NOISE IMPACT ANALYSIS

Alante
10211 Rancho Carmel Drive
San Diego, California 92128

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1.0 EXECUTIVE SUMMARY

The proposed project, known as Alante, consists of the construction of a four-story, 50-unit residential building on top of an existing parking structure to be retained. The project site is located at 10211 Rancho Carmel Drive in the City of San Diego, California.

The current and future noise environment primarily consists of traffic noise from Rancho Carmel Drive, Ted Williams Parkway, and Interstate 15 (I-15). Future noise impacts at building facades are expected to range from 56 CNEL at the east-facing facade on the second floor, to approximately 71 CNEL at the west-facing facade of the first floor.

The City of San Diego Noise Element to the General Plan requires that residential outdoor use areas be protected from noise levels greater than 65 CNEL. As designed, future traffic noise levels are expected to be 65 CNEL or less at all common outdoor use areas and private balconies where noise standards would apply, with the exception of the private balconies at the northwest corner of the building. Additional project design features would be required in these locations. With solid balcony barriers with a height of 3.5 feet at the first floor and four feet at the second through fourth floors at the northwest corner of the building, future traffic noise levels are expected to be reduced to be 65 CNEL and therefore would be in compliance with City of San Diego exterior noise standards. More information is provided in Section 5.1.

The City of San Diego and State of California require interior noise levels of 45 CNEL or less in residential units. Calculations show that future noise levels on site exceed 60 CNEL at most facades, and therefore interior noise levels may exceed 45 CNEL within units. Due to high noise levels on-site, an exterior-to-interior analysis should be performed when building plans become available, prior to the issuance of building permits. The required interior noise levels are feasible and can be achieved with readily available building materials and construction methods. It is anticipated that a typical exterior wall, windows and glass doors with an STC rating of 28, and mechanical ventilation in units will be sufficient for achieving compliant interior noise levels; however, this should be confirmed when construction documents become available.

Noise from the anticipated HVAC equipment on site has been calculated to determine impacts at off-site receivers. Calculations show that noise levels from the mechanical equipment will be in compliance with the City of San Diego noise regulations found within the Municipal Code. No project design features are deemed necessary to control project-generated noise impacts from mechanical equipment. Project-generated traffic noise is also expected to be less than significant.

Noise levels from temporary construction activities associated with this project are expected to comply with the applicable City of San Diego construction noise limits at all surrounding property lines, with activity limited to the daytime hours of 7 a.m. to 7 p.m. during all phases of construction. Construction is prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays or legal holidays. Though it is not required by regulations, the general good practice construction noise control methods listed herein should be followed, as a courtesy to surrounding properties.

The proposed project is not expected to result in any potentially significant noise impacts by the standards of the California Environmental Quality Act (CEQA). Noise impacts are summarized in Section 5.5.

2.0 INTRODUCTION

This acoustical analysis report is submitted to satisfy the noise requirements of the City of San Diego. Its purpose is to assess noise impacts from nearby roadway traffic to identify project features or requirements necessary to achieve exterior noise levels of 65 CNEL or less at outdoor use areas, and interior noise levels of 45 CNEL or less in habitable residential spaces. In addition, this report assesses noise impacts from potential project-related noise sources, such as mechanical equipment and project-generated traffic, as well as temporary construction noise. This analysis aims to determine if additional project design features are necessary and feasible to reduce these impacts to comply with the applicable noise regulations of the City of San Diego Noise Element to the General Plan and Municipal Code. Potential impacts will also be assessed for significance per the California Environmental Quality Act (CEQA).

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. The Community Noise Equivalent Level (CNEL) is a calculated 24-hour weighted average, where sound levels during evening hours of 7 p.m. to 10 p.m. have an added 5 dB weighting, and sound levels during nighttime hours of 10 p.m. to 7 a.m. have an added 10 dB weighting. This is similar to the Day-Night sound level, L_{DN}, which is a 24-hour average with an added 10 dB weighting on the same nighttime hours but no added weighting on the evening hours. According to the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (see reference), peak hour traffic noise levels are typically found to be close to predicted CNEL values. Sound levels expressed in CNEL are always based on A-weighted decibels. These metrics are used to express noise levels for both measurement and municipal regulations, for land use guidelines, and for enforcement of noise ordinances. Further explanation can be provided upon request.

Sound pressure is the actual noise experienced by a human or registered by a sound level instrument. When sound pressure is used to describe a noise source, the distance from the noise source must be specified in order to provide complete information. Sound power, on the other hand, is a specialized analytical metric to provide information without the distance requirement, but it may be used to calculate the sound pressure at any desired distance.

2.1 Project Description

The proposed project, known as Alante, consists of the construction of a four-story, 50-unit residential building on top of an existing parking structure to be retained. The project proposes a mixture of one and two-bedroom units with common and private outdoor use areas for residents. For additional project details, please refer to the project plans provided in Appendix A.

The project site is surrounded by an abandoned golf course to the north, multifamily residential uses to the southeast/east, and commercial uses to the south (across Provencal Place). The property to the west of the site (across Rancho Carmel Drive) is a public park. Single-family residential properties are located at a considerable distance from the project site to the north, beyond the abandoned golf course.

2.2 Project Location

The project site is located at 10211 Rancho Carmel Drive in the City of San Diego, California. The Assessor's Parcel Number (APN) is 313-680-18-00. The site is currently occupied by an existing two-story parking garage. For a graphical representation of the site, please refer to the Vicinity Map, Assessor's Parcel Map, Satellite Aerial Photograph, and Topographic Map, provided as Figures 1 through 4, respectively.

2.3 Applicable Noise Regulations

This acoustical report is submitted to satisfy the acoustical requirements of the City of San Diego Noise Element to the General Plan and Municipal Code.

The City of San Diego Noise Element to the General Plan and California Building Code require interior noise levels not exceeding 45 CNEL in habitable residential space. The City of San Diego requires that noise levels at residential outdoor use areas do not exceed 65 CNEL. This exterior noise standard applies to common outdoor use areas and private patios or balconies with a depth of greater than six feet.

The City of San Diego Municipal Code, Section 59.5.0401 specifies noise limits based on the land use of the properties in question. Although the City of San Diego Municipal Code states that noise limits apply "on the boundaries of the property," as the intent of the code is to protect actual occupied areas, noise levels have been evaluated at the nearest noise-sensitive receivers beyond adjacent roadways and sidewalks. The most restrictive nighttime noise limits at surrounding land uses are 50 dBA for high-density multi-family residential (to the southeast) and 60 dBA at commercial properties to the south. There are no exterior noise limits in the code that would apply to the abandoned golf course to the north or the public park to the west, but for purposes of this analysis, the single-family residential limit of 40 dBA has been applied for a worst-case analysis.

Additionally, Section 59.5.0404 of the City of San Diego Municipal Code states that construction activity is prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays or legal holidays. During permissible hours of operation, noise levels from construction activity must be limited to a twelve-hour average of no greater than 75 dBA at any property line zoned for residential use.

Also, the City of San Diego Significance Determination Thresholds (Section K) should be used to determine whether or not a project will have a significant impact on surrounding properties. In order to determine whether or not a project will have a significant impact on surrounding properties, the following must be considered:

1. Would the project result or create a significant increase (3 dBA or more) in the existing ambient noise levels?

2. Would the project expose people to noise levels which exceed the City's adopted noise ordinance or are incompatible with Table K-4?

3. Would the project expose people to current or future transportation noise levels which exceed standards established in the Transportation Element of the General Plan or an adopted airport Comprehensive Land Use Plan?

4. Would the project result in land uses which are not compatible with aircraft noise levels as defined by an adopted airport Comprehensive Land Use Plan (CLUP)?

Please refer to Appendix B for pertinent sections of the City of San Diego Noise Element to the General Plan, the City of San Diego Municipal Code, and Significance Determination Thresholds.

3.0 ENVIRONMENTAL SETTING

3.1 Existing Noise Environment

The primary noise sources in the vicinity of the project site includes automobile and truck traffic noise from Rancho Carmel Drive, Ted Williams Parkway, and Interstate 15 (I-15). No other noise source is considered significant.

3.1.1 Roadway Traffic Noise

Current traffic volumes are given based on traffic counts from the San Diego Association of Governments (SANDAG) Transportation Data, traffic counts by Linscott Law and Greenspan (LLG) for the traffic impact study for the project, and the Caltrans Traffic Census (see references).

Rancho Carmel Drive is a four-lane, two-way Major Arterial running north-south along the west boundary of the project site. The posted speed limit is 45 mph. In the vicinity of the project site, Rancho Carmel Drive currently carries a traffic volume of approximately 14,500 Average Daily Trips (ADT) as of the year 2013 according to SANDAG counts. LLG existing traffic counts show volumes of 13,700 ADT south of Provencal Place and 11,630 ADT north of Provencal Place. As SANDAG counts exceed those provided by LLG, SANDAG counts will be used for current traffic modeling.

Ted Williams Parkway is a six-lane, two-way Prime Arterial running east-west to the south of the project site. The posted speed limit is 55 mph. In the vicinity of the project site, Ted Williams Parkway currently carries a traffic volume of approximately 35,300 ADT as of the year 2014 according to SANDAG counts. LLG existing traffic counts show a volume of 43,590 ADT for this roadway. As LLG counts exceed those provided by SANDAG, LLG counts will be used for current traffic modeling.

I-15 is a 14-lane, two-way Freeway running north-south to the west of the project site. The posted speed limit is 65 mph. In the vicinity of the project site, I-15 currently carries a traffic volume of approximately 238,000 ADT as of the year 2017, according to Caltrans traffic counts.

Caltrans traffic information shows that the segment of I-15 near the proposed project site currently carries approximately 3.46% medium trucks and 3.64% heavy trucks. No current or future truck percentages were available for other roadways in the vicinity of the project site. However, based on neighboring and surrounding land use, roadway classification, professional experience and on-site observations, a truck percentage mix of 3.0% medium and 2.0% heavy trucks was used for Ted Williams Parkway, and a mix of 1.0% medium and 1.0% heavy trucks was used for Rancho Carmel Drive.

Current and future traffic volumes and vehicle mixes for roadway sections near the project site are shown in Table 1. For more information, please refer to Appendix C: Cadna Analysis Data and Results.

Table 1. Overall Roadway Traffic Information					
Roadway Name	Speed Limit (mph)	Vehicle Mix (%)		Current Traffic (Year)	Future Traffic (2035)
		Medium Trucks	Heavy Trucks		
Rancho Carmel Drive	45	1.0	1.0	14,500 (2013)	23,100 / 22,100*
Ted Williams Parkway	55	3.0	2.0	43,590 (2019)	67,800
I-15 Northbound	65	3.46	3.64	119,000 (2017)	134,400
I-15 Southbound	65	3.46	3.64	119,000 (2017)	127,000

*Future traffic volumes for Rancho Carmel Drive are given for segments north and south of Provencal Place, respectively.

Without existing or proposed on-site structures, the current traffic noise contours calculated at ground level showed that traffic noise impacts to the project site are between 61 and 70 CNEL. For a graphical representation of these contours, please refer to Figure 5: Satellite Aerial Photograph Showing Current Traffic CNEL Contours and Noise Measurement Location.

3.1.2 Measured Noise Level

An on-site inspection and traffic noise measurement were made on the afternoon of May 20, 2019. The noise measurement was made using the methodology described in Section 4.1 at the northeast corner of Rancho Carmel Drive and Provencal Place, approximately 50 feet from the Rancho Carmel Drive centerline. The microphone was placed at approximately five feet above the road grade. Traffic volumes for Rancho Carmel Drive were recorded for automobiles, medium-size trucks, and large trucks during the measurement period. After a continuous 15-minute sound level measurement, no changes in the L_{EQ} were observable and results were recorded. The measured noise level and related weather conditions are found in Table 2.

Table 2. On-Site Noise Measurement Conditions and Results	
Date	Monday, May 20, 2019
Time	4:22 p.m. – 4:39 p.m.
Conditions	Cloudy skies, 11 mph wind, temperature in the low 60s with moderate humidity
Measured Noise Level	69.7 dBA L_{EQ}

3.1.3 Calculated Noise Level

Noise levels were calculated for the site using the methodology described in Section 4.1 for the location, conditions, and traffic volumes counted during the noise measurements. The calculated noise levels (L_{EQ}) were compared with the measured on-site noise level to determine if adjustments or corrections (calibration) should be applied to the traffic noise prediction model. Adjustments are intended to account for site-specific variances in overall reflectivity or absorption, which may not be accurately represented by the default settings in the model.

The measured noise level of 69.7 dBA L_{EQ} at the northeast corner of Rancho Carmel Drive and Provencal Place was compared to the calculated (modeled) noise level of 69.7 dBA L_{EQ}, for the same weather conditions and traffic flow. According to the Federal Highway Administration's Highway Traffic Noise: Analysis and Abatement Guide (see reference), a traffic noise model is considered validated if the measured and calculated noise impacts differ by three decibels or less. No adjustment was deemed necessary to model future noise levels for this noise model as the difference between the measured and calculated levels was found to be less than three decibels. The traffic noise model is assumed to be representative of actual traffic noise that is experienced on site. This information is presented in Table 3.

Table 3. Calculated versus Measured Traffic Noise Data

Calibration Receiver Position	Calculated	Measured	Difference	Correction
50 feet from Rancho Carmel Drive centerline	69.7 dBA L_{EQ}	69.7 dBA L_{EQ}	0 dB	None applied

3.2 Future Noise Environment

3.2.1 Future Transportation Noise

The future on-site noise environment will be the result of the same noise sources. The future (year 2035) traffic volumes for surrounding local roadways were provided in the LLG traffic study. Future traffic volumes for I-15 and Ted Williams Parkway were provided by the SANDAG Series 13 Transportation Forecast Information Center (see reference). By the year 2035, the traffic volume of Rancho Carmel Drive is expected to increase to approximately 22,100 ADT north of Provencal Place and 23,100 ADT and 23,100 ADT south of Provencal Place. According to the traffic study, the traffic volume of Ted Williams Parkway is expected to increase to approximately 48,000 ADT by the year 2035; however, SANDAG projects approximately 67,800 ADT by the year 2035. The higher of the two values was used for the modeling of future traffic noise impacts to the site. In 2035, the traffic volume of I-15 is expected to increase to approximately 134,000 ADT traveling northbound and 127,000 ADT traveling southbound.

The same truck percentages from the current traffic volumes were used for future traffic volume modeling. Additional information is provided in Appendix C: Cadna Analysis Data and Results.

Future traffic noise contours were calculated at ground level and showed that traffic noise impacts to the project site will increase slightly to be between 63 and 72 CNEL. For a graphical representation of these contours, please refer to Figure 6: Satellite Aerial Photograph Showing Future Traffic CNEL Contours and Noise Measurement Location.

3.2.2 Mechanical Equipment On-Site

The primary source of noise generated by the proposed project is anticipated to be HVAC equipment. Equipment will be roof-mounted on the buildings. A typical HVAC unit was selected that is assumed to be representative of a unit that could be used on site for each residential unit. The typical unit selected is manufactured by Carrier, and is model number CA13NA030 (2.5-ton capacity). Sound power levels have been provided by the manufacturer in octave band values and a sound rating value. As the sum of octave band noise levels given was found to be slightly less than the given sound rating, the octave band noise levels were increased accordingly such that the

total sum was equal to the sound rating. The resultant estimated spectrum for the unit is shown below in Table 4. Manufacturer data sheets have been provided as Appendix D.

Table 4. Sound Power Levels of Carrier CA13NA030 (Typical 2.5-ton Unit)								
Source	Sound Power at Octave Band Frequency (dBA)							Total (dBA)
	125	250	500	1K	2K	4K	8K	
Carrier CA13NA030	52.7	62.2	66.2	67.2	65.2	60.2	55.2	72

Operational mechanical noise levels have been calculated for the project site using the above information. Results of this analysis are provided in Section 5.3.1.

3.2.3 Project-Generated Traffic

A traffic impact study conducted by Linscott Law and Greenspan shows traffic volumes generated by the proposed project and the distribution of these trips on surrounding roadways. The impacts of project-generated traffic noise have been assessed using these trip generation values and the existing, opening year (year 2022), and future (year 2035) traffic volumes for surrounding roadways. Project traffic volumes and the analysis of project-generated traffic noise is provided in Section 5.3.2.

3.2.4 Temporary Construction Equipment

In order to evaluate anticipated temporary construction noise impacts, information from the project applicant and typical assumptions have been made regarding stages of construction and equipment to be used. The equipment list in Table 5 is typical of what is expected to be used on site based on the information provided and professional experience. Construction equipment noise levels were obtained from the DEFRA Construction Equipment Noise Database (see reference).

Table 5. Anticipated Construction Stages and Equipment Noise Levels			
Stage of Construction	Equipment	Duty Cycle (%)	Noise Level, at 50 feet (dBA)
Underground Utilities	Backhoe	40	64
	Concrete Saw	20	80
Foundation Excavation	Drill Rig	20	79
	Dump Truck	40	75
Garage Reinforcement	Concrete Saw	20	80
	Concrete Mixer Truck	40	71
	Concrete Pump	20	71
	Jackhammer	20	79
Vertical Construction	Crane	16	66
	Concrete Mixer Truck	40	71
	Concrete Pump	20	71

These noise levels have been incorporated into the temporary construction noise analysis for the site, provided in Section 5.4.

4.0 METHODOLOGY AND EQUIPMENT

4.1 Methodology

4.1.1 Field Measurement

Typically, a "one-hour" equivalent sound level measurement (L_{EQ}, A-Weighted) is recorded for at least one noise-sensitive location on the site. During the on-site noise measurement, start and end times are recorded, vehicle counts are made for cars, medium trucks (double-tires/two axles), and heavy trucks (three or more axles) for the corresponding road segment(s). Supplemental sound measurements of one hour or less in duration are often made to further describe the noise environment of the site.

For measurements of less than one hour in duration, the measurement time is long enough for a representative traffic volume to occur and the noise level (L_{EQ}) to stabilize. The vehicle counts are then converted to one-hour equivalent volumes by applying an appropriate factor. Other field data gathered include measuring or estimating distances, angles-of-view, slopes, elevations, roadway grades, and vehicle speeds. This information is subsequently verified using available maps and records.

4.1.2 Roadway Noise Calculation

The Traffic Noise Model (TNM) calculation protocol in Cadna Version 2019 (based on the methodology used in TNM Version 2.5, released in February 2004 by the U.S. Department of Transportation) was used for all traffic modeling in the preparation of this report. Using the TNM protocol, the CNEL is calculated as 0.092 times the ADT for surrounding roadways, based on the studies made by Wyle Laboratories (see reference). CNEL is calculated for desired receptor locations using road alignment, elevations, lane configurations, projected traffic volumes, estimated truck mixes, and vehicle speeds. Noise attenuation methods may be analyzed, tested, and planned with Cadna, as required.

In order to determine the estimated traffic volumes of roadways during the traffic noise measurement made on site for model calibration, the approximate percentage of the Average Daily Trips (ADT) value for the time period in which the measurement is made is incorporated into the traffic model. These percentages have been established in a study performed by Katz-Okitsu and Associates, Traffic Engineers (see reference). For purposes of calibrating the Cadna TNM, 8.6% of the ADT values for the current environment were used in calculations (for roadways that were not manually counted) to account for traffic between the hours of 4 p.m. and 5 p.m. in the vicinity of the project site. In addition, in order to determine anticipated minimum ambient noise levels at the site for determination of the significance of noise impacts, traffic noise levels have been calculated as 0.1% of the ADT values for the current environment, to account for the lowest amount of traffic that would occur during a single hour of the day.

4.1.3 Cadna Noise Modeling Software

Modeling of the outdoor noise environment 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 alleviation 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. Noise standards used by Cadna that are particularly relevant to this analysis include ISO 9613 (Attenuation of sound during propagation outdoors). Cadna provides results that are in line with basic acoustical calculations for distance attenuation and barrier insertion loss.

4.1.4 Formulas and Calculations

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.

Project-Generated Traffic Noise Impacts

Changes in traffic noise levels can be predicted by inputting the ratio of the two scenarios into the following logarithmic equation:

$$\Delta = 10\log(V2/V1)$$

where: Δ= Change in sound energy,
V1 = original or existing traffic volume, and
V2 = future or cumulative traffic volume.

Construction Vibration Calculations

The construction vibration assessment contained herein is evaluated using calculations of peak particle velocity (PPV). PPV at receivers is calculated as follows:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

where PPV_{equip} is the peak particle velocity (in inches per second) of the equipment, adjusted for distance,
PPV_{ref} is the reference vibration level (in inches per second) at a distance of 25 feet from the equipment, and
D is the distance from the equipment to the receiver.

4.2 Measurement Equipment

The following equipment was used at the site to measure existing noise levels:

- Larson Davis Model LxT Type 1 Integrating Sound Level Meter, Serial #4084
- Larson Davis Model CA250 Type 1 Calibrator, Serial #2106

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 S1.4). All instruments are maintained with National Bureau of Standards traceable calibration, per the manufacturers' standards.

5.0 NOISE IMPACTS

5.1 Exterior

5.1.1 Noise Impacts to Outdoor Use Areas

As per the City of San Diego Noise Element to the General Plan, outdoor use areas of multi-family land uses should not exceed 65 CNEL for residential areas. The common outdoor use areas are located on the first and second floors, and a private balcony is provided for each unit. The City of San Diego requires compliance with this noise standard at balconies with a depth of greater than six feet. Common areas and balconies with a depth exceeding six feet were evaluated to determine if traffic noise levels exceed 65 CNEL. For both common areas and balconies, receivers were placed at a height of four feet (relative to the deck floor height) to estimate the height of a seated adult.

Future traffic noise levels for the common outdoor use areas are shown in Table 6, and take the shielding provided by the building into account. Receiver locations are shown in Figure 7.

Table 6. Future Traffic Noise Levels at Common Outdoor Use Areas

Receiver	Description	Exterior Noise Level (CNEL)
OU1	First Floor Common Area	64
OU2	Second Floor Common Area	65

As shown in Table 6, exterior traffic noise levels at the common areas are not expected to exceed the 65 CNEL noise limit set by the City of San Diego. For this reason, no additional project design

features are required for the proposed common areas. The common outdoor use areas are therefore expected to comply with the City of San Diego Noise Element to the General Plan as designed.

Private balconies are located around the perimeter of the building at all units, and balconies with a depth exceeding six feet are located along the north building facade. Future traffic noise levels at private outdoor balconies are shown in Table 7. Receiver locations are shown in Figure 7.

Table 7. Future Traffic Noise Levels at Private Balconies

Receiver	Location	Exterior Noise Level (CNEL)			
		First Floor	Second Floor	Third Floor	Fourth Floor
OU3	Northwest	**69**	**68**	**68**	**68**
OU4	North	65	64	64	64
OU5	North	63	63	63	63
OU6	North	65	64	65	65
OU7	North	63	62	63	64
OU8	North	60	60	60	61
OU9	North	62	61	62	62

As shown above, private balconies at the northwest corner of the building are expected to be exposed to traffic noise levels that exceed 65 CNEL in the future noise environment, and therefore, additional project design features are required in those areas.

The proposed project currently incorporates balcony barrier walls at all balconies. With proposed balcony barriers at the northwest corner of the building modified to be constructed as a solid sound barrier with a minimum height of 3.5 feet at the first floor and four feet at the second through fourth floors, noise impacts would be reduced to be 65 CNEL in these locations. With these project design features in place, all private outdoor use areas would be expected to comply with the City of San Diego Noise Element to the General Plan.

The required balcony barriers should be 3.5 feet high at the first floor and four feet high at the second through fourth floors, relative to the deck floor height. A sound wall should be solid and constructed of masonry, wood, plastic, fiberglass, steel, or a combination of those materials, with no cracks or gaps, through or below the wall. Any seams or cracks must be filled or caulked as much as possible. If wood is used, it can be tongue and groove and must be at least 7/8-inch thick or have a surface density of at least 3½ pounds per square foot. Where architectural or aesthetic factors allow, glass or clear plastic may be used, if it is desirable to preserve a view. A glass or plexiglass railing wall should be sufficient for sound attenuation in these locations.

5.1.2 Noise Impacts at Building Facades

Future traffic noise impacts at building facades were calculated and show that noise levels are expected to range from approximately 56 CNEL at the east-facing facade on the second floor, to approximately 71 CNEL at the west-facing facade of the first floor. Noise levels are shown in Table 8, and receiver locations are shown in Figure 8.

Table 8. Future Traffic Noise Levels at Building Facades					
Receiver	Location	Exterior Noise Level (CNEL)			
		First Floor	Second Floor	Third Floor	Fourth Floor
F1	West	71	70	70	70
F2	North	66	66	66	66
F3	North	64	63	64	65
F4	North	63	62	63	63
F5	North	61	61	61	62
F6	East	56	57	58	59
F7	South	63	64	64	65
F8	South	63	65	65	65
F9	South	67	67	67	67

5.2 Interior

The State of California and the City of San Diego require buildings to be designed in order to attenuate, control, and maintain interior noise levels to 45 CNEL or less in habitable residential space. Current exterior building construction is generally expected to achieve at least 15 decibels of exterior-to-interior noise attenuation, with windows opened, according to the U.S. EPA (see reference). Therefore, proposed project building structures exposed to exterior noise levels greater than 60 CNEL could be subject to interior noise levels exceeding the 45 CNEL noise limit for residential habitable space.

As shown in Table 8, the maximum future noise impact anticipated at project building facades is above 60 CNEL. As building facade noise impacts are expected to exceed 60 CNEL, interior noise levels may exceed 45 CNEL with standard building construction. Therefore, a detailed interior noise analysis should be performed for this project prior to the issuance of building permits, to determine design elements necessary to maintain compliant interior noise levels. However, the required interior noise levels are feasible and can be achieved with readily available building materials and construction methods. From a preliminary review, it is anticipated that a typical exterior wall, windows and glass doors with an STC rating of 28, and mechanical ventilation in units will be sufficient for achieving compliant interior noise levels; however, this can be confirmed when construction documents become available.

5.3 Permanent Project-Related Noise Impacts

5.3.1 Mechanical Equipment Noise

Noise levels from HVAC units were calculated in Cadna at the nearest properties using data presented in Section 3.2.2. All equipment was assumed to be in constant operation for 100 percent of the time, although in actuality, equipment will only operate intermittently. Calculations consider the topography of the surrounding area as well as shielding that would be provided by the proposed on-site structure, with the exception of any parapet walls. For this reason, the analysis is considered to represent a conservative estimate of noise impacts at off-site receivers.

Table 9 shows the project-related mechanical noise impacts at surrounding receivers. All receivers have been calculated at a height of five feet above their respective grade with the exception of receiver R5, which was calculated at a height of 15 feet above grade to account for receivers at the second story of the adjacent residential property. Additional information is provided in Appendix C: Cadna Analysis Data and Results. For a graphic showing mechanical equipment noise source and receiver locations, please refer to Figure 9.

Table 9. Project-Related Mechanical Noise Impacts

Receiver	Description	Noise Limit (dBA)	Noise Level (dBA)
R1	North Property Line	40	31
R2	South Property Line (Across Provencal)	60	36
R3	Southeast Property Line	50	31
R4	Southeast Residential Building, 1st Floor	50	28
R5	Southeast Residential Building, 2nd Floor	50	29
R6	West Property Line (Across Rancho Carmel)	40	25

As shown above, noise levels at adjacent property lines are anticipated to comply with the applicable nighttime noise limits of the City of San Diego with the project as currently designed. For these reasons, no additional project design features are deemed necessary to reduce noise impacts from rooftop mechanical equipment.

5.3.2 Project-Generated Traffic Noise

According to LLG traffic projections, the proposed project is anticipated to add the following number of ADT to surrounding roadways:

- 50 ADT to Rancho Carmel Drive, north of Provencal Place
- 260 ADT to Rancho Carmel Drive, south of Provencal Place
- 200 ADT to Ted Williams Parkway
- 30 ADT to Sabre Springs Parkway

An analysis of the potential change in traffic noise levels to the surrounding area has been evaluated based on these traffic projections in comparison to existing, opening year (2022), and future (2035) traffic volumes. A significant impact is generally expected to be an increase of three decibels. Project-generated traffic noise increases are shown in Table 10.

Table 10. Anticipated Traffic Noise Increases with Project-Generated Traffic

Road Segment	Scenario	Traffic Volume (ADT)		Noise Level Increase (dB)
		No Project	With Project	
Rancho Carmel Drive (North of Provencal)	Existing	11,630	11,680	0.0
	Opening Year (2022)	12,340	12,390	0.0
	Future (2035)	22,100	22,150	0.0
Rancho Carmel Drive (South of Provencal)	Existing	13,700	13,960	0.1
	Opening Year (2022)	14,540	14,800	0.1
	Future (2035)	23,100	23,360	0.0
Ted Williams Parkway	Existing	43,590	43,790	0.0
	Opening Year (2022)	46,260	46,760	0.0
	Future (2035)	48,000	48,200	0.0
Sabre Springs Parkway	Existing	16,750	16,780	0.0
	Opening Year (2022)	17,780	17,810	0.0
	Future (2035)	19,560	19,590	0.0

As shown in Table 10, based on the minimal amount of traffic generated by the project relative to traffic volumes without the project, the increase in noise levels on surrounding roadways will be well below the three-decibel threshold of significance. Project-generated traffic noise levels are therefore less than significant.

5.4 Temporary Construction Noise Impacts

According to the City of San Diego Municipal Code, construction activity is prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays or legal holidays. During permissible hours of operation, noise levels from construction activity must be limited to a twelve-hour average of no greater than 75 dBA at any property line zoned for residential use.

Noise levels were calculated at the nearest receiver to the southeast, as any other off-site receivers are located at a greater distance from the project site and therefore would be exposed to lesser noise impacts. Construction noise sources were placed near the center of the work area to

evaluate typical impacts to this receiver as equipment moves around the property. The approximate center of work is located roughly 75 feet from the nearest sensitive receiver location on the southeast property. Noise calculations consider typical duty cycles of equipment, to account for periods of activity and inactivity on the site.

Calculated construction noise impacts are shown in Table 11. A graphical representation of evaluated source and receiver locations is shown in Figure 10. Please refer to Appendix E for additional information.

Table 11. Temporary Construction Noise Levels at Nearest Residential Receiver (Southeast)

Stage	Equipment	12-Hour Average Noise Level (dBA)
Underground Utilities	Backhoe, Concrete Saw	70
Foundation Excavation	Drill Rig, Dump Truck	71
Garage Reinforcement	Concrete Saw, Concrete Mixer Truck, Concrete Pump, Jackhammer	73
Vertical Construction	Crane, Concrete Mixer Truck, Concrete Pump	66

As shown in Table 11, based on the typical noise levels and duty cycles of construction equipment, 12-hour average hourly noise levels are anticipated to remain below 75 dBA at the nearest noise-sensitive property lines. Any other noise-sensitive properties are located at a greater distance from on-site activity and therefore would be exposed to lesser noise levels.

Despite the fact that noise impacts are expected to remain in compliance with the construction noise limit of the City of San Diego, the following “good practice” measures should still be practiced as a courtesy to residential neighbors.

1. Staging areas should be placed as far as possible from residential receivers (west side of the property).

2. Place stationary equipment in locations that will have a lesser noise impact on nearby sensitive receivers.

3. Turn off equipment when not in use.

4. Limit the use of enunciators or public address systems, except for emergency notifications.

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

6. Schedule work to avoid simultaneous construction activities that both generate high noise levels.

7. Use equipment with effective mufflers.

8. Minimize the use of backup alarms.

With operating hours limited to those permitted by the City of San Diego and adherence to the general good practice construction noise control techniques, temporary construction noise impacts are expected to be less than significant at surrounding properties.

5.5 CEQA Significance Determination

5.5.1 City of San Diego Significance Determination Thresholds

The noise impacts to the project site and from the project site on surrounding properties was taken into account using methodology given in the City of San Diego's CEQA Significance Determination Thresholds document. In order to determine whether or not the project will have a significant impact on surrounding properties, the City's Initial Study Checklist was used, and is addressed as follows:

1. Would the project result in a significant increase (3 dBA or more) in the existing ambient noise levels?

Minimum ambient noise levels were projected using the methodology detailed in Section 4.1.2 and were combined with the projected HVAC equipment noise impacts to determine the cumulative noise impact and the increase in ambient noise levels resulting from operation of the project. Results are shown in Table 12.

Table 12. Calculated Cumulative Noise Impacts at Surrounding Property Lines

Receiver Number	Receiver Location	Noise Level (dBA)				Impact
		Minimum Ambient	HVAC	Cumulative	Ambient Increase	
R1	North Property Line	45.6	31.1	45.8	0.2	Less than Significant
R2	South Property Line (Across Provencal)	44.4	35.5	44.9	0.5	Less than Significant
R3	Southeast Property Line	44.7	30.9	44.9	0.2	Less than Significant
R4	Southeast Residential Building, 1st Floor	43.9	27.5	44.0	0.1	Less than Significant
R5	Southeast Residential Building, 2nd Floor	42.8	29.2	43.0	0.2	Less than Significant
R6	West Property Line (Across Rancho Carmel)	50.4	25.3	50.4	0.0	Less than Significant

The results in Table 12 demonstrate that the increase in ambient noise levels from HVAC operation will be less than 3 dBA. Additionally, as demonstrated in Section 5.3.2 of this report, noise impacts from project-generated traffic are not expected to cause a significant increase (greater than three decibels) on any surrounding roadway. This impact is also considered to be less than significant.

As the project creates less than a 3 dBA increase in the existing ambient noise levels, its impact is considered to be less than significant at surrounding properties.

2. Would the project expose people to noise levels which exceed the City's adopted noise ordinance or are incompatible with Table K-4?

Per the analysis shown in Sections 5.3 and 5.4, noise impacts from the proposed project would not exceed the City's adopted noise ordinance. It is the understanding of the undersigned that Table K-4 is no longer applicable, as the City of San Diego Noise Element to the General Plan was updated in 2015. For this reason, Table NE-3 shall be used to demonstrate compliance. As the maximum property line noise limit of 36 dBA at the south property line is well below the most restrictive limit in Table NE-3 of the City of San Diego Noise Element to the General Plan (60 CNEL), the project will also not exceed any of the limits in this table. Please see Appendix B for a copy of Table NE-3.

3. Would the project expose people to current or future transportation noise levels which exceed standards established in the Transportation Element to the General Plan or an adopted airport Comprehensive Land Use Plan?

As shown in Section 5.1, with solid balcony barrier walls incorporated as project design features in the required locations, noise impacts at outdoor use areas of the project site would be adequately controlled to be 65 CNEL or less, in compliance with the transportation noise standards of the City of San Diego Noise Element to the General Plan. Therefore, the project will not expose people to current or future transportation noise levels which exceed standards established in the General Plan. The project is also not located within an airport influence area and therefore would not be subject to compliance with an airport Comprehensive Land Use Plan.

4. Would the project result in land uses which are not compatible with aircraft noise levels as defined by an adopted airport Comprehensive Land Use Plan (CLUP)?

The proposed project lies outside any airport noise exposure areas, and would therefore not result in any land uses which are not compatible with aircraft noise levels as defined by an adopted airport CLUP.

Using the methodology given in the City of San Diego's Significance Determination Thresholds Document, it has been determined that the proposed project will have a less than significant impact on surrounding properties.

5.5.2 CEQA Guidelines Environmental Checklist

Noise impacts from the project site are summarized below and classified per the noise portion of the CEQA Environmental Checklist form. This list summarizes conclusions made within the report and classifies the level of significance as: Potentially Significant Impact, Less than Significant with Mitigation Incorporated, Less than Significant Impact, or No Impact.

Italics are used to denote language from the CEQA Environmental Checklist form.

XII. NOISE—Would the project result in:

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

Less Than Significant Impact. Operational noise impacts calculated in Section 5.3.1 are not expected to generate a substantial permanent increase in ambient noise levels in the vicinity of the

project site. A substantial increase would be considered an increase of three decibels or more, which would represent a doubling of sound energy. The comparison of HVAC noise impacts to existing minimum ambient noise projections is shown in Table 12, and demonstrates a less than significant increase in ambient noise levels.

Additionally, as demonstrated in Section 5.3.2 of this report, noise impacts from project-generated traffic are not expected to cause a significant increase (greater than three decibels) on any surrounding roadway. This impact is also considered to be less than significant.

As shown in Section 5.4 of this report, noise from temporary construction is expected be less than significant considering the anticipated construction schedule and assuming that equipment is maintained in proper operating condition and using appropriate mufflers. Noise impacts from anticipated construction activity are expected to remain at or below the 75 dBA construction noise limit set by the City of San Diego. Additionally, no construction activity will take place during the more sensitive nighttime hours when ambient noise levels tend to be lower, as per City of San Diego requirements. For these reasons, this impact is deemed to be less than significant.

As demonstrated above, the project is not expected to cause a substantial permanent or temporary increase in ambient noise levels, and therefore, this impact can be classified as less than significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. The proposed foundation excavation phase of construction is expected to generate the highest vibration levels of the four phases, as it consists of caisson drilling. According to the Federal Transit Administration Transit Noise and Vibration Assessment Manual (see reference), caisson drilling generates a peak particle velocity (PPV) of approximately 0.089 inches/second at a distance of 25 feet from equipment. The evaluation of an impact's significance can be determined by reviewing both the likelihood of annoyance to individuals as well as the potential for damage to existing structures. According to the Caltrans Transportation and Construction Vibration Guidance Manual (see reference), the appropriate threshold for damage to modern residential structures is a PPV of 0.5 inches/second. Annoyance is assessed based on levels of perception, with a PPV of 0.01 being considered "barely perceptible," 0.04 inches/second as "distinctly perceptible," 0.1 inches/second as "strongly perceptible," and 0.4 inches/second as "severe."

The location of caisson drilling is currently unknown; however, it is estimated that the nearest location would be approximately 25 feet from the nearest residential structure, when caissons are drilled beneath the eastern portion of the building. At this distance, the PPV would be approximately 0.089 inches/second. This level of vibration falls well below the building damage PPV criteria of 0.5 inches/second. The impact falls between the "distinctly perceptible" and "strongly perceptible" PPV criteria for annoyance; however, vibration would be reduced to "distinctly perceptible" levels by the time drilling is located at a distance of 50 feet from receivers, and "barely perceptible" at 100 feet from receivers. As construction vibration is not anticipated to cause damage to off-site buildings and will only approach the threshold of "strongly perceptible" vibration for a short period of time when work is performed on the eastern portion of the building, it is the opinion of the undersigned that temporary construction vibration impacts would not be "excessive" and therefore are less than significant. Please refer to Appendix E for additional information.

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

No Impact. The project site is not located within an airport land use plan nor is it located within two miles of a private airstrip, public airport, or public use airport. Therefore, the proposed project would not expose people working in the project area to excessive noise levels from such uses.

6.0 CONCLUSION

The City of San Diego Noise Element to the General Plan requires that residential outdoor use areas be protected from noise levels greater than 65 CNEL. As designed, future traffic noise levels are expected to be 65 CNEL or less at all common outdoor use areas and private balconies where noise standards would apply, with the exception of the private balconies at the northwest corner of the building. Additional project design features would be required in these locations. With solid balcony barriers with a height of 3.5 feet at the first floor and four feet at the second through fourth floors at the northwest corner of the building, future traffic noise levels are expected to be reduced to be 65 CNEL and therefore would be in compliance with City of San Diego exterior noise standards. More information is provided in Section 5.1.

The City of San Diego and State of California require interior noise levels of 45 CNEL or less in residential units. Calculations show that future noise levels on site exceed 60 CNEL at most facades, and therefore interior noise levels may exceed 45 CNEL within units. Due to high noise levels on-site, an exterior-to-interior analysis should be performed when building plans become available, prior to the issuance of building permits. The required interior noise levels are feasible and can be achieved with readily available building materials and construction methods. It is anticipated that a typical exterior wall, windows and glass doors with an STC rating of 28, and mechanical ventilation in units will be sufficient for achieving compliant interior noise levels; however, this should be confirmed when construction documents become available.

Noise from the anticipated HVAC equipment on site has been calculated to determine impacts at off-site receivers. Calculations show that noise levels from the mechanical equipment will be in compliance with the City of San Diego noise regulations found within the Municipal Code. No project design features are deemed necessary to control project-generated noise impacts from mechanical equipment. Project-generated traffic noise is also expected to be less than significant.

Noise levels from temporary construction activities associated with this project are expected to comply with the applicable City of San Diego construction noise limits at all surrounding property lines, with activity limited to the daytime hours of 7 a.m. to 7 p.m. during all phases of construction. Construction is prohibited between the hours of 7 p.m. and 7 a.m. and on Sundays or legal holidays. Though it is not required by regulations, the general good practice construction noise control methods listed herein should be followed, as a courtesy to surrounding properties.

The proposed project is not expected to result in any potentially significant noise impacts by the standards of the California Environmental Quality Act (CEQA). Noise impacts are summarized in Section 5.5.

7.0 CERTIFICATION

All recommendations for noise control are based on the best information available at the time our consulting services are provided. However, as there are many factors involved in sound transmission, and Eilar Associates has no control over the construction, workmanship or materials, Eilar Associates is specifically not liable for final results of any recommendations or implementation of the recommendations.

This report is based on the related project information received and measured noise levels, and represents a true and factual analysis of the acoustical impact issues associated with the Alante project, to be located in the City of San Diego, California. This report was prepared by Amy Hool and Jonathan Brothers.

Amy Hool, Senior Acoustical Consultant

Jonathan Brothers, Principal Acoustical Consultant

8.0 REFERENCES

1. City of San Diego Noise Element to the General Plan, June 2015.

2. City of San Diego Municipal Code, Article 9.5: Noise Abatement and Control.

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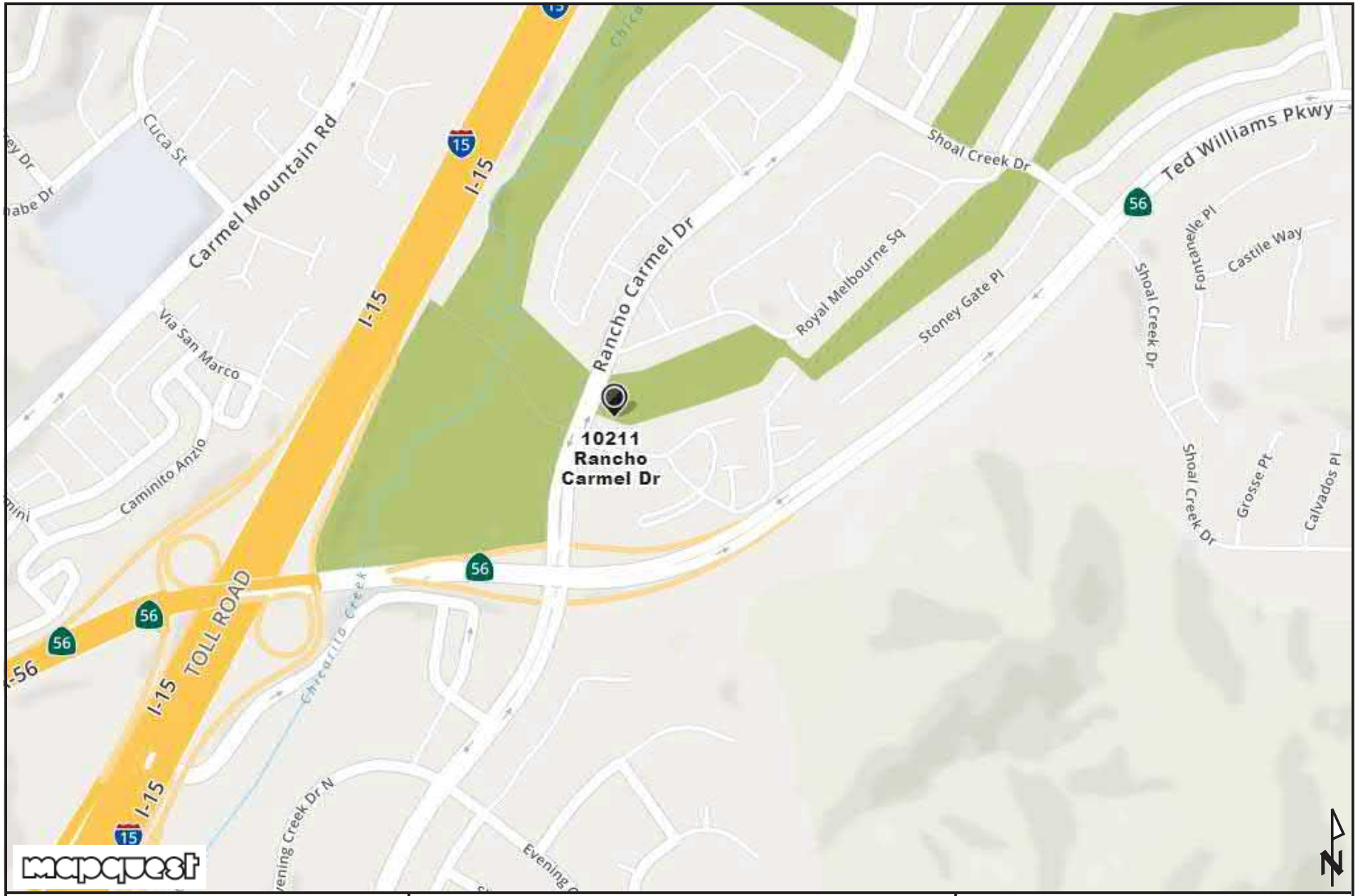
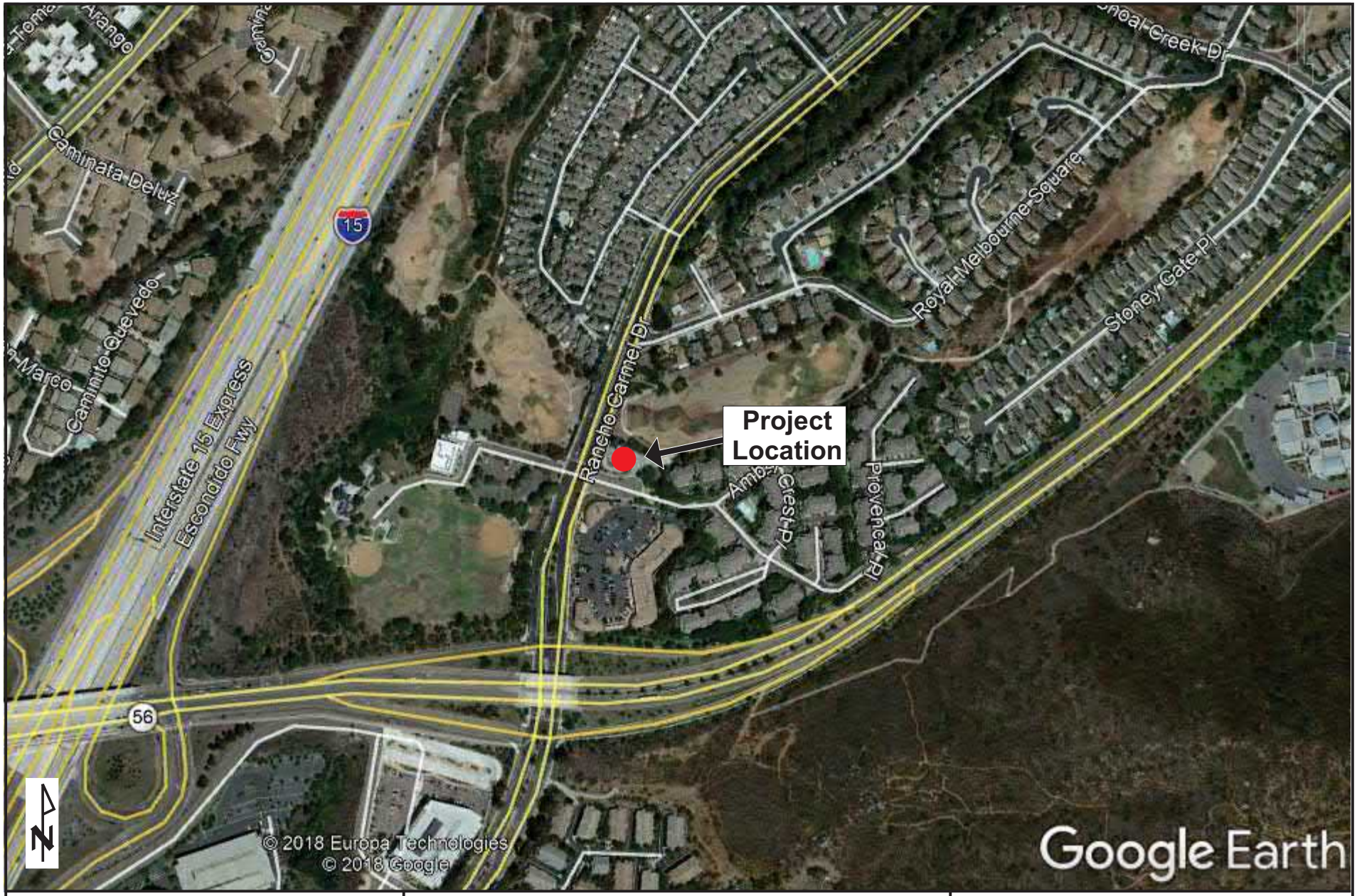
FIGURES

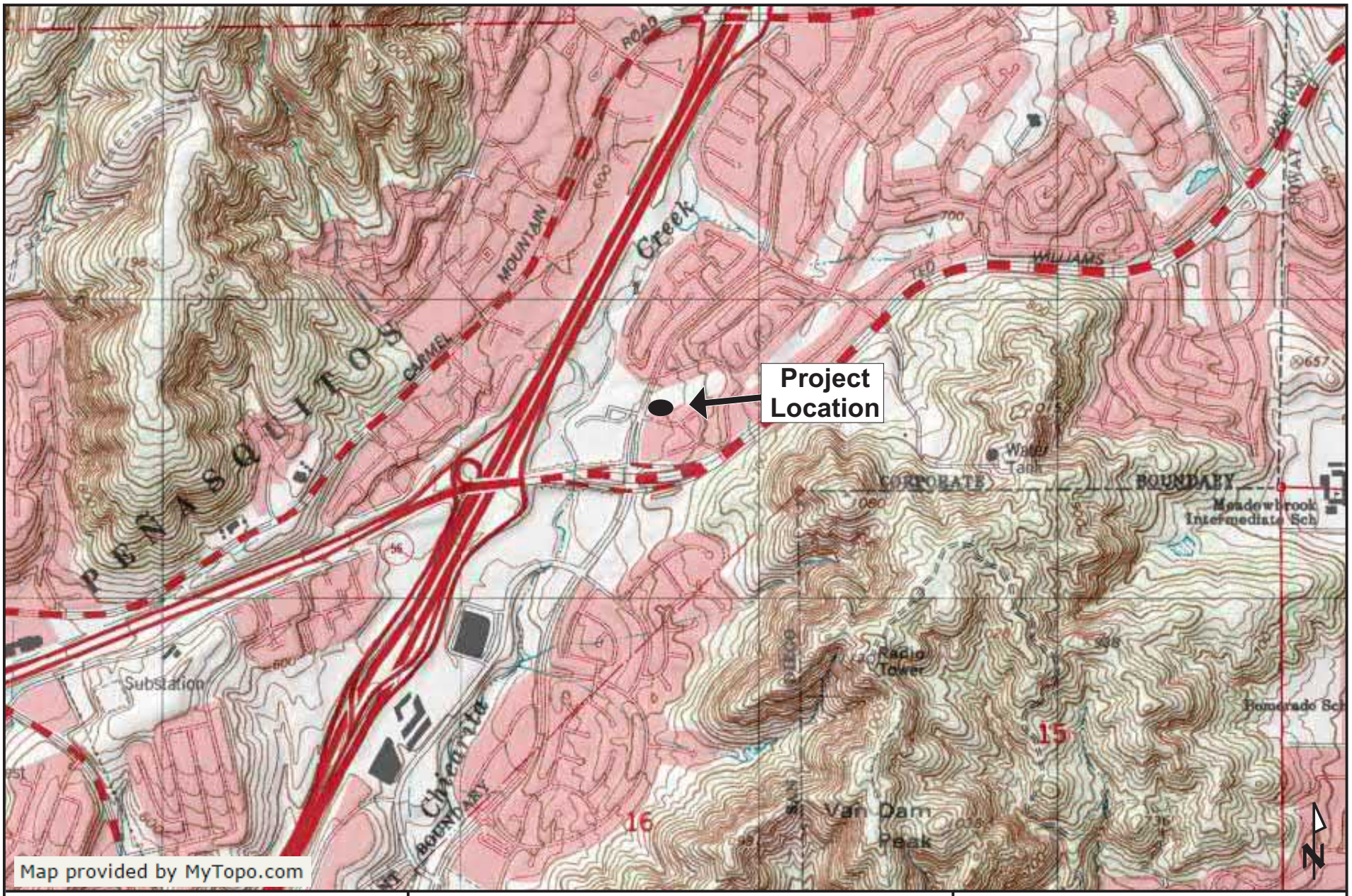


Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Vicinity Map** **Job # S190506.2**	**Figure 1**

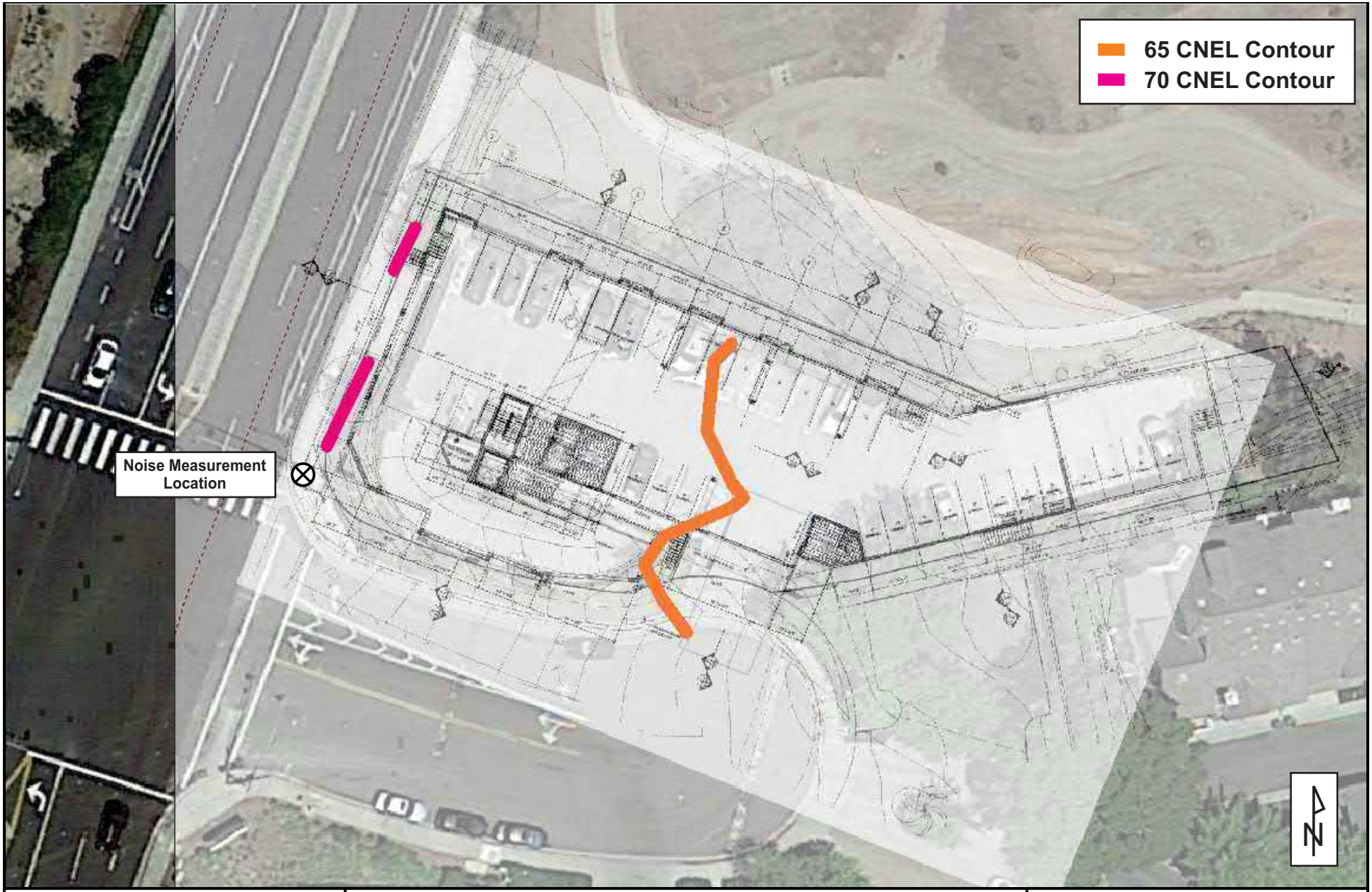
Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Assessor's Parcel Map** **Job # S190506.2**	**Figure 2**



Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Satellite Aerial Photograph** **Job # S190506.2**	**Figure 3**



Eilar Associates, Inc. **210 South Juniper Street, Suite 100** **Escondido, California 92025** **760-738-5570**	**Topographic Map** **Job # S190506.2**	**Figure 4**



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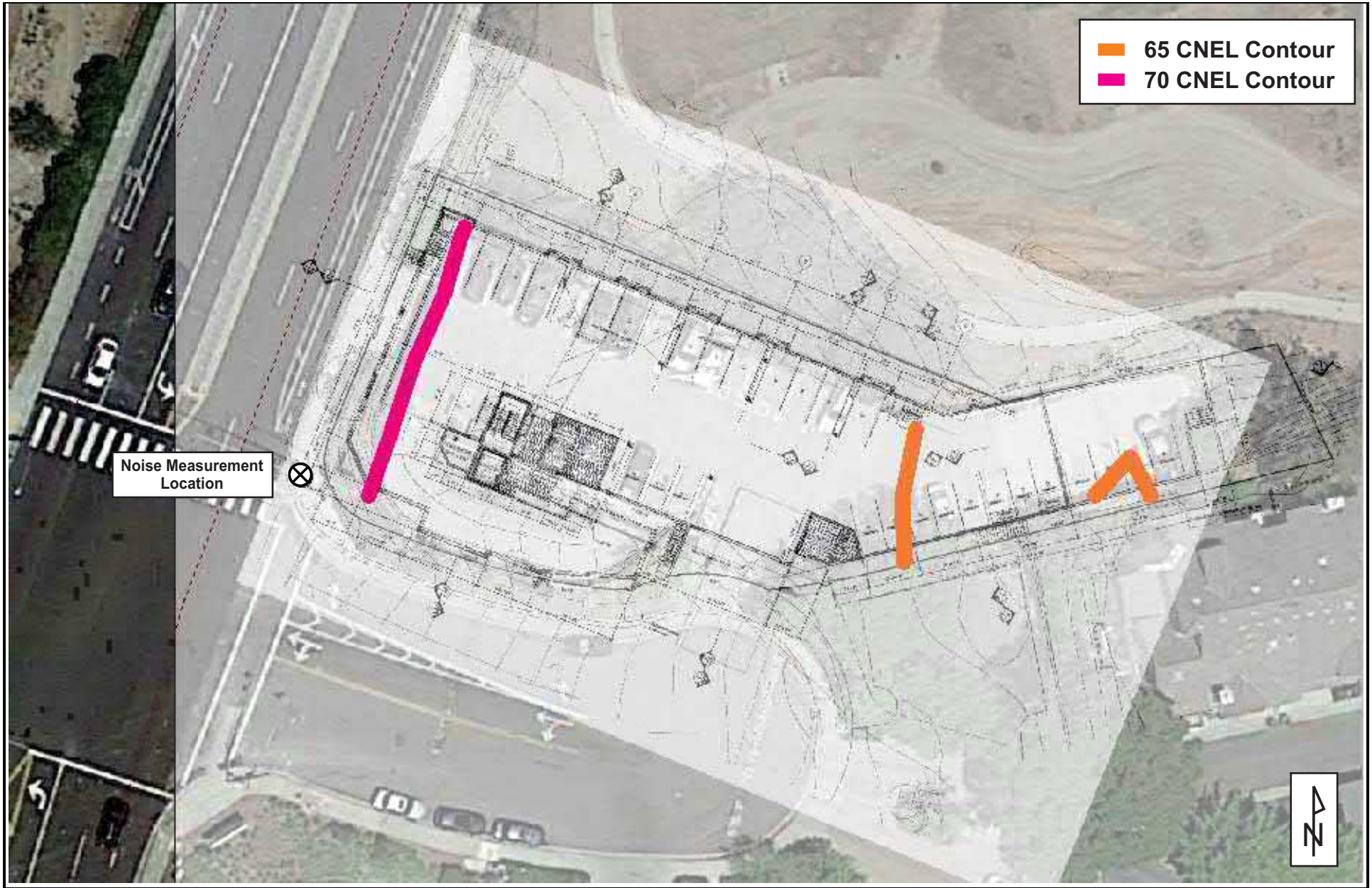
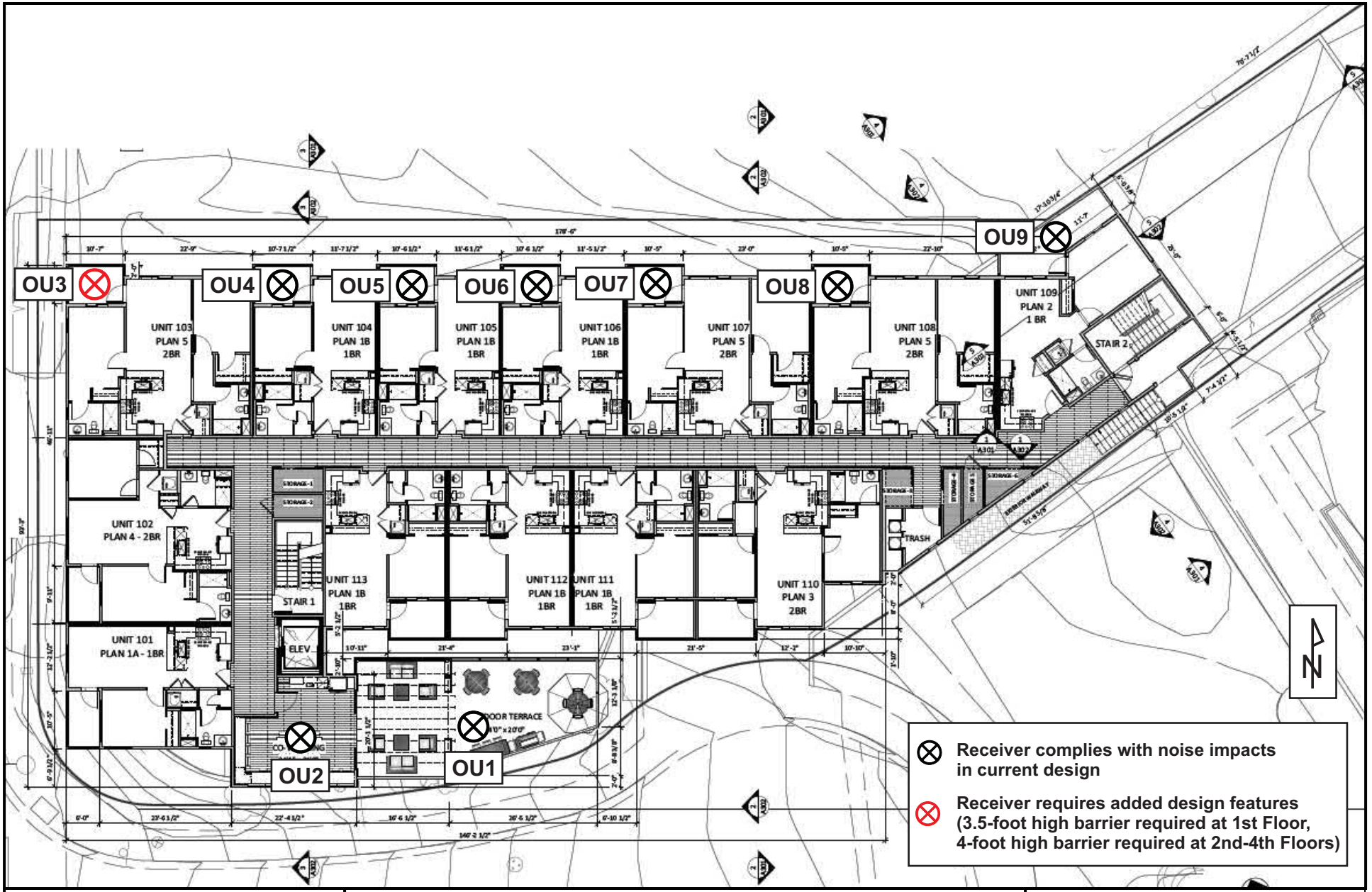
Satellite Aerial Photograph Showing Current Traffic CNEL Contours and Noise Measurement Location
Job # S190506.2

Figure 5



Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570	**Satellite Aerial Photograph Showing Future Traffic CNEL Contours and Noise Measurement Location** **Job # S190506.2**	**Figure 6**



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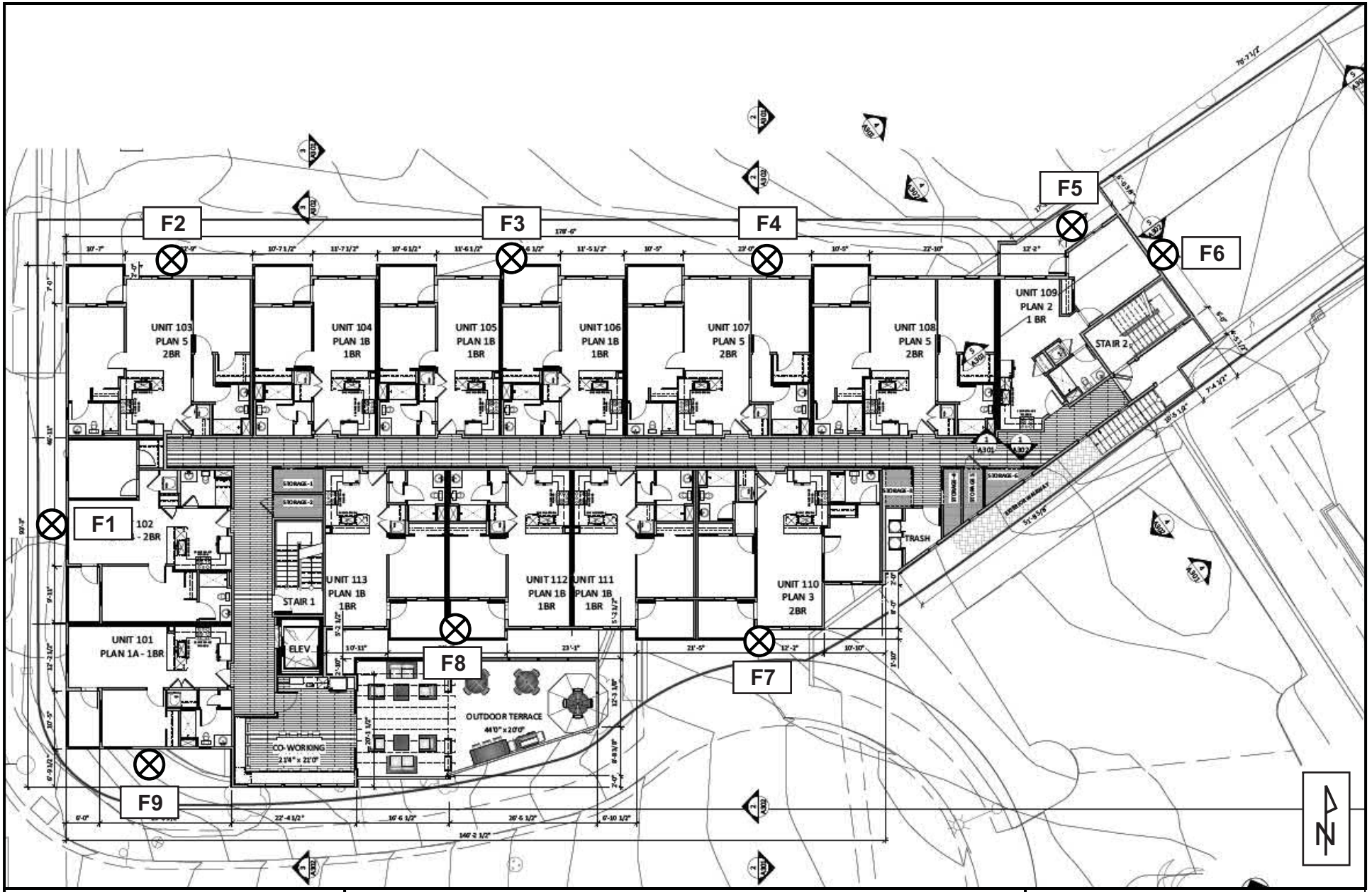
First Floor Plan Showing Outdoor Use Area
Receiver and Balcony Barrier Locations
Job # S190506.2

Figure 7



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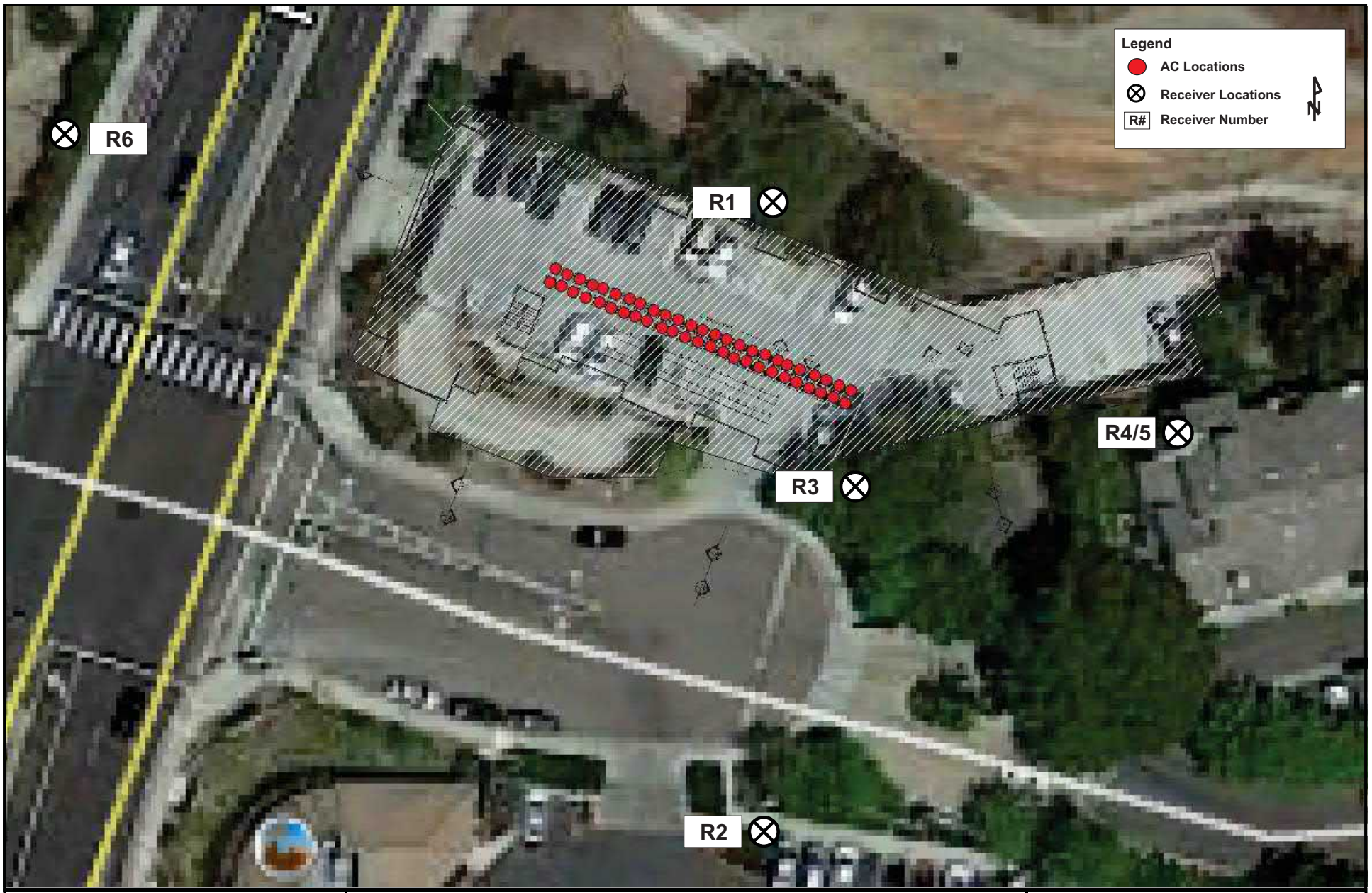
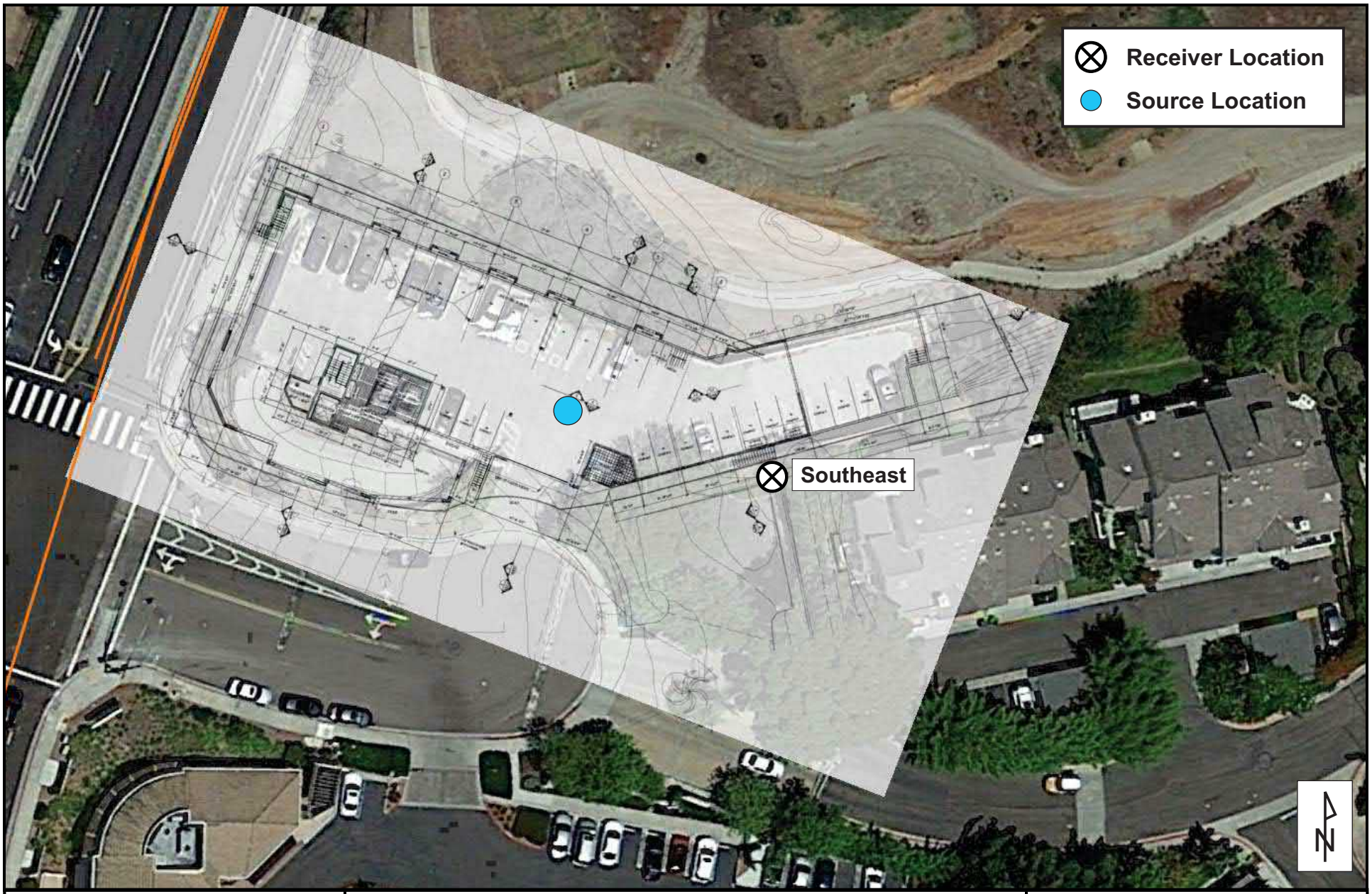
First Floor Plan Showing Building Facade Receiver Locations
Job # S190506.2

Figure 8



Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570	**Satellite Aerial Photograph Showing Mechanical Equipment Noise Source and Receiver Locations** **Job # S190506.2**	**Figure 9**



Eilar Associates, Inc. 210 South Juniper Street, Suite 100 Escondido, California 92025 760-738-5570	**Satellite Aerial Photograph Showing** **Construction Noise Source and Receiver Locations** **Job # S190506.2**	**Figure 10**

APPENDIX A

Project Plans

ABBREVIATIONS

ABV	above
AFF	above finished floor
ACOUS	acoustical
ACT	acoustical ceiling tile
ADJ	adjacent
AGGR	aggregate
A/C	air conditioning
ALT	alternate
ALUM	aluminum
AB	anchor bolt
APPROX	approximate
ARCH	architectural
AD	area drain
ASPH	asphalt
AT	asphalt tile
BA	bath
BM	beam
BRG	bearing
BR	bedroom
BLW	below
BLK	block
BLKG	blocking
BD	board
BOT	bottom
BO	bottom of
BLDG	building
BUR	built up roof
CAB	cabinet
CPT	carpet
CANTIL	cantilevered
CI	cast iron
CB	catch basin
CLG	ceiling
CJ	ceiling joist
CEM	cement
CTR	center
CL	center line
CT	ceramic tile
CO	clean out
CLR	clear
CLO	closet
CW	cold water
COL	column
CONC	concrete
CMU	concrete masonry unit
COND	condition
CONSTR	construction
CONT	continuous
CONTR	contract
CORR	corridor
CNTR	counter
DJ	deck joist
D	deep/dryer
DEMO	demolition
DEPT	department
DET	detail
DIAG	diagonal
DIA	diameter
DIM	dimension
DW	dishwasher
DR	door
DBL	double
DH	double hung
DF	douglas fir / drinking fountain
DN	down
DS	downspout
DWG	drawing
EA	each
E	east
EN	edge nailing
ELEC	electrical
EL	elevation
ELEV	elevator
EJT	end jack truss
EQ	equal
EXH	exhaust
EXH GR	exhaust air grill
EXP	expansion / exposed
EJ	expansion joint
EXT	exterior
FO	face of
FOC	face of concrete
FOM	face of masonry
FOS	face of stud
FAM CTR	family center
FIN	finish
FF	finished floor
FIN GR	finish grade
FE	fire extinguisher
FEC	fire extinguisher cabinet
FP	fireplace
FX	fixed
FIXT	fixture
FWP	flat wall paint
FLR	floor
FD	floor drain
FJ	floor joist
FMC	floor material change
FLR SK	floor sink
FLUOR	fluorescent
FL	flush
FT	foot / feet / fire treated
FTG	footing
FAU	forced air unit
FDTN	foundation
FR DR	french door
FG	fuel gas
FURR	furring
GALV	galvanized
GD	garbage disposal
GA	gauge
GT	girder truss
GL	glass
GLB	glue lam beam
GR	grade
GFCI	ground fault circuit interrupter
GYP BD	gypsum board
GWB	gypsum wallboard
HCP	handicap
HS	hard surface
HDW	hardware
HDWD	hardwood
HDR	header
HTG	heating
HVAC	heating ventilation air condition
HT	height
HD	hold down
HC	hollow core
HM	hollow metal
HORZ	horizontal
HP	heat pump
HB	hose bibb
HWH	hot water heater
HR	hour
ID	identification
INCL	include / including
INSUL	insulation
INT	interior
JAN	janitor
JT	joint
JST	joist
KP	king post
KIT	kitchen
LB	lag bolt / pound
LAM	laminated
LNDSCP	landscape
LAU	laundry
LAV	lavatory
LH	left hand(ed)
LT	light
LW	light weight
LWC	light weight concrete
LR	living room
LUM	luminous
MB	machine bolt
MH	manhole
MFD	manufactured
ML	manufactured lumber
MFR	manufacturer
MBL	marble
MAS	masonry
MO	masonry opening
M BA	master bath
M BR	master bedroom
MATL	material
MAX	maximum
MECH	mechanical
MC	medicine cabinet
MED	medium
MEMB	membrane
MTL	metal
MW	microwave
MID	middle
MIN	minimum
MISC	miscellaneous
MT	mount
MOV	movable
NAT	natural
NOM	nominal
N	north
NA	not applicable
NIC	not in contract
NTS	not to scale
NO	number
OFF	office
OC	on center
OPNG	opening
OPP	opposite
OPT	optional
OSB	oriented strand board
O	oven
O/	over
OH	over head
PT	paint
PG	paint grade
PR	pair
PNLG	paneling
PAR	parapet
PART	partial
P BD	particle board
PTN	partition
PTPS	per top plate splice
PERM	permanent
PLAS	plaster / plastic
PL	plate / property line
PLYWD	plywood
POC	point of connection
POL	polished
PT	post tension / pressure treated
PREFAB	prefabricated
PROP	property
QT	quarry tile
R	radius / riser
RWD	redwood
RCP	reflected ceiling plan/ reinforced concrete pipe
REF	refrigerator / reference
REG	register
REINF	reinforced / reinforcement
REQ	required
RS	resawn
RESIL	resilient
RF	resilient flooring
RAG	return air grill
REV	reverse
ROW	right of way
RD	roof drain
RR	roof rafter
RM	room
RO	rough opening
SL	sawn lumber
SCHED	schedule
SCRN	screen
SCP	scupper
SHTG	sheathing
SHT	sheet
SM	sheet metal
S&P	shelf and pole
SHT	shower
SIM	similar
SH	single hung
SLDG	sliding
SGD	sliding glass door
SD	smoke detector / storm drain
SC	solid core
STC	sound transmission class
SPEC	specification / specified
SQ	square
SF	square foot / square feet
SSL	stainless steel
STD	standard
STL	steel
STOR	storage
STRUCT	structural
SAR	supply air register
SUSP	suspended / suspension
SYMM	symmetrical
TEL	telephone
TEMP	tempered
TEXT	texture
THK	thickness
T&G	tongue and groove
T&B	top and bottom
TO	top of
TOA	top of arch
TOC	top of concrete
TOD	top of drain
TOP	tope of parapet
TOW	top of wall
TC	trash compactor
T	tread
TYP	typical
U/G	under group
U/S	under slab
UNO	unless noted otherwise
UR	urinal
UTIL	utility
VAR	varies
VTR	vent though roof
VTW	vent though wall
VERT	vertical
VEST	vestibule
VYL	vinyl
WIC	walk in closet
WSCT	wainscot
W	washer
WC	water closet
WP	waterproof
WT	weight
WWF	welded wire fabric
WWM	welded wire mesh
W	west
WO	where occurs
WDW	window
W/	with
W/O	with out
WD	wood

GRAPHIC LEGEND

GENERAL

- revision mark
- building section mark / sheet number reference
- elevation mark / sheet number reference
- elevation mark / sheet number reference
- LIVING RM — space name/number
- CPT 8' — floor finish / ceiling height
- change in elevation
- optional line - noted in italics
- hidden line
- center line
- break line

ELECTRICAL

- duplex wall receptacle (110V typ)
- duplex wall receptacle, 1/2 switched
- duplex wall receptacle, GFCI
- waterproof duplex wall receptacle, GFCI
- floor outlet (110V typ)
- fourplex wall receptacle (110V typ)
- 220V (or 208V 3-phase) wall receptacle
- duplex ceiling receptacle
- single-pole, double throw switch
- 3-way switch
- 4-way switch
- dimmer
- photoelectric switch
- vacancy sensor
- hanging light fixture (w/ blocking to support 100#)
- surface mounted ceiling light fixture
- surface mounted porcelain socket w/ pull-chain
- surface mounted fluorescent light fixture
- recessed ceiling light fixture
- recessed wall-washer light fixture
- recessed fluorescent light fixture
- motion detected light fixture
- wall bracket light fixture
- wall bracket light fixture - photo reactive
- ceiling track light fixture
- undercabinet light fixture
- fluorescent light fixture
- junction box (weatherproof when noted WP)
- heat lamp
- floor light fixture
- chimes
- door bell
- smoke detector - direct wire to panel
- carbon monoxide detector
- telephone outlet
- television outlet
- garage door opener
- electrical service main panel
- internally illuminated address numbers legible from the street, low voltage type
- ceiling fan

MECHANICAL / PLUMBING

- air duct (in cross-section)
- thermostat
- ceiling return air grille
- wall return air grille
- type "B" vent through roof (VTR)
- exhaust fan vented to exterior
- whole house exhaust fan, Broan SSQTXE w/ smart sensor control or equal, 6" min duct
- humidistat fan, Broan QTXEL105 humidity sensing or equal, 6" min duct
- recessed exhaust fan and light fixture
- range hood with exhaust fan and light
- fuel gas supply with shutoff valve
- loose (log lighter) key valve w/ shutoff
- hose bib
- ice maker line w/ shutoff valve
- hot water heater
- gas meter
- dryer vent through roof
- shower head

PROJECT DESCRIPTION

This project is located on the east portion of Rancho Carmel Drive at the intersection of Provencal Place in the Carmel Mountain Ranch neighborhood of San Diego, CA. The site is approximately 19,906 SF.

Currently on the site exists a 2 level park and ride parking structure that was built in 1991 that will remain. The proposed project, a 50 unit residential development, will be built over top of the existing parking structure. The 50 apartments will include 35 market rate and 15 affordable units. A mixture of 1-bedroom and 2-bedroom units are distributed throughout the building levels 1 thru 4. The existing parking structure is located on the basement and ground floor level. The addition of an elevator will service the parking and residential levels. The ground floor level will house the residential lobby, leasing office, mail, delivery support, child transportation support, rideshare information, trash, motorcycle and bicycle storage, two handicapped parking spaces, and the existing standard and compact parking spaces. The basement level parking level will provide the existing standard and compact parking spaces, elevator generator room, electric utility room, motorcycle and bicycle storage. The first level residential level includes 13 units, a co-working space, with kitchenette, and a common open space terrace with BBQ. The second thru fourth levels contain residential units with an additional common space roof terrace on level 2. All levels contain additional storage units and private balconies.

The project is located within the Parking Standard Transit Priority Area, which requires zero parking spaces, however the existing parking structure will remain and provide 60 car spaces, 5 motorcycle spaces, and 34 bicycle spaces. The Transportation Amenity Requirement is 2 points, however this project is providing 8 points.

The project qualifies for 3 incentives. All zoning requirements have been met except for North side setback, Lot Coverage and Storage requirement which with the use of 3 incentives, an the project will be able to be submitted administratively and not as a discretionary project.

The proposed housing project is privately funded and is considered to be a private housing project.

PROJECT INFO / BUILDING ANALYSIS

SITE SUMMARY

Site Area (Approx)	19,906 SF		
Base Zone	RM 4-10		
Planned Community	CARMEL MOUNTAIN RANCH		
Overlay Zones	Transit Priority Area		
	Residential Tandem Parking Overlay		
	MCAS Miramar - Airport Influence Area		
	MCAS Miramar - Airport Land Use Compatibility Overlay		
Geological Hazard Category	53		
Use	Existing: Park and Ride Facility Built in 1991		Multi-Family Residential
		MIN/MAX	Proposed
Pre-Bonus Density	400 SF	50 DU	50 DU
Setback	North Side	15	10'0" & 5'0"*
	East Side	15	15
	South	0	0
	West	0	0
	Min Side/Rear	5	5
Structure Height		-	
Floor Area Ratio	3.60		2.39
Gross Floor Area		71,662 SF	47,622 SF
Lot Coverage	60 %	11,944 SF	63% *
Storage Requirements	240 CF/DU	12,000 CF	9,147 CF*
Common Indoor Open Space			386 SF
Common Outdoor Open Space	25 SF/DU	1,250 SF	4,853 SF
Private Open Space	50 SF/DU	2,500 SF	3,546 SF
Refuse & Recyclable		192 (96/96) SF	203 SF

* Requested Deviations

BUILDING SUMMARY

	# Bed / # Ba	Area Living	Area Open	Total	Market	Low (60% & 80%)	Moderate (120% AMI)
Plan 1A	1BR/1BA	594 SF	61 SF	4 Units			
Plan 1B	1BR/1BA	580 SF	72 SF	18 Units			
Plan 2	1BR/1BA	621 SF	75 SF	4 Units			
Plan 3	2BR/2BA	817 SF	73 SF	4 Units			
Plan 4	2BR/2BA	866 SF	62 SF	4 Units			
Plan 5	2BR/2BA	902 SF	72 SF	16 Units			
Total				50 Units	35 Units	10 Units	5 Units

	Building Floor Area: Garage	Common	Residential	Storage	GFA	Open Space: Private	Common
Basement	9,748 SF	664 SF		705 CF	10,412 SF**		
Ground	11,540 SF	1,171 SF		737 CF	12,590 SF**		
First		2,048 SF	9,085 SF	1,881 CF	12,196 SF	922 SF	785 SF
Second		1,603 SF	9,085 SF	1,881 CF	11,809 SF	922 SF	381 SF
Third		1,603 SF	9,147 SF	1,881 CF	11,809 SF	851 SF	
Fourth		1,603 SF	9,147 SF	1,881 CF	11,809 SF	851 SF	
Total	11,540 SF	8,691 SF	36,464 SF	8,967 CF	47,622 SF	3,546 SF	1,166 SF
				1,296 CF	** Not Included in Total GFA		
Total Building Floor Area					70,624 SF		

TRANSPORTATION AMENITY REQUIREMENT

Required		2 points
Provided	Transit and Rideshare Information	1 points
	Delivery Support	1 points
	Child Transportation Storage	1 points
	MicroMobility1 10%	3 points
	Co-Working Space	2 points
Total		8 points

FAR, DENSITY BONUS, & INCENTIVE CALCULATION

	Low (60 & 80% AMI)	Moderate (120% AMI)	
Total Building Area			47,622 SF
Lot Size (Approx)			19,906 SF
Building FAR			2.39
Base Zone			RM 4-10
Base Allowable FAR			3.60
Residential Mixed Use Bonus			
Underground Parking Bonus			
Allowable FAR			3.60
Allowable Building Area			71,662 SF
Base Allowable Density (1DU/SF)			400 SF
Allowable DUs Pre-bonus			50 DU
Low Income (LI) DUs	10		
Moderate Income (MI) DUs		5	
Percentage of LI & MI DUs	20%	10%	
Density Bonus & Incentives	Low (60 & 80% AMI)	Moderate (120% AMI)	
Density Bonus	35.00 %	0.00 %	
Allowable DUs Post-bonus			67
Incentives	2	1	
Allowable Number of Incentives			3

Requested Incentives

1. Setbacks on North Side
2. Lot Coverage
3. Storage

PARKING CALCULATION

BICYCLE SPACES (RESIDENTIAL)	
1 Bedroom Dwelling Units	26
2 Bedroom Dwelling Units	24
Bicycle Spaces / 1BR Dwelling Unit	0.4
Bicycle Spaces / 2BR Dwelling Unit	0.5
Total Required Bicycle Spaces (Residential)	22
Provided Bicycle Spaces	22
MOTORCYCLE SPACES (RESIDENTIAL)	
1 Bedroom Dwelling Units	26
2 Bedroom Dwelling Units	24
Motorcycle Spaces / Unit	0.1
Total Required Motorcycle Spaces	5
Provided Motorcycle Spaces	5
VEHICLE SPACES (TPA-RESIDENTIAL) per Table 142-05C	
1 Bedroom Dwelling Units	26
2 Bedroom Dwelling Units	24
Total Required Vehicle Spaces (Residential)	0
Provided Spaces	60
Required ADA Spaces	0
Required Van ADA Spaces	1
Provided ADA Spaces	0
Provided Van ADA Spaces as Part of Total	1
Total Required Vehicle Spaces	1
Total Provided Vehicle Spaces	60

CODE ANALYSIS

JURISDICTION HAVING AUTHORITY

City of San Diego, California

GOVERNING CODES

These documents and this project shall conform with the following codes:

- 2016 California Code of Regulations Title 24 which incorporates:
- 2016 California Building Code
- 2016 California Residential Code
- 2016 California Mechanical Code
- 2016 California Plumbing Code
- 2016 California Electrical Code
- 2016 California Fire Code
- 2016 California Green Building Standards Code
- 2016 California Energy Code with
- 2016 California Energy Efficiency Standards

PLANNING ZONE (Refer to Local Zoning Map)

EXISTING RM-1-2
PROPOSED RM-4-10

OCCUPANCY CLASSIFICATION (Refer to Section 302)

R-2 Residential Apartments
S-1 Existing Parking Garages

TYPE OF CONSTRUCTION (Refer to Table 601)

VA 1 Hour Rated

ALLOWABLE HEIGHT (Refer to Table 504)

VA 70' and 4 Stories

SPRINKLERED (Refer to Section 903)

R-2 Yes

An automatic fire sprinkler system is required. Drawings prepared by symon's fire protection.

A one inch or greater water service and meter will be required to ensure adequate water demands are met in the event of a fire sprinkler activation during periods of other uses and/or demands are occurring, ie irrigation.

SPECIAL INSPECTION OR PERMIT

A Property Owner's Final Report form for work required to have special inspections, testing and structural observations must be completed by the property owner, property owner's agent of record, architect of record, or engineer of record and submitted to and this project.

Special inspections required:

DIRECTORY

OWNER/DEVELOPER
New Pointe Communities
16880 W Bernardo Dr, Suite 110
San Diego, CA 92127
858.415.8700
858.415.8701 fax

ARCHITECT
Architects BP Associates Inc.
11858 Bernardo Plaza Court, Suite 120
San Diego, CA 92128
858.592.4710
858.592.4103 fax

STRUCTURAL ENGINEER
Innovative Structural Engineering Inc
ATTN: Shane Lothrop
29870 Technology Drive, #108
Murrieta, CA 92563
Phone: 951.600.0032
Fax: 951.600.0036
Email: shane@iseengineers.com

CIVIL ENGINEER
Hunsaker & Associates San Diego, Inc.

9707 Waples Street
San Diego, CA 92121
Phone: 858.558.4500
Fax: 858.558.1414

LANDSCAPE ARCHITECT
GMP
ATTN: John Patterson
4010 Sorrento Valley Blvd., Ste. 200 Bin I
San Diego, CA 92121
Phone: 858.558.8977
Email: john@gmplandarch.com

SHEET INDEX

A000	TITLE SHEET
A010	EXISTING - PERMITTED TS & SITE PLAN
A011	EXISTING - PERMITTED FLR PLAN & ELEV

CIVIL DRAWINGS

SHEET 1	ALTA / ACSM LAND TITLE SURVEY
SHEET 2	ALTA / ACSM LAND TITLE SURVEY

ARCHITECTURAL DRAWINGS

A001	ARCHITECTURAL SITE PLAN
A002	SITE DEVELOPMENT REGULATIONS
A100	BASEMENT FLOOR PLAN
A101	GROUND FLOOR PLAN
A102	FIRST FLOOR PLAN
A103	SECOND FLOOR PLAN
A104	THIRD FLOOR PLAN
A105	FOURTH FLOOR PLAN
A106	ROOF PLAN
A201	ELEVATIONS
A202	ELEVATIONS
A301	SECTIONS
A302	SECTIONS
AC01	COLOR ELEVATIONS
AC02	COLOR ELEVATIONS
AC03	COLOR ISOMETRIC

VICINITY MAP

LEGAL DESCRIPTION

ASSESSORS PARCEL NUMBERS

313-080-18-00

ASSESSORS PARCEL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF SAN DIEGO, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

LOT 18 OF RESUBDIVISION OF CARMEL MOUNTAIN RANCH UNITS 4 AND 30, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 12516, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, DECEMBER 13, 1989.

PRINTS

DATE:	DESCRIPTION:
08.29.18	Planning Department Pre-Application

REVISIONS

DATE:	DESCRIPTION:

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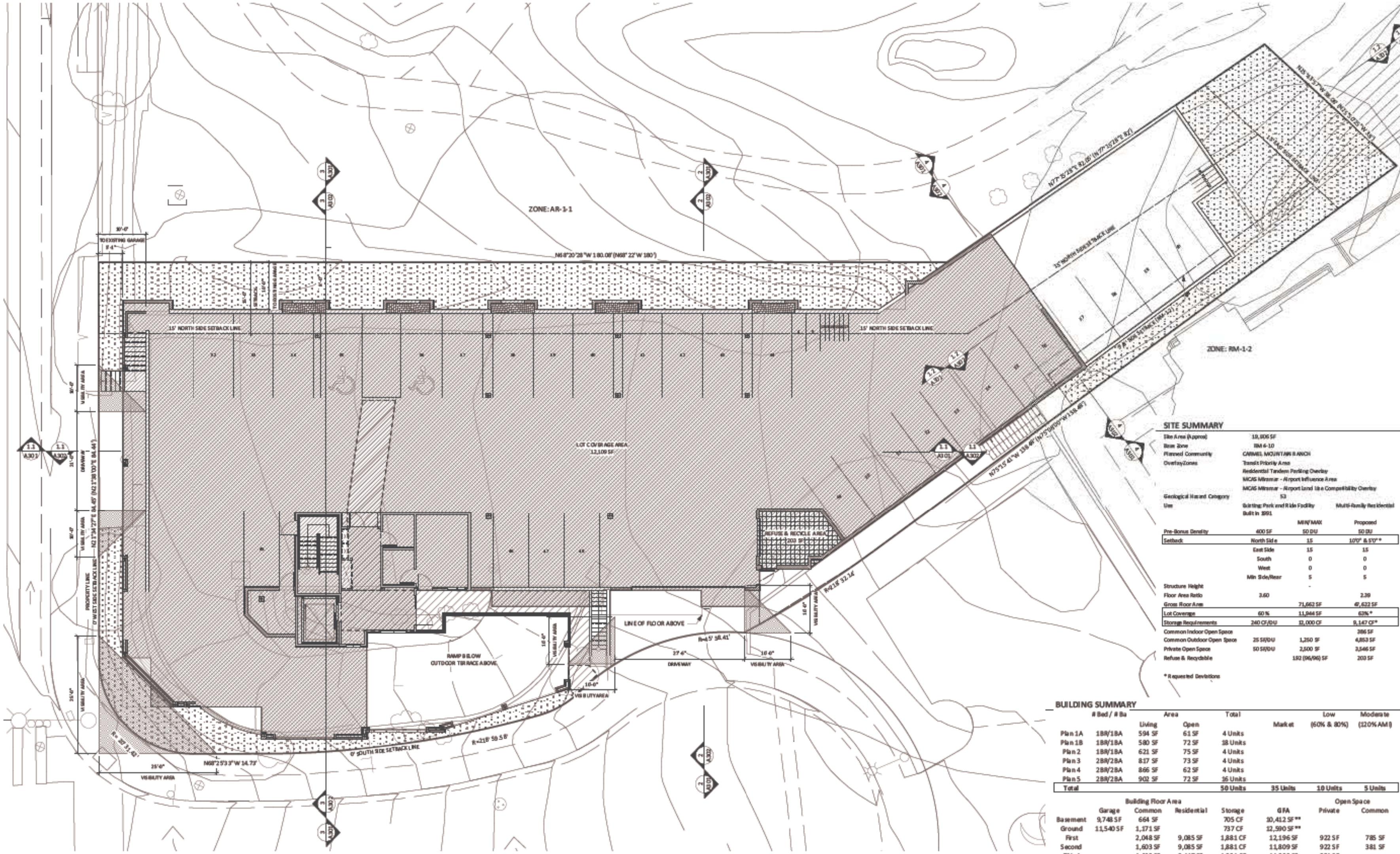
Architects BP Associates
Planning Design Architecture
11858 Bernardo Plaza Court, Suite 120
San Diego California 92128
T 858-592-4710 F 858-592-4103
www.abpainc.com

A L A N T E
10211 RANCHO CARMEL DR
SAN DIEGO
NEW POINTE COMMUNITIES

JOB NO: 188P04 DATE: 05.28.18
DRAWN BY: SS, WJ

8/29/18 Planning Pre-Application

A000



ARCHTECTURAL SITE PLAN - GROUND FLOOR

2 / AS01

Scale: 1" = 10 ft

NOTES:
VERIFY SITE PROPERTY LINES AND AS-BUILT GARAGE LOCATION

SITE SUMMARY

Site Area (Approx)	19,806 SF		
Base Zone	RM 4-10		
Planned Community	CARMEL MOUNTAIN RANCH		
Overlay Zones	Transit Priority Area		
	Residential Tandem Parking Overlay		
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	MCAS Miramar - Airport Land Use Compatibility Overlay		
Geological Hazard Category	53		
Use	Existing: Park and Ride Facility Built in 1991		Multi-Family Residential
		MIN/MAX	Proposed
Pre-Bonus Density	400 SF	50 DU	50 DU
Setback	North Side	15	10'0" & 5'0" *
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	South	0	0
	West	0	0
	Min Side/Rear	5	5
Structure Height		-	
Floor Area Ratio	3.60		2.39
Gross Floor Area		71,662 SF	47,622 SF
Lot Coverage	60 %	11,944 SF	63% *
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Common Indoor Open Space			386 SF
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Refuse & Recyclable		192 (96/96) SF	203 SF

* Requested Deviations

BUILDING SUMMARY

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Plan 4	2BR/2BA	866 SF	62 SF	4 Units			
Plan 5	2BR/2BA	902 SF	72 SF	16 Units			
Total				50 Units	35 Units	10 Units	5 Units

	Building Floor Area					Open Space	
	Garage	Common	Residential	Storage	GFA	Private	Common
Basement	9,748 SF	664 SF		705 CF	10,412 SF**		
Ground	11,540 SF	1,171 SF		737 CF	12,590 SF**		
First		2,048 SF	9,085 SF	1,881 CF	12,196 SF	922 SF	785 SF
Second		1,603 SF	9,085 SF	1,881 CF	11,809 SF	922 SF	381 SF
Third		1,603 SF	9,147 SF	1,881 CF	11,809 SF	851 SF	
Fourth		1,603 SF	9,147 SF	1,881 CF	11,809 SF	851 SF	
Total	11,540 SF	8,691 SF	36,464 SF	8,967 CF	47,622 SF	3,546 SF	1,166 SF
				1,296 CF	** Not Included in Total GFA		
Total Building Floor Area					70,624 SF		

SITE LEGEND

- LOT COVERAGE AREA
- SETBACK
- ACCESSIBLE ROUTE
- COMMON OPEN SPACE
- PRIVATE OPEN SPACE
- REFUSE & RECYCLE STORAGE
- STORAGE FOR DWELLING UNIT
- VISIBILITY AREA

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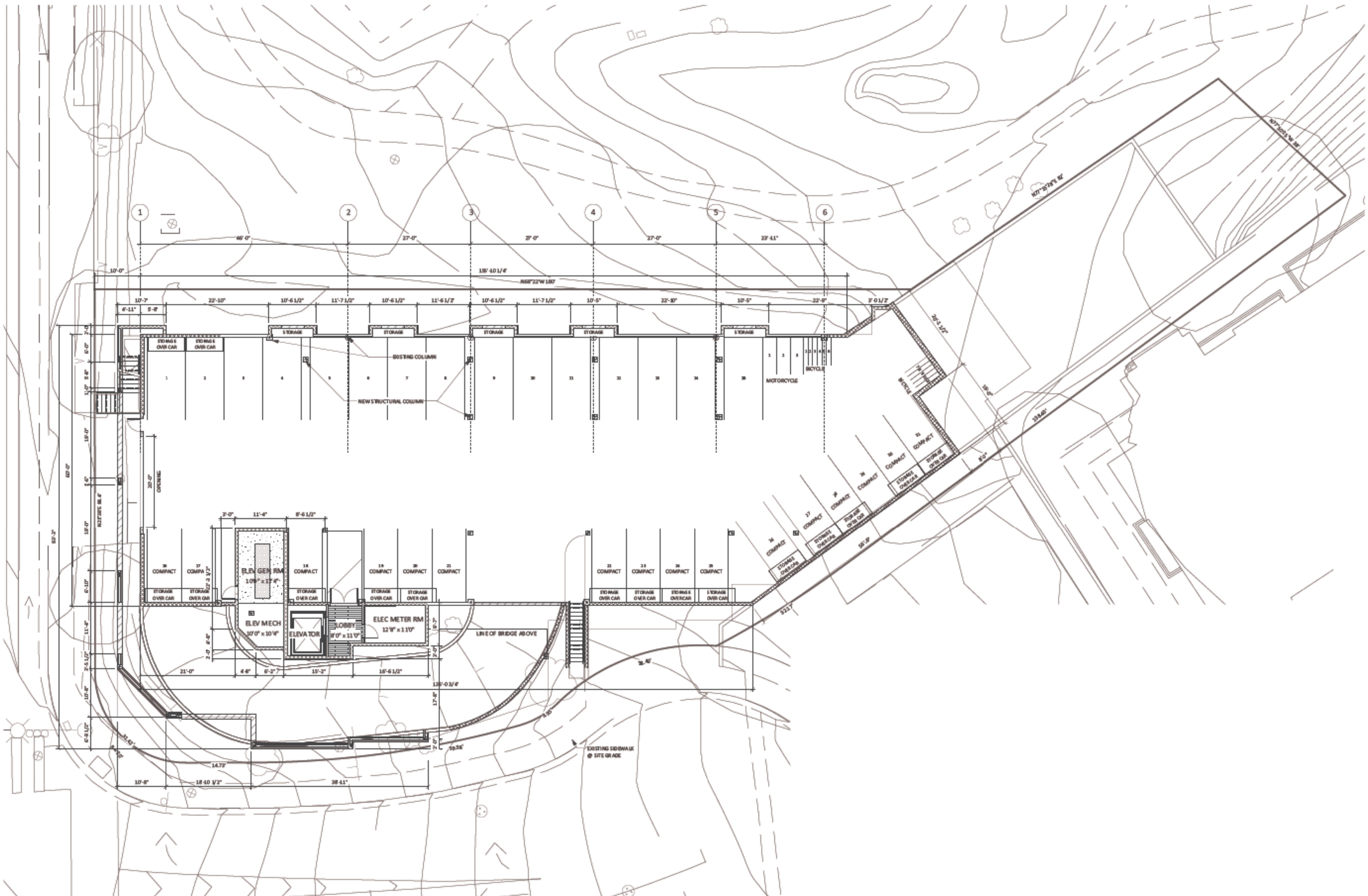
AS01



1
A100
PROPOSED BASEMENT FLOOR PLAN
Scale: 1" = 10ft

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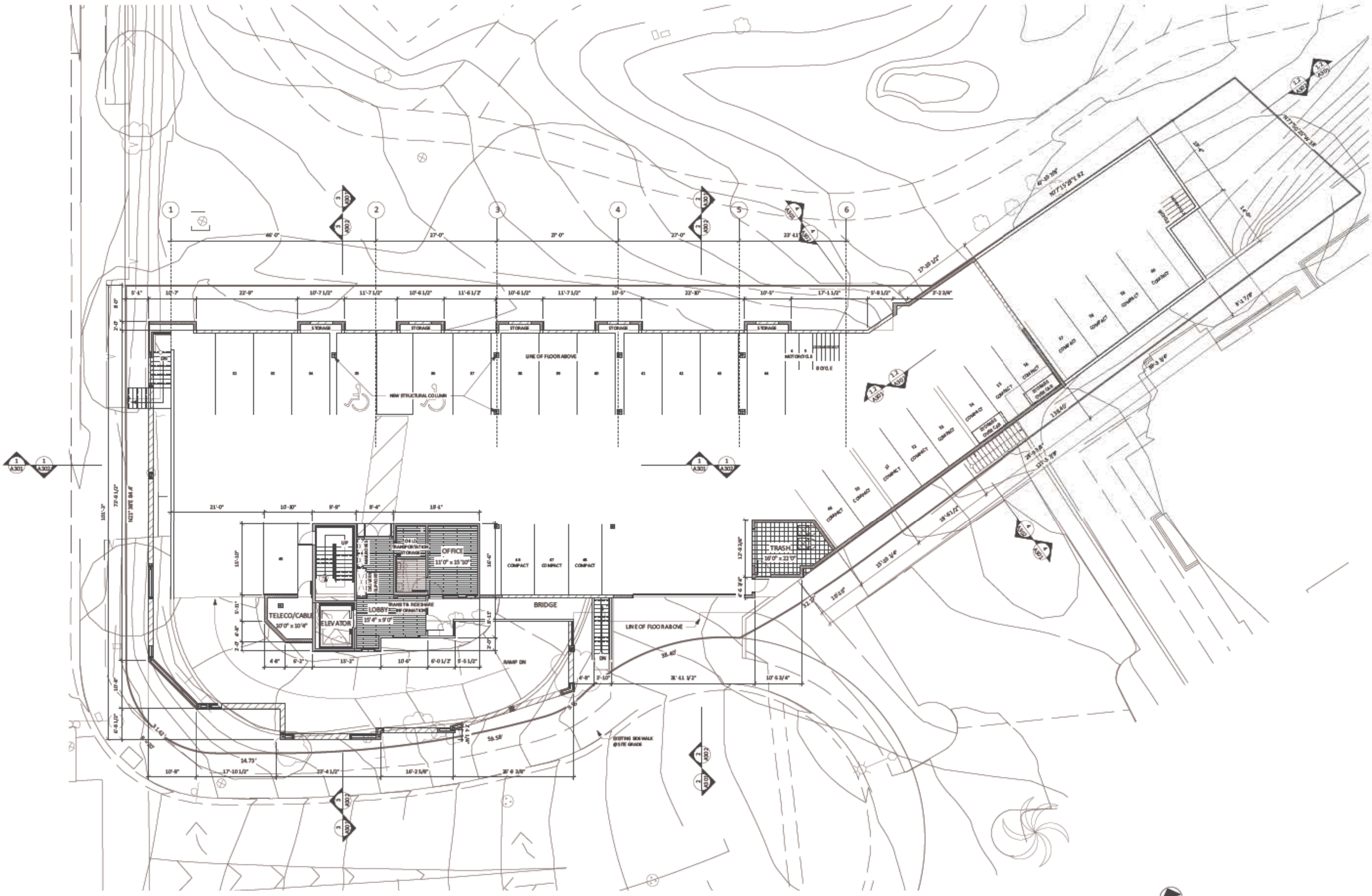
A100



1
A101

PROPOSED GROUND FLOOR PLAN

Scale: 1" = 10ft

0 10 20 30 FT

SCALE: 1" = 10'-0"

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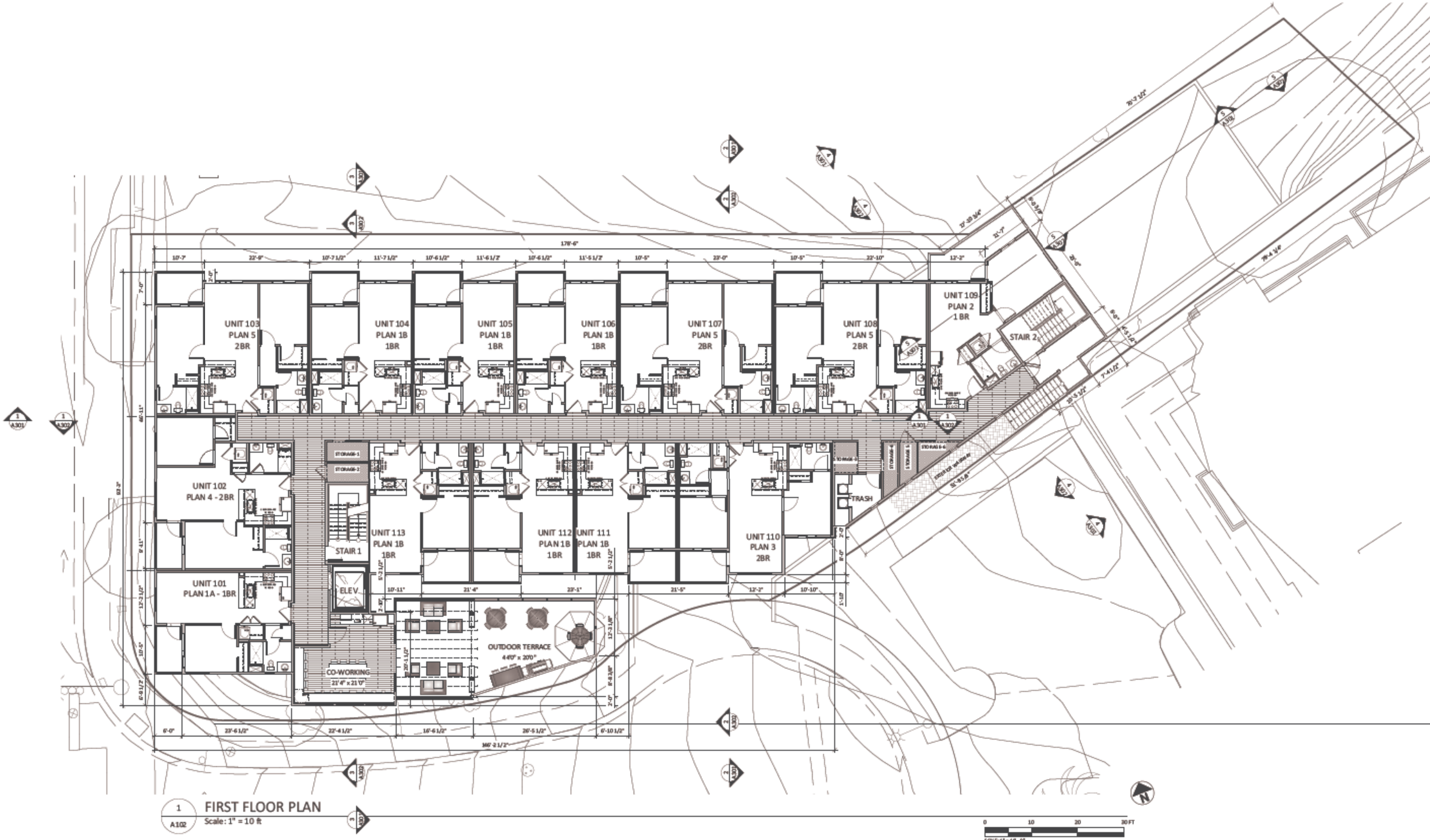
A101



1 FIRST FLOOR PLAN
A102 Scale: 1" = 10 ft

0 10 20 30 FT

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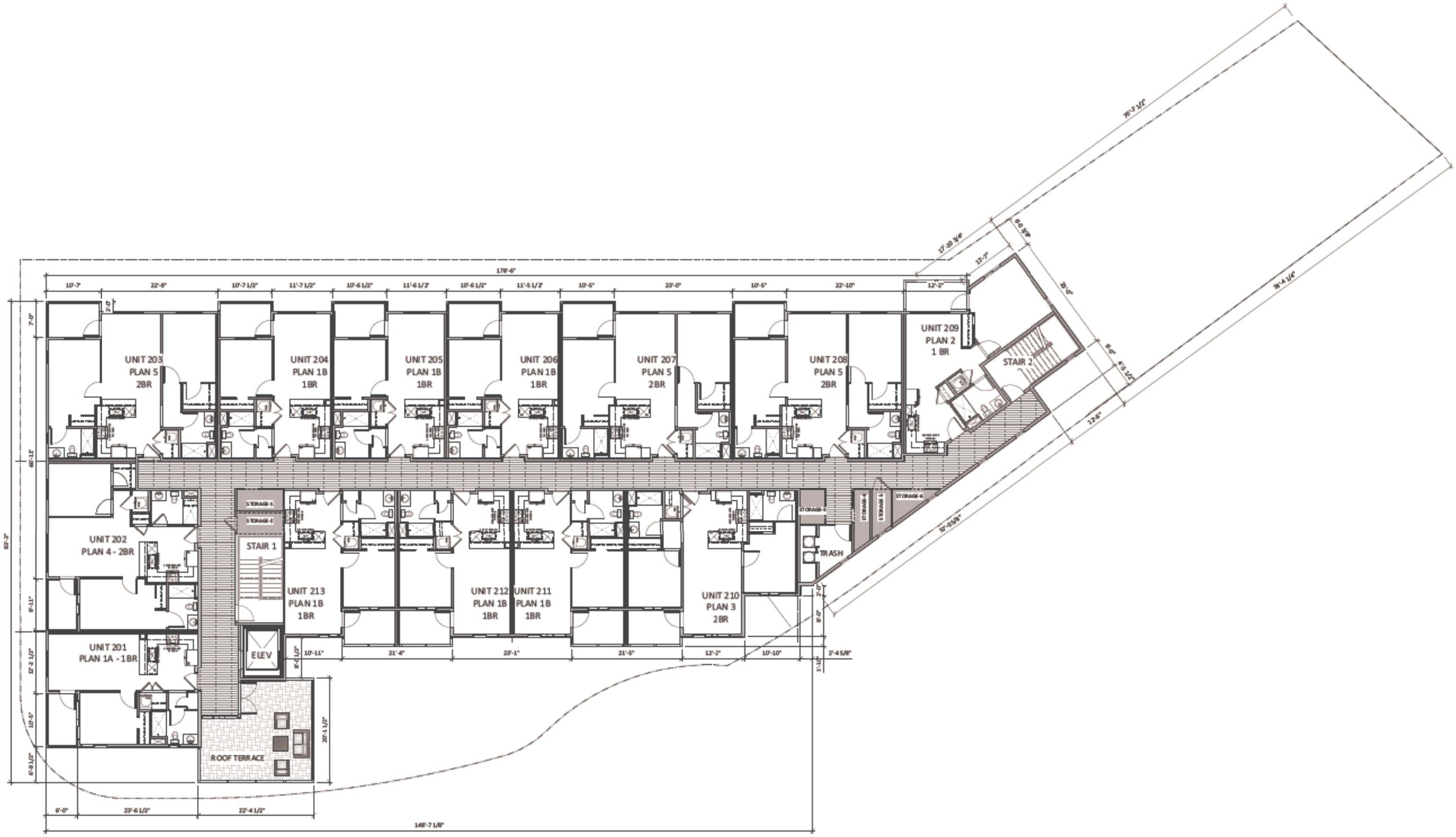
A102



1 A103 SECOND FLOOR PLAN
Scale: 1" = 10 ft

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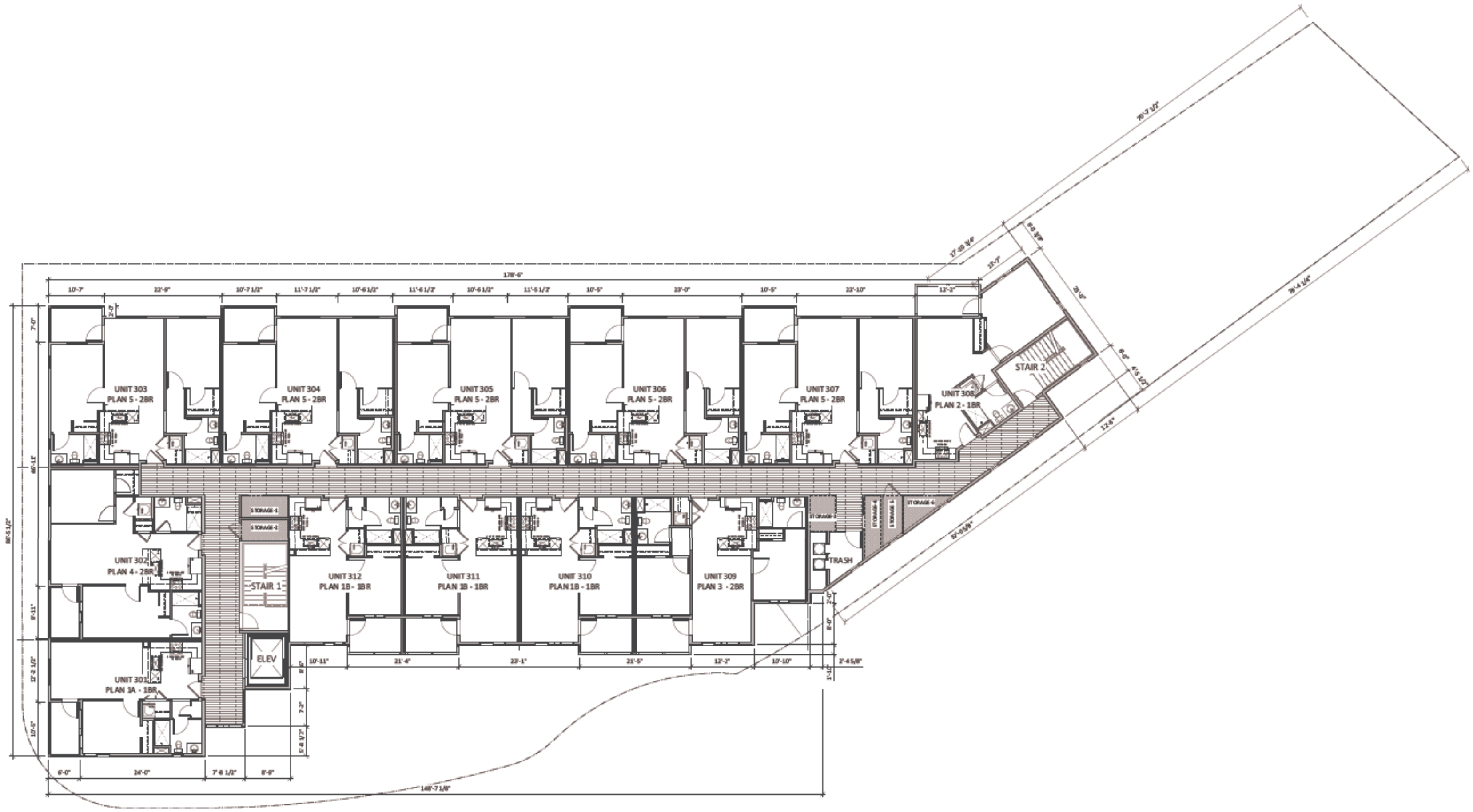
A103



1
A104

THIRD FLOOR PLAN
Scale: 1" = 10 ft

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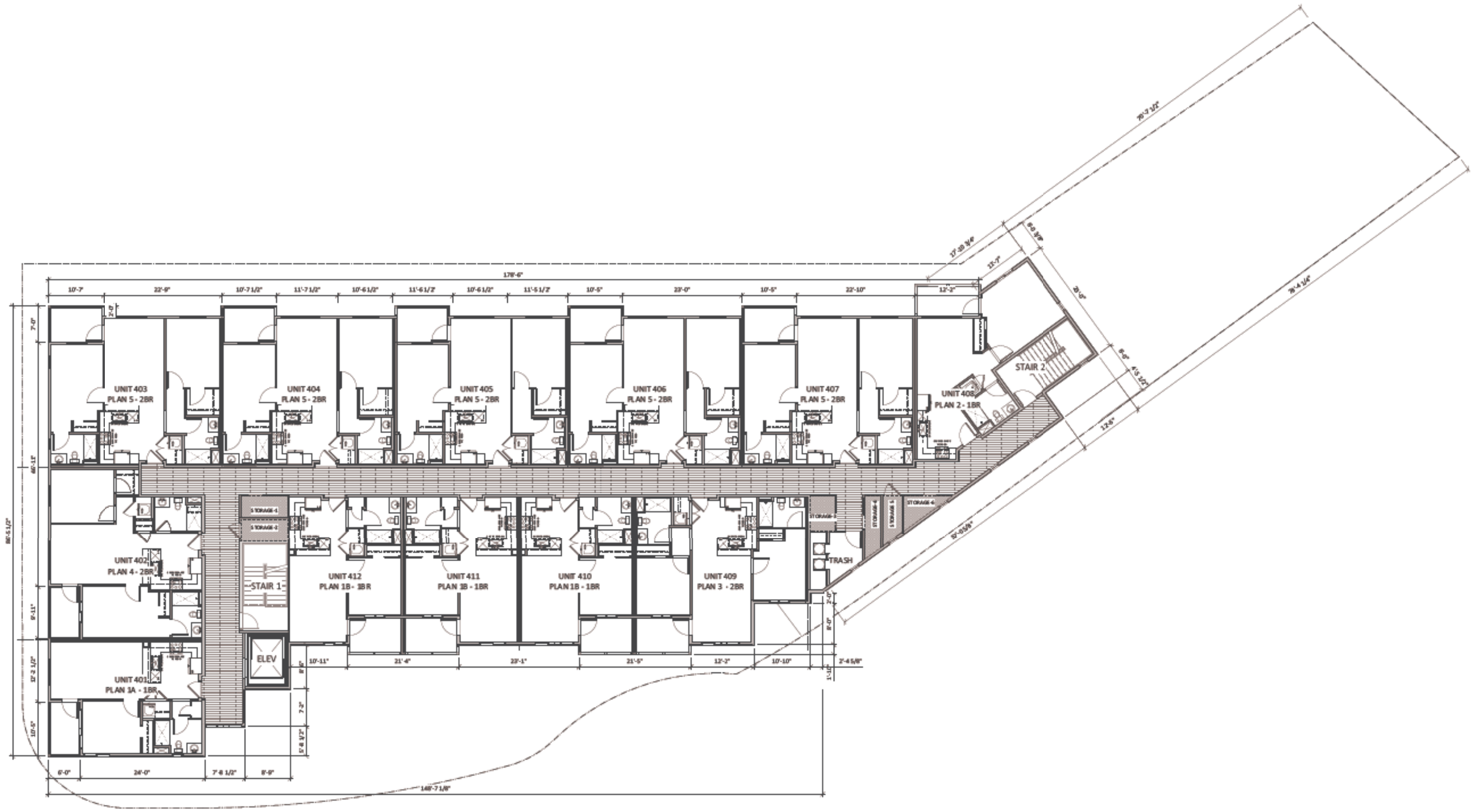
A104



1
A105

FOURTH FLOOR PLAN

Scale: 1" = 10 ft

0 10 20 30 FT
SCALE: 1" = 10' - 0"

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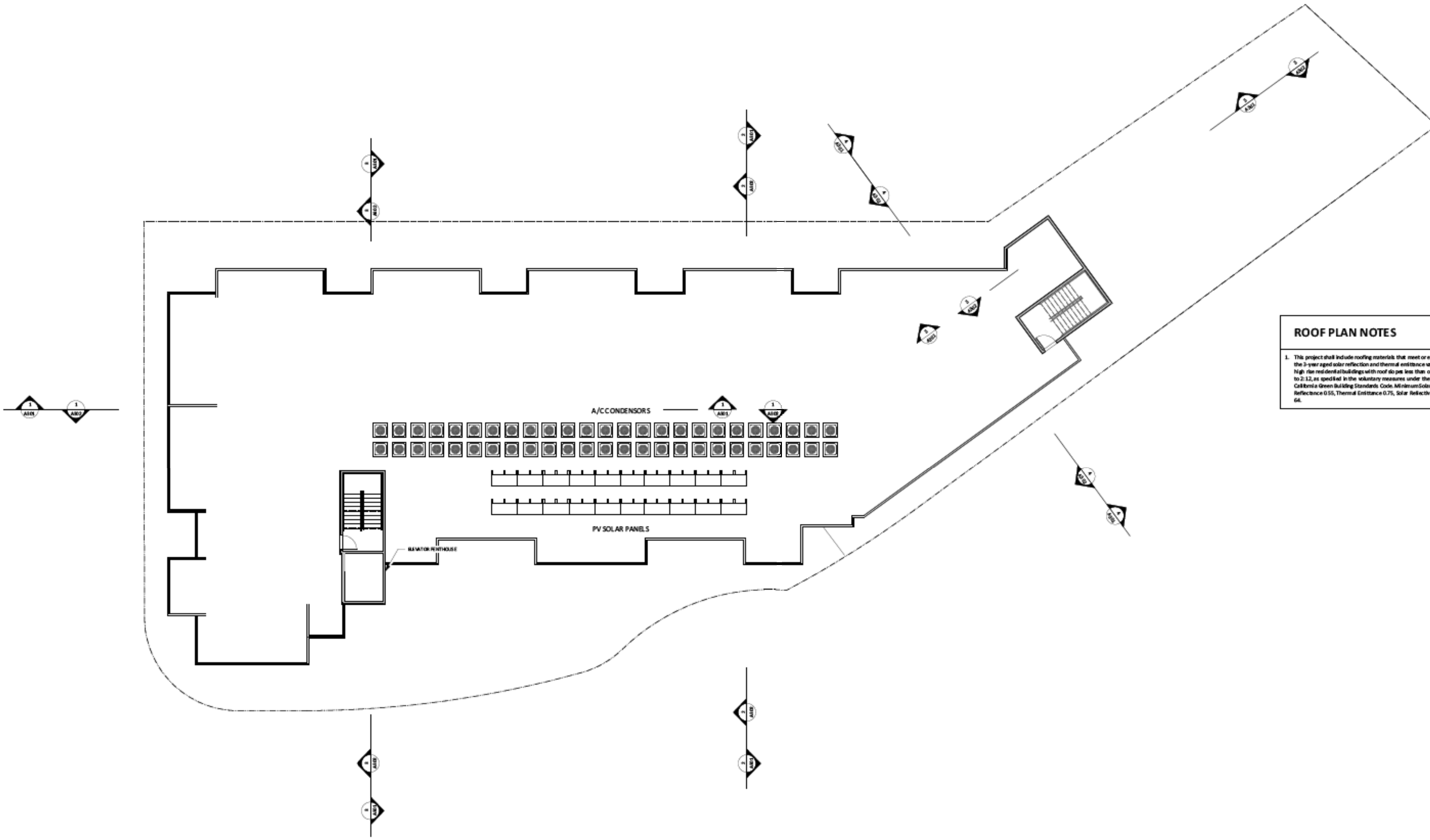
A105



1 A106 ROOF PLAN
Scale: 1" = 10 ft

ROOF PLAN NOTES

1. This project shall include roofing materials that meet or exceed the 3-year aged solar reflection and thermal emittance values for high rise residential buildings with roof slopes less than or equal to 2:12, as specified in the voluntary measures under the California Green Building Standards Code. Minimum Solar Reflectance 0.55, Thermal Emittance 0.75, Solar Reflective Index 64.

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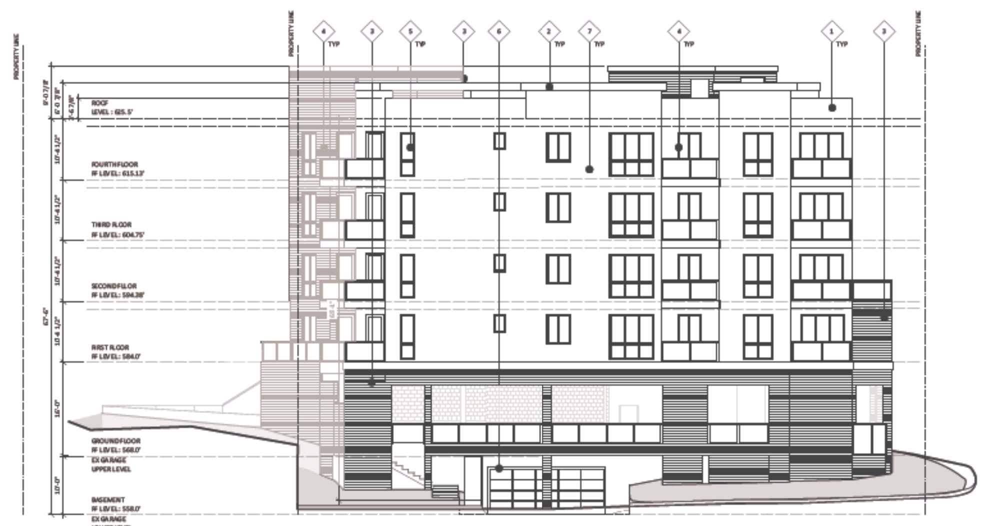
A106

1 A201 SOUTH ELEVATION
Scale: 1" = 10 ft

0 10 20 30 FT
SCALE: 1" = 10'-0"

EXTERIOR ELEVATION MATERIALS

	MATERIAL	MANUFACTURER
1	PAINTED STUCCO	OMEGA (PAINT: SHERWIN WILLIAMS)
2	PAINTED FRAMED STUCCO TRIM	OMEGA (PAINT: SHERWIN WILLIAMS)
3	HORIZONTAL CEMENT-BOARD SIDING	JAMES HARDIE (PAINT: SHERWIN WILLIAMS)
4	VINYL WINDOWS	PER CLIENT
5	PAINTED METAL DOORS	THERMA-TRU (PAINT: SHERWIN WILLIAMS)
6	GLAZED OVERHEAD DOORS	PER CLIENT
7	GLAZED METAL RAILING	PER CLIENT



2 A201 WEST ELEVATION
Scale: 1" = 10 ft

0 10 20 30 FT
SCALE: 1" = 10'-0"

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NEW POINTE COMMUNITIES

JOB NO: 188/04 DATE: 05.28.19
DRAWN BY: SS, WJ

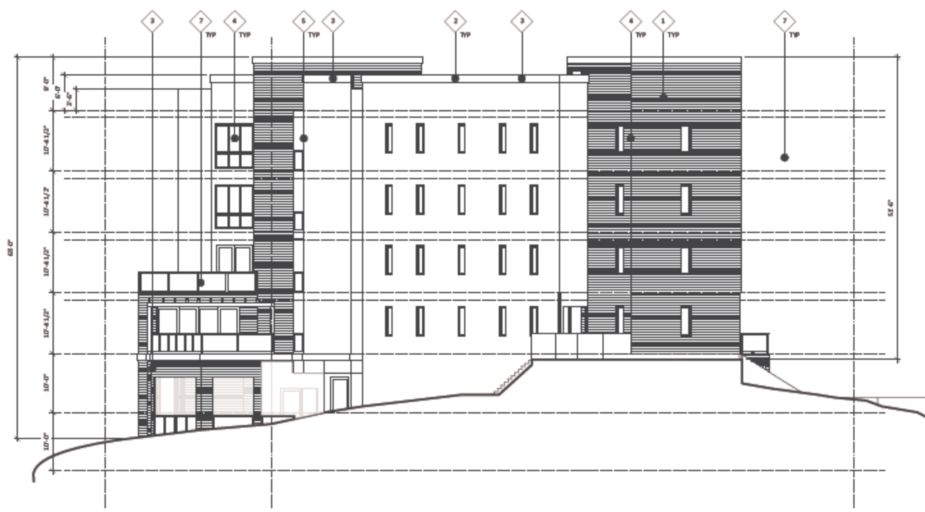
A201

1 A202 NORTH ELEVATION
Scale: 1" = 10 ft

0 10 20 30 FT
SCALE: 1" = 10' - 0"

EXTERIOR ELEVATION MATERIALS

	MATERIAL	MANUFACTURER
1	PAINTED STUCCO	OMEGA (PAINT: SHERWIN WILLIAMS)
2	PAINTED FRAMED STUCCO TRIM	OMEGA (PAINT: SHERWIN WILLIAMS)
3	HORIZONTAL CEMENT-BOARD SIDING	JAMES HARDIE (PAINT: SHERWIN WILLIAMS)
4	VINYL WINDOWS	PER CLIENT
5	PAINTED METAL DOORS	THERMA-TRU (PAINT: SHERWIN WILLIAMS)
6	GLAZED OVERHEAD DOORS	PER CLIENT
7	GLAZED METAL RAILING	PER CLIENT



2 A202 EAST ELEVATION
Scale: 1" = 10 ft

0 10 20 30 FT
SCALE: 1" = 10' - 0"

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NEW POINTE COMMUNITIES

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A202

APPENDIX B

Applicable Noise Regulations

Noise Element

NE-A.2. Assure the appropriateness of proposed developments relative to existing and future noise levels by consulting the guidelines for noise-compatible land use (shown on Table NE-3) to minimize the effects on noise-sensitive land uses.

NE-A.3. Limit future residential and other noise-sensitive land uses in areas exposed to high levels of noise.

NE-A.4. Require an acoustical study consistent with Acoustical Study Guidelines (Table NE-4) for proposed developments in areas where the existing or future noise level exceeds or would exceed the "compatible" noise level thresholds as indicated on the Land Use - Noise Compatibility Guidelines (Table NE-3), so that noise mitigation measures can be included in the project design to meet the noise guidelines.

NE-A.5. Prepare noise studies to address existing and future noise levels from noise sources that are specific to a community when updating community plans.

TABLE NE-3 Land Use - Noise Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	60	65	70	75	
Parks and Recreational					
Parks, Active and Passive Recreation					
Outdoor Spectator Sports, Golf Courses; Water Recreational Facilities; Indoor Recreation Facilities					
Agricultural					
Crop Raising & Farming; Community Gardens, Aquaculture, Dairies; Horticulture Nurseries & Greenhouses; Animal Raising, Maintain & Keeping; Commercial Stables					
Residential					
Single Dwelling Units; Mobile Homes		45			
Multiple Dwelling Units **For uses affected by aircraft noise, refer to Policies NE-D.2. & NE-D.3.*		45	45*		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12Educational Facilities; Libraries; Museums; Child Care Facilities		45			
Other Educational Facilities including Vocational/Trade Schools and Colleges and Universities		45	45		
Cemeteries					
Retail Sales					
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories			50	50	

Land Use Category	Exterior Noise Exposure (dBA CNEL)				
	60	65	70	75	
Commercial Services					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Maintenance & Repair; Personal Services; Assembly & Entertainment (includes public and religious assembly); Radio & Television Studios; Golf Course Support			50	50	
Visitor Accommodations		45	45	45	
Offices					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	50	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
Industrial					
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries					
Research & Development				50	

	Compatible	**Indoor Uses**	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. Refer to Section I.
		Outdoor Uses	Activities associated with the land use may be carried out.
45, 50	**Conditionally Compatible**	**Indoor Uses**	Building structure must attenuate exterior noise to the indoor noise level indicated by the number (45 or 50) for occupied areas. Refer to Section I.
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated t make the outdoor activities acceptable. Refer to Section I.
	Incompatible	**Indoor Uses**	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

TABLE NE-4 Acoustical Study Guidelines

An acoustical study should include, but is not limited to the following analysis:
Provide noise level measurements to describe existing local conditions and the predominant noise sources.
Measure existing single event noise levels (SENEL, SEL, or Time Above) within airport influence areas.
Estimate existing and projected noise levels (CNEL) and compare them to levels on Table NE-3. For parks, may consider motor vehicle traffic noise measurements during the one-hour period where the worst-case traffic noise levels are expected to occur from dawn to dusk at a park.
Recommend appropriate mitigation measures to achieve acceptable noise levels on Table NE-3.
Estimate noise exposure levels with recommended mitigation measures.
Describe a post-project assessment to evaluate the effectiveness of the proposed mitigation measures.

B. Motor Vehicle Traffic Noise

Goal

- Minimal excessive motor vehicle traffic noise on residential and other noise-sensitive land uses.

Discussion

Motor vehicle traffic noise is a major contributor of noise within the City. Excessive noise levels along arterial roads, interstate freeways, and state highways affect much of the urban environment. Traffic noise level is dependent upon traffic volume, speed, flow, vehicle mix, pavement type and condition, the use of barriers, as well as distance to the receptor.

Local roadway design features and traffic management and calming techniques can minimize noise from traffic speed and frequent vehicle acceleration and deceleration, and innovative roadway paving material can further reduce traffic noise. Vehicles equipped with a properly functioning muffler system help to limit excessive exhaust noise. Future use of hybrid transit buses could help to reduce noise along mixed-use transit corridors.

At higher speeds, typically on freeways, highways and primary arterials, the noise from tire/pavement interaction can be greater than from vehicle exhaust and engine noise. The use of lower noise paving surfaces can reduce tire/pavement interaction noise. For noise-sensitive land uses adjacent to freeways and highways, these uses should be buffered from excessive noise levels by intervening, less sensitive, industrial-commercial uses or shielded by sound walls or landscaped berms. The City can, however, influence daily traffic volumes and reduce peak-hour

Article 9.5: Noise Abatement and Control

Division 4: Limits

("Noise Level Limits, Standards and Control"
added 9–18–1973 by O–11122 N.S.)
(Retitled to "Limits" on 9–22–1976 by O–11916 N.S.)

§59.5.0401 Sound Level Limits

(a) It shall be unlawful for any person to cause noise by any means to the extent that the one–hour average sound level exceeds the applicable limit given in the following table, at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person.

TABLE OF APPLICABLE LIMITS

Land Use	Time of Day	One-Hour Average Sound Level (decibels)
1. Single Family Residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45 40
2. Multi-Family Residential (Up to a maximum density of 1/2000)	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50 45
3. All other Residential	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55 50
4. Commercial	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m.	65 60 60
5. Industrial or Agricultural	any time	75

(b) The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts. Permissible construction noise level limits shall be governed by Sections 59.5.0404 of this article.

(c) Fixed–location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of Part A. of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

(d) This section does not apply to firework displays authorized by permit from the Fire Department.

(e) This section does not apply to noise generated by helicopters at heliports or helistops authorized by a conditional use permit, nor to any roller coaster operated on City–owned parkland.

(Amended 9–11–1989 by O–17337 N.S.)
(Amended 11-28-2005 by O-19446 N.S.; effective 2-9-2006.)

§59.5.0402 Motor Vehicles

(a) Off–Highway

(1) Except as otherwise provided for in this article, it shall be unlawful to operate any motor vehicle of any type on any site, other than on a public street or highway as defined in the California Vehicle Code, in any manner so as to cause noise in excess of those noise levels permitted for on– highway motor vehicles as specified in the table for "45 mile– per–hour or less speed limits" contained in Section 23130 of the California Vehicle Code, and as corrected for distances set forth in subsection A.2. below.

(2) Corrections

The maximum noise level as the off–highway vehicle passes may be measured at a distance of other than fifty (50) feet from the center line of travel, provided the measurement is further adjusted by adding algebraically the applicable correction as follows:

Distance (Feet)	Correction (decibels)
25	-6
28	-5
32	-4
35	-3
40	-2
45	-1
50 (preferred distance)	0
56	+1
63	+2
70	+3
80	+4
90	+5
100	+6

(3) A measured noise level thus corrected shall be deemed in violation of this section if it exceeds the applicable noise–level limit as specified above.

(b) Nothing in this section shall apply to authorized emergency vehicles when being used in emergency situations, including the blowing of sirens and/or horns.

("Motor Vehicles" renumbered from Sec. 59.5.0403 on 9–22–1976 by O–11916 N.S.)

§59.5.0403 Watercraft

Violations for excessive noise of watercraft operating in waters under the jurisdiction of The City of San Diego shall be prosecuted under applicable provisions of the California Harbors and Navigation Code. Permits issued by The City of San Diego for the operation of watercraft not in compliance with noise criteria of the Harbors and Navigation Code shall be reviewed and approved by the Administrator prior to issuance.

("Watercraft" renumbered from Sec. 59.5.0407 and amended 9–22–1976 by O–11916 N.S.)

§59.5.0404 Construction Noise

(a) It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest.

(b) Except as provided in subsection C. hereof, it shall be unlawful for any person, including The City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12–hour period from 7:00 a.m. to 7:00 p.m.

(c) The provisions of subsection B. of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work.

(Amended 1–3–1984 by O–16100 N.S.)

§59.5.0406 Refuse Vehicles and Parking Lot Sweepers

No person shall operate or permit to be operated a refuse compacting, processing, or collection vehicle between the hours of 7:00 p.m. to 6:00 a.m. or a parking lot sweeper between the hours of 7:00 p.m. to 7:00 a.m. in any residential area unless a permit has been applied for and granted by the Administrator.

("Refuse Vehicles" added 9–18–1973 by O–11122 N.S.; amended 9–22–1976 by O–11916 N.S.)

(Amended 6-9-2010 by O-19960 N.S.; effective 7-9-2010.)

4. **Is the site currently being mined?**
   If an economically feasible mineral extraction operation is the site's current use, and the site is not exhausted, a different use of the site would likely result in a significant impact on the availability of a locally important mineral recovery site.

K. NOISE

Noise is defined as unwanted or objectionable sound. Noise levels compatible with a person's life, health and enjoyment of property are regulated by Local, State, and Federal regulations, including the City of San Diego Progress Guide and General Plan, City Noise Abatement and Control Ordinance, California Noise Insulation Standards (Title 24), the State Public Utilities Code regulating airports, and other regulations. A direct and/or indirect noise impact should be evaluated in relation to applicable City standards, particularly, the City of San Diego Progress Guide and General Plan (Transportation Element). The following significance thresholds are in accordance with the City's Progress Guide and General Plan (Transportation Element) Land Use Compatibility with Annual Community Noise Equivalent Levels (CNEL).

Measurement of sound involves three variables, (1) magnitude; (2) frequency; and (3) duration. Noise levels in the City of San Diego are expressed and compared as dB (A) CNEL.

Definitions

The following definitions shall have the same meaning as defined in the Section 59.5.0102 of the City of San Diego Municipal Code:

A-Weighting
As in decibel A-weighting (dB [A]). Represents the frequency characteristics of the average human ear for various sound intensities. An A-Weight sound filters out lower frequencies, and provides a good indicator of the annoyance potential of a noise.

Average Sound Level
A sound level typical of the sound levels at a certain place during a given period of time, averaged by the general rule of combination for sound levels, said general rule being set forth in American National Standard Specifications for Sound Level Meters 1.4-1971. Average sound level is also called equivalent continuous sound level. (L_{eq})

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

CNEL recognizes that noise annoyance is related to duration, how often the noise is present, how long it persists, and when it occurs.

Decibel (dB)

A unit measure of sound (noise) level.

Just as feet is used to measure distances, decibels are used to measure sound (noise) levels. The decibel is defined as 10 times the common logarithm of the ratio of two amounts of sound power.

The human ear can hear sounds from less than 10 dB to over 100 dB (sounds which are 100,000 times greater that the faintest sounds). Table K-1 shows the approximate relationship between sound level changes and peoples judgment of the relative loudness of the change.

Table K-1
RELATIVE LOUDNESS

Sound Level Change	Acoustic Energy Change	Relative Loudness
0 dB	0	Reference Point
3 dB	50 %	Perceptible Change
10 dB	90 %	Twice as Loud
20 dB	99 %	Four Times as Loud
30 dB	99.9 %	Eight Times as Loud
40 dB	99.99 %	Sixteen Times as Loud

Source: Miller 1989 pg. 1-6

Noise Level
The same as sound level. The terms may be used interchangeably.

Sound Level
In decibels, that quantity measured with a sound level meter as defined herein, by use of the "A" frequency weighting and "fast" time averaging unless some other time averaging is specified.

Sound Level Meter
An instrument for the measurement of sound, including a microphone, an amplifier, an attenuator, networks at least for standardized frequency weighting A, and an indicating instrument having at least the standardized dynamic characteristic "fast," as specified in American National Standard Specification for Sound Level Meters S1. 4-1971 or its successor.

INITIAL STUDY CHECKLIST QUESTIONS

The following questions are from the City's Initial Study Checklist and are used to provide guidance to determine potential significant impacts related to Noise:

Would the project:

1. Result or create a significant increase in the existing ambient noise levels?

2. Exposure of people to noise levels which exceed the City's adopted noise ordinance or are incompatible with Table K-4?

3. Exposure of people to current or future transportation noise levels which exceed standards established in the Transportation Element of the General Plan or an adopted airport Comprehensive Land Use Plan?

4. Result in land uses which are not compatible with aircraft noise levels as defined by an adopted airport Comprehensive Land Use Plan (CLUP)?

SIGNIFICANCE THRESHOLDS

1. Interior and Exterior Noise Impacts from Traffic Generated Noise (Table K-2 below provides the general thresholds of significance for uses affected by traffic noise.)

Table K-2
TRAFFIC NOISE SIGNIFICANCE THRESHOLDS
(db(A) CNEL)

Structure or Proposed Use that would be impacted by Traffic Noise	Interior Space	Exterior Useable Space [22]	General Indication of Potential Significance
Single-family detached	45 dB	65 Db	Structure or outdoor useable area[23] is < 50 feet from the center of the closest (outside) lane on a street with existing or future ADTs > 7500 [24]
Multi-family, schools, libraries, hospitals, day care, hotels, motels, parks, convalescent homes.	- Development Services Department (DSD) ensures 45 dB pursuant to Title 24	65 dB	
Offices, Churches, Business, Professional Uses	n/a	70 dB	Structure or outdoor usable area is < 50 feet from the center of the closest lane on a street with existing or future ADTs > 20,000
Commercial, Retail, Industrial, Outdoor Spectator Sports Uses	n/a	75 dB	Structure or outdoor usable area is < 50 feet from the center of the closest lane on a street with existing or future ADTs > 40,000

Source: 1) City of San Diego Acoustical Report Guidelines (December 2003) and 2) City of San Diego Progress Guide and General Plan (Transportation Element)

[22] If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.

[23] Exterior usable areas do not include residential front yards or balconies, unless the areas such as balconies are part of the required usable open space calculation for multi-family units.

[24] Traffic counts are available from:
- San Diego Regional Association of Governments (SANDAG) Regional Economic Development Information
- System (**REDI**): http://cart.sandag.cog.ca.us/REDI/
- **SANDAG Traffic Forecast Information Center**: http://pele.sandag.org/trfic.html

2. HUD-Funded projects and Noise

If a project is receiving U.S. Department of Housing and Urban Development (HUD) funding, noise analysis and mitigation must be in accordance with the HUD Noise Guidebook[25] Minimum attenuation requirements are prescribed in Title 24 of the Code of Federal Regulations[26] (24 CFR 51.104(a)) which are the HUD Environmental Criteria and Standards.

3. Airport Noise Impacts

If the project is proposed within the Airport Environs Overlay Zone (AEOZ) as defined in Chapter 13, Article 2, Division 3 of the San Diego Municipal Code, the potential exterior noise impacts from aircraft noise would not constitute a significant environmental impact.

However, interior noise impacts will be regulated by the requirement for residential development within the AEOZ to reduce interior noise levels attributable to airport noise to 45 dB Community Noise Equivalent Level (CNEL). Interior noise levels for new construction of multi-family units are addressed by the Building Development Review Division (BDR) of the City's Development Services Department (DSD) and do not need to be mitigated through conditions in the environment report, but the BDR requirements should be noted. BDR requires additional insulation and upgraded building materials so that interior noise levels do \not exceed 45 dB(A) CNEL. The requirements for an acoustical testing are defined in the City of San Diego Municipal Code, Chapter 13, Article 2, Division 3, §132.0308, "Acoustical Testing of Interior Noise Levels."

Requirements for noise studies are found in the Municipal Code at Chapter 13, Article 2, Division 3, §132.0308. This section of the municipal code applies to "development" as defined at, § 113.0103 to include "constructing, reconstructing, converting, establishing, altering, maintaining, relocating, demolishing, using, or enlarging any building, structure, improvement, lot, or premises."

Remodels and additions to single-family and multi-family residences subject to airport noise levels above 65 dB (A) CNEL ordinarily would not be considered a significant issue and a noise study would not be required for the purposes of CEQA analysis. However, new construction of hospitals, schools, day care centers, or other sensitive uses subject to airport noise levels in excess of 65 dB(A) CNEL would be considered a significant issue and a noise study would be required that could recommend measures to mitigate potential noise impacts to a level below significance. Table K-3 below addresses the general impacts from airport noise thresholds.

[25] http://www.hud.gov/offices/cpd/energyenviron/environment/resources/guidebooks/noise/index.cfm

[26] http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1

Table K-3
IMPACTS FROM AIRPORT NOISE

Structure or Proposed Use that would be impacted by Airport Noise	Regulation
Structure within an AEOZ	Exterior noise is one factor in determining land use compatibility. See Table K-4 and the applicable Comprehensive Land Use Plan (CLUP).
New Single Family and Multi-family	Building Development Review Division (BDR) of Development Services Department (DSD) ensures 45 dB interior noise levels. Discuss Airport noise impact & BDR requirements (insulation and upgraded building materials to ensure 45 dB(A) CNEL) in environmental document See also **§ 132.0309 Requirement for Avigation Easement**
Remodels and additions to existing single and multi-family	Noise study & mitigation **not required** for airport noise > 65 dB(A) CNEL. See also **§ 132.0309 Requirement for Avigation Easement**. For development within the 60 dB CNEL contour of Lindbergh Field the applicant must demonstrate that indoor noise levels that are attributable to airport operations shall not exceed 45 dB. Refer to § 132.0306 of the Municipal Code.
New construction of hospitals, schools, day care centers or other sensitive uses	Noise study and mitigation **required** for airport noise > 65 dB(A) CNEL. See also § **132.0309 Requirement for Avigation Easement.**

4. Noise from Adjacent Stationary Uses (Noise Generators)

A project which would generate noise levels at the property line which exceed the City's Noise Ordinance Standards is considered potentially significant (such as potentially a carwash or projects operating generators or noisy equipment).

If a non-residential use, such as a commercial, industrial or school use, is proposed to abut an existing residential use, the decibel level at the property line should be the arithmetic mean of the decibel levels allowed for each use as set forth in Section 59.5.0401 of the Municipal Code. Although the noise level above could be consistent with the City's Noise Ordinance Standards, a noise level above 65 dB (A) CNEL at the residential property line could be considered a significant environmental impact.

1. Impacts to Sensitive Wildlife

Noise mitigation may be required for significant noise impacts to certain avian species during their breeding season, depending upon the location of the project such as in or adjacent to an MHPA, whether or not the project is occupied by the California gnatcatcher, least Bell's vireo, southern willow flycatcher, least tern, cactus wren, tricolored blackbird or western snowy plover, and whether or not noise levels from the project, including construction during the breeding season of these species would exceed 60dB(A) or existing ambient noise level if above 60dB(A). In addition, please note that significant noise impacts to the California gnatcatcher are only analyzed if the project is within an MHPA; there are no restrictions for the gnatcatcher outside the MHPA any time of year. Please see Biological Resources Section, Step 2, Note (f).

6. Temporary Construction Noise

Temporary construction noise which exceeds 75 dB (A) L_{eq} at a sensitive receptor would be considered significant. Construction noise levels measured at or beyond the property lines of any property zoned residential shall not exceed an average sound level greater than 75-decibles (dB) during the 12-hour period from 7:00 a.m. to 7:00 p.m. In addition, construction activity is prohibited between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, that would create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator, in conformance with San Diego Municipal Code Section 59.5.0404.

Additionally, where temporary construction noise would substantially interfere with normal business communication, or affect sensitive receptors, such as day care facilities, a significant noise impact may be identified.

7. Noise/Land Use Compatibility

Noise is one factor to be considered in determining whether a land use is compatible. Land use compatibility noise factors are presented in Table K-4. Compatible land uses are shaded. Incompatible land uses are unshaded. The transition zone between compatible and incompatible should be evaluated by the environmental planner to determine whether the use would be acceptable based on all available information and the extent to which the noise from the proposed project would affect the surrounding uses.

Table K-4

City of San Diego Noise Land Use Compatibility Chart

	Land Use	*Annual Community Noise Equivalent Level in Decibels*					
		50	55	60	65	70	75
1	Outdoor amphitheaters						
2	Schools, libraries						
3	Nature preserves, wildlife preserves						
4	Residential single-family, multi-family, mobile homes, transient housing						
5	Retirement homes, intermediate care facilities, convalescent homes						
6	Hospitals						
7	Parks, playgrounds						
8	Office buildings, business and professional						
9	Auditoriums, concert halls, indoor arenas, churches						
10	Riding stables, water recreation facilities						
11	outdoor spectator sports, golf courses						
12	livestock farming, animal breeding						
13	Commercial-retail, shopping centers, restaurants, movie theaters						
14	Commercial-wholesale, industrial manufacturing, utilities						
15	Agriculture (except livestock), extractive industry, farming						
16	Cemeteries						

APPENDIX C

Cadna Analysis Data and Results

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 07 Jun 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receivers

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
Cal			69.7	-65.9	0.0	0.0		x	Total	1.52	r	543.88	337.71	173.52

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Rancho Carmel Dr		RO_1	65.8	0.0	0.0			1136.0	0.0	0.0	1.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
I-15 NB		RO_3	80.1	0.0	0.0			10234.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
I-15 SB		RO_4	80.1	0.0	0.0			10234.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
Ted Williams		RO_2	73.1	0.0	0.0			3749.0	0.0	0.0	5.0	0.0	0.0	89		24.38	0.0	1	0.0	0.0		

Geometry - Roads

Name	Height				Coordinates				Dist	LSlope
	Begin		End		x	y	z	Ground	(m)	(%)
	(m)		(m)		(m)	(m)	(m)	(m)		
Rancho Carmel Dr					497.74	135.08	175.00	175.00		
					501.94	213.20	175.00	175.00		
					505.30	257.30	173.00	173.00		
					526.11	329.14	172.00	172.00		
					598.26	519.95	174.00	172.00		
I-15 NB					-242.64	-478.34	159.00	159.00		
					185.32	347.46	177.00	177.00		
					445.68	859.53	186.00	186.00		
I-15 SB					411.71	892.06	186.00	186.00		
					146.48	366.07	177.00	177.00		
					-281.96	-465.76	159.00	159.00		
Ted Williams					996.59	337.98	201.00	201.00		
					880.67	245.58	197.00	197.00		
					713.51	145.61	188.00	188.00		
					595.06	111.17	186.00	180.00		
					500.98	112.85	180.00	180.00		
					401.02	112.85	180.00	180.00		
					236.38	108.65	176.00	176.00		
					83.49	96.05	176.00	176.00		

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00
						678.94	337.55	182.00
						620.71	329.61	178.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 07 Jun 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Rancho Carmel Dr		RO_1	67.0	0.0	0.0			1334.0	0.0	0.0	2.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
Ted Williams		RO_2	73.4	0.0	0.0			4010.0	0.0	0.0	5.0	0.0	0.0	89		24.38	0.0	1	0.0	0.0		
I-15 NB		RO_3	80.4	0.0	0.0			10948.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
I-15 SB		RO_4	80.4	0.0	0.0			10948.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		

Geometry - Roads

Name	Height				Coordinates				Dist	LSlope
	Begin		End		x	y	z	Ground	(m)	(%)
	(m)		(m)		(m)	(m)	(m)	(m)		
Rancho Carmel Dr					497.74	135.08	175.00	175.00		
					501.94	213.20	175.00	175.00		
					505.30	257.30	173.00	173.00		
					526.11	329.14	172.00	172.00		
					598.26	519.95	174.00	172.00		
Ted Williams					996.59	337.98	201.00	201.00		
					880.67	245.58	197.00	197.00		
					713.51	145.61	188.00	188.00		
					595.06	111.17	186.00	180.00		
					500.98	112.85	180.00	180.00		
					401.02	112.85	180.00	180.00		
					236.38	108.65	176.00	176.00		
					83.49	96.05	176.00	176.00		
I-15 NB					-242.64	-478.34	159.00	159.00		
					185.32	347.46	177.00	177.00		
					445.68	859.53	186.00	186.00		
I-15 SB					411.71	892.06	186.00	186.00		
					146.48	366.07	177.00	177.00		
					-281.96	-465.76	159.00	159.00		

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00
						678.94	337.55	182.00
						620.71	329.61	178.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 18 Sep 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Rancho Carmel Dr		RO_1	68.8	0.0	0.0			2033.0	0.0	0.0	2.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
Rancho Carmel Dr		RO_1	69.0	0.0	0.0			2125.0	0.0	0.0	2.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
Ted Williams		RO_2	75.3	0.0	0.0			6238.0	0.0	0.0	5.0	0.0	0.0	89		24.38	0.0	1	0.0	0.0		
I-15 NB		RO_3	80.9	0.0	0.0			12365.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
I-15 SB		RO_4	80.7	0.0	0.0			11684.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		

Geometry - Roads

Name	Height				Coordinates				Dist	LSlope
	Begin		End		x	y	z	Ground	(m)	(%)
	(m)		(m)		(m)	(m)	(m)	(m)		
Rancho Carmel Dr					497.74	135.08	175.00	175.00		
					501.94	213.20	175.00	175.00		
					505.30	257.30	173.00	173.00		
					526.11	329.14	172.00	172.00		
					527.30	332.29	172.03	172.00		
Rancho Carmel Dr					527.30	332.29	172.03	172.00		
					598.26	519.95	174.00	172.00		
Ted Williams					996.59	337.98	201.00	201.00		
					880.67	245.58	197.00	197.00		
					713.51	145.61	188.00	188.00		
					595.06	111.17	186.00	180.00		
					500.98	112.85	180.00	180.00		
					401.02	112.85	180.00	180.00		
					236.38	108.65	176.00	176.00		
					83.49	96.05	176.00	176.00		
I-15 NB					-242.64	-478.34	159.00	159.00		
					185.32	347.46	177.00	177.00		
					445.68	859.53	186.00	186.00		
I-15 SB					411.71	892.06	186.00	186.00		
					146.48	366.07	177.00	177.00		
					-281.96	-465.76	159.00	159.00		

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						560.70	420.64	171.00
North Res		C3				560.70	420.64	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						678.94	337.55	182.00
						620.71	329.61	178.00
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 19 Sep 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receivers

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
OU1			64.4	-73.1	65.4	0.0				178.10	a	566.10	331.62	178.10
OU2			65.2	-71.8	65.4	0.0				181.15	a	559.40	334.66	181.15
OU3-1			68.7	-69.5	65.4	0.0				178.10	a	557.76	360.39	178.10
OU3-2			68.1	-69.8	65.4	0.0				181.15	a	557.76	360.39	181.15
OU3-3			67.7	-70.3	65.4	0.0				184.20	a	557.76	360.39	184.20
OU3-4			68.0	-70.2	65.4	0.0				187.25	a	557.76	360.39	187.25
OU4-1			64.5	-73.1	65.4	0.0				178.10	a	566.79	356.87	178.10
OU4-2			63.8	-73.3	65.4	0.0				181.15	a	566.79	356.87	181.15
OU4-3			64.0	-73.4	65.4	0.0				184.20	a	566.79	356.87	184.20
OU4-4			64.1	-73.5	65.4	0.0				187.25	a	566.79	356.87	187.25
OU5-1			63.0	-74.3	65.4	0.0				178.10	a	573.46	354.03	178.10
OU5-2			62.5	-74.4	65.4	0.0				181.15	a	573.46	354.03	181.15
OU5-3			62.7	-74.5	65.4	0.0				184.20	a	573.46	354.03	184.20
OU5-4			63.1	-74.4	65.4	0.0				187.25	a	573.46	354.03	187.25
OU6-1			64.8	-73.9	65.4	0.0				178.10	a	579.87	351.36	178.10
OU6-2			64.2	-74.1	65.4	0.0				181.15	a	579.87	351.36	181.15
OU6-3			64.9	-74.1	65.4	0.0				184.20	a	579.87	351.36	184.20
OU6-4			65.2	-74.0	65.4	0.0				187.25	a	579.87	351.36	187.25
OU7-1			62.8	-74.6	65.4	0.0				178.10	a	586.43	348.89	178.10
OU7-2			62.4	-74.6	65.4	0.0				181.15	a	586.43	348.89	181.15
OU7-3			63.1	-74.5	65.4	0.0				184.20	a	586.43	348.89	184.20
OU7-4			63.7	-74.4	65.4	0.0				187.25	a	586.43	348.89	187.25
OU8-1			60.2	-76.3	65.4	0.0				178.10	a	595.98	344.64	178.10
OU8-2			59.7	-76.3	65.4	0.0				181.15	a	595.98	344.64	181.15
OU8-3			60.4	-76.4	65.4	0.0				184.20	a	595.98	344.64	184.20
OU8-4			60.8	-76.3	65.4	0.0				187.25	a	595.98	344.64	187.25
OU9-1			62.3	-75.7	65.4	0.0				178.10	a	608.06	342.22	178.10
OU9-2			60.7	-75.8	65.4	0.0				181.15	a	608.06	342.22	181.15
OU9-3			61.5	-75.8	65.4	0.0				184.20	a	608.06	342.22	184.20
OU9-4			62.3	-75.6	65.4	0.0				187.25	a	608.06	342.22	187.25

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Rancho Carmel Dr		RO_1	68.4	0.0	0.0			1858.0	0.0	0.0	2.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
Ted Williams		RO_2	75.3	0.0	0.0			6238.0	0.0	0.0	5.0	0.0	0.0	89		24.38	0.0	1	0.0	0.0		
I-15 NB		RO_3	80.9	0.0	0.0			12365.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
I-15 SB		RO_4	80.7	0.0	0.0			11684.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		

Geometry - Roads

Name	Height				Coordinates				Dist	LSlope
	Begin		End		x	y	z	Ground	(m)	(%)
	(m)		(m)		(m)	(m)	(m)	(m)		
Rancho Carmel Dr					497.74	135.08	175.00	175.00		
					501.94	213.20	175.00	175.00		
					505.30	257.30	173.00	173.00		
					526.11	329.14	172.00	172.00		
					598.26	519.95	174.00	172.00		
Ted Williams					996.59	337.98	201.00	201.00		
					880.67	245.58	197.00	197.00		
					713.51	145.61	188.00	188.00		
					595.06	111.17	186.00	180.00		
					500.98	112.85	180.00	180.00		
					401.02	112.85	180.00	180.00		
					236.38	108.65	176.00	176.00		
					83.49	96.05	176.00	176.00		
I-15 NB					-242.64	-478.34	159.00	159.00		
					185.32	347.46	177.00	177.00		
					445.68	859.53	186.00	186.00		
I-15 SB					411.71	892.06	186.00	186.00		
					146.48	366.07	177.00	177.00		
					-281.96	-465.76	159.00	159.00		

Buildings

Name	M.	ID	RB	Residents	Absorption	Height
						Begin
						(m)
	+		x	0		
	+		x	0		

Geometry - Buildings

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
	+		x	0			546.92	338.60	176.88	172.00
							554.93	334.96	176.88	172.00
							554.07	332.44	176.88	172.00
							564.99	328.01	176.88	172.00
							574.39	328.01	176.88	172.00
							575.78	331.25	176.88	172.00
							588.15	327.35	176.88	172.00
							590.07	327.48	176.88	172.00
							590.87	329.66	176.88	172.00
							617.40	336.02	176.88	172.00
							624.29	337.41	176.88	172.00
							622.76	342.37	176.88	172.00
							625.74	342.83	176.88	172.00
							624.62	348.33	176.88	172.00
							601.45	343.63	176.88	172.00
							556.59	361.96	176.88	172.00
	+		x	0			548.04	341.39	189.50	176.88
							549.78	340.76	189.50	176.88
							548.59	337.82	189.50	176.88
							555.14	335.17	189.50	176.88
							555.71	336.71	189.50	176.88
							557.78	335.79	189.50	176.88
							558.81	337.78	189.50	176.88
							560.96	336.75	189.50	176.88
							561.89	339.18	189.50	176.88
							565.78	337.46	189.50	176.88
							566.32	338.98	189.50	176.88
							572.53	336.46	189.50	176.88
							572.17	334.90	189.50	176.88
							578.91	331.87	189.50	176.88
							579.37	333.42	189.50	176.88
							585.59	330.88	189.50	176.88
							585.12	329.38	189.50	176.88
							588.44	327.85	189.50	176.88
							589.66	330.20	189.50	176.88
							589.95	329.81	189.50	176.88

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
							592.36	328.93	189.50	176.88
							603.14	331.10	189.50	176.88
							609.23	332.35	189.50	176.88
							608.66	334.20	189.50	176.88
							613.87	335.30	189.50	176.88
							612.13	341.95	189.50	176.88
							608.86	341.32	189.50	176.88
							608.15	340.21	0.00	0.00
							605.09	341.29	189.50	176.88
							597.99	344.42	189.50	176.88
							597.40	342.89	189.50	176.88
							594.37	344.19	189.50	176.88
							594.92	345.59	189.50	176.88
							588.16	348.38	189.50	176.88
							587.88	347.08	0.00	0.00
							584.78	348.22	189.50	176.88
							585.15	349.72	0.00	0.00
							581.81	351.27	189.50	176.88
							581.27	349.70	0.00	0.00
							578.04	350.99	0.00	0.00
							578.80	352.33	189.50	176.88
							575.36	353.65	189.50	176.88
							574.94	352.55	189.50	176.88
							571.88	353.91	189.50	176.88
							572.34	354.98	189.50	176.88
							568.91	356.55	189.50	176.88
							568.60	355.24	189.50	176.88
							564.94	356.62	189.50	176.88
							565.49	357.89	189.50	176.88
							559.09	360.78	189.50	176.88
							558.60	359.23	189.50	176.88
							555.91	360.41	189.50	176.88
							550.62	347.60	189.50	176.88
							552.39	346.79	189.50	176.88
							551.17	343.98	189.50	176.88
							549.52	344.75	189.50	176.88

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00
						678.94	337.55	182.00
						620.71	329.61	178.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 19 Sep 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receivers

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
OU3-1			63.6	-75.5	65.4	0.0				178.10	a	558.25	359.53	178.10
OU3-2	+		64.5	-72.4	65.4	0.0				181.15	a	558.25	359.53	181.15
OU3-3	+		64.7	-72.4	65.4	0.0				184.20	a	558.25	359.53	184.20
OU3-4	+		65.0	-72.9	65.4	0.0				187.25	a	558.25	359.53	187.25

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Rancho Carmel Dr		RO_1	68.4	0.0	0.0			1858.0	0.0	0.0	2.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
Ted Williams		RO_2	75.3	0.0	0.0			6238.0	0.0	0.0	5.0	0.0	0.0	89		24.38	0.0	1	0.0	0.0		
I-15 NB		RO_3	80.9	0.0	0.0			12365.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
I-15 SB		RO_4	80.7	0.0	0.0			11684.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		

Geometry - Roads

Name	Height				Coordinates				Dist	LSlope
	Begin		End		x	y	z	Ground	(m)	(%)
	(m)		(m)		(m)	(m)	(m)	(m)		
Rancho Carmel Dr					497.74	135.08	175.00	175.00		
					501.94	213.20	175.00	175.00		
					505.30	257.30	173.00	173.00		
					526.11	329.14	172.00	172.00		
					598.26	519.95	174.00	172.00		
Ted Williams					996.59	337.98	201.00	201.00		
					880.67	245.58	197.00	197.00		
					713.51	145.61	188.00	188.00		
					595.06	111.17	186.00	180.00		
					500.98	112.85	180.00	180.00		
					401.02	112.85	180.00	180.00		
					236.38	108.65	176.00	176.00		
					83.49	96.05	176.00	176.00		
I-15 NB					-242.64	-478.34	159.00	159.00		
					185.32	347.46	177.00	177.00		
					445.68	859.53	186.00	186.00		
I-15 SB					411.71	892.06	186.00	186.00		
					146.48	366.07	177.00	177.00		
					-281.96	-465.76	159.00	159.00		

Barriers

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			
			left	right		horz.	vert.	Begin		End	
					(m)	(m)	(m)	(m)		(m)	
B3-1	+				1.07						
B3-2	+				1.22						
B3-3	+				1.22						
B3-4	+				1.22						

Geometry - Barriers

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
			left	right		horz.	vert.	Begin		End		x	y	z	Ground
					(m)	(m)	(m)	(m)		(m)		(m)	(m)	(m)	(m)
B3-1	+				1.07							555.94	360.43	177.95	172.00
												556.65	362.43	177.95	172.00
												559.49	361.25	177.95	172.00
												559.18	360.51	177.95	172.00
B3-2	+				1.22							555.94	360.43	181.15	172.00
												556.65	362.43	181.15	172.00
												559.49	361.25	181.15	172.00
												559.18	360.51	181.15	172.00
B3-3	+				1.22							555.94	360.43	184.20	172.00
												556.65	362.43	184.20	172.00
												559.49	361.25	184.20	172.00
												559.18	360.51	184.20	172.00
B3-4	+				1.22							555.94	360.43	187.25	172.00
												556.65	362.43	187.25	172.00
												559.49	361.25	187.25	172.00
												559.18	360.51	187.25	172.00

Buildings

Name	M.	ID	RB	Residents	Absorption	Height
						Begin
						(m)
	+		x	0		
	+		x	0		

Geometry - Buildings

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
	+		x	0			546.92	338.60	176.88	172.00
							554.93	334.96	176.88	172.00
							554.07	332.44	176.88	172.00
							564.99	328.01	176.88	172.00
							574.39	328.01	176.88	172.00
							575.78	331.25	176.88	172.00
							588.15	327.35	176.88	172.00
							590.07	327.48	176.88	172.00
							590.87	329.66	176.88	172.00
							617.40	336.02	176.88	172.00
							624.29	337.41	176.88	172.00
							622.76	342.37	176.88	172.00
							625.74	342.83	176.88	172.00
							624.62	348.33	176.88	172.00
							601.45	343.63	176.88	172.00
							556.59	361.96	176.88	172.00
	+		x	0			547.96	341.49	189.50	176.88
							549.70	340.86	189.50	176.88
							548.50	337.92	189.50	176.88
							555.05	335.27	189.50	176.88
							555.63	336.82	189.50	176.88
							557.70	335.89	189.50	176.88
							558.72	337.88	189.50	176.88
							560.88	336.86	189.50	176.88
							561.81	339.28	189.50	176.88
							565.69	337.56	189.50	176.88
							566.24	339.09	189.50	176.88
							572.45	336.57	189.50	176.88
							572.09	335.01	189.50	176.88
							578.82	331.97	189.50	176.88
							579.29	333.52	189.50	176.88
							585.50	330.98	189.50	176.88
							585.04	329.48	189.50	176.88
							588.36	327.96	189.50	176.88
							589.57	330.30	189.50	176.88
							589.87	329.91	189.50	176.88

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
							592.28	329.03	189.50	176.88
							603.06	331.21	189.50	176.88
							609.15	332.45	189.50	176.88
							608.58	334.30	189.50	176.88
							613.79	335.41	189.50	176.88
							612.04	342.05	189.50	176.88
							608.78	341.43	189.50	176.88
							608.07	340.32	0.00	0.00
							605.00	341.39	189.50	176.88
							597.91	344.52	189.50	176.88
							597.32	342.99	189.50	176.88
							594.29	344.30	189.50	176.88
							594.84	345.69	189.50	176.88
							588.07	348.49	189.50	176.88
							587.79	347.18	0.00	0.00
							584.69	348.32	189.50	176.88
							585.06	349.83	0.00	0.00
							581.73	351.37	189.50	176.88
							581.19	349.81	0.00	0.00
							577.96	351.10	0.00	0.00
							578.72	352.43	189.50	176.88
							575.28	353.75	189.50	176.88
							574.86	352.66	189.50	176.88
							571.79	354.01	189.50	176.88
							572.25	355.08	189.50	176.88
							568.83	356.66	189.50	176.88
							568.52	355.34	189.50	176.88
							564.86	356.73	189.50	176.88
							565.40	358.00	189.50	176.88
							559.00	360.88	189.50	176.88
							558.51	359.33	189.50	176.88
							555.83	360.52	189.50	176.88
							550.53	347.70	189.50	176.88
							552.31	346.89	189.50	176.88
							551.08	344.08	189.50	176.88
							549.44	344.85	189.50	176.88

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00
						678.94	337.55	182.00
						620.71	329.61	178.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 19 Sep 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receivers

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
F1-1			70.9	-66.7	65.4	0.0				178.40	a	551.10	350.14	178.40
F1-2			70.2	-67.2	65.4	0.0				181.45	a	551.10	350.14	181.45
F1-3			70.2	-67.5	65.4	0.0				184.50	a	551.10	350.14	184.50
F1-4			69.9	-68.0	65.4	0.0				187.55	a	551.10	350.14	187.55
F2-1			66.3	-71.4	65.4	0.0				178.40	a	563.81	359.51	178.40
F2-2			66.1	-71.5	65.4	0.0				181.45	a	563.81	359.51	181.45
F2-3			66.4	-71.7	65.4	0.0				184.50	a	563.81	359.51	184.50
F2-4			66.4	-71.9	65.4	0.0				187.55	a	563.81	359.51	187.55
F3-1			64.1	-73.7	65.4	0.0				178.40	a	579.25	353.10	178.40
F3-2			63.4	-73.9	65.4	0.0				181.45	a	579.25	353.10	181.45
F3-3			63.9	-73.9	65.4	0.0				184.50	a	579.25	353.10	184.50
F3-4			64.5	-73.8	65.4	0.0				187.55	a	579.25	353.10	187.55
F4-1			62.6	-74.9	65.4	0.0				178.40	a	592.59	347.63	178.40
F4-2			62.1	-75.0	65.4	0.0				181.45	a	592.59	347.63	181.45
F4-3			62.7	-75.0	65.4	0.0				184.50	a	592.59	347.63	184.50
F4-4			63.3	-75.0	65.4	0.0				187.55	a	592.59	347.63	187.55
F5-1			61.4	-75.9	65.4	0.0				178.40	a	609.99	342.02	178.40
F5-2			60.7	-75.9	65.4	0.0				181.45	a	609.99	342.02	181.45
F5-3			61.4	-76.0	65.4	0.0				184.50	a	609.99	342.02	184.50
F5-4			62.1	-75.8	65.4	0.0				187.55	a	609.99	342.02	187.55
F6-1			56.0	-77.7	65.4	0.0				178.40	a	613.20	339.27	178.40
F6-2			56.9	-77.7	65.4	0.0				181.45	a	613.20	339.27	181.45
F6-3			57.7	-77.7	65.4	0.0				184.50	a	613.20	339.27	184.50
F6-4			58.7	-77.6	65.4	0.0				187.55	a	613.20	339.27	187.55
F7-1			62.7	-74.5	65.4	0.0				178.40	a	584.37	328.45	178.40
F7-2			63.6	-73.9	65.4	0.0				181.45	a	584.37	328.45	181.45
F7-3			64.3	-73.7	65.4	0.0				184.50	a	584.37	328.45	184.50
F7-4			64.8	-73.5	65.4	0.0				187.55	a	584.37	328.45	187.55
F8-1			62.9	-74.0	65.4	0.0				178.40	a	568.86	333.85	178.40
F8-2			64.3	-72.9	65.4	0.0				181.45	a	568.86	333.85	181.45
F8-3			64.6	-72.9	65.4	0.0				184.50	a	568.86	333.85	184.50
F8-4			64.9	-72.8	65.4	0.0				187.55	a	568.86	333.85	187.55
F9-1			67.1	-69.8	65.4	0.0				178.40	a	552.92	335.30	178.40
F9-2			67.0	-70.0	65.4	0.0				181.45	a	552.92	335.30	181.45
F9-3			67.2	-70.2	65.4	0.0				184.50	a	552.92	335.30	184.50
F9-4			67.4	-70.3	65.4	0.0				187.55	a	552.92	335.30	187.55

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Rancho Carmel Dr		RO_1	68.4	0.0	0.0			1858.0	0.0	0.0	2.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
Ted Williams		RO_2	75.3	0.0	0.0			6238.0	0.0	0.0	5.0	0.0	0.0	89		24.38	0.0	1	0.0	0.0		
I-15 NB		RO_3	80.9	0.0	0.0			12365.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
I-15 SB		RO_4	80.7	0.0	0.0			11684.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		

Geometry - Roads

Name	Height				Coordinates				Dist	LSlope
	Begin		End		x	y	z	Ground	(m)	(%)
	(m)		(m)		(m)	(m)	(m)	(m)		
Rancho Carmel Dr					497.74	135.08	175.00	175.00		
					501.94	213.20	175.00	175.00		
					505.30	257.30	173.00	173.00		
					526.11	329.14	172.00	172.00		
					598.26	519.95	174.00	172.00		
Ted Williams					996.59	337.98	201.00	201.00		
					880.67	245.58	197.00	197.00		
					713.51	145.61	188.00	188.00		
					595.06	111.17	186.00	180.00		
					500.98	112.85	180.00	180.00		
					401.02	112.85	180.00	180.00		
					236.38	108.65	176.00	176.00		
					83.49	96.05	176.00	176.00		
I-15 NB					-242.64	-478.34	159.00	159.00		
					185.32	347.46	177.00	177.00		
					445.68	859.53	186.00	186.00		
I-15 SB					411.71	892.06	186.00	186.00		
					146.48	366.07	177.00	177.00		
					-281.96	-465.76	159.00	159.00		

Buildings

Name	M.	ID	RB	Residents	Absorption	Height
						Begin
						(m)
	+		x	0		
	+		x	0		

Geometry - Buildings

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
	+		x	0			546.92	338.60	176.88	172.00
							554.93	334.96	176.88	172.00
							554.07	332.44	176.88	172.00
							564.99	328.01	176.88	172.00
							574.39	328.01	176.88	172.00
							575.78	331.25	176.88	172.00
							588.15	327.35	176.88	172.00
							590.07	327.48	176.88	172.00
							590.87	329.66	176.88	172.00
							617.40	336.02	176.88	172.00
							624.29	337.41	176.88	172.00
							622.76	342.37	176.88	172.00
							625.74	342.83	176.88	172.00
							624.62	348.33	176.88	172.00
							601.45	343.63	176.88	172.00
							556.59	361.96	176.88	172.00
	+		x	0			548.09	341.43	189.50	176.88
							549.82	340.80	189.50	176.88
							548.63	337.86	189.50	176.88
							555.18	335.21	189.50	176.88
							555.75	336.75	189.50	176.88
							557.82	335.83	189.50	176.88
							558.85	337.82	189.50	176.88
							561.00	336.80	189.50	176.88
							561.94	339.22	189.50	176.88
							565.82	337.50	189.50	176.88
							566.36	339.02	189.50	176.88
							572.57	336.50	189.50	176.88
							572.21	334.94	189.50	176.88
							578.95	331.91	189.50	176.88
							579.41	333.46	189.50	176.88
							585.63	330.92	189.50	176.88
							585.16	329.42	189.50	176.88
							588.48	327.89	189.50	176.88
							589.70	330.24	189.50	176.88
							589.99	329.85	189.50	176.88

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
							592.41	328.97	189.50	176.88
							603.19	331.15	189.50	176.88
							609.28	332.39	189.50	176.88
							608.70	334.24	189.50	176.88
							613.91	335.34	189.50	176.88
							612.17	341.99	189.50	176.88
							608.90	341.36	189.50	176.88
							608.19	340.25	0.00	0.00
							605.13	341.33	189.50	176.88
							598.04	344.46	189.50	176.88
							597.44	342.93	189.50	176.88
							594.41	344.23	189.50	176.88
							594.96	345.63	189.50	176.88
							588.20	348.42	189.50	176.88
							587.92	347.12	0.00	0.00
							584.82	348.26	189.50	176.88
							585.19	349.76	0.00	0.00
							581.85	351.31	189.50	176.88
							581.31	349.74	0.00	0.00
							578.08	351.03	0.00	0.00
							578.85	352.37	189.50	176.88
							575.40	353.69	189.50	176.88
							574.99	352.59	189.50	176.88
							571.92	353.95	189.50	176.88
							572.38	355.02	189.50	176.88
							568.95	356.60	189.50	176.88
							568.64	355.28	189.50	176.88
							564.99	356.66	189.50	176.88
							565.53	357.94	189.50	176.88
							559.13	360.82	189.50	176.88
							558.64	359.27	189.50	176.88
							555.95	360.46	189.50	176.88
							550.66	347.64	189.50	176.88
							552.43	346.83	189.50	176.88
							551.21	344.02	189.50	176.88
							549.57	344.79	189.50	176.88

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00
						678.94	337.55	182.00
						620.71	329.61	178.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

Eilar Associates, Inc.
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Phone: (760) 738-5570

Date: 18 Sep 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receivers

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
North		R1	31.1	31.1	0.0	0.0		x	Total	1.52	r	584.93	353.45	173.63
South		R2	35.5	35.5	0.0	0.0		x	Total	1.52	r	584.28	296.01	176.39
Southeast		R3	30.9	30.9	0.0	0.0		x	Total	1.52	r	592.35	327.63	173.57
Southeast Res1		R4	27.5	27.5	0.0	0.0		x	Total	1.52	r	621.86	332.54	176.73
Southeast Res2		R5	29.2	29.2	0.0	0.0		x	Total	4.57	r	621.86	332.54	179.78
West		R6	25.3	25.3	0.0	0.0		x	Total	1.52	r	520.71	359.53	171.71

Point Sources

Name	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
AC		1	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	566.44	346.41	190.72
AC		2	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	567.60	345.96	190.72
AC		3	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	568.76	345.46	190.72
AC		4	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	569.79	345.13	190.72
AC		5	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	570.91	344.59	190.72
AC		6	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	572.12	344.13	190.72
AC		7	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	573.12	343.73	190.72
AC		8	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	574.37	343.15	190.72
AC		9	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	575.39	342.76	190.72
AC		10	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	576.52	342.32	190.72
AC		11	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	577.68	341.82	190.72
AC		12	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	578.79	341.34	190.72
AC		13	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	579.91	340.96	190.72
AC		14	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	580.91	340.46	190.72
AC		15	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	582.10	339.96	190.72
AC		16	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	583.27	339.46	190.72
AC		17	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	584.37	339.13	190.72
AC		18	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	585.60	338.67	190.72
AC		19	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	586.35	338.21	190.72
AC		20	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	587.56	337.76	190.72
AC		21	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	588.95	337.23	190.72
AC		22	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	589.93	336.80	190.72
AC		23	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	591.14	336.32	190.72
AC		24	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	592.16	335.90	190.72
AC		25	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	566.01	345.28	190.72
AC		26	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	566.97	344.84	190.72
AC		27	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	568.14	344.30	190.72
AC		28	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	569.41	343.84	190.72
AC		29	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	570.47	343.38	190.72
AC		30	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	571.64	342.94	190.72
AC		31	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	572.70	342.59	190.72
AC		32	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	573.72	342.15	190.72
AC		33	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	575.06	341.59	190.72
AC		34	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	576.04	341.19	190.72
AC		35	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	577.20	340.69	190.72
AC		36	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	578.35	340.30	190.72
AC		37	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	579.49	339.84	190.72
AC		38	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	580.62	339.32	190.72
AC		39	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	581.58	338.88	190.72
AC		40	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	582.72	338.55	190.72
AC		41	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	583.87	338.01	190.72
AC		42	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	585.00	337.55	190.72
AC		43	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	586.16	337.09	190.72
AC		44	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	587.27	336.61	190.72
AC		45	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	588.37	336.13	190.72
AC		46	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	589.41	335.69	190.72
AC		47	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	590.56	335.25	190.72
AC		48	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	591.68	334.80	190.72
AC		49	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	564.92	345.67	190.72
AC		50	72.0	72.0	72.0	Lw	L42		0.0	0.0	0.0							0.0		(none)	190.72	a	565.43	346.90	190.72

Buildings

Name	M.	ID	RB	Residents	Absorption	Height
						Begin
						(m)
	+		x	0		
	+		x	0		

Geometry - Buildings

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
	+		x	0			546.92	338.60	176.88	172.00
							554.93	334.96	176.88	172.00
							554.07	332.44	176.88	172.00
							564.99	328.01	176.88	172.00
							574.39	328.01	176.88	172.00
							575.78	331.25	176.88	172.00
							588.15	327.35	176.88	172.00
							590.07	327.48	176.88	172.00
							590.87	329.66	176.88	172.00
							617.40	336.02	176.88	172.00
							624.29	337.41	176.88	172.00
							622.76	342.37	176.88	172.00
							625.74	342.83	176.88	172.00
							624.62	348.33	176.88	172.00
							601.45	343.63	176.88	172.00
							556.59	361.96	176.88	172.00
	+		x	0			548.49	341.19	189.50	176.88
							550.23	340.56	189.50	176.88
							549.04	337.62	189.50	176.88
							555.59	334.97	189.50	176.88
							556.16	336.51	189.50	176.88
							558.23	335.59	189.50	176.88
							559.26	337.58	189.50	176.88
							561.41	336.55	189.50	176.88
							562.34	338.98	189.50	176.88
							565.47	337.72	189.50	176.88
							566.11	339.08	189.50	176.88
							571.89	336.63	189.50	176.88
							571.36	335.26	189.50	176.88
							577.64	332.46	189.50	176.88
							578.23	333.88	189.50	176.88
							583.92	331.47	189.50	176.88
							583.29	330.04	189.50	176.88
							586.71	328.61	189.50	176.88
							587.63	330.76	189.50	176.88
							590.40	329.61	189.50	176.88

Name	M.	ID	RB	Residents	Absorption	Height	Coordinates			
						Begin	x	y	z	Ground
						(m)	(m)	(m)	(m)	(m)
							590.76	330.18	189.50	176.88
							591.36	329.81	189.50	176.88
							607.53	334.00	189.50	176.88
							607.19	335.49	189.50	176.88
							610.82	336.69	189.50	176.88
							609.07	343.17	189.50	176.88
							606.07	342.41	189.50	176.88
							605.54	341.09	189.50	176.88
							595.76	345.13	189.50	176.88
							595.25	343.79	189.50	176.88
							592.49	345.10	189.50	176.88
							593.12	346.33	189.50	176.88
							586.82	349.04	189.50	176.88
							586.33	347.73	189.50	176.88
							583.53	348.71	189.50	176.88
							584.15	350.17	189.50	176.88
							577.87	352.72	189.50	176.88
							577.27	351.46	189.50	176.88
							574.68	352.73	189.50	176.88
							575.16	353.90	189.50	176.88
							568.70	356.60	189.50	176.88
							568.20	355.37	189.50	176.88
							565.39	356.42	189.50	176.88
							565.94	357.69	189.50	176.88
							559.85	360.44	189.50	176.88
							559.02	358.82	189.50	176.88
							556.36	360.21	189.50	176.88
							551.07	347.40	189.50	176.88
							552.84	346.59	189.50	176.88
							551.62	343.78	189.50	176.88
							549.97	344.55	189.50	176.88

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00
						678.94	337.55	182.00
						620.71	329.61	178.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

Sound Level Spectra

Name	ID	Type	Oktave Spectrum (dB)												Source
			Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
Carrier CA13NA030	L42	Lw	A			52.7	62.2	66.2	67.2	65.2	60.2	55.2	72.0	75.7	Manufacturer

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 07 Jun 2019

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receivers

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
North		R1	45.6	-71.3	0.0	0.0		x	Total	1.52	r	584.93	353.45	173.63
South		R2	44.4	-72.3	0.0	0.0		x	Total	1.52	r	584.28	296.01	176.39
Southeast		R3	44.7	-73.0	0.0	0.0		x	Total	1.52	r	592.35	327.63	173.57
Southeast Res1		R4	43.9	-73.9	0.0	0.0		x	Total	1.52	r	621.86	332.54	176.73
Southeast Res2		R5	42.8	-73.5	0.0	0.0		x	Total	4.57	r	621.86	332.54	179.78
West		R6	50.4	-65.5	0.0	0.0		x	Total	1.52	r	520.71	359.53	171.71

Roads

Name	M.	ID	Lme			Count Data		exact Count Data						Speed Limit		SCS	Surface		Gradient	Mult. Reflection		
			Day	Evening	Night	DTV	Str.class.	M			p (%)			Auto	Truck	Dist.	Dstro	Type		Drefl	Hbuild	Dist.
			(dBA)	(dBA)	(dBA)			Day	Evening	Night	Day	Evening	Night	(km/h)	(km/h)		(dB)		(%)	(dB)	(m)	(m)
Rancho Carmel Dr		RO_1	47.5	0.0	0.0			15.0	0.0	0.0	2.0	0.0	0.0	72		15.24	0.0	1	0.0	0.0		
Ted Williams		RO_2	53.8	0.0	0.0			44.0	0.0	0.0	5.0	0.0	0.0	89		24.38	0.0	1	0.0	0.0		
I-15 NB		RO_3	60.8	0.0	0.0			119.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		
I-15 SB		RO_4	60.8	0.0	0.0			119.0	0.0	0.0	7.1	0.0	0.0	105		33.53	0.0	1	0.0	0.0		

Geometry - Roads

Name	Height				Coordinates				Dist	LSlope
	Begin		End		x	y	z	Ground	(m)	(%)
	(m)		(m)		(m)	(m)	(m)	(m)		
Rancho Carmel Dr					497.74	135.08	175.00	175.00		
					501.94	213.20	175.00	175.00		
					505.30	257.30	173.00	173.00		
					526.11	329.14	172.00	172.00		
					598.26	519.95	174.00	172.00		
Ted Williams					996.59	337.98	201.00	201.00		
					880.67	245.58	197.00	197.00		
					713.51	145.61	188.00	188.00		
					595.06	111.17	186.00	180.00		
					500.98	112.85	180.00	180.00		
					401.02	112.85	180.00	180.00		
					236.38	108.65	176.00	176.00		
					83.49	96.05	176.00	176.00		
I-15 NB					-242.64	-478.34	159.00	159.00		
					185.32	347.46	177.00	177.00		
					445.68	859.53	186.00	186.00		
I-15 SB					411.71	892.06	186.00	186.00		
					146.48	366.07	177.00	177.00		
					-281.96	-465.76	159.00	159.00		

Terrain Contours

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
North Course		C1				563.50	372.00	173.00
						574.17	404.35	171.00
						780.62	480.39	186.00
						809.63	466.72	189.00
						813.30	433.03	188.00
						790.95	411.69	187.00
						683.23	374.00	177.00
						637.54	357.99	175.00
						615.53	355.99	174.00
						563.84	372.00	171.00
172		C2		172.00		556.00	365.82	172.00
						547.38	345.86	172.00
						545.49	336.20	172.00
						553.90	329.89	172.00
						564.44	327.46	172.00
						577.64	326.32	172.00
						598.23	328.84	172.00
						624.91	336.41	172.00
						626.27	339.42	172.00
						626.02	348.78	172.00
						625.54	351.95	172.00
						605.37	347.96	172.00
						583.31	351.95	172.00
						555.79	367.08	172.00
North Res		C3				426.09	539.36	169.00
						482.39	475.49	170.00
						540.38	425.07	171.00
						573.16	417.92	171.00
						630.30	430.53	174.00
						788.30	492.30	189.00
						862.67	528.85	200.00
						599.42	522.13	172.00
						445.42	523.81	170.00
Southeast		C4				538.65	306.85	173.00
						520.65	171.32	175.00
						633.94	170.79	183.00
						726.06	190.90	187.00
						776.36	226.90	187.00
						864.77	269.79	194.00
						855.24	441.32	196.00
						767.89	377.26	183.00
						723.41	366.14	182.00
						678.94	337.55	182.00
						620.71	329.61	178.00

Name	M.	ID	OnlyPts	Height		Coordinates		
				Begin	End	x	y	z
				(m)	(m)	(m)	(m)	(m)
						590.53	301.02	175.00
						536.53	307.38	173.00
West		C5				466.40	173.26	173.00
						326.99	154.58	176.00
						133.56	129.90	176.00
						196.26	293.99	172.00
						302.31	520.11	175.00
						399.03	492.76	166.00
						534.43	410.05	168.00
						502.42	312.67	172.00
						483.74	262.64	171.00
						468.40	179.93	173.00
I-15 E		C6				-217.71	-485.05	159.00
						206.52	336.72	177.00
						471.22	855.55	186.00
I-15 W		C7				-306.65	-442.69	159.00
						117.57	379.08	177.00
						382.28	897.90	186.00
TW N		C8				985.66	349.66	201.00
						873.96	261.25	197.00
						709.84	160.13	188.00
						593.90	127.83	180.00
TW S		C9				1005.78	320.54	201.00
						894.07	232.13	197.00
						729.96	131.01	188.00
						614.01	98.72	180.00

APPENDIX D

Manufacturer Data Sheets

CA13NA 018–060
Base Series Air Conditioner with Puron® Refrigerant

Carrier
turn to the experts

Product Data

Carrier's CA13 has been designed utilizing Carrier's Puron refrigerant. The environmentally sound refrigerant allows you to make a responsible decision in the protection of the earth's ozone layer.

This product has been designed and manufactured to meet Energy Star® criteria for energy efficiency when matched with appropriate coil components. Refer to the combination ratings in the Product Data for system combinations that meet Energy Star® guidelines.

INDUSTRY LEADING FEATURES / BENEFITS

Efficiency

- 13.0 SEER / 10.9 – 11 EER (based on tested combination)
- Microtube Technology™ refrigeration system
- Energy Star® combinations

Reliability

- Puron® refrigerant – environmentally sound, won't deplete the ozone layer and low lifetime servce cost.
- Scroll compressor
- Internal pressure relief valve
- Internal thermal overload
- Filter drier

Durability

WeatherArmor™ protection package:

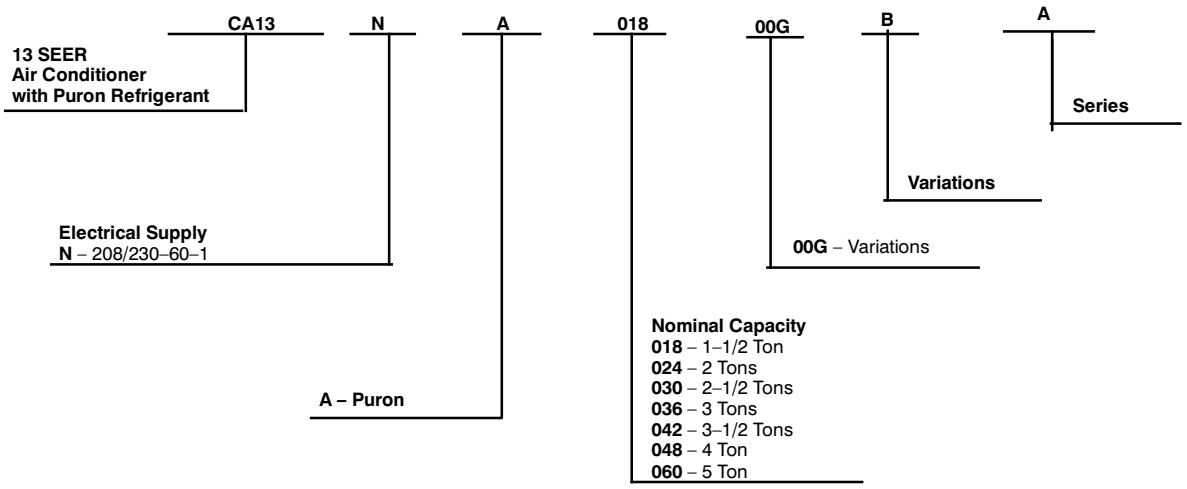
- Solid, durable sheet metal construction
- Dense wire coil guard

Applications

- Long–line – up to 250 feet (76.20 m) total equivalent length, up to 200 feet (60.96 m) condenser above evaporator, or up to 80 ft. (24.38 m) evaporator above condenser (See Longline Guide for more information.)
- Low ambient (down to –20°F/–28.9°C)) with accessory kit

NOTE: **Ratings contained in this document are subject to change at any time. Always refer to the AHRI directory (www.ahridirectory.org) for the most up–to–date ratings information.**

PRODUCT NUMBER NOMENCLATURE



Puron
the environmentally sound refrigerant

AHRI CERTIFIED
www.ahridirectory.org

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.

c UL us

ENERGY STAR

This product has been designed and manufactured to meet Energy Star® criteria for energy efficiency when matched with appropriate coil components. However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency. Installation of this product should follow all manufacturing refrigerant charging and air flow instructions. **Failure to confirm proper charge and air flow may reduce energy efficiency and shorten equipment life.**

A–WEIGHTED SOUND POWER (dBA)

UNIT SIZE – SERIES	Standard Rating (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018–A	71	49.5	59.0	63.0	66.5	62.5	58.5	54.0
024–A	73	50.5	61.0	67.0	68.0	65.0	60.0	55.5
030–A	72	52.0	61.5	65.5	66.5	64.5	59.5	54.5
036–C	74	53.5	63.5	68.5	69.5	67.0	65.0	58.5
042–A	75	56.0	64.5	69.5	71.0	66.0	64.0	59.0
048–C	76	54.0	63.0	69.5	71.5	70.0	66.0	58.5
060–C	79	57.5	67.0	72.0	75.0	72.5	68.0	61.0

NOTE: Tested in compliance with AHRI 270–2008 (not listed with AHRI)

A–WEIGHTED SOUND POWER (dBA) WITH SOUND SHIELD

UNIT SIZE – SERIES	Standard Rating (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018–A	70	53.5	60.0	62.0	65.5	62.0	57.5	52.5
024–A	73	53.0	62.0	67.5	68.0	65.0	60.0	53.5
030–A	71	54.0	61.5	65.5	66.0	63.5	58.5	52.0
036–C	74	54.0	63.5	68.0	69.0	66.5	64.0	58.5
042–A	74	55.5	64.0	69.0	69.5	65.5	63.5	57.5
048–C	76	55.0	63.0	69.5	71.0	68.5	65.0	58.0
060–C	79	57.5	68.0	72.5	74.5	72.5	68.0	60.5

NOTE: Tested in compliance with AHRI 270–2008 (not listed with AHRI)

METERING DEVICE

UNIT SIZE – SERIES	INDOOOR	REQUIRED SUBCOOLING °F (°C)
18–A	TXV*	10 (5.6)
24–A		10 (5.6)
30–A		10 (5.6)
36–C		12 (6.7)
42–A		10 (5.6)
48–C		15 (8.3)
60–C		15 (8.3)

* TXV must be ordered separately when indoor coil is not equipped with a TXV. TXV must be hard–shutoff type.

APPENDIX E

Construction Noise and Vibration Calculations

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Backhoe
Receiver: Southeast

Noise Source

Noise Level (dBA) 64 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: 75 feet

Path Calculation

Source to Receiver Direct Path Distance: **75** feet

Sound Pressure Level **60.5** at 75 feet
Hours of Use: **12**
Duty Cycle (%): **40**
Level During 12 Hour day: **56.5**

Summation

Number of Sources: 2

Level during 12 hour day: **69.7**

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Concrete Saw
Receiver: Southeast

Noise Source

Noise Level (dBA)	80	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:	75	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**75**	feet

Sound Pressure Level	**76.5**	at	75	feet
Hours of Use:	**12**			
Duty Cycle (%):	**20**			
Level During 12 Hour day:	**69.5**			

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Drill Rig
Receiver: Southeast

Noise Source

Noise Level (dBA) 79 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: 75 feet

Path Calculation

Source to Receiver Direct Path Distance: **75** feet

Sound Pressure Level **75.5** at 75 feet
Hours of Use: **12**
Duty Cycle (%): **20**
Level During 12 Hour day: **68.5**

Summation

Number of Sources: 2

Level during 12 hour day: **71.0**

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Dump Truck
Receiver: Southeast

Noise Source

Noise Level (dBA)	75	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:	75	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**75**	feet

Sound Pressure Level	**71.5**	at	75	feet
Hours of Use:	**12**			
Duty Cycle (%):	**40**			
Level During 12 Hour day:	**67.5**			

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Concrete Saw
Receiver: Southeast

Noise Source

Noise Level (dBA) 80 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: 75 feet

Path Calculation

Source to Receiver Direct Path Distance: **75** feet

Sound Pressure Level **76.5** at 75 feet
Hours of Use: **12**
Duty Cycle (%): **20**
Level During 12 Hour day: **69.5**

Summation

Number of Sources: 4

Level during 12 hour day: **72.9**

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Concrete Mixer Truck
Receiver: Southeast

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:	75	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**75**	feet

Sound Pressure Level	**67.5**	at	75	feet
Hours of Use:	**12**			
Duty Cycle (%):	**40**			
Level During 12 Hour day:	**63.5**			

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Concrete Pump Truck
Receiver: Southeast

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:	75	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**75**	feet

Sound Pressure Level	**67.5**	at	75	feet
Hours of Use:	**12**			
Duty Cycle (%):	**20**			
Level During 12 Hour day:	**60.5**			

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Jackhammer
Receiver: Southeast

Noise Source

Noise Level (dBA)	79	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:	75	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**75**	feet

Sound Pressure Level	**75.5**	at	75	feet
Hours of Use:	**12**			
Duty Cycle (%):	**20**			
Level During 12 Hour day:	**68.5**			

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Crane
Receiver: Southeast

Noise Source

Noise Level (dBA) 66 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: 75 feet

Path Calculation

Source to Receiver Direct Path Distance: **75** feet

Sound Pressure Level **62.5** at 75 feet
Hours of Use: **12**
Duty Cycle (%): **16**
Level During 12 Hour day: **54.5**

Summation

Number of Sources: 3

Level during 12 hour day: **65.6**

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Concrete Mixer Truck
Receiver: Southeast

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:	75	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**75**	feet

Sound Pressure Level	**67.5**	at	75	feet
Hours of Use:	**12**			
Duty Cycle (%):	**40**			
Level During 12 Hour day:	**63.5**			

EILAR ASSOCIATES, INC.
Acoustical and Environmental Consulting

Noise Attenuation by Distance Calculation

Job: Alante
Job #: S190506
Date: 5/30/2019
Source: Concrete Pump Truck
Receiver: Southeast

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:	75	feet			

Path Calculation

Source to Receiver Direct Path Distance:	**75**	feet

Sound Pressure Level	**67.5**	at	75	feet
Hours of Use:	**12**			
Duty Cycle (%):	**20**			
Level During 12 Hour day:	**60.5**			

Construction Vibration Calculation

Job: Alante
Job #: S190506
Date: 6/7/2019
Source 1: Caisson Drilling
Receiver: Southeast

Vibration Source

Vibration Level (PPV, in/sec) 0.089 at 25 feet

Path Calculation

Source to Receiver Direct Path Distance: **25** feet

Vibration Level (PPV, in/sec) **0.089** at 25 feet

Path Calculation

Source to Receiver Direct Path Distance: **45** feet

Vibration Level (PPV, in/sec) **0.037** at 45 feet

Path Calculation

Source to Receiver Direct Path Distance: **100** feet

Vibration Level (PPV, in/sec) **0.011** at 100 feet