Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

210 South Juniper Street, Suite 100, Escondido, CA 92025
Phone: 760-738-5570 • Fax: 760-738-5227
www.eilarassociates.com • info@eilarassociates.com

October 15, 2024

Job # B81110N1

County of San Diego
Planning & Development Services
Attention: Souphalak Sakdarak
5510 Overland Avenue, Suite 110
San Diego, California 92123

Subject: **Response to Second Iteration Noise Issues for Jamacha Building, County of San Diego Record ID PDS2018-STP-18-009, Environmental Log No. PDS2018-ER-18-19-001**

This letter is in response to the County of San Diego's Planning & Development Services (PDS) second iteration comments for the Jamacha Building (Record ID PDS2018-STP-18-009). Comments are found in the project issue checklist and are dated September 4, 2020. These comments have been addressed in a revised version of the report, dated October 15, 2024, and this letter will reference the location of each comment response or requested changes in the revised report. Italics are added to indicate County of San Diego staff comments.

8-3 On page 2, Section 1.2.2, please add a sentence that indicates the measurement was measured with a sound level meter using A-weighting and a "slow" response time, as these terms are used in ANSI S1.1-1994 or its latest revision.

RESPONSE: A sentence stating that measurements were performed using A-weighting and a "slow" response time was added to the prior version of the report, omitting the reference to ANSI S1.1 as this standard only provides definitions of the terms but does not speak to any requirements for performing ambient noise measurements. According to email communications with Ms. Sakdarak, including a reference Section 36.403 of the County of San Diego Noise Ordinance, which uses this same terminology, in this sentence would be satisfactory for addressing this comment. The sentence on page 2 has been updated accordingly to include this reference.

Please call if you have any questions or require additional information.

Amy Hool, INCE
President/CEO

FOCUSED NOISE ANALYSIS

Jamacha Office Building
San Diego County Record ID: PDS2018-STP-18-009,
Environmental Log Number: PDS2018-ER-18-19-001

Lead Agency:

County of San Diego
Planning & Development Services
Contact: Souphalak Sakdarak
5510 Overland Avenue, Suite 310
San Diego, California 92123
Phone: 858-495-5214

Preparer:

Amy L. Hool
Eilar Associates, Inc.
Acoustical & Environmental Consulting
210 South Juniper Street, Suite 100
Escondido, California 92025
www.eilarassociates.com
Phone: 760-738-5570
Fax: 760-738-5227

Project Proponent:

Mark Khouli
1620 La Presa Avenue
Spring Valley, California 91977
Phone: 619-300-6040

Job #B81110N1

Original Report: December 18, 2018
First Revision: October 1, 2019
Second Revision: October 15, 2024

TABLE OF CONTENTS

		Page
	EXECUTIVE SUMMARY	1
1.0	**INTRODUCTION**	1
1.1	Project Description	
1.2	Environmental Settings and Existing Conditions	
1.3	Methodology	
2.0	**PROJECT-GENERATED AIRBORNE NOISE**	6
2.1	Guidelines for Determination of Significance	
2.2	Potential Operational Noise Impacts	
2.3	Potential General Construction Noise Impacts	
2.4	Potential Impulsive Noise Impacts	
3.0	**CONCLUSION**	10
4.0	**CERTIFICATION**	10
5.0	**REFERENCES**	11

FIGURES

1. Vicinity Map
2. Assessor's Parcel Map
3. Satellite Aerial Photograph
4. Topographic Map
5. Satellite Image Showing Short-Term and Long-Term Noise Measurement Locations
6. Satellite Image Showing Mechanical Equipment Noise Contours
7. Satellite Image Showing Construction Noise Source and Receiver Locations

APPENDICES

A. Project Plans
B. Cadna Analysis Data and Results
C. Pertinent Sections of the County of San Diego Noise Ordinance
D. Manufacturer Data Sheets
E. Temporary Construction Noise Calculations

EXECUTIVE SUMMARY

The proposed project, Jamacha Office Building (County of San Diego Record ID PDS2018-STP-18-009), consists of the construction of a new commercial office structure on two parcels. The project site is located near 9619 Jamacha Boulevard in the unincorporated community of Spring Valley, County of San Diego, California.

According to the scoping letter prepared by the County of San Diego, no analysis of traffic or aircraft noise is required at this time. Permanent project-related mechanical noise and temporary construction noise is the focus of this analysis.

Noise from proposed mechanical equipment to be located on site has been evaluated to determine whether noise from operation of these sources will exceed the noise standards of the County of San Diego Noise Ordinance. For purposes of this analysis, mechanical noise sources to be located on site are assumed to be four rooftop units that will serve the proposed offices. With typical equipment in place, noise impacts from mechanical equipment are expected to comply with the noise limits set within the County of San Diego Noise Ordinance at surrounding property lines during daytime and nighttime hours. No mitigation is required. In the event that significantly louder equipment or different equipment locations are chosen, the exact equipment type and placement can be evaluated prior to the issuance of building permits in order to reevaluate the noise impacts and potential need for mitigation.

Temporary construction noise was calculated to determine the impact this activity will have on surrounding occupied properties. Section 36.409 of the County of San Diego Noise Ordinance states it is unlawful to operate construction equipment that exceeds an average sound level of 75 dB for an eight-hour period between 7 a.m. and 7 p.m. when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received. Calculations show that typical construction activities will not exceed the County of San Diego temporary construction noise limit of 75 dBA at worst-case adjacent property lines during the construction activity. General good practice measures should be followed to ensure that noise levels remain below the County of San Diego construction noise limits, including reasonable maintenance of equipment, conservative planning of simultaneous equipment operation, and using equipment with effective mufflers. Equipment operation must also be limited to the allowable hours of operation set by the County of San Diego.

1.0 INTRODUCTION

This acoustical analysis report is submitted to satisfy the acoustical requirements of the County of San Diego for site plan approval. Its purpose is to assess noise impacts from mechanical equipment operation and construction activities to identify project features or requirements necessary to remain in compliance with County of San Diego noise regulations.

All noise level or sound level values presented herein are expressed in terms of decibels, with A-weighting to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, for a specified duration. Further explanation can be provided upon request.

1.1 Project Description

The proposed project, Jamacha Office Building (County of San Diego Record ID PDS2018-STP-18-009), consists of the construction of a new 12,000 square foot commercial office structure on two parcels. The area for both parcels is approximately 47,080 square feet. Additional information is provided in the project plans, included as Appendix A.

The subject property is zoned commercial, C30. Adjacent land uses to the west are zoned C30. Adjacent land uses to the north, east, and south are zoned single family residential, RS. According to the scoping letter prepared by the County of San Diego, no analysis of traffic or aircraft noise is required at this time. Project mechanical operational noise and temporary construction noise is the focus of this analysis.

1.2 Environmental Settings and Existing Conditions

1.2.1 Project Location

The project site is located on Jamacha Boulevard in the unincorporated community of Spring Valley, County of San Diego, California. The address is unknown; however, the site is located near 9619 Jamacha Boulevard. The Assessor's Parcel Numbers (APN) for the properties are 579-300-32-00 and 579-300-33-00. The project location is shown on the Vicinity Map, Figure 1, following this report. An Assessor's Parcel Map, Satellite Aerial Photograph, and Topographic Map are also provided as Figures 2 through 4, respectively.

1.2.2 Measured Noise Level

An on-site inspection was conducted the afternoon of Monday, December 10, 2018. The weather conditions were as follows: winds at 3 mph, overcast skies, moderate humidity, and temperatures in the mid 60s. The sound level measurement was performed with a sound level meter using A-weighting and a "slow" response time in accordance with Section 36.403 of the County of San Diego Noise Ordinance. An ambient noise measurement was taken approximately 37 feet south of the north property line for a duration of 16 minutes. The microphone position was approximately five feet above the existing grade. The measured noise level and related weather conditions can be found in Table 1. The primary sources of noise during the measurement were traffic noise on Jamacha Boulevard, noise from an adjacent school yard, dogs barking, and occasional airplanes in the distance. The short-term measurement location is shown in Figure 5.

Table 1. On-Site Noise Measurement Conditions and Results	
Date	Monday, December 10, 2018
Time	3:36 p.m. – 3:52 p.m.
Conditions	Overcast skies, winds at 3 mph, temperature in the mid 60s with moderate humidity
Measured Noise Level	67.2 dBA L_{EQ}

Long-term noise measurements were also made at two locations on site starting on the afternoon of Monday, December 10, and running though the afternoon of Tuesday, December 11. The purpose of these measurements was to monitor the change in ambient noise levels on the project site over a 24-hour period. Noise measurements were performed near the southern property line (Noise Measurement Location #2), as well as a location near the east property line (Noise Measurement

Location #3). Noise data obtained on site is shown in Table 2, and the long-term measurement locations are shown graphically in Figure 5.

Table 2. Long-Term Measured Noise Levels on Site			
Date	**Time**	**L_{EQ} (dBA)**	
		NML 2	**NML 3**
December 10, 2018	3 p.m. – 4 p.m.	53.4	61.9
	4 p.m. – 5 p.m.	53.9	62.0
	5 p.m. – 6 p.m.	53.7	61.9
	6 p.m. – 7 p.m.	52.9	61.1
	7 p.m. – 8 p.m.	56.2	65.9
	8 p.m. – 9 p.m.	54.9	60.6
	9 p.m. - 10 p.m.	51.1	58.3
	10 p.m. – 11 p.m.	50.0	57.5
	11 p.m. – 12 a.m.	49.1	56.5
December 11, 2018	12 a.m. – 1 a.m.	46.7	54.0
	1 a.m. – 2 a.m.	45.0	52.9
	2 a.m. – 3 a.m.	45.6	52.2
	3 a.m. – 4 a.m.	45.6	52.9
	4 a.m. – 5 a.m.	48.4	56.1
	5 a.m. – 6 a.m.	51.1	59.1
	6 a.m. – 7 a.m.	54.2	61.8
	7 a.m. – 8 a.m.	55.6	63.4
	8 a.m. – 9 a.m.	53.3	62.6
	9 a.m. - 10 a.m.	52.1	60.1
	10 a.m. – 11 a.m.	52.5	60.0
	11 a.m. – 12 p.m.	52.6	60.6
	12 p.m. – 1 p.m.	53.2	60.6
	1 p.m. – 2 p.m.	53.3	61.0
	2 p.m. – 3 p.m.	54.3	62.2

As shown in Table 2, measured ambient noise levels at Noise Measurement Location #2 were observed to range from a minimum of 45.0 dBA between the hours of 1 a.m. and 2 a.m. on December 11th, to a maximum of 56.2 dBA between 7 p.m. and 8 p.m. on December 10th. Measured ambient noise levels at Noise Measurement Location #3 were observed to range from a minimum of 52.2 dBA between the hours of 2 a.m. and 3 a.m. on December 11th to a maximum of 65.9 dBA between 7 p.m. and 8 p.m. on December 10th.

1.3 Methodology

1.3.1 Cadna Noise Modeling

Modeling of the outdoor noise environment to determine project-related mechanical noise impacts is accomplished using Cadna Version 2019, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. Cadna (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and mitigation of noise

exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed model and uses the most up-to-date calculation standards to predict outdoor noise impacts.

In order to validate the results of the Cadna noise prediction model, the noise impacts from four rooftop units were manually calculated as attenuation by distance at all property line receivers, and does not include shielding from topography or proposed building structures. These values were compared to those predicted by Cadna. This data is summarized in Table 3 and Cadna data sheets are provided in Appendix B.

Table 3. Calculated Noise Levels for Model Comparison

Noise Sources	Receiver	Receiver Location	Average Distance from Sources (ft)	Calculated Noise Level[1] (dBA)	Cadna Model Noise Level[2] (dBA)	Difference (dB)
Four (4) Rooftop Units	R1	North	238	40.0	34.3	5.7
	R2	East	149	44.8	36.4	8.4
	R3	Southeast	125	46.9	39.0	7.9
	R4	South	72	51.8	43.8	8.0
	R5	South	75	51.9	45.0	6.9
	R6	Southwest	122	47.2	42.7	4.5
	R7	West	113	48.4	39.2	9.2

[1]Calculated as attenuation by distance only (see Section 1.3.2)
[2]As predicted by Cadna model

As shown above in Table 3, the calculated value for all property line receivers were found to be greater than the Cadna calculated noise level, with a difference ranging from 4.5 dB to 9.2 dB. Due to the complexity of the project topography and shielding that would be provided by the project building from rooftop units to ground level receivers, manual distance attenuation calculations are considered insufficient for calculating actual noise impacts at off-site receivers. It is the opinion of the undersigned that the difference between the Cadna model and calculated values shown in Table 3 is due to topography on the site as well as shielding from the proposed building, on which rooftop units were modeled. For these reasons, the Cadna model is considered appropriate to use for noise predictions.

1.3.2 Formulas and Calculations

The following formulas and calculations have been used in the preparation of this analysis:

Decibel Addition

To determine the combined logarithmic noise level of two known noise source levels, the values are converted to the base values, added together, and then converted back to the final logarithmic value, using the following formula:

$$L_C = 10\log(10^{L1/10} + 10^{L2/10} + 10^{LN/10})$$

where L_C = the combined noise level (dB), and
L_N = the individual noise sources (dB).

This procedure is also valid when used successively for each added noise source beyond the first two. The reverse procedure can be used to estimate the contribution of one source when the contribution of another concurrent source is known and the combined noise level is known. These methods can be used for L_{EQ} or other metrics (such as L_{DN} or CNEL), as long as the same metric is used for all components.

Sound Power to Sound Pressure

To convert sound power levels to sound pressure levels, the following formula is used:

$$SPL = SWL - 20\log(D) - 0.5$$

where: SPL= Calculated sound pressure level at distance, and
D = Distance from source to location of calculated sound pressure level, measured in feet.

Attenuation Due To Distance

Attenuation due to distance is calculated by the equation:

$$SPL_2 = SPL_1 - 20\log(\frac{D_2}{D_1})$$

where SPL_1 = Known sound pressure level at known distance,
SPL_2 = Calculated sound pressure level at distance,
D_1 = Distance from source to location of known sound pressure level, and
D_2 = Distance from source to location of calculated sound pressure level.

This is identical to the more commonly used reference of 6 dB reduction for every doubling of distance. This equation does not take into account reduction in noise due to atmospheric absorption.

Hourly L_{EQ} Summation

To determine the hourly average noise levels (L_{EQ}) when the noise is created for less than the full hour, convert the logarithm values to the base energy value, multiply by the percentage of the hour that the noise occurs, and then convert the sum back to a logarithmic value. This is done with the following formula:

$$L_{EQ} = 10\log(P_H \times 10^{L_P/10})$$

where P_H = the percent or fraction of the hour noise is created, and
L_P = the partial hour noise level (dB).

1.3.3 Measurement Equipment

Some or all of the following equipment was used at the site to measure existing noise levels:

- Larson Davis Model 824 Type 1 Sound Level Meter, Serial # A0343
- Larson Davis Model CA250 Type 1 Calibrator, Serial # 1081
- Larson Davis Model 706RC Type 2 Sound Level Meter, Serial # 18676
- Larson Davis Model 706RC Type 2 Sound Level Meter, Serial # 18675
- Larson Davis Model CA150 Calibrator, Serial # 5954
- Tripod, microphones, and windscreens

The sound level meter was field-calibrated immediately prior to the noise measurement and checked afterward, to ensure accuracy. All sound level measurements conducted and presented in this report, in accordance with the regulations, were made with a sound level meter that conforms to the American National Standards Institute specifications for sound level meters (ANSI SI.4). All instruments are maintained with National Bureau of Standards traceable calibration, per the manufacturers' standards.

2.0 PROJECT-GENERATED AIRBORNE NOISE

2.1 Guidelines for the Determination of Significance

The County of San Diego Noise Ordinance states that noise levels from stationary sources shall not exceed 50 dBA between the hours of 7 a.m. and 10 p.m. and 45 dBA between the hours of 10 p.m. and 7 a.m. at residentially zoned properties or properties zoned RS. Commercial noise limits are 60 dBA between the hours of 7 a.m. and 10 p.m. and 55 dBA between the hours of 10 p.m. and 7 a.m. At a boundary between two zones, the arithmetic average of the two limits would apply. For this reason, at the boundary of property zoned residential and property zoned commercial, the nighttime noise limit of 50 dBA would apply.

Section 36.409 of the County of San Diego Noise Ordinance states that it is unlawful to operate construction equipment that exceeds an average sound level of 75 dBA for an eight-hour period, between 7 a.m. and 7 p.m. when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received. In addition, according to Section 36.408 of the ordinance, construction activities must be limited to the hours of 7 a.m. to 7 p.m., Monday through Saturday (except legal holidays). No construction activity is permitted on Sunday. Section 36.410 provides noise limits for impulsive noise, which is defined as a high peak noise level of short duration (one second or less). Impulsive activity includes blasting and the use of equipment such as a rock crusher, hoe ram, pile driver, or drill rig. None of this activity is anticipated to take place on the project site, and therefore, impulsive activity has not been evaluated in any further depth.

Please refer to Appendix C: Pertinent Sections of the County of San Diego Noise Ordinance.

2.2 Potential Operational Noise Impacts

2.2.1 Potential Build-Out Noise Conditions

Anticipated operational noise impacts from the proposed project will primarily consist of air conditioning units that will serve commercial offices on site.

The HVAC units that will be used on site are currently unknown, and for purposes of this analysis, were assumed to be manufactured by Carrier. A total of four 6-ton units were modeled and were assumed to be roof-mounted.

Sound power levels have been provided by the manufacturer in octave band values. Values are shown in Table 4. Manufacturer data sheets have been provided as Appendix D.

Table 4. Sound Power Levels of Anticipated Commercial HVAC Unit

Source	Sound Power at Octave Band Frequency (dB)								Total (dBA)
	63	125	250	500	1K	2K	4K	8K	
Carrier 48HC-A07	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7	82.0

Noise levels of mechanical equipment operation have been calculated using Cadna at surrounding receivers considering existing and proposed site topography and the proposed building structure. Noise impacts have been compared to the more restrictive nighttime noise limits, for a worst-case analysis. Results are shown in Table 5. More information is provided in Appendix B: Cadna Analysis Data and Results, and a graphical representation of source/receiver locations and equipment noise contours are provided as Figure 6.

Table 5. Mechanical Equipment Noise Levels at Surrounding Receivers

Receiver	Location	Nighttime Noise Limit (dBA)	Equipment Noise Level (dBA)
R1	North Property Line (across Jamacha Boulevard)	50	34.4
R2	East Property Line	50	36.4
R3	Southeast Property Line	50	39.0
R4	South Property Line	50	43.8
R5	South Property Line	50	45.0
R6	Southwest Property Line	50	42.6
R7	West Property Line	55	39.2

As shown above, noise levels from anticipated mechanical equipment operation on site are expected to meet the noise limits set within the County of San Diego Noise Ordinance at surrounding properties during daytime and nighttime hours without additional mitigation. In the event that significantly louder equipment or different equipment locations are chosen, the exact

equipment type and placement can be evaluated prior to the issuance of building permits in order to reevaluate the noise impacts and potential need for mitigation.

2.3 Potential General Construction Noise Impacts

2.3.1 Potential Temporary Construction Noise Impacts without Mitigation

According to the County of San Diego Noise Ordinance, temporary construction noise must be adequately controlled at occupied properties. The occupied properties surrounding the site include receivers to the north, south, and east.

An anticipated construction schedule was formulated using information provided by Marco Limon of Civil Engineering Consulting Services and Mark Khouli of Lighthouse Builders. According to communication with these individuals, the anticipated construction will include site clearing, grading, retaining wall installation, building construction, and parking lot construction. There will be approximately 700 cubic yards of export of material from the site. This consideration was taken into account when making typical construction phase and equipment assumptions. The anticipated construction activities are shown in Table 6.

Table 6. Anticipated Construction Activity

Phase	Anticipated Large Equipment
Site Clear/Excavation/Grading	Small Excavator, Dump Truck
Foundation	Cement Mixer Truck, Cement Pump
Building Structure	Air Compressor, Small Telescopic Forklift
Paving	Paver, Roller

Please refer to Table 7 for typical noise levels of construction equipment expected to be used on site, as described above. All noise levels have been provided by the UK Department for Environment, Food and Rural Affairs (DEFRA), and duty cycle information was taken from the Federal Highway Administration.

Table 7. Typical Construction Equipment Noise Levels

Noise Source	Duty Cycle (%)	Calculated Noise Level (L_{MAX}) at 50 feet (dBA)
Small Excavator	40	65
Dump Truck	40	76
Concrete Mixer Truck	40	71
Concrete Pump	20	71
Air Compressor	40	61
Telescopic Forklift	40	67
Paver	50	71
Roller	20	69

The site was divided into four roughly equal quadrants for construction noise evaluation. As activity on the southeast quadrant would represent the worst-case condition where construction equipment would be operating at the closest distance to surrounding noise-sensitive properties, it has been used for a worst-case analysis of construction noise at the site. Receivers on property lines to the east and south were calculated for the phases of construction listed above considering construction activity centered on the southeast quadrant. All other noise-sensitive receivers are located at a greater distance from potential construction activity and are expected to have lower noise levels. Construction equipment noise sources were placed at the center of the southeast quadrant in order to account for the varying distance from source to receiver as equipment moves around the site.

Noise levels of construction at the locations described above are shown in Table 8. Detailed calculations can be found in Appendix E. Noise source and receiver locations are shown in Figure 7.

Table 8. Worst-Case Temporary Construction Noise Levels at Neighboring Properties

Phase	Equipment Used	Receiver Location	Distance (ft)	8-Hour Average Noise Level (dBA)
Site Clear/Excavation/ Grading	Small Excavator, Dump Truck	East (R1)	57	71.2
		South (R2)	48	72.7
Foundation	Cement Mixer Truck, Cement Pump	East (R1)	57	67.6
		South (R2)	48	69.1
Building Structure	Air Compressor, Small Telescopic Forklift	East (R1)	57	61.9
		South (R2)	48	64.3
Paving	Paver, Roller	East (R1)	57	67.8
		South (R2)	48	69.3

2.3.2 Design Considerations and Temporary Mitigation Measures

As shown above, worst-case noise levels from temporary construction activity are expected to be in compliance with the County of San Diego eight-hour average equivalent noise limit of 75 dBA for on-site and off-site activity.

For any project in which construction activity will take place near occupied residential properties, the following “good practice” recommendations should be adhered to whenever possible:

1. Turn off equipment when not in use.

2. Equipment used in construction should be maintained in proper operating condition, and all loads should be properly secured, to prevent rattling and banging.

3. Use equipment with effective mufflers.

4. Minimize the use of backup alarms.

5. Equipment staging areas should be placed at locations away from noise-sensitive (occupied) receivers.

These general recommendations, in addition to limiting construction equipment operation to the allowable hours detailed in the County of San Diego Noise Ordinance, will assist in maintaining the comfort of neighboring sensitive receivers during the construction of this site.

2.4 Potential Impulsive Noise Impacts

There is no anticipated need for impulsive construction activity on site, and therefore, this noise source has not been included in this analysis.

3.0 CONCLUSION

Calculations show that operational noise impacts from mechanical equipment are expected to comply with the noise limits set within the County of San Diego Noise Ordinance at surrounding property lines during daytime and nighttime hours. No mitigation is required. In the event that significantly louder equipment or different equipment locations are chosen, the exact equipment type and placement can be evaluated prior to the issuance of building permits in order to reevaluate the noise impacts and potential need for mitigation.

Additionally, calculations show that typical construction activities are expected to comply with the County of San Diego temporary construction noise limit of 75 dBA at adjacent property lines during the construction activity. General good practice measures should be followed to ensure that noise levels remain below the County of San Diego construction noise limits, including reasonable maintenance of equipment, conservative planning of simultaneous equipment operation, and using equipment with effective mufflers. Equipment operation must also be limited to the allowable hours of operation set by the County of San Diego.

4.0 CERTIFICATION

The findings and recommendations of this acoustical analysis report are based on the information available and are a true and factual analysis of the potential acoustical issues associated with the proposed Jamacha Office Building project, located near 9619 Jamacha Boulevard in the unincorporated community of Spring Valley, County of San Diego, California. This report was prepared by Daniel Gershun and Amy Hool.

Daniel Gershun, Acoustical Consultant II

Amy Hool, Senior Acoustical Consultant

5.0 REFERENCES

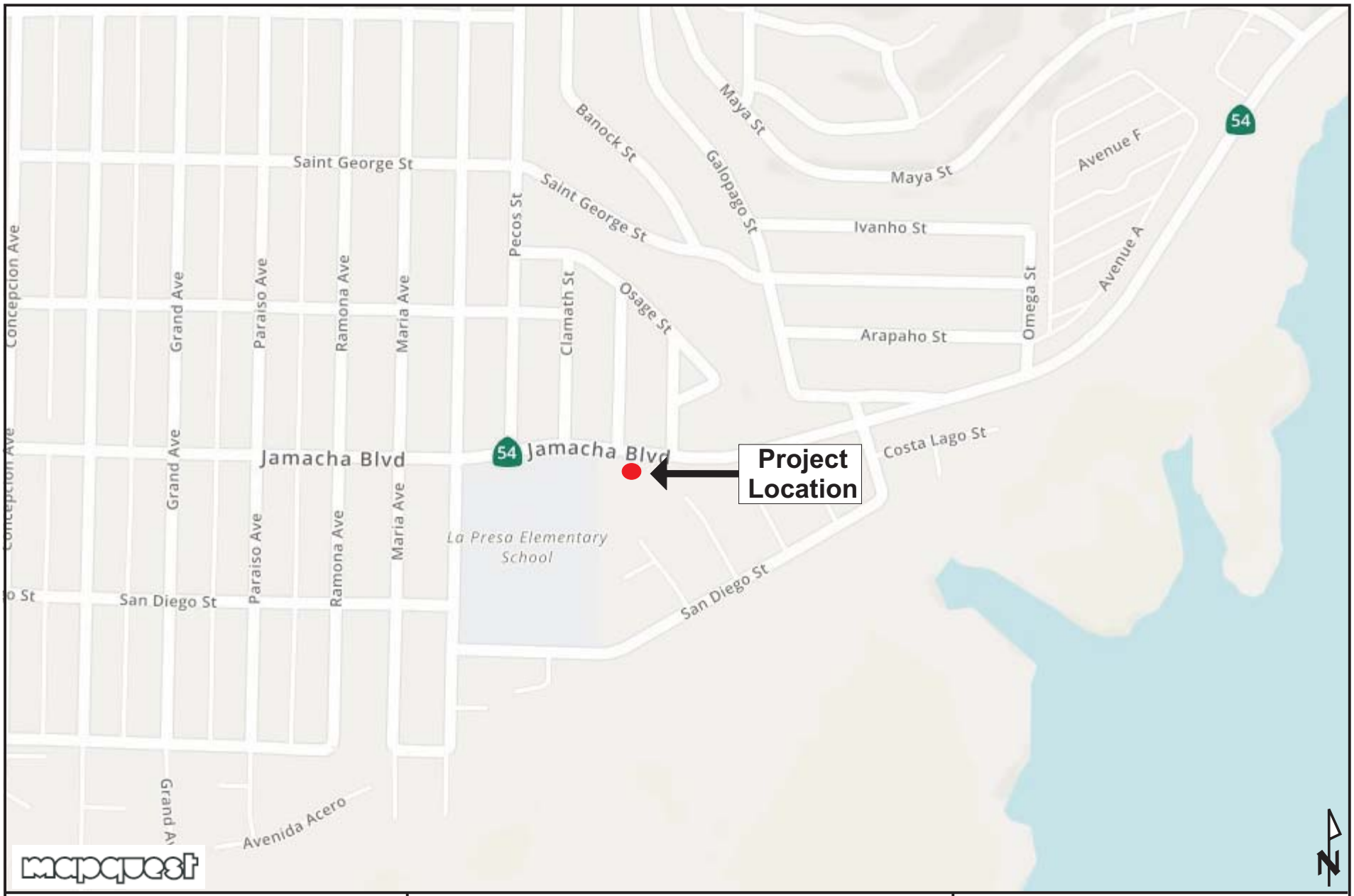
1. County of San Diego Noise Ordinance.

2. DataKustik, CadnaA (Computer Aided Noise Abatement), Version 2019.

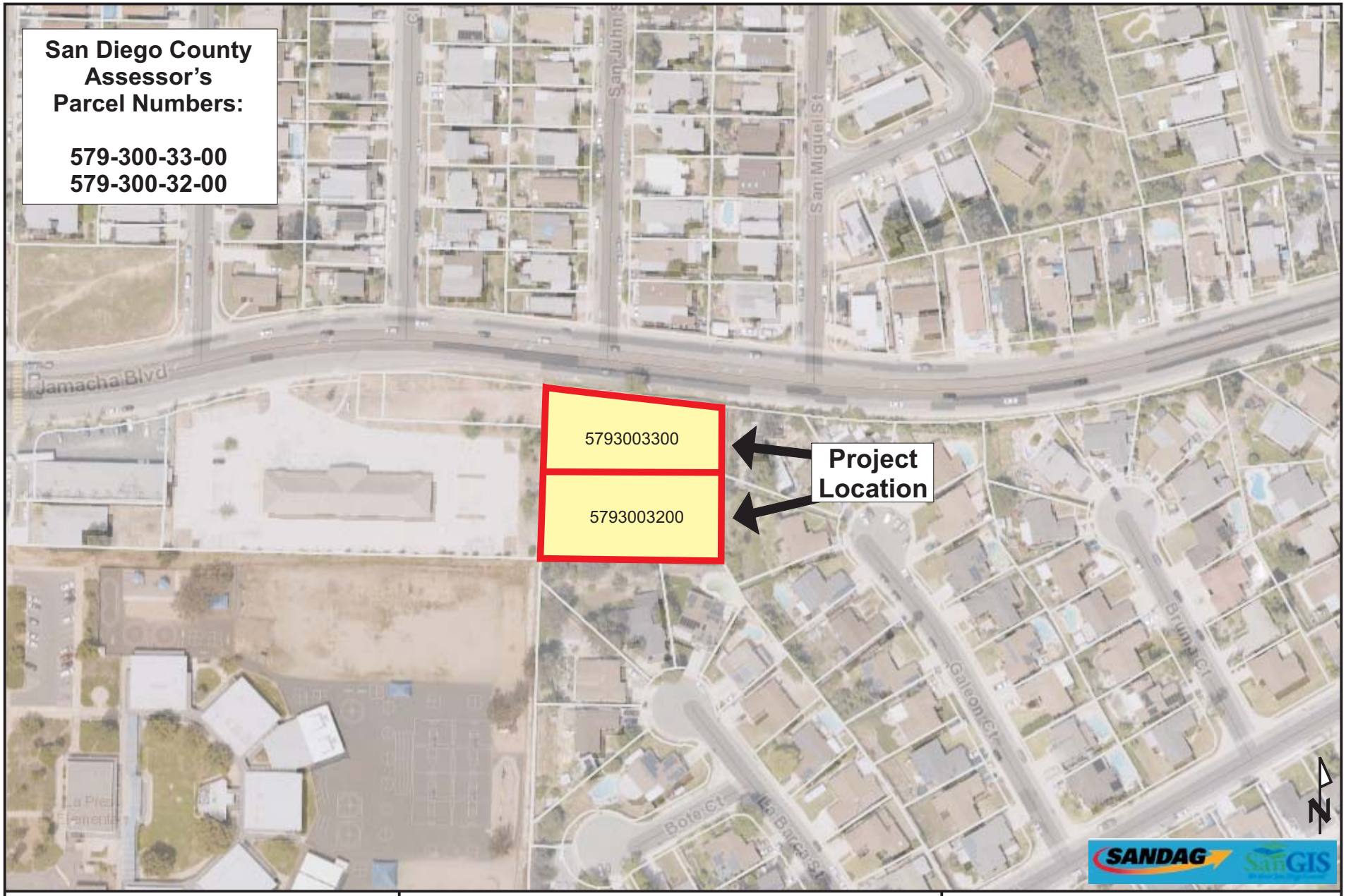
3. UK Department for Environment, Food, and Rural Affairs (DEFRA) Construction Noise Database.

4. U.S. Department of Transportation Federal Highway Administration, Construction Noise Handbook, Construction Equipment Noise Levels and Ranges.

FIGURES



Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Vicinity Map** **Job # B81110N1**	**Figure 1**

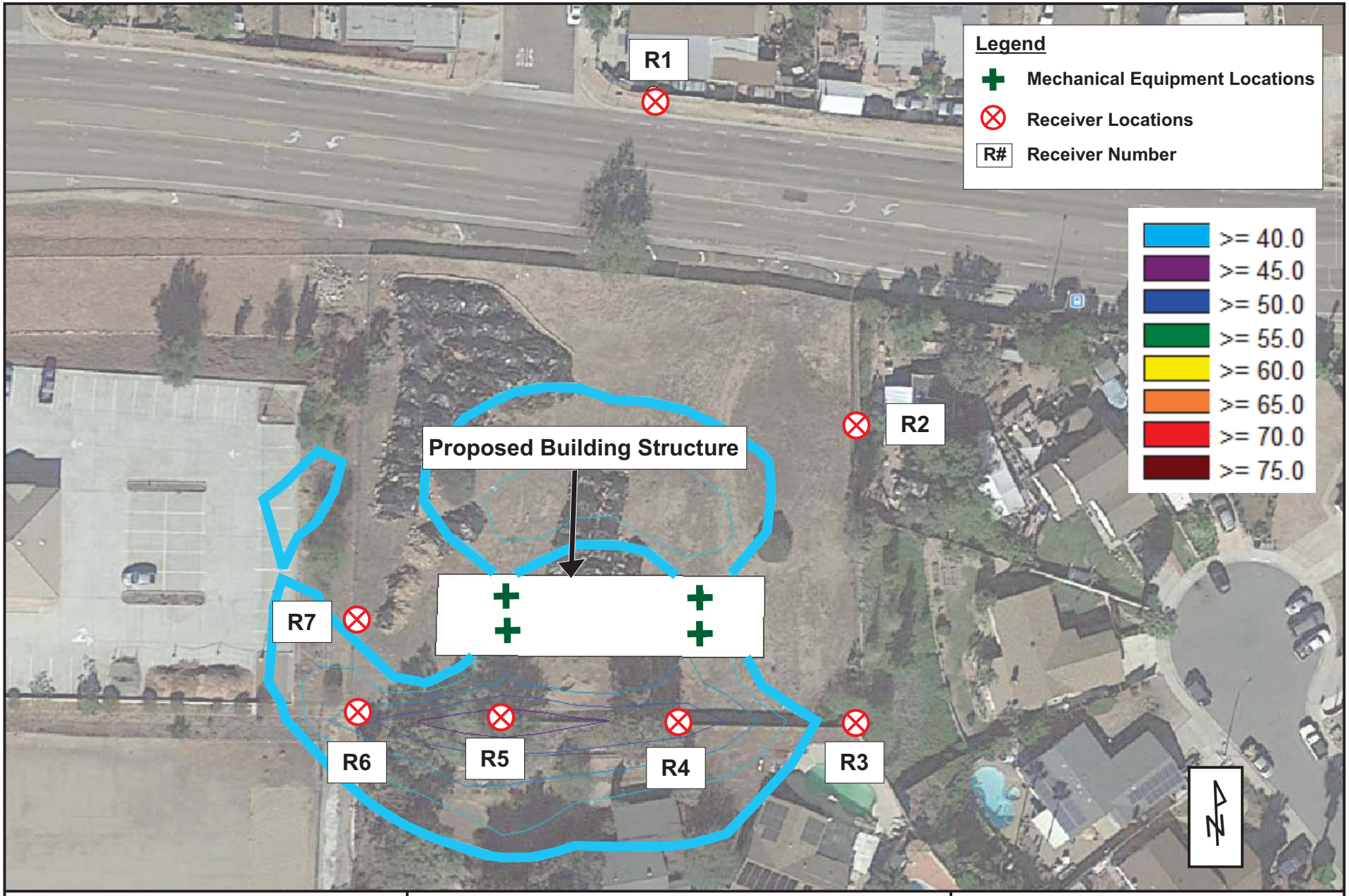


Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570	Assessor's Parcel Map Job # B81110N1	Figure 2

Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Satellite Aerial Photograph** **Job # B81110N1**	**Figure 3**

Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Topographic Map** **Job # B81110N1**	**Figure 4**

Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570	Satellite Image Showing Short-Term and Long-Term Noise Measurement Locations Job # B81110N1	Figure 5

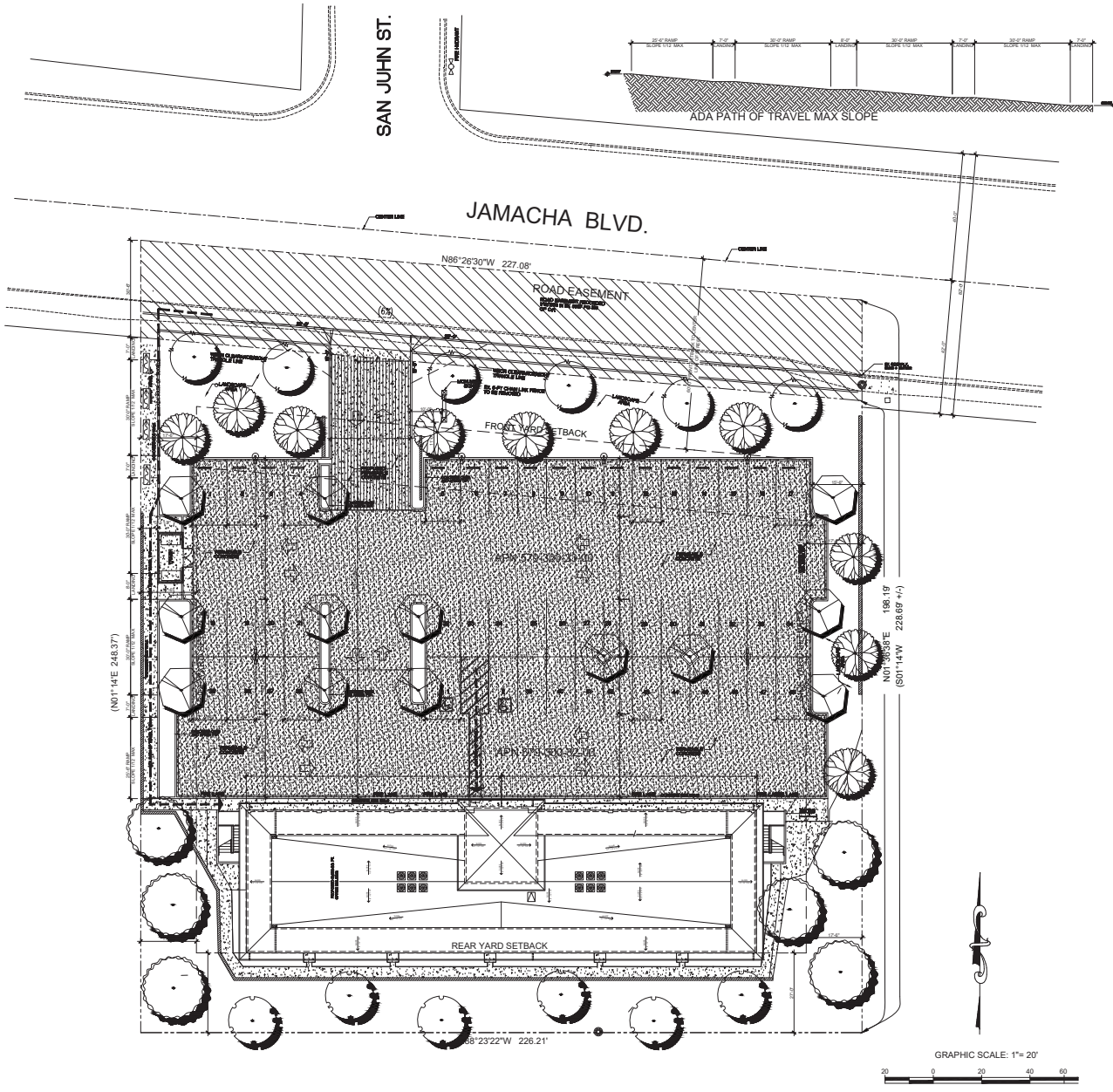


Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570	Satellite Image Showing Mechanical Equipment Noise Contours Job # B81110N1	Figure 6

Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570	Satellite Image Showing Construction Noise Source and Receiver Locations Job # B81110N1	Figure 7

APPENDIX A

Project Plans



OWNER
GEORGE KHOULI
2121 La West Ave.
San Diego Ca. 92108

AUTHORIZED AGENT
MARK KHOULI
1620 La Presa Ave.
Spring Valley Ca. 91977

PROJECT ADDRESS
9619 Jamacha Blvd. Spring Valley Ca. 91977

APN #
APN 579-300-32-00
APN 579-300-33-00
TOTAL LOT SIZE 47,080 SQ. FT.

12,000 SQUARE FEET OF OFFICE SPACE

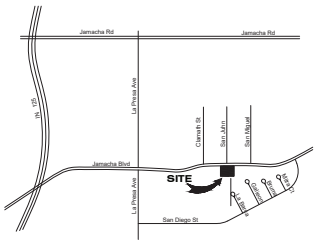
PARKING
48 PARKING STALLS REQUIRED
48 PROVIDED

2 ADA PARKING STALLS REQUIRED
2 PROVIDED

LANDSCAPING
15,925 SQUARE FEET PROVIDED
15,925 ÷ 47,080 = 33.8%

LEGEND
- PROPERTY LINE
- SET BACKS
- CONCRETE CURB
- ADA PATH OF TRAVEL
- DOUBLE LAMP PARKING LIGHT POST
- SINGLE LAMP PARKING LIGHT POST
- FIRE HYDRANT
- COMBINATION ROOF DRAIN AND OVERFLOW DRAIN

VICINITY MAP



SDC PDS RCVD 03-06-23
STP18-009

ARCHITECTURAL DESIGN BY:
CIVIL ENGINEERING
Consulting Services
P.O. BOX 2158 VALLEY CENTER, CA 92082
PHONE: (760) 235-1176 FAX: (866) 313-8408

REGISTERED PROFESSIONAL ENGINEER
MARCO A. LOPEZ
No. C-56710
Exp. 6/30/23
CIVIL
STATE OF CALIFORNIA

LIGHTHOUSE BUILDERS, INC.
JAMACHA BLVD. BLDG.
Jamacha Blvd.
Spring Valley, Ca. 91977

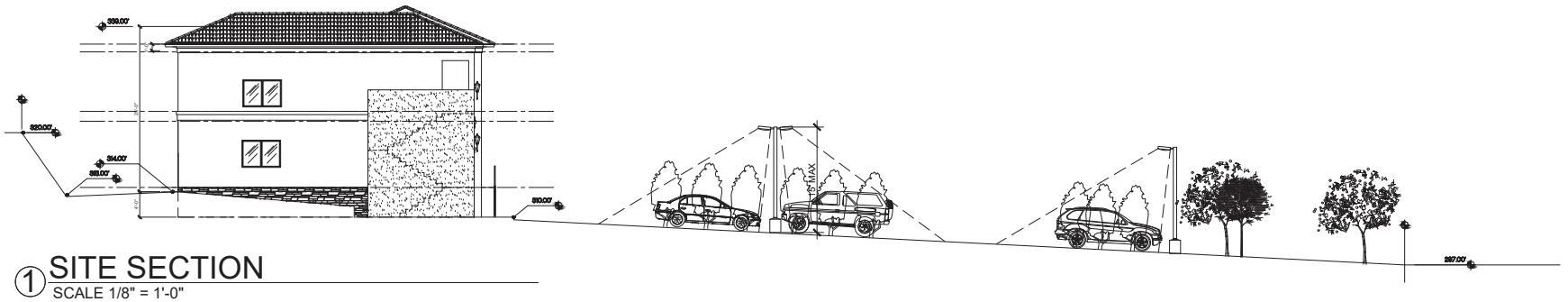
DISCRETIONARY PLANS

REV. NO. 2-12/26/2019

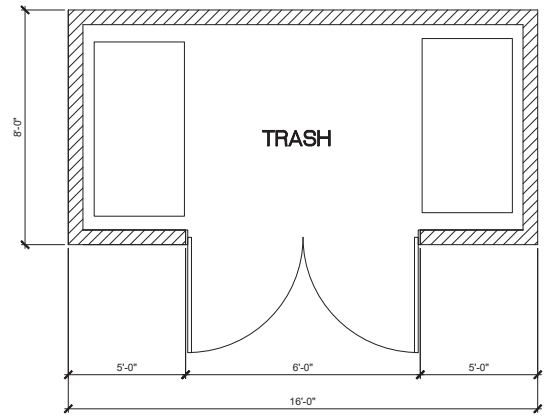
SITE PLAN

SCALE AS NOTED
19 March 2019
PROJECT NO.
18105-2018

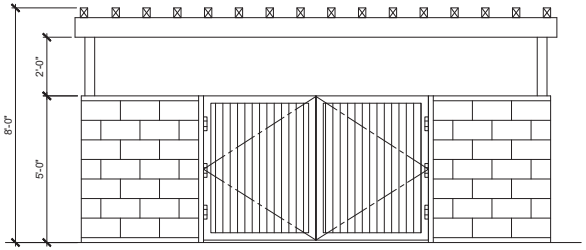
A-0.1



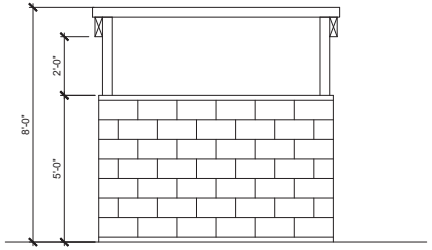
① SITE SECTION
SCALE 1/8" = 1'-0"



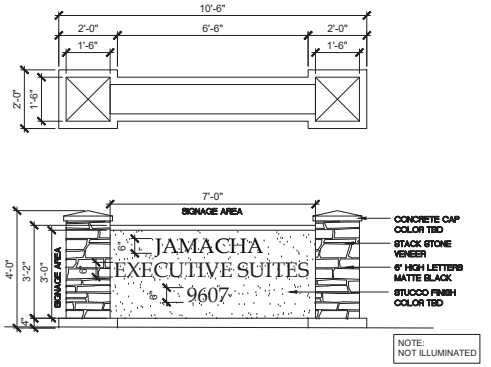
② TRASH ENCLOSURE PLAN
SCALE 1/2" = 1'-0"



FRONT ELEVATION
SCALE 1/2" = 1'-0"



SIDE ELEVATION
SCALE 1/2" = 1'-0"



MONUMENT SIGN
SCALE 1/2" = 1'-0"

ARCHITECTURAL DESIGN BY:
CIVIL ENGINEERING
Consulting Services
P.O. BOX 2158 VALLEY CENTER, CA 92082
PHONE: (760) 233-1178 FAX: (866) 313-6908

REGISTERED PROFESSIONAL ENGINEER
MARCO A. LIMON
No. C-56710
Exp. 9/30/23
CIVIL
STATE OF CALIFORNIA

LIGHTHOUSE BUILDERS, INC.
JAMACHA BLVD. BLDG.
Jamacha Blvd.
Spring Valley, Ca. 91977

DISCRETIONARY PLANS

REV. NO. 2-12/26/2019

SITE SECTION

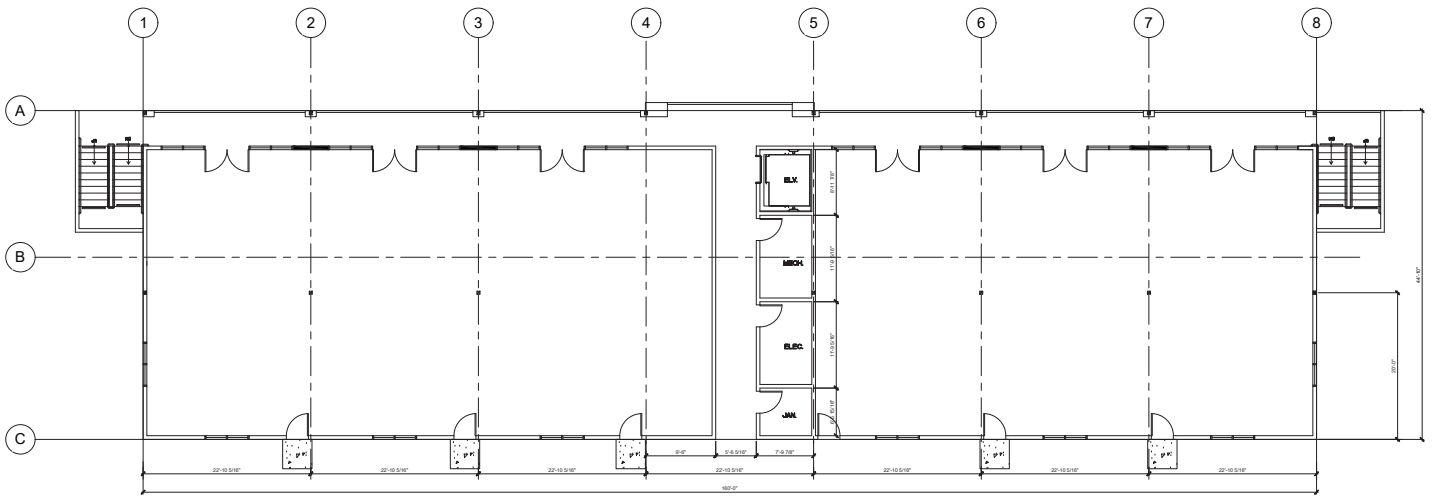
SCALE AS NOTED

19 March 2019

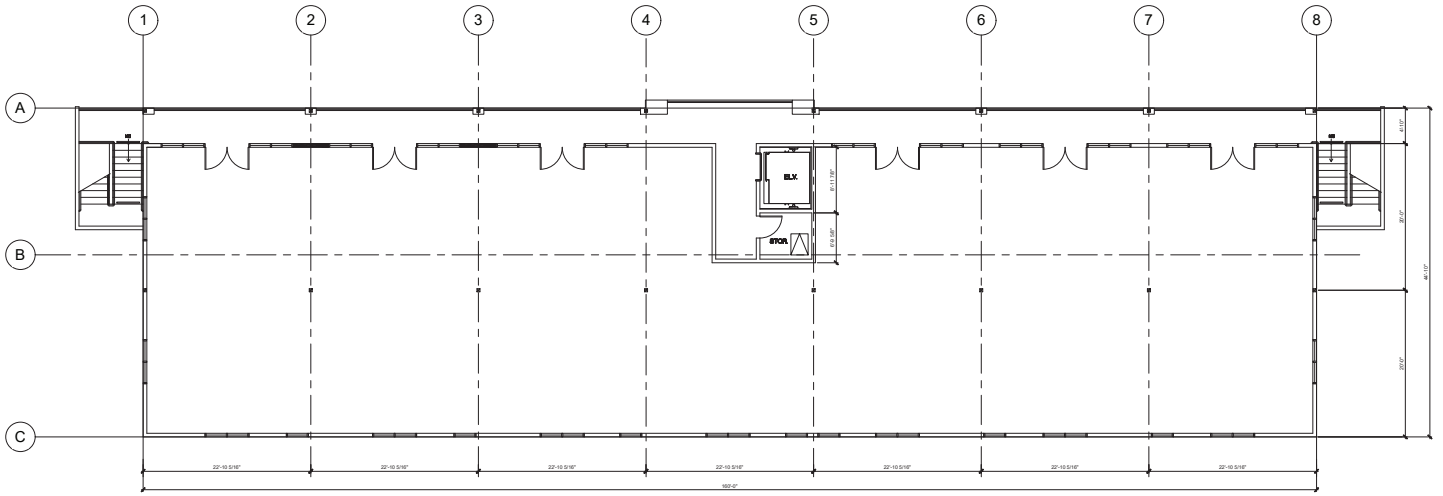
PROJECT NO.
18101.5-2018

DRAWING NO.

A-0.2



1 FIRST FLOOR, FLOOR PLAN
SCALE 1/8" = 1'-0"



2 SECOND FLOOR, FLOOR PLAN
SCALE 1/8" = 1'-0"

ARCHITECTURAL DESIGN BY:
CIVIL ENGINEERING
Consulting Services
P.O. BOX 2158 VALLEY CENTER, CA 92082
PHONE: (760) 233-1178 FAX: (866) 313-6606

REGISTERED PROFESSIONAL ENGINEER
MICHAEL A. LIMON
No. C-56710
Exp. 9/30/23
CIVIL
STATE OF CALIFORNIA

LIGHTHOUSE BUILDERS, INC.
JAMACHA BLVD. BLDG.
Jamacha Blvd.
Spring Valley, Ca. 91977

DISCRETIONARY PLANS

REV. NO. 2-12/26/2019

FLOOR PLANS

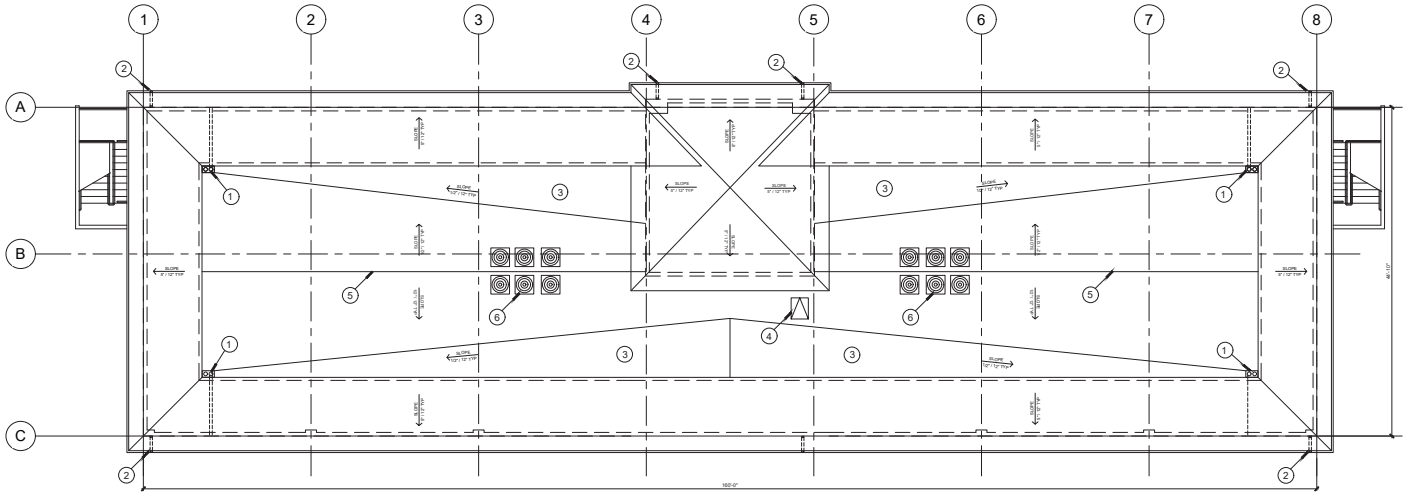
SCALE AS NOTED

19 March 2019

PROJECT NO.
18101-5-2018

DRAWING NO.

A-1.1



3 ROOF PLAN
SCALE 1/8" = 1'-0"

KEY NOTES:

1. COMBINATION ROOF DRAIN WITH SECONDARY BACK FLOW DRAIN UNIT
2. RAIN GUTTER AND DOWN SPOUT
3. DRAINAGE CRICKET
4. ROOF ACCESS HATCH
5. RIDGE LINE, HIGHEST POINT OF FLAT ROOF SLOPE TO BE 1/2" PER 12"
6. MECHANICAL EQUIPMENT

ARCHITECTURAL DESIGN BY:
CIVIL ENGINEERING
Consulting Services
P.O. BOX 2158 VALLEY CENTER, CA 92082
PHONE: (760) 233-1178 FAX: (866) 313-6908

REGISTERED PROFESSIONAL ENGINEER
MILICO A. LIMOA
No. C-56710
Exp. 9/30/23
CIVIL
STATE OF CALIFORNIA

LIGHTHOUSE BUILDERS, INC.
JAMACHA BLVD. BLDG.
Jamacha Blvd.
Spring Valley, Ca. 91977

DISCRETIONARY PLANS

REV. NO. 2-12/26/2019

ROOF PLANS

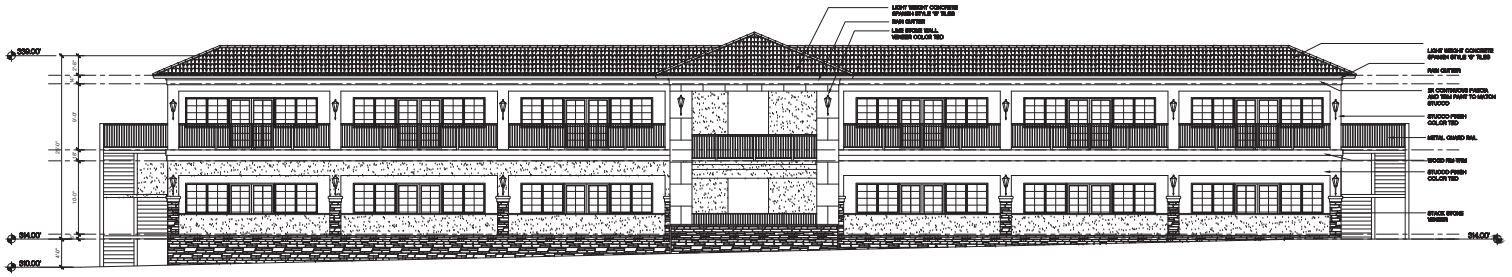
SCALE AS NOTED

19 March 2019

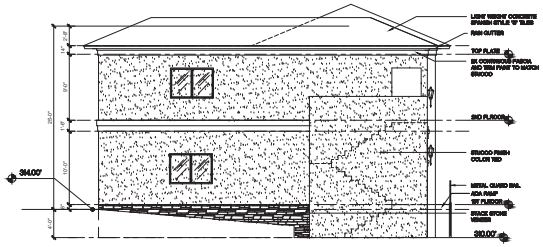
PROJECT NO.
18105-2018

DRAWING NO.

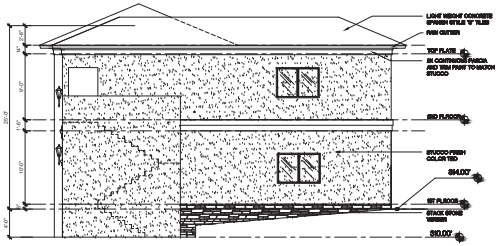
A-1.2



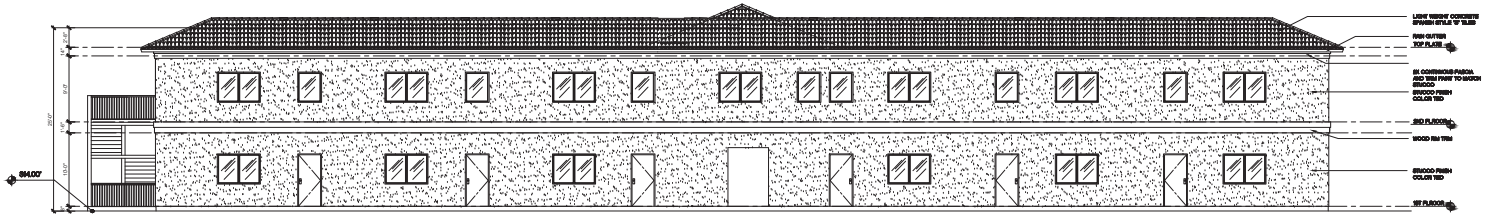
FRONT ELEVATIONS (NORTH)
SCALE 1/8" = 1'-0"



SIDE ELEVATIONS (EAST)
SCALE 1/8" = 1'-0"



SIDE ELEVATIONS (WEST)
SCALE 1/8" = 1'-0"



REAR ELEVATION (SOUTH)
SCALE 1/8" = 1'-0"

ARCHITECTURAL DESIGN BY:
CIVIL ENGINEERING
Consulting Services
P.O. BOX 2158 VALLEY CENTER, CA 92082
PHONE: (760) 233-1178 FAX: (866) 313-6606

REGISTERED PROFESSIONAL ENGINEER
MICHAEL A. LIMON
No. C-56710
Exp. 6/30/23
CIVIL
STATE OF CALIFORNIA

LIGHTHOUSE BUILDERS, INC.
JAMACHA BLVD. BLDG.

Jamacha Blvd.
Spring Valley, Ca. 91977

DISCRETIONARY PLANS

REV. NO. 2-12/26/2019

EXTERIOR ELEVATIONS

SCALE AS NOTED

19 March 2019

PROJECT NO.
18105-2018

DRAWING NO.

A-3.1

APPENDIX B

Cadna Analysis Data and Results

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	234.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Units
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**234.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7		86.8	(dB)
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**18.6**	**24.5**	**28.3**	**29.1**	**26.3**	**23.5**	**17.7**	(dBA)	at	234.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	34.1	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**34.1**	(dBA) at	234.0	(ft)

Total Sound Pressure Level at Receiver	**40.0**	dBA

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	249.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**249.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**18.1**	**24.0**	**27.8**	**28.6**	**25.8**	**23.0**	**17.2**	(dBA)	at	249.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	33.5	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**33.5**	(dBA) at	249.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	226.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**226.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**18.9**	**24.8**	**28.6**	**29.4**	**26.6**	**23.8**	**18.0**	(dBA)	at	226.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	34.4	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**34.4**	(dBA) at	226.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	244.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**244.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**18.3**	**24.2**	**28.0**	**28.8**	**26.0**	**23.2**	**17.4**	(dBA)	at	244.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	33.7	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**33.7**	(dBA) at	244.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	178.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Units
Path Description: R-2

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**178.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**21.0**	**26.9**	**30.7**	**31.5**	**28.7**	**25.9**	**20.1**	(dBA)	at	178.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	36.5	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**36.5**	(dBA) at	178.0	(ft)

Total Sound Pressure Level at Receiver **44.8** dBA

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	185.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**185.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**20.7**	**26.6**	**30.4**	**31.2**	**28.4**	**25.6**	**19.8**	(dBA)	at	185.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	36.1	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**36.1**	(dBA) at	185.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	108.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**108.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**25.3**	**31.2**	**35.0**	**35.8**	**33.0**	**30.2**	**24.4**	(dBA)	at	108.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	40.8	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**40.8**	(dBA) at	108.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	122.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**122.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**24.3**	**30.2**	**34.0**	**34.8**	**32.0**	**29.2**	**23.4**	(dBA)	at	122.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	39.7	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**39.7**	(dBA) at	122.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	167.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Units
Path Description: R-2

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**167.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**21.5**	**27.4**	**31.2**	**32.0**	**29.2**	**26.4**	**20.6**	(dBA)	at	167.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	37.0	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**37.0**	(dBA) at	167.0	(ft)

Total Sound Pressure Level at Receiver **46.9** dBA

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	162.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**162.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**21.8**	**27.7**	**31.5**	**32.3**	**29.5**	**26.7**	**20.9**	(dBA)	at	162.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	37.3	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**37.3**	(dBA) at	162.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	91.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**91.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**26.8**	**32.7**	**36.5**	**37.3**	**34.5**	**31.7**	**25.9**	(dBA)	at	91.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	42.3	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**42.3**	(dBA) at	91.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	81.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**81.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**27.8**	**33.7**	**37.5**	**38.3**	**35.5**	**32.7**	**26.9**	(dBA)	at	81.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	43.3	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**43.3**	(dBA) at	81.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	97.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Units
Path Description: R-4

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**97.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**26.3**	**32.2**	**36.0**	**36.8**	**34.0**	**31.2**	**25.4**	(dBA)	at	97.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	41.7	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**41.7**	(dBA) at	97.0	(ft)

Total Sound Pressure Level at Receiver **51.8** dBA

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	89.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**89.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**27.0**	**32.9**	**36.7**	**37.5**	**34.7**	**31.9**	**26.1**	(dBA)	at	89.0	(ft)

Combined Sound Pressure Level at Receiver

Total Sound Pressure Level:	42.5	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**42.5**	(dBA) at	89.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	60.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**60.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**30.4**	**36.3**	**40.1**	**40.9**	**38.1**	**35.3**	**29.5**	(dBA)	at	60.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	45.9	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**45.9**	(dBA) at	60.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	42.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**42.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**33.5**	**39.4**	**43.2**	**44.0**	**41.2**	**38.4**	**32.6**	(dBA)	at	42.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	49.0	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**49.0**	(dBA) at	42.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	56.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Units
Path Description: R-5

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**56.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**31.0**	**36.9**	**40.7**	**41.5**	**38.7**	**35.9**	**30.1**	(dBA)	at	56.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	46.5	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**46.5**	(dBA) at	56.0	(ft)

Total Sound Pressure Level at Receiver **51.9** dBA

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	41.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**41.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**33.7**	**39.6**	**43.4**	**44.2**	**41.4**	**38.6**	**32.8**	(dBA)	at	41.0	(ft)

Combined Sound Pressure Level at Receiver

Total Sound Pressure Level:	49.2	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**49.2**	(dBA) at	41.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	106.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**106.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**25.5**	**31.4**	**35.2**	**36.0**	**33.2**	**30.4**	**24.6**	(dBA)	at	106.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	41.0	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**41.0**	(dBA) at	106.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	97.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**97.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**26.3**	**32.2**	**36.0**	**36.8**	**34.0**	**31.2**	**25.4**	(dBA)	at	97.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	41.7	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**41.7**	(dBA) at	97.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	87.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Units
Path Description: R-5

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**87.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**27.2**	**33.1**	**36.9**	**37.7**	**34.9**	**32.1**	**26.3**	(dBA)	at	87.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	42.7	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**42.7**	(dBA) at	87.0	(ft)

Total Sound Pressure Level at Receiver **47.2** dBA

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	78.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**78.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**28.2**	**34.1**	**37.9**	**38.7**	**35.9**	**33.1**	**27.3**	(dBA)	at	78.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	43.6	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**43.6**	(dBA) at	78.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	164.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**164.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**21.7**	**27.6**	**31.4**	**32.2**	**29.4**	**26.6**	**20.8**	(dBA)	at	164.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	37.2	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**37.2**	(dBA) at	164.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	159.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**159.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**22.0**	**27.9**	**31.7**	**32.5**	**29.7**	**26.9**	**21.1**	(dBA)	at	159.0	(ft)

Combined Sound Pressure Level at Receiver

Total Sound Pressure Level:	37.4	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**37.4**	(dBA) at	159.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	70.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Units
Path Description: R-7

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**70.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**29.1**	**35.0**	**38.8**	**39.6**	**36.8**	**34.0**	**28.2**	(dBA)	at	70.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	44.6	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**44.6**	(dBA) at	70.0	(ft)

Total Sound Pressure Level at Receiver	**48.4**	dBA

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	70.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**70.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**29.1**	**35.0**	**38.8**	**39.6**	**36.8**	**34.0**	**28.2**	(dBA)	at	70.0	(ft)

Combined Sound Pressure Level at Receiver

Total Sound Pressure Level:	44.6	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**44.6**	(dBA) at	70.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	156.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**156.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**22.1**	**28.0**	**31.8**	**32.6**	**29.8**	**27.0**	**21.2**	(dBA)	at	156.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	37.6	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**37.6**	(dBA) at	156.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Sound Power Level to Sound Pressure Level Analysis

Distances			
Source Height:	h_S =	0.0	(ft)
Receiver Height:	h_R =	0.0	(ft)
Source to Receiver Distance:	d_{SR} =	156.0	(ft)

Project Name: Jamacha Office Building
Project Number: B81110N1
Date: 12/13/2018
Source Description: Rooftop Un
Path Description: R-1

Path Calculation			
Source to Receiver Direct Path Distance:	r =	**156.0**	(ft)

Sound Power to Sound Pressure Calculations

Octave Band	125	250	500	1000	2000	4000	8000	(Hz)			
Sound Power Level: L_W	82.6	81.0	79.4	77.0	73.0	70.4	66.7	66.7			
Sound Power Level Lw	66.5	72.4	76.2	77.0	74.2	71.4	65.6	(dBA)		82.0	(dBA)
Sound Pressure Level: $L_P = L_W - 20\ log(r) - 0.5$	**22.1**	**28.0**	**31.8**	**32.6**	**29.8**	**27.0**	**21.2**	(dBA)	at	156.0	(ft)

Combined Sound Pressure Level at Receiver				
Total Sound Pressure Level:	37.6	(dBA)		
# of sources	1			
Combined Sound Pressure Level:	**37.6**	(dBA) at	156.0	(ft)

210 South Juniper Street, Suite 100, Escondido, CA 92025 • 760-738-5570 • Fax 760-738-5227 • info@eilarassociates.com

Cadna Noise Model - Sound Levels														
Name	ID	Type	Weight	Oktave Spectrum (dB)										Source
				63	125	250	500	1000	2000	4000	8000	A	lin	
48HC-6T	W1	Lw		90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7	82.0	91.8	Manufac.

Cadna Noise Model - Point Sources								
Name	ID	Result. PWL Day (dBA)	Lw / Li Type	Lw / Li Value	Height (from roof) (m)	Coordinates X (m)	Coordinates Y (m)	Coordinates Z (m)
AC1	S1	82.0	Lw	W1	0.52	145.46	111.96	102.31
AC2	S2	82.0	Lw	W1	0.52	145.46	107.27	102.31
AC3	S3	82.0	Lw	W1	0.52	172.11	112.12	102.31
AC4	S4	82.0	Lw	W1	0.52	171.90	106.41	102.31

Cadna Noise Model - Buildings					
Name	Absorption	Coordinates			
		X	Y	Z	Ground
		(m)	(m)	(m)	(m)
Office Building	0.37	136.22	114.85	101.79	95.70
		135.90	103.88	101.79	95.70
		180.27	103.56	101.79	95.70
		180.48	114.54	101.79	95.70

Cadna Noise Model - Terrain Contour Lines			
Name	Coordinates		
	X	Y	Z
	(m)	(m)	(m)
C1	128.7	160.9	92.7
	130.2	156.7	92.7
	136.2	156.3	92.7
	136.1	157.5	92.7
	148.1	156.2	92.7
	182.6	141.8	92.7
	190.2	141.5	92.7
C2	187.2	125.1	92.7
	188.3	122.3	92.7
	192.8	121.7	92.7
C3	126.9	145.1	93.3
	128.9	146.3	93.3
	144.7	145.4	93.3
	169.7	135.3	93.3
C4	183.8	134.4	93.3
	190.4	134.1	93.3
C5	185.5	124.4	93.3
	187.1	119.1	93.3
	192.8	118.0	93.3
C6	126.8	138.6	93.9
	128.6	136.8	93.9
	135.5	136.2	93.9
C7	183.8	129.7	93.9
	188.2	126.0	93.9
C8	184.1	123.9	93.9
	186.4	115.6	93.9
	192.9	114.4	93.9
C9	128.5	128.1	94.5
	181.0	124.3	94.5
	185.6	112.2	94.5
	192.6	110.6	94.5
Building Pad	135.8	115.4	95.7
	135.6	103.8	95.7
	180.6	103.4	95.7
	180.7	114.8	95.7
	135.8	115.4	95.7
C10	130.7	108.1	97.0
	131.1	106.8	97.0
	131.3	104.1	97.0
	131.3	102.6	97.0
	131.6	100.9	97.0
	132.7	99.5	97.0
	134.0	98.9	97.0
	136.0	98.7	97.0
	139.0	98.6	97.0
	155.1	98.3	97.0
	156.0	98.1	97.0
	156.5	98.0	97.0

Cadna Noise Model - Terrain Contour Lines			
Name	Coordinates		
	X	Y	Z
	(m)	(m)	(m)
C11	185.3	153.9	89.9
	187.5	152.4	89.9
	189.5	150.5	89.9
	191.2	148.0	89.9
	192.0	146.1	89.9
	192.5	144.3	89.9
	192.8	142.5	89.9
	192.9	141.2	89.9
C12	184.1	103.4	95.7
	185.7	103.7	95.7
	188.2	102.7	95.7
	188.7	102.1	95.7
	192.5	94.9	95.7
C13	120.0	95.5	98.8
	193.1	93.6	95.7
C14	193.1	93.6	95.7
	200.4	80.4	93.9
	209.9	68.9	93.3
	217.7	61.2	93.0
C15	193.4	80.4	94.5
	180.3	88.2	94.5
	165.3	85.5	94.5
	158.1	83.4	94.5
	151.6	72.8	94.5
	146.0	64.5	94.5
C16	75.2	201.3	97.3
	150.0	193.1	91.5
	223.1	184.6	88.4
C17	193.2	151.5	89.6
	193.0	123.1	92.4
C18	192.7	127.9	91.5
	190.9	128.3	91.5
	190.5	130.9	91.5
C19	202.7	120.1	89.3
	203.0	134.1	89.3
	211.5	147.3	89.3

Cadna Noise Model - Height Points			
Name	Coordinates		
	X	Y	Z
	(m)	(m)	(m)
HP1	126.75	157.72	93.0
HP2	118.41	140.13	97.0
HP3	60.99	144.23	99.4
HP4	116.69	97.39	99.4
HP5	53.32	98.85	99.7
HP6	253.29	142.12	88.4
HP7	234.11	109.31	88.4
HP8	244.03	90.26	87.5
HP9	203.55	107.19	90.5
HP10	211.23	82.25	88.7
HP11	124.1	96.48	98.8

Cadna Noise Model - Noise Levels at Receivers						
Name	ID	Level Lr Day	Height	Coordinates		
				X	Y	Z
		(dBA)	(m)	(m)	(m)	(m)
R1	R_1	34.3	1.52	165.37	179.88	92.34
R2	R_2	36.4	1.52	193.26	135.62	92.66
R3	R_3	39.0	1.52	192.88	94.29	97.19
R4	R_4	43.8	1.52	169.06	94.56	98.21
R5	R_5	45.0	1.52	145.02	95.03	99.24
R6	R_6	42.6	1.52	124.88	95.53	100.1
R7	R_7	39.2	1.52	124.64	110.13	98.67

APPENDIX C

Pertinent Sections of the County of San Diego Noise Ordinance

CHAPTER 4. NOISE ABATEMENT AND CONTROL*

***Note--**Added by Ord. No. 3075 (N.S.), effective 6-15-67. Repealed and new Chapter 4 added by Ord. No. 4487 (N.S.), effective 10-17-74. Repealed and new Chapter 4 added by Ord. No. 6212 (N.S.), effective 2-4-82; amended by Ord. No. 9962 (N.S.), effective 1-9-09.

Cross reference(s)--Noise abatement procedures, § 85.441.

SEC. 36.401. PURPOSE.

Disturbing, excessive or offensive noise interferes with a person's right to enjoy life and property and is detrimental to the public health and safety. Every person is entitled to an environment free of annoying and harmful noise. The purpose of this chapter is to regulate noise in the unincorporated area of the County to promote the public health, comfort and convenience of the County's inhabitants and its visitors.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.402. DEFINITIONS.

The following definitions shall apply to this chapter:

(a) "Ambient noise level" means the composite of existing noise from all sources at a given location and time. Ambient noise is sometimes referred to as background noise.

(b) "Average sound level" means the level in decibels of the mean-square A-weighted sound pressure during a stated time period, with reference to the square of the standard reference sound pressure of 20 micropascals. The "average sound level" is equivalent to the industry standard L_{EQ}.

(c) "A-weighted sound level" means the sound level in decibels as measured on a sound level meter using the A-weighted network. The A-weighted network is the network for measuring sound that most closely resembles what the human ear hears. Sound measured using the A-weighted network is designated dBA.

(d) "Construction equipment" means tools, machinery or equipment including "special construction equipment" defined in the Vehicle Code, used in a construction operation on any construction site.

(e) "Container" means any receptacle, regardless of contents, manufactured from wood, metal, plastic, paper or any other material including but not limited to any barrel, basket, box, crate, tub, bottle, can or refuse container.

(f) "Decibel" means a unit for measuring the amplitude of 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 micropascals.

(g) "Disturbing, excessive or offensive noise" means any sound or noise that:

(1) Endangers the health or safety of any person.

(2) Causes discomfort or annoyance to a person of normal sensitivity.

(h) "Emergency work" means work: (1) necessary to restore property to a safe condition following a public calamity, (2) required to protect a person or property from injury or damage or (3) by a public or private utility to restore utility service.

(i) "Impulsive noise" means a single noise event or a series of single noise events, which causes a high peak noise level of short duration (one second or less), measured at a specific location. Examples include, but are not limited to, a gun shot, an explosion or a noise generated by construction equipment.

(j) "Maximum sound level" means the highest sound level reached when measuring noise with a sound level meter using the A-weighted network and slow time weighting. The "maximum sound level" is equivalent to the industry standard known as L_{MAX}.

(k) "Motor vehicle" means any self-propelled vehicle as defined in the Vehicle Code and includes a mini-bike and a go-cart.

(l) "Noise control officer" means the County Director of the Department of Planning and Development Services or a person appointed or retained by the Director to perform this function.

(m) "Occupied property" means property on which there is a building for which a certificate of occupancy has been issued.

(n) "Off-road recreational vehicle" means a motor vehicle that is being operated other than on a public or private roadway, whether or not the vehicle was designed or intended for off-road use and may include but is not limited to a motorcycle, go-cart, camper, dune buggy, ATV, racecar, automobile, SUV, pick-up truck or truck. A piece of farm equipment or a motor vehicle being used for an agricultural, military, fire, emergency or law enforcement use or by a public or private utility for work on utilities is not an "off-road recreational vehicle."

(o) "Plainly audible" means any sound that can be detected by a person using his or her unaided hearing faculties. As an example, if the sound source under investigation is a portable or personal vehicular sound amplification or reproduction device, the detection of the rhythmic base component of music is sufficient to verify plainly audible sound. The noise control officer need not determine the title, specific words or the artist performing the music.

(p) "Powered model vehicle" means a model airplane, model boat or model vehicle of any type or size not designed for carrying persons or property and which may be propelled other than by manpower or wind power.

(q) "Sound amplifying equipment" means any machine or device used to amplify music, the human voice or any sound and does not include a standard automobile radio when used and heard only by the occupants of the vehicle in which it is installed.

(r) "Sound level" means the weighted sound pressure level obtained using a sound level meter and frequency weighting network as provided in the American National Standards Institute (ANSI) specifications for sound level meters. As used in this chapter, "sound level" means the same as "noise level."

(s) "Sound level meter" means an instrument for the measurement of sound levels, which meets or exceeds the requirements pertinent for a type 1 or type 2 meter in the ANSI specifications for sound level meters, ANSI S1.4-1983 or its latest revision.

(t) "Sound truck" means a "vehicle," as that term is defined in the Vehicle Code that has or uses sound amplifying equipment.

(Amended by Ord. No. 7428 (N.S.), effective 2-4-88; amended by Ord. No. 8477 (N.S.), adopted 11-8-94, operative 1-1-95; amended by Ord. No. 8975 (N.S.), adopted 12-8-98, operative 1-2-99; amended by Ord. No. 9962 (N.S.), effective 1-9-09; amended by Ord. No. 10224 (N.S.), effective 10-25-12)

Cross reference(s)--Definitions, § 12.101 et seq.

SEC. 36.403. SOUND LEVEL MEASUREMENT.

(a) A sound level measurement made pursuant to this chapter shall be measured with a sound level meter using A-weighting and a "slow" response time, as these terms are used in ANSI S1.1-1994 or its latest revision.

(b) Each measurement shall be conducted at the boundary line of the property on which the noise source is located or any place on the affected property, but no closer than five feet from the noise source.

(c) The sound level meter shall be calibrated and adjusted by means of an acoustical calibrator of the coupler-type to assure meter accuracy within the tolerances in the ANSI specifications for sound level meters, ANSI S1.4-1983 or its latest revision. The sound level meter shall be used as provided in the manufacturer's instructions.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.404. GENERAL SOUND LEVEL LIMITS.

(a) Except as provided in section 36.409 of this chapter, it shall be unlawful for any person to cause or allow the creation of any noise, which exceeds the one-hour average sound level limits in Table 36.404, when the one-hour average sound level is measured at the property line of the property on which the noise is produced or at any location on a property that is receiving the noise.

TABLE 36.404
SOUND LEVEL LIMITS IN DECIBELS (dBA)

ZONE	TIME	ONE-HOUR AVERAGE SOUND LEVEL LIMITS (dBA)
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S90, S92, RV, and RU with a General Plan Land Use Designation density of less than 10.9 dwelling units per acre.	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
(2) RRO, RC, RM, S86, V5, RV and RU with a General Plan Land Use Designation density of 10.9 or more dwelling units per acre.	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
(3) S94, V4, and all commercial zones.	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
(4) V1, V2	7 a.m. to 7 p.m.	60
V1, V2	7 p.m. to 10 p.m.	55
V1	10 p.m. to 7 a.m.	55
V2	10 p.m. to 7 a.m.	50
V3	7 a.m. to 10 p.m.	70
	10 p.m. to 7 a.m.	65
(5) M50, M52, and M54	Anytime	70

(6) S82, M56, and M58.	Anytime	75
(7) S88 (see subsection (c) below)		

(b) Where a noise study has been conducted and the noise mitigation measures recommended by that study have been made conditions of approval of a Major Use Permit, which authorizes the noise-generating use or activity and the decision making body approving the Major Use Permit determined that those mitigation measures reduce potential noise impacts to a level below significance, implementation and compliance with those noise mitigation measures shall constitute compliance with subsection (a) above.

(c) S88 zones are Specific Planning Areas which allow different uses. The sound level limits in Table 36.404 above that apply in an S88 zone depend on the use being made of the property. The limits in Table 36.404, subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.

(d) If the measured ambient noise level exceeds the applicable limit in Table 36.404, the allowable one-hour average sound level shall be the one-hour average ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.

(e) The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. The one-hour average sound level limit applicable to extractive industries, however, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone in which the extractive industry is located.

(f) A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section measured at or beyond six feet from the boundary of the easement upon which the facility is located.

(Amended by Ord. No. 7094 (N.S.), effective 3-25-86; amended by Ord. No. 9478 (N.S.), effective 7-19-02; amended by Ord. No. 9621 (N.S.), effective 1-9-04; amended by Ord. No. 9962 (N.S.), effective 1-9-09; amended by Ord. No. 10211 (N.S.), effective 6-1-12)

SEC. 36.405. REPAIRING, REBUILDING OR TESTING MOTOR VEHICLES.

It shall be unlawful for any person to repair, rebuild or test any motor vehicle in such a manner as to cause a disturbing, excessive or offensive noise as defined in section 36.402 of this chapter.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.406. POWERED MODEL VEHICLES.

It shall be unlawful for any person to operate a powered model vehicle between 9 p.m. and 7 a.m. A powered model vehicle operated in a County park shall meet the daytime sound level standards for an RS zone measured at a point 100 feet from the park property line or 100 feet from where the model vehicle is being operated, whichever is less.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.407. REFUSE VEHICLES & PARKING LOT SWEEPERS.

No person shall operate or allow to be operated, a refuse compacting, processing, or collection vehicle or a parking lot sweeper between the hours of 10 p.m. to 6 a.m., in or within 100 feet of a residential zone.

(Amended by Ord. No. 7428 (N.S.), effective 2-4-88; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.408. HOURS OF OPERATION OF CONSTRUCTION EQUIPMENT.

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

(a) Between 7 p.m. and 7 a.m.

(b) On a Sunday or a holiday. For purposes of this section, a holiday means January 1st, the last Monday in May, July 4th, the first Monday in September, December 25th and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10 a.m. and 5 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in sections 36.409 and 36.410.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.409. SOUND LEVEL LIMITATIONS ON CONSTRUCTION EQUIPMENT.

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 decibels for an eight-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

(Amended by Ord. No. 9700 (N.S.), effective 2-4-05; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.410. SOUND LEVEL LIMITATIONS ON IMPULSIVE NOISE.

In addition to the general limitations on sound levels in section 36.404 and the limitations on construction equipment in section 36.409, the following additional sound level limitations shall apply:

(a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410A, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410A are as described in the County Zoning Ordinance.

TABLE 36.410A.
MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DECIBELS (dBA)

OCCUPIED PROPERTY USE	DECIBELS (dBA)
Residential, village zoning or civic use	82
Agricultural, commercial or industrial use	85

(b) Except for emergency work, no person working on a public road project shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 36.410B, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 36.410B are as described in the County Zoning Ordinance.

TABLE 36.410B.
MAXIMUM SOUND LEVEL (IMPULSIVE) MEASURED AT OCCUPIED PROPERTY IN DECIBELS (dBA) FOR PUBLIC ROAD PROJECTS

OCCUPIED PROPERTY USE	dB(A)
Residential, village zoning or civic use	85
Agricultural, commercial or industrial use	90

(c) The minimum measurement period for any measurements conducted under this section shall be one hour. During the measurement period a measurement shall be conducted every minute from a fixed location on an occupied property. The measurements shall measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise exceeds the maximum sound level for any portion of any minute, it will be deemed that the maximum sound level was exceeded during that minute.

(Added by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.411. CONTAINERS AND CONSTRUCTION MATERIAL.

It shall be unlawful for any person to handle, transport, or cause to be handled or transported in any public place, any container or any construction material in such a way as to create a disturbing, excessive, or offensive noise as defined in section 36.402 of this chapter.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.412. SIGNAL DEVICE FOR FOOD TRUCKS.

No person shall operate or cause to have operated or used any sound signal device other than sound-amplification equipment attached to a motor vehicle wagon or manually propelled cart from which food or any other items are sold which emits a sound signal more frequently than once every ten minutes in any one street block and with a duration of more than ten seconds for any single emission. The sound level of this sound signal shall not exceed 90 decibels at 50 feet from the point of the noise source.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.413. MULTIPLE FAMILY DWELLING UNITS.

Notwithstanding any other provision of this chapter it shall be unlawful for any person to create, maintain or cause to be maintained any sound within the interior of any multiple family dwelling unit which causes the noises level to exceed those limits set forth below in another dwelling unit:

TABLE 36.413
ALLOWABLE INTERIOR NOISE LEVEL

Type of Land Use	Hours		Allowable Interior Noise Level (dBA)	
		No Time	1 min in 1 hour	5 min in 1 hour
Multifamily	10 pm- 7 am	> 45	40	35
Residential	7 am-10 pm	> 55	50	35

(> greater than)

(less than or equal to)

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.414. GENERAL NOISE PROHIBITIONS.

In addition to the general limitations on sound levels in section 36.404, the following additional prohibitions shall apply:

(a) It shall be unlawful for a person to make, continue or cause to be made or continued a disturbing, excessive or offensive noise.

(b) The characteristics and conditions which should be considered in determining whether a violation of this section has been committed include, but are not limited to, the following:

(1) The level of noise.

(2) Whether the nature of the noise is usual or unusual.

(3) Whether the origin of the noise is natural or unnatural.

(4) The ambient noise level.

(5) The proximity of the noise to a place where someone sleeps.

(6) The nature and zoning of the area within which the noise emanates and where it is received.

(7) The time of day the noise occurs.

(8) The duration of the noise.

(9) Whether the noise is recurrent, intermittent or constant.

(10) Whether the noise is produced by a commercial or noncommercial activity.

(c) The following acts, among others, are declared to be disturbing, excessive and offensive noises that violate this chapter and are unlawful:

(1) Unnecessarily using or operating or allowing another person to use or operate a vehicle horn, signaling device or other similar device, other than as regulated by the Vehicle Code.

(2) Using, operating, playing or allowing another person to use, operate or play a radio, musical instrument, phonograph, television set or other device for the production or reproduction of sound:

(A) That disturbs the peace, quiet and comfort of persons of normal sensitivity residing in the area.

(B) That exceeds the levels in section 36.404 when measured at a distance of 25 feet from a device operating in a public right-of-way.

(C) That exceeds the levels in section 36.404 when measured at a distance of 25 feet from a device for the production or reproduction of sound operated in a County park unless a permit has been obtained from the County Parks and Recreation Department specifying the time, location and other conditions under which amplified sound may be allowed within a County park. A person using, operating or playing a

device for the production or reproduction of sound in a County park, however, shall not exceed a level of 90 decibels when measured 50 feet from the source or exceed the levels in section 36.404 when measured at the park boundary. Subsection 36.414 (c)(2)(C) shall be enforced by the Parks and Recreation Department.

(3) It shall be a prima facie violation of section 36.414(c)(2)(A) if a device for the production or reproduction of sound that is being operated, used or played is plainly audible at a distance of 50 feet or more from the building, structure or vehicle in which it is located.

(4) Playing, using, operating or allowing to be played, used or operated any sound production or reproduction device or machine including but not limited to radio receiving sets, phonographs, musical instruments, loudspeakers and sound amplifiers, for commercial or business advertising purposes in, on, over or across any street, alley, sidewalk, park or public property in a manner as to violate the provisions of this ordinance is prohibited. This subsection shall not apply to sound amplifying equipment mounted on a sound truck where the operator complies with the following requirements:

(A) The only sound emitted is music or human speech and the music or speech emitted is not obscene, lewd, profane or slanderous.

(B) The sound truck is only operated between the hours of 8:00 a.m. and 9:00 p.m. or after 9:00 p.m. during public events and affairs of general public interest.

(C) The sound amplifying equipment is not being operated unless the sound truck is traveling at a speed of at least 10 miles per hour, except when the truck is stopped or impeded by traffic. If the sound truck is stopped by traffic the sound amplifying equipment shall not be operated for longer than one minute at each stop.

(D) Sound is not emitted within 100 yards of a hospital, school, church or courthouse.

(E) The volume of sound does not exceed a sound level of 65 decibels (on the "A" scale) at a distance of 50 feet from the sound amplifying equipment as measured by a sound level meter.

(F) No sound amplifying equipment is operated unless the axis of the center of the sound reproducing equipment is parallel to the direction of travel of the sound truck. Any sound reproducing equipment, however, may be placed upon the sound truck as to not vary more than 15º either side of the axis of the center of the direction of travel.

(G) No sound truck with its amplifying device in operation shall be driven on the same street past the same point more than twice in one hour.

(5) Causing or allowing unreasonably loud or disturbing verbal noise that is offensive or annoying to a person of normal sensitivity.

(6) Owning, possessing or harboring an animal which by any frequent or long continued noise causes annoyance or discomfort to a person of normal sensitivity in the vicinity. The written affirmation by two persons having separate residences that an animal has caused frequent or long continued noise, that has caused them annoyance or discomfort shall be prima facie evidence of a violation of this section. This subsection does not apply to animal noise emanating from a legally operated animal hospital, humane society, County Department of Animal Services facility, farm or other agricultural facility where keeping animals is allowed.

(7) Operating or causing to be operated or used any steam whistle attached to a stationary boiler, except to give notice of the time to start or stop work or as a signal of imminent danger.

(8) Using or allowing the use of a motor vehicle to knowingly produce a noise that causes annoyance or discomfort to a person of normal sensitivity in the vicinity of the noise by backfiring the engine, screeching

the tires, operating without a muffler, altering the muffler or any other action that causes a disturbing, excessive or offensive noise.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.415. BURGLAR ALARMS.

(a) No person shall install or operate a burglar alarm in a residence or any other building that is not equipped with a functioning automatic cutoff device that terminates any noise emanating from the alarm within 15 minutes from the time the alarm is activated.

(b) No motor vehicle owner shall install or have in his or her possession a motor vehicle that is not equipped with a functioning automatic cutoff device that terminates any noise emanating from the alarm within 15 minutes from the time the alarm is activated.

(c) Notwithstanding the requirements of this section, a law enforcement officer may deactivate a building or motor vehicle alarm after the alarm is activated.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.416. NOISE FROM OFF-ROAD RECREATIONAL VEHICLES.

In addition to the general limitations on sound levels in section 36.404, no person shall operate or allow the operation of an off-road recreational vehicle on private property that produces a noise when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, that at any time exceeds the following maximum sound levels: 82 decibels between the hours of 7 a.m. and 7 p.m., 77 decibels between the hours of 7 p.m. and 10 p.m. and 55 decibels between the hours of 10 p.m. and 7 a.m.

(Added by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.417. EXEMPTIONS.

(a) This chapter shall not apply to:

(1) Emergency work, as defined in this chapter, provided that (A) the person performing the work notifies noise control officer in advance, or as soon as practicable after the emergency and (B) any vehicle, device, apparatus or equipment used, related to or connected with the emergency work is designed, modified or equipped to reduce noise produced to the lowest possible level consistent with effective operation of the vehicle, device, apparatus or equipment.

(2) Noise reasonably related to authorized school: (A) bands, (B) athletic activities and (C) entertainments events.

(3) Sporting, entertainment and public events which are conducted pursuant to a license or permit issued by the County, within the scope of the license or permit. This section is not intended to excuse the act of an individual not participating in the event who violates this chapter.

(4) The operation of an emergency generator after a power failure, by an employee or agent of a law enforcement agency, fire department, hospital or other medical or surgical facility that is providing emergency medical services.

(5) The reasonable testing of an emergency generator by any person provided that the testing is conducted between the hours of 7 a.m. and 7 p.m.

(6) Any activity preempted by State or federal law.

(b) Section 36.404 shall not apply to:

(1) Noise associated with routine property maintenance used either in part or in whole for residential purposes, provided activity takes place between 7 a.m. and 8 p.m. on any day except Sunday or between 10 a.m. and 8 p.m. on Sunday.

(2) Equipment associated with agricultural operations, provided that each piece of equipment and machinery powered by an internal-combustion engine is equipped with an appropriate muffler and air intake silencer in good working order and one of the following applies:

(A) Operations do not take place between 7 p.m. and 7 a.m. of the following day.

(B) The operations and equipment are utilized for the preparation, planting, harvesting, protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

(C) The operations and equipment are used for agricultural pest control in accordance with regulations and procedures administered by the County Department of Agriculture.

(Amended by Ord. No. 7428 (N.S.), effective 2-4-88; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.418. RESPONSIBILITY FOR ENFORCEMENT.

The Sheriff shall have primary responsibility for enforcing sections 36.405, 36.407, 36.411, 36.412, 36.413, 36.414 and 36.415. When this chapter requires measurements to enforce these sections, the noise control officer shall assist the Sheriff. The noise control officer shall have primary responsibility for enforcing all other sections of this chapter. Pursuant to Penal Code section 836.5, a person authorized to enforce this chapter may arrest a person without a warrant if he or she has reasonable cause to believe that the person has committed a misdemeanor in his or her presence that violates this chapter.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

State law reference(s)--Arrest without warrant, Penal Code, § 836.5.

SEC. 36.419. ADDITIONAL REMEDIES.

The noise control officer may order a person to cease violating any section of this chapter that the noise control officer enforces. The noise control officer may, in addition to using any remedy provided in section 11.121 of this code, summarily abate a public nuisance caused by any act that violates this chapter if the noise control officer determines there is an immediate threat to the health or safety of any person.

(Amended by Ord. No. 7141 (N.S.), effective 6-26-86; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.420. FALSE STATEMENT.

No person shall knowingly provide false information, either orally or in writing, to the noise control officer related to any matter within the noise control officer's jurisdiction.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.421. REPRODUCTION OR ALTERATION OF DOCUMENTS.

No person shall reproduce or alter any document issued by the noise control officer or required by this chapter, for the purpose of evading, attempting to evade or violating any requirement of this chapter.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.422. DISPLAY OF PERMIT, VARIANCE OR OTHER DOCUMENT.

Any permit, variance or other document that authorizes any activity regulated by this chapter shall be displayed or maintained on the property or at the location where the activity is occurring.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.423. VARIANCES.

(a) A person who proposes to perform non- emergency work on a public right-of-way, public utility facility, public transportation facility or some other project for the benefit of the general public, who is unable to conform to the requirements of this chapter may apply to the County for a variance authorizing the person to temporarily deviate from the requirements of this chapter.

(b) The noise control officer shall only grant a variance if the officer makes findings that the applicant's proposed activity cannot feasibly be done in a manner that would comply with this chapter and the applicant has no other reasonable alternative available.

(c) When evaluating a request for a variance the noise control officer shall determine the impact any noise that does not comply with the limits of this chapter will have on each property likely to be affected by the noise. The evaluation shall include the uses on each property on which the non-complying noise will be received, what activities will be impacted on the property and the duration of each impact. The evaluation shall also include the value to the community of the work being done by the applicant, the cost to the community if the applicant is unable to perform the work, the cost to the applicant for mitigating the non-complying noise and any cost to the occupant of the impacted property during the time the period of the impacted property will be subject to the non-complying noise.

(d) If the noise control officer grants a variance under this section the variance may impose time limitations on the non-complying activity and may include mitigation measures that the applicant is required to adopt.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.424. APPLICATION FOR VARIANCE.

An applicant for a variance shall file an application with the noise control officer on a form provided by the officer. The application shall not be deemed complete until the applicant provides all information required by the application and any supplemental information requested by the noise control officer.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.425. REQUEST FOR DUPLICATE VARIANCE CERTIFICATE.

A person who loses the certificate issued by the noise control officer that grants a variance shall request a duplicate certificate from the noise control officer within 10 days after the certificate is destroyed, lost or defaced.

(Amended by Ord. No. 9689, operative 2-4-05, effective 2-13-05; amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.426. ACTION ON APPLICATION.

(a) The noise control officer shall review an application for a variance to determine if the applicant has provided all information necessary to render a decision on the application. If the application is not complete, the noise control officer shall notify the applicant within 15 days from the date the application was submitted what additional information the applicant needs to provide to make the application complete. If the applicant does not provide the additional information within 15 days of the notice the noise control officer shall deny the application. Within 30 days after receiving a completed application the noise control officer shall deny, approve or grant conditional approval of the request for a variance and notify the applicant in writing of the action taken.

(b) If the noise control officer denies the request for a variance the notice of denial shall state the reasons for the denial. If the noise control officer conditionally approves the variance request the notice of conditional approval shall clearly state the conditions and the reasons for the conditional approval.

(c) An applicant may deem a variance denied if the application has not been acted on within 30 days after the application was submitted or within 15 days after providing additional information requested by the noise control officer, whichever is later.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.427. FAILURE TO COMPLY WITH CONDITIONS.

If a person granted a variance fails to comply with a condition of the variance or this chapter the noise control officer may suspend the variance until the person complies or may revoke the variance.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.428. APPEALS.

A person may appeal a decision of the noise control officer by filing a notice of appeal with the Clerk of the Board of Supervisors (Clerk) and paying the appeal fee for the appeal of an administrative decision, as provided in section 362.1 of the County Administrative Code, within 15 days after the noise control officer:

(a) Serves a notice of denial or conditional approval of a variance or the date a variance request is deemed denied.

(b) Serves a notice of suspension or revocation of a variance.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.429. CONTENTS OF NOTICE OF APPEAL.

A notice of appeal to review a denial or conditional approval of a variance shall include a copy of the variance application, a copy of the notice of denial or conditional approval and the reasons for the appeal. A notice of appeal of a suspension or revocation of a variance shall include a copy of the variance, a copy of the noise control officer's notice of suspension or revocation and the reasons for the appeal. The appellant shall not be allowed to raise any grounds for appeal not contained in the notice of appeal.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.430. DISMISSAL OF APPEAL.

The appellant may dismiss an appeal at any time before the appeal hearing by filing a written notice of dismissal with the Clerk with a copy to the noise control officer.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.431. HEARING OFFICER.

All appeals filed under this chapter shall be heard by a County hearing officer appointed pursuant to sections 650 et seq. of the County Administrative Code. The Clerk shall assign the matter to a hearing officer on a rotating basis from the list of appointed hearing officers.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.432. SCHEDULING HEARINGS.

The Clerk shall schedule a hearing within 20 days after receipt of the notice of appeal and serve the notice of hearing on the appellant and the noise control officer. The notice shall provide the date, time and location of the hearing.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.433. HEARING PROCEDURES.

An appeal hearing authorized by this chapter shall be conducted as follows:

(a) Every witness before testifying shall take an oath or make an affirmation.

(b) The noise control officer shall present evidence that explains why the variance was denied, approved conditionally, suspended or revoked.

(c) The appellant shall present evidence that supports his/her contention that the noise control officer's determination denying, conditionally approving, suspending or revoking the variance was erroneous.

(d) Each party shall have the right to: call and examine witnesses, introduce exhibits, cross-examine opposing witnesses on any matter relevant to the issues, impeach any witness regardless of which party first called the witness to testify and to rebut the evidence against the party. The noise control officer may call and examine the appellant or any employee or agent of the appellant as a witness during the noise control officer's case in chief or during the rebuttal case. The hearing officer may examine the appellant or any of the appellant's employees or agents as if under cross-examination.

(e) Strict rules of evidence shall not apply. Evidence that might otherwise be excluded under the Evidence Code may be admissible if the hearing officer determines that it is relevant and of the kind that reasonably prudent persons rely on in making decisions. All rules of privilege recognized by the Evidence Code, however, shall apply to the hearing. The hearing officer shall exclude irrelevant and cumulative evidence.

(f) The hearing shall be conducted in English. If the appellant or any of appellant's witnesses require an interpreter the appellant is responsible to provide a State certified interpreter at appellant's expense.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.434. CONTINUANCES.

The hearing officer may grant a continuance requested by either party for good cause.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

SEC. 36.435. DECISION.

The hearing officer shall issue a written decision within five days after the hearing is concluded and file it with the Clerk. The decision shall affirm, modify or overrule the noise control officer's decision that was appealed. The decision shall state the reasons for the hearing officer's decision. The Clerk shall serve a copy of the decision on the appellant and provide a copy to the noise control officer. The decision shall be effective after it has been served by the Clerk.

(Amended by Ord. No. 9962 (N.S.), effective 1-9-09)

APPENDIX D

Manufacturer Data Sheets

48HC
Gas Heat/Electric Cooling Packaged Rooftop
3 to 8.5 Nominal Tons

Carrier
turn to the experts

Product Data

WeatherMaster®

ENERGY STAR PARTNER

Puron™
the environmentally sound refrigerant

ASHRAE 90.1 COMPLIANT

C10222

Printed in U.S.A. Edition Date: 2/10

Catalog No:48HC–01PD

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Replaces: NEW

TABLE 5 – HEATING RATING TABLE - LOW NO_X[1]

UNIT		GAS HEAT	LOW NOx HEAT EXCHANGER		TEMP RISE (DEG F)	THERMAL EFFICIENCY (%)	AFUE (%)
			INPUT / OUTPUT STAGE 1 (MBH)	INPUT / OUTPUT STAGE 2 (MBH)			
Single Phase	04	LOW	–	60 / 50	20 – 50	81%	80%
		MED	–	90 / 74	30 – 60	81%	81%
		HIGH	–	–	–	–	–
	05	LOW	–	60 / 50	20 – 50	81%	80%
		MED	–	90 / 74	30 – 60	81%	81%
		HIGH	–	120 / 101	40 – 70	81%	80%
	06	LOW	–	60 / 50	15 – 50	81%	80%
		MED	–	90 / 74	25 – 60	80%	81%
		HIGH	–	120 / 101	35 – 70	80%	81%
Three Phase	04	LOW	–	60 / 50	20 – 50	81%	80%
		MED	–	90 / 74	30 – 60	81%	81%
		HIGH	–	–	–	–	–
	05	LOW	–	60 / 50	20 – 50	81%	80%
		MED	–	90 / 74	30 – 60	81%	81%
		HIGH	–	120 / 101	40 – 70	81%	80%
	06	LOW	–	60 / 50	15 – 50	81%	80%
		MED	–	90 / 74	25 – 60	80%	81%
		HIGH	–	120 / 101	35 – 70	80%	81%

NOTE:

1. Units meet California's South Coast Air Quality Management District (SCAQMD) Low–NO_x emissions requirement of 40 nanograms per joule or less.

TABLE 6 – SOUND PERFORMANCE TABLE

UNIT	COOLING STAGES	OUTDOOR SOUND (dB) AT 60								
		A–WEIGHTED	63	125	250	500	1000	2000	4000	8000
A04	1	76	78.2	78.0	74.2	73.3	70.6	66.0	62.4	56.9
A05	1	78	84.7	83.6	77.1	74.6	72.3	68.3	64.7	60.9
A06	1	77	87.5	82.5	76.1	73.6	71.3	67.1	64.1	60.0
A07	1	82	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7
D08	2	82	90.6	84.3	80.2	79.3	77.1	72.2	67.4	63.7
D09	2	82	88.6	85.0	81.6	79.5	77.4	74.1	71.0	66.3

LEGEND

dB – Decibel

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program For verification of certification for individual products, go to www.ahridirectory.org.

NOTES:

1. Outdoor sound data is measure in accordance with AHRI.
2. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.
3. A–weighted sound ratings filter out very high and very low frequencies, to better approximate the response of "average" human ear. A–weighted measurements for Carrier units are taken in accordance with AHRI.

APPENDIX E

Temporary Construction Noise Calculations

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Excavator
Receiver: SE Quadrant, East Receiver (Site Clear/Excavation/Grading)

Noise Source

Noise Level (dBA) 65 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 57 feet

Path Calculation

Source to Receiver Direct Path Distance: **57** feet

Sound Pressure Level **63.9** at 57 feet
Hours of Use: **8**
Duty Cycle (%): **40**
Level During 8 Hour day: **59.9**

Summation

Number of Sources: 2

Level during 8 hour day: **71.2**

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Dump Truck
Receiver: SE Quadrant, East Receiver (Site Clear/Excavation/Grading)

Noise Source

Noise Level (dBA)	76	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	57	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**57**	feet

Sound Pressure Level	**74.9**	at	57	feet
Hours of Use:	**8**			
Duty Cycle (%):	**40**			
Level During 8 Hour day:	**70.9**			

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Excavator
Receiver: SE Quadrant, South Receiver (Site Clear/Excavation/Grading)

Noise Source

Noise Level (dBA) 65 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 48 feet

Path Calculation

Source to Receiver Direct Path Distance: **48** feet

Sound Pressure Level **65.4** at 48 feet
Hours of Use: **8**
Duty Cycle (%): **40**
Level During 8 Hour day: **61.4**

Summation

Number of Sources: 2

Level during 8 hour day: **72.7**

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Dump Truck
Receiver: SE Quadrant, South Receiver (Site Clear/Excavation/Grading)

Noise Source

Noise Level (dBA)	76	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	48	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**48**	feet

Sound Pressure Level	**76.4**	at	48	feet
Hours of Use:	**8**			
Duty Cycle (%):	**40**			
Level During 8 Hour day:	**72.4**			

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Concrete Mixer
Receiver: SE Quadrant, East Reciever (Foundation)

Noise Source

Noise Level (dBA) 71 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 57 feet

Path Calculation

Source to Receiver Direct Path Distance: **57** feet

Sound Pressure Level **69.9** at 57 feet
Hours of Use: **8**
Duty Cycle (%): **40**
Level During 8 Hour day: **65.9**

Summation

Number of Sources: 2

Level during 8 hour day: **67.6**

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Concrete Pump
Receiver: SE Quadrant, East Reciever (Foundation)

Noise Source

Noise Level (dBA)	71	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	57	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**57**	feet

Sound Pressure Level	**69.9**	at	57	feet
Hours of Use:	**8**			
Duty Cycle (%):	**20**			
Level During 8 Hour day:	**62.9**			

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Concrete Mixer
Receiver: SE Quadrant, South Reciever (Foundation)

Noise Source

Noise Level (dBA) 71 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 48 feet

Path Calculation

Source to Receiver Direct Path Distance: **48** feet

Sound Pressure Level **71.4** at 48 feet
Hours of Use: **8**
Duty Cycle (%): **40**
Level During 8 Hour day: **67.4**

Summation

Number of Sources: 2

Level during 8 hour day: **69.1**

Noise Attenuation by Distance Calculation

Job: #REF!
Job #: #REF!
Date: #REF!
Source: Concrete Pump
Receiver: SE Quadrant, South Reciever (Foundation)

Noise Source

Noise Level (dBA)	71	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	48	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**48**	feet

Sound Pressure Level	**71.4**	at	48	feet
Hours of Use:	**8**			
Duty Cycle (%):	**20**			
Level During 8 Hour day:	**64.4**			

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Air Compressor
Receiver: SE Quadrant, East Receiver (Building)

Noise Source

Noise Level (dBA) 61 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 57 feet

Path Calculation

Source to Receiver Direct Path Distance: **57** feet

Sound Pressure Level **59.9** at 57 feet
Hours of Use: **8**
Duty Cycle (%): **40**
Level During 8 Hour day: **55.9**

Summation

Number of Sources: 2

Level during 8 hour day: **62.9**

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Small Telescopic Forklift
Receiver: SE Quadrant, East Receiver (Building)

Noise Source

Noise Level (dBA)	67	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	57	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**57**	feet

Sound Pressure Level	**65.9**	at	57	feet
Hours of Use:	**8**			
Duty Cycle (%):	**40**			
Level During 8 Hour day:	**61.9**			

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Air Compressor
Receiver: SE Quadrant, South Receiver (Building)

Noise Source

Noise Level (dBA) 61 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 48 feet

Path Calculation

Source to Receiver Direct Path Distance: **48** feet

Sound Pressure Level **61.4** at 48 feet
Hours of Use: **8**
Duty Cycle (%): **40**
Level During 8 Hour day: **57.4**

Summation

Number of Sources: 2

Level during 8 hour day: **64.3**

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Small Telescopic Forklift
Receiver: SE Quadrant, South Receiver (Building)

Noise Source

Noise Level (dBA)	67	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	48	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**48**	feet

Sound Pressure Level	**67.4**	at	48	feet
Hours of Use:	**8**			
Duty Cycle (%):	**40**			
Level During 8 Hour day:	**63.4**			

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Paver
Receiver: SE Quadrant, East Receiver (Paving)

Noise Source

Noise Level (dBA) 71 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 57 feet

Path Calculation

Source to Receiver Direct Path Distance: **57** feet

Sound Pressure Level **69.9** at 57 feet
Hours of Use: **8**
Duty Cycle (%): **50**
Level During 8 Hour day: **66.9**

Summation

Number of Sources: 2

Level during 8 hour day: **67.8**

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Roller
Receiver: SE Quadrant, East Receiver (Paving)

Noise Source

Noise Level (dBA)	69	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	57	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**57**	feet

Sound Pressure Level	**67.9**	at	57	feet
Hours of Use:	**8**			
Duty Cycle (%):	**20**			
Level During 8 Hour day:	**60.9**			

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Paver
Receiver: SE Quadrant, South Receiver (Paving)

Noise Source

Noise Level (dBA) 71 at 50 feet

Distances

Source Elevation 0 feet at 5 feet above grade
Receiver Elevation: 0 feet at 5 feet above grade
Source to Receiver Distance: 48 feet

Path Calculation

Source to Receiver Direct Path Distance: **48** feet

Sound Pressure Level **71.4** at 48 feet
Hours of Use: **8**
Duty Cycle (%): **50**
Level During 8 Hour day: **68.3**

Summation

Number of Sources: 2

Level during 8 hour day: **69.3**

Noise Attenuation by Distance Calculation

Job: Jamacha Office Building
Job #: B81110N1
Date: 12/13/2018
Source: Roller
Receiver: SE Quadrant, South Receiver (Paving)

Noise Source

Noise Level (dBA)	69	at	50	feet

Distances

Source Elevation	0	feet	at	5	feet above grade
Receiver Elevation:	0	feet	at	5	feet above grade
Source to Receiver Distance:	48	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**48**	feet

Sound Pressure Level	**69.4**	at	48	feet
Hours of Use:	**8**			
Duty Cycle (%):	**20**			
Level During 8 Hour day:	**62.4**			