A)
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
Inverter	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	0
DC-DC	Point	-1
Receiver R4 FI G dB(A) Leq,d 43 dB(A) Sigma(Leq,d) 0.0 dB(A)		
HVAC	Point	25
HVAC	Point	25
HVAC	Point	25
HVAC	Point	25
HVAC	Point	25

Source	Source ty	Leq,d dB(A)
HVAC	Point	25
HVAC	Point	25
HVAC	Point	25
HVAC	Point	24
HVAC	Point	24
HVAC	Point	24
HVAC	Point	24
HVAC	Point	24
HVAC	Point	24
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	23
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	22
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	21
HVAC	Point	20
HVAC	Point	20

Source	Source ty	Leq,d dB(A)
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	20
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	19
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18
HVAC	Point	18

Source	Source ty	Leq,d dB(A)
HVAC	Point	18
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	17
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
Inverter	Point	16
Inverter	Point	16
HVAC	Point	16
Inverter	Point	16
Inverter	Point	16
HVAC	Point	16
Inverter	Point	16
Inverter	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
Inverter	Point	16

Source	Source ty	Leq,d dB(A)
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
HVAC	Point	16
Inverter	Point	16
HVAC	Point	16
HVAC	Point	15
HVAC	Point	15
HVAC	Point	15
HVAC	Point	15
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
DC-DC	Point	15
Inverter	Point	15
DC-DC	Point	15
Inverter	Point	15
Inverter	Point	15
Inverter	Point	15
DC-DC	Point	15
Inverter	Point	15
Inverter	Point	14
DC-DC	Point	14
Inverter	Point	14
Inverter	Point	14
DC-DC	Point	14
DC-DC	Point	14
Inverter	Point	14
Inverter	Point	14
DC-DC	Point	14
DC-DC	Point	14
Inverter	Point	14
Inverter	Point	14
DC-DC	Point	14
DC-DC	Point	14
Inverter	Point	14
Inverter	Point	14
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13

Source	Source ty	Leq,d dB(A)
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
DC-DC	Point	13
DC-DC	Point	13
DC-DC	Point	13
DC-DC	Point	13
DC-DC	Point	13
DC-DC	Point	13
DC-DC	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	13
Inverter	Point	13
DC-DC	Point	13
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12

Source	Source ty	Leq,d dB(A)
Inverter	Point	12
DC-DC	Point	12
DC-DC	Point	12
Inverter	Point	12
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
DC-DC	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	11
Inverter	Point	10
Inverter	Point	10
Inverter	Point	10
Inverter	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
Inverter	Point	10
Inverter	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10

Source	Source ty	Leq,d dB(A)
Inverter	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	10
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
Inverter	Point	9
DC-DC	Point	9
DC-DC	Point	9
DC-DC	Point	9
DC-DC	Point	9
DC-DC	Point	9
DC-DC	Point	9
DC-DC	Point	9
DC-DC	Point	9
Inverter	Point	9
Inverter	Point	8

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
DC-DC	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	8
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7

Nobles Solar Noise
Contribution level - 001 - Nobles Solar: Outdoor SP

Source	Source ty	Leq,d dB(A)
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
Inverter	Point	7
DC-DC	Point	7
DC-DC	Point	7
DC-DC	Point	6
DC-DC	Point	6
Inverter	Point	6
Inverter	Point	6
Inverter	Point	6
DC-DC	Point	6
Inverter	Point	6
DC-DC	Point	6
Inverter	Point	6
Inverter	Point	6
Inverter	Point	6
DC-DC	Point	6
DC-DC	Point	6
Inverter	Point	6
Inverter	Point	6
Inverter	Point	6
Inverter	Point	6
DC-DC	Point	6
Inverter	Point	6
Inverter	Point	6
Inverter	Point	6
Inverter	Point	6
Inverter	Point	6
DC-DC	Point	6
DC-DC	Point	6

Source	Source ty	Leq,d dB(A)
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	6
DC-DC	Point	5
DC-DC	Point	5
DC-DC	Point	5
DC-DC	Point	5
DC-DC	Point	5
DC-DC	Point	5
DC-DC	Point	5
DC-DC	Point	5
DC-DC	Point	5

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
DC-DC	Point				71.0	71.0	0.0	0.0		0	100%/24h		71.0	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	500Hz
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	

Name	Source type	I or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	500Hz	
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5	

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

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Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
HVAC	Point				81.5	81.5	0.0	0.0		0	100%/24h		81.5
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	500Hz	
		m,m²	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0	

Nobles Solar Noise
Octave spectra of the sources in dB(A) - 001 - Nobles Solar: Outdoor SP

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	500Hz dB(A)
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0
Inverter	Point				72.0	72.0	0.0	0.0		0	100%/24h		72.0

Appendix C:

Traffic Noise Modeling Output

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the Riverside County Transportation Department requirements for traffic impact analysis of the following project. The analysis must follow the Riverside County Transportation Analysis Guidelines dated December 2020.

Case No. PAR 210152
Related Cases -
SP No. ____
EIR No. ____
GPA No. ____
CZ No. ____
Project Name: Nobles Solar
Project Address: Ramon Road and Vista De Oro Road
Project Description: Proposed CUP for a 400MW battery and 60-150MW solar facility on 166 AC connecting into the SCE Mirage Substation located on the north side of Ramon Blvd.

	Consultant	Developer
Name:	Integrated Engineering Group	Frederick Noble,
Address:	23905 Clinton Keith Road 114-280	Wintec Energy Ltd.
	Wildomar CA 92562	2045 E. Tahquitz Canyon Way
Telephone:	951-833-3105	Palm Springs, CA 92262
Fax:		

A. Trip Generation Source: Land Use Specialized Trip Generation

Current GP Land Use *Provide General Plan Land Use Designation (e.g.: MDR, CR, etc)* ____

Proposed Land Use Solar Farm

Current Zoning R-1

Proposed Zoning W-2

	Current Trip Generation In	Out	Total	Proposed Trip Generation In	Out	Total
AM Trips	0	0	0	33	3	36
PM Trips	0	0	0	3	33	36

Internal Trip Allowance ☐ Yes ☐ No (% Trip Discount)
Pass-By Trip Allowance ☐ Yes ☐ No (% AM/PM Trip Discount)*

A passby trip discount of 25% is allowed for appropriate land uses. The passby trips at adjacent study area intersections and project driveways shall be indicated on a report figure.

B. Trip Geographic Distribution: N ____ % S ____ % E ____ % W ____ %
(attach exhibit for detailed assignment)

C. Background Traffic

Project Build-out Year: 2023
Annual Ambient Growth Rate: ____ %
Phase Year(s) N/A

Other area projects to be analyzed:

Model/Forecast methodology N/A

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D. **Study intersections:** *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1 __________ 6. __________
2. __________ 7. __________
3. __________ 8. __________
4. 9. __________
5. __________ 10. __________

E. **Study Roadway Segments:** *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1. __________ 6. __________
2. __________ 7. __________
3. __________ 8. __________
4. __________ 9. __________
5. __________ 10. __________

E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? ☐ Yes ☐ No

If so, name of City Jurisdiction: __________

F. Site Plan (please attach reduced copy)

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Transportation Department)
(NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)
Trip generation assessment and VMT analysis will be provided for County staff review and approval

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.
Date of counts_ N/A

***NOTE* Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. Transportation Department staff will not process the Scoping Agreement prior to receipt of the fee.**

Recommended by:

George Ghossain 1/13/2022

Consultant's Representative Date

Scoping Agreement Submitted on 1/13/2022

Revised on

Approved Scoping Agreement:

Riverside County Transportation Department Date

INTEGRATED ENGINEERING GROUP
TRANSPORTATION PLANNING AND ENGINEERING

Project Description

The Project is proposing the construction and operation of a 400-megawatt (MW) battery and 60-150 MW solar facility on 166 AC connecting into the Southern California (SCE) Mirage Substation located on the north side of Ramon Blvd. The proposed project is located on a vacant lot at the southeast quadrant of Ramon Road and Vista De Oro Road intersection.

Project Trip Generation Forecast

Per the County of Riverside Transportation Analysis Guidelines for Level of Service and Vehicle Miles Traveled, Trip generation may be estimated for land uses that are not included in the Institute of Transportation Engineers (ITE) Trip Generation Manual or other published sources. For the purposes of this analysis, the forecasted trips generated by the project assume that trips will occur during the construction phase only since the project, once constructed and in operation, will be unmanned with no office or operation space constructed on site. The operation of the site will be monitored remotely not requiring any employees to be present on site. Site routine maintenance and inspections will be performed consistent with an established monthly maintenance schedule and time of need.

Level of Service (LOS) Assessment

Construction Trips

Project construction peak hour trips are anticipated to occur outside the typical peak hours of the network since construction workers will need to be at the construction site prior to 7am and depart the site at 3pm; however in order to evaluate the worst-case scenario, it is assumed that construction employees arrive during the AM peak hour and depart during the peak hour traffic of the adjacent street with truck trips occurring randomly over the course of the work day.

Based on these assumptions, a daily and peak hour trip generation has been calculated for the project. It is estimated that 35 employees will work on the site during the five-month peak construction period of which 25 employees will arrive alone and 10 employees will carpool. Other ancillary project related truck trips are also accounted for as follows:

- Single Occupancy - 25 employees
    - 50 (25 employees x 2 trips per day) daily trips
    - 25 inbound trips in the morning peak and
    - 25 outbound trips in the afternoon peak
- Carpool (assumed 2 in a carpool) – 10 employees
    - 10 (10 employees/2 x 2 trips per day) daily trips

- 5 inbound trips in the morning peak
- 5 outbound trips in the afternoon peak

- Truck Trips – 10 trucks
  - 60 (10 x 3 (PCE factor) x 2) daily trips
  - 3 inbound and 3 outbound trips in the morning peak
  - 3 inbound and 3 outbound trips in the afternoon peak

The following table shows the traffic generation expected from the project based on the information provided by the design team.

Project Construction Traffic Generation Forecast

Type of Trips	Total # of Units	Multiplying Factor[1]	Daily Trips	AM Peak Hour			PM Peak Hour		
				Total	**In**	**Out**	**Total**	**In**	**Out**
Employee Trips (single occupancy)	25		50	25	25	0	25	0	25
Employee Trips (carpooling 2+)	10		10	5	5	0	5	0	5
Truck Trips	10	3	60	6	3	3	6	3	3
NET Project Trips (PCEs)			**120**	**36**	**33**	**3**	**36**	**3**	**33**

Notes: [1] Passenger car equivalent factor of 3.0; 4+ Axle Trucks (worst case scenario)

Based on the project trip generation calculation outlined in the table above, IEG will prepare a trip generation assessment report for County staff review and approval.

Vehicle Miles Traveled (VMT) Assessment

Since the project, once constructed and in operation, will be unmanned with no office or operation space constructed on site, it will be screened out from conducted a full VMT analysis. Additionally, it should be noted that construction worker VMT is not a newly generated VMT; instead, it is redistributed throughout the regional roadway network based on the different work sites in which construction workers travel to each day. Therefore, construction workers are not generating new VMT each day, only redistributing it. This redistribution is considered to have a nominal and momentary effect on the regional and citywide daily VMT. IEG will prepare a VMT screening analysis report for staff review and approval.

LOCATION	DIR	X-STREET	NOTE	DATE	DAY	ADT
PROMONTORY PKWY	W	WHISPER OAKS RD		5/23/2019	Thursday	2346
	E	PACIFIC PARK DR		5/22/2019	Wednesday	2411
RAINBOW CANYON RD	N	FRONTAGE RD	CENSUS	7/10/2019	Wednesday	11194
	N	FRONTAGE RD		9/9/2015	Wednesday	8597
	N	FRONTAGE RD		3/4/2014	Tuesday	7103
RAMON RD	W	DESERT MOON DR		11/1/2016	Tuesday	7613
	E	SHELTER DR		11/1/2016	Tuesday	11807
	E	BOB HOPE DR	CENSUS	2/9/2016	Tuesday	19456
	E	MONTEREY AVE	CENSUS	2/9/2016	Tuesday	7755
	W	MONTEREY AVE	CENSUS	2/9/2016	Tuesday	10165
	E	VARNER RD	CENSUS	2/9/2016	Tuesday	13077
	W	VARNER RD	CENSUS	2/9/2016	Tuesday	14636
	E	AVENIDA CABALLEROS	CVAG	4/3/2013	Wednesday	19174
	W	FARRELL DR	CVAG	4/3/2013	Wednesday	22898
	W	SUNRISE WAY	CVAG	4/3/2013	Wednesday	20897
	W	EL CIELO RD	CVAG	4/2/2013	Tuesday	31758
	E	INDIAN CANYON DR S (INDIA	CVAG	4/1/2013	Monday	13039
	W	INDIAN CANYON DR S (INDIA	CVAG	4/1/2013	Monday	8209
	E	PASEO DOROTEA	CVAG	3/26/2013	Tuesday	30189
	W	CATHEDRAL CANYON DR	CVAG	3/25/2013	Monday	30408
	W	GENE AUTRY TRL	CVAG	3/25/2013	Monday	39169
	W	LANDAU BLVD	CVAG	3/25/2013	Monday	35273
	W	DA VALL DR	CVAG	3/20/2013	Wednesday	22682
	E	DATE PALM DR	CVAG	3/20/2013	Wednesday	26779
	W	DATE PALM DR	CVAG	3/20/2013	Wednesday	30323
	E	DA VALL DR	CVAG	3/19/2013	Tuesday	24255
	E	BOB HOPE DR	CVAG	3/11/2013	Monday	26402
	W	BOB HOPE DR	CVAG	3/11/2013	Monday	23736
	W	MONTEREY AVE	CVAG	3/11/2013	Monday	9385
	W	VARNER RD	CVAG	3/11/2013	Monday	11693
	E	MONTEREY AVE	CENSUS	2/27/2013	Wednesday	7166
	E	BOB HOPE DR	CENSUS	2/26/2013	Tuesday	26006
	W	THOUSAND PALMS CANYON	CVAG	2/21/2013	Thursday	3283
RAMONA AVE	S	NUEVO RD		6/21/2017	Wednesday	843
RAMONA EXPY	E	BRIDGE ST		10/1/2019	Tuesday	24770
	W	BRIDGE ST		10/1/2019	Tuesday	22646
	E	LAKEVIEW AVE	CENSUS	4/24/2019	Wednesday	22025
	E	BRIDGE ST	CENSUS	4/18/2019	Thursday	23422

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Nobles Solar	JOB #:	07412149
ROADWAY:	Ramon Rd	DATE:	17-Jan-22
LOCATION:	50 ft from CL (existing)	ENGINEER	C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	7,755	
SPEED =	40	
PK HR % =	10	
NEAR LANE/FAR LANE DIS	12	
ROAD ELEVATION =	0.0	
GRADE =	0.0	%
PK HR VOL =	776	

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		50
PAD ELEVATION =		0.0
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	0.755	0.140	0.104	0.9200
MEDIUM TRUCK	0.480	0.020	0.500	0.0300
HEAVY TRUCKS	0.480	0.020	0.500	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	49.73	- -
MEDIUM TRUCKS	4.0	49.65	- -
HEAVY TRUCKS	8.0	49.73	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	64.5	62.5	61.2	55.2	63.6	64.2
MEDIUM TRUCKS	58.6	54.6	46.9	56.1	62.2	62.3
HEAVY TRUCKS	65.7	61.7	53.9	63.1	69.3	69.3
NOISE LEVELS (dBA)	68.6	65.5	62.1	64.4	70.9	71.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.5	62.5	61.2	55.2	63.6	64.2
MEDIUM TRUCKS	58.6	54.6	46.9	56.1	62.2	62.3
HEAVY TRUCKS	65.7	61.7	53.9	63.1	69.3	69.3
NOISE LEVELS (dBA)	68.6	65.5	62.1	64.4	70.9	71.1

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	64	203	643	2032
LDN	62	196	621	1963

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	Nobles Solar	JOB #:	07412149
ROADWAY:	Ramon Rd	DATE:	17-Jan-22
LOCATION:	50 ft from CL (existing plus project)	ENGINEER	C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	7,870
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIS	12
ROAD ELEVATION =	0.0
GRADE =	0.0 %
PK HR VOL =	787

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5.0
WALL DISTANCE FROM RECEIVER		50
PAD ELEVATION =		0.0
ROADWAY VIEW:	LF ANGLE=	-90
	RT ANGLE=	90
	DF ANGLE=	180

SITE CONDITIONS

AUTOMOBILES =	10
MEDIUM TRUCKS =	10
HEAVY TRUCKS =	10

(10 = HARD SITE, 15 = SOFT SITE)

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	0.755	0.140	0.104	0.9200
MEDIUM TRUCK	0.480	0.020	0.500	0.0300
HEAVY TRUCKS	0.480	0.020	0.500	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	49.73	- -
MEDIUM TRUCKS	4.0	49.65	- -
HEAVY TRUCKS	8.0	49.73	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	64.6	62.6	61.3	55.2	63.7	64.3
MEDIUM TRUCKS	58.7	54.7	46.9	56.1	62.3	62.3
HEAVY TRUCKS	65.7	61.8	54.0	63.2	69.3	69.4
NOISE LEVELS (dBA)	68.7	65.6	62.2	64.5	71.0	71.2

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.6	62.6	61.3	55.2	63.7	64.3
MEDIUM TRUCKS	58.7	54.7	46.9	56.1	62.3	62.3
HEAVY TRUCKS	65.7	61.8	54.0	63.2	69.3	69.4
NOISE LEVELS (dBA)	68.7	65.6	62.2	64.5	71.0	71.2

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	65	206	652	2062
LDN	63	199	630	1992

Appendix D:

Construction Noise Modeling Output

Receptor - Residences to the West

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
SITE GRADE									
1. Loaders	2	79	250	1500	40	0.66	0.40	60.4	35.7
2. Graders	2	85	250	1500	40	0.66	0.40	66.4	41.7
3. Scrapers	2	84	250	1500	40	0.66	0.40	65.4	40.7
								66.4	47.8
SITE FOUNDATIONS									
1. Drill Rigs	2	79	250	1500	20	0.66	0.20	60.4	32.7
2. Loader	1	79	250	1500	40	0.66	0.40	60.4	35.7
3. Dump Truck	1	76	250	1500	40	0.66	0.40	57.4	32.7
								60.4	39.7
PANEL INSTALLATION									
1. Track Cranes	2	81	250	1500	16	0.66	0.16	62.4	33.7
2. Loader	1	79	250	1500	40	0.66	0.40	60.4	35.7
								62.4	39.3
PLATFORM INSTALLATION									
1. Loader	1	79	250	1500	40	0.66	0.40	60.4	35.7
								60.4	35.7
INVERTOR INSTALLATION									
1. Track Cranes	2	81	250	1500	16	0.66	0.16	62.4	33.7
2. Loader	1	79	250	1500	40	0.66	0.40	60.4	35.7
								62.4	39.3

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

VIBRATION LEVEL IMPACT

Project:	Nobles Solar	Date: 1/17/22
Source:	Large Bulldozer	
Scenario:	Unmitigated	
Location:	Existing southwest residences	
Address:		
PPV = PPVref(25/D)^n (in/sec)		

DATA INPUT

Equipment = Type	2	Large Bulldozer	INPUT SECTION IN BLUE
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	250.00	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 =	**0.007**	IN/SEC	OUTPUT IN RED