URBAN
CROSSROADS

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PACIFICA ESTATES
PRELIMINARY NOISE STUDY
COUNTY OF SAN DIEGO, CALIFORNIA

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PRELIMINARY NOISE STUDY
COUNTY OF SAN DIEGO, CALIFORNIA

1.0 EXECUTIVE SUMMARY

This noise study has been completed to determine the noise impacts associated with the development of the proposed Pacifica Estates Development. The project site is proposed to be developed with 21 single family residential lots. The project site is located north of Stage Coach Lane and east of Mission Road in the Fallbrook community of the County of San Diego.

The purpose of this noise assessment is to evaluate the noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential project impacts. Preliminary exterior and interior noise requirements for tentative tract map approval are presented in this report.

1.1 On-Site Noise Analysis

The results of this analysis indicate that the combination of future vehicle noise from Mission Road and Stage Coach Lane is the principal source of community noise that will impact the site. Based on the future buildout traffic projections, the proposed site will not experience unmitigated exterior noise levels in excess of the County of San Diego 60 dBA CNEL noise standards for transportation related noise impacts.

To minimize traffic noise impacts, the project should provide the following noise mitigation measures summarized below:

Exterior Noise Mitigation

The noise levels at all proposed lots will meet the County of San Diego 60 dBA CNEL standard without mitigation.

Interior Noise Mitigation

Building façade noise levels were found to be below the General Plan Noise Element Standard, of 60 dBA for the first and second floors of all lots on the project site. Therefore, interior mitigation is not required to obtain an interior level of 45 dBA CNEL.

1.2 Construction Noise Analysis

The nearest property lines are located at the adjacent residences to the north and south and are a minimum of 100-feet or more from the proposed grading operations. At a distance of 100-feet the point source noise attenuation from construction activities and the nearest property line is 6.0 dBA. Given this, the noise levels will comply with the County of San Diego's 75 dBA standard at all project property lines. The equipment is expected to be spread around the site and no impacts are anticipated.

If the construction equipment is located within 575 feet of any sensitive habitat, it is recommended that a specific mitigation plan based upon the location of the identified habitat and corresponding construction schedule be identified by a County certified acoustical engineer. This mitigation plan would determine the height and location of a temporary barrier, if one is necessary. The height of this barrier would be based on the topography in the area, the location of the habitat and also the location of the equipment. The biological mitigation plan should include noise monitoring prior to and during the beginning of the nesting/breeding season by the acoustical engineer in coordination with the Project Biologist to ensure compliance with applicable standards.

2.0 INTRODUCTION

This preliminary noise study outlines the project, provides basic information regarding the fundamentals of traffic noise, describes local noise guidelines, provides the study methods and procedures for traffic noise analysis, and evaluates the future exterior and interior noise environments.

This report presents the results of a preliminary noise study for the Pacifica Estates Development. The proposed site includes 21 single family lots. The general location of the project is shown on the Location Map, Exhibit 2-A. The proposed project is located north of Stage Coach Lane and east of Mission Road in the Fallbrook community of the County of San Diego. The site plan used for this analysis is shown on Exhibit 2-B.

Included in the report is a discussion of the expected exterior community noise environment and recommendations for control of the noise impacts for exterior noise sensitive land uses. In the following sections, noise exposures expected within the planned site are reviewed and compared to the applicable noise standards.

EXHIBIT 2-A

LOCATION MAP

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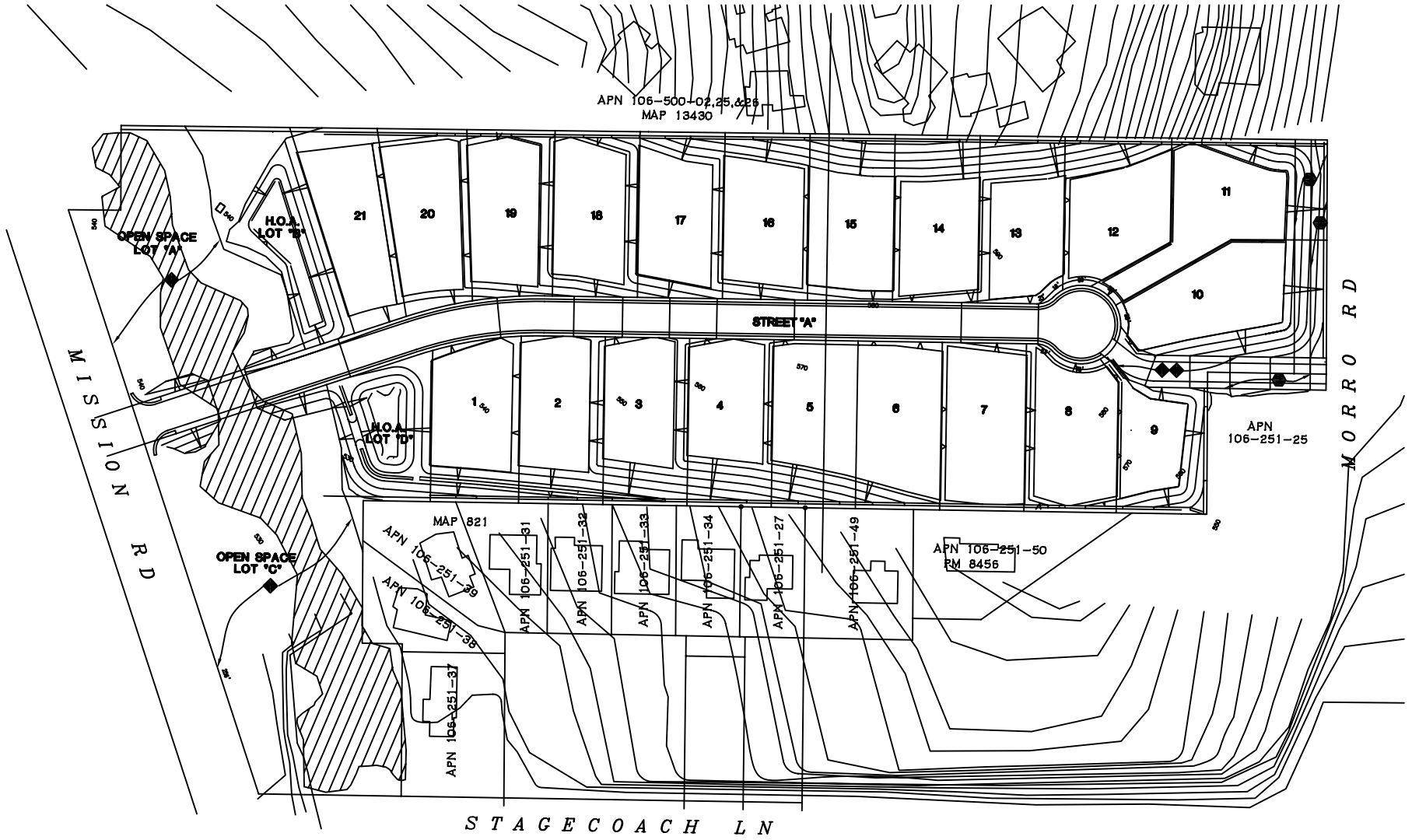
EXHIBIT 2-B

SITE PLAN



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3.0 NOISE FUNDAMENTALS

Noise has been simply defined as "unwanted sound". Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

3.1 Noise Descriptors

Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak hour Leq is the noise metric used by Caltrans for all traffic noise impact analysis.

The Community Noise Equivalent Level (CNEL) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of five decibels to sound levels in the evening from 7 p.m. to 10 p.m., and the addition of ten decibels to sound levels at night between 10 p.m. to 7 a.m. These additions are made to the sound levels at these time periods because during the evening and night hours, with the decrease in overall amount and loudness of noise generated, when compared to daytime hours, there is an increased sensitivity to sounds. For this reason the sound appears louder and it is weighted accordingly. The County of San Diego relies on the CNEL noise standard to assess transportation related impacts on noise sensitive land uses.

3.2 Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust and tires.

Because of the logarithmic nature of traffic noise levels, a doubling of the traffic noise (acoustic energy) results in a noise level increase 3 dBA. Based on the FHWA community noise assessment criteria this change is “barely perceptible”. In other words, doubling the traffic volume (assuming that the speed and truck mix do not change) results in a noise increase of 3 dBA. The truck mix on a given roadway also has a significant effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

3.3 Noise Control

Noise control is the process of obtaining an acceptable noise environment for a particular observation point or receiver by controlling the noise source, transmission path, receiver or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to any and all of these three elements and a noise barrier is most effective when placed close to the noise source or receiver.

3.4 Ground Absorption

To account for the ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft site and hard site conditions. Soft site conditions account for the sound propagation loss over

natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, as compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. To predict the worse-case future noise environment, hard site conditions were used for all floors in this analysis based on the topography in the site area and the monitoring results.

3.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 decibels, cutting the loudness of traffic noise in half. Noise barriers however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the view of a road. Noise barriers do very little good for homes on a hillside overlooking a road or for building which rise above the barrier. A noise barrier can typically achieve a 5 decibel noise level reduction when it is tall enough to break the line-of-sight.

4.0 COUNTY OF SAN DIEGO NOISE STANDARDS

The County of San Diego addresses two separate types of noise sources through the CEQA process: (1) mobile, and (2) stationary. In the context of this noise analysis, the noise levels associated with the proposed Pacifica Estates Development are regulated by the County of San Diego noise guidelines for determining significance. Those guidelines are summarized below and provided as Appendix "A".

4.1 Noise Element Criteria

The County of San Diego has adopted interior and exterior noise standards as part of the County's Noise Element of the General Plan for assessing the compatibility of land uses with transportation related noise impacts. For assessing noise impacts to noise sensitive land uses, the County requires an exterior noise level of less than 60 dBA CNEL for outdoor living areas and an interior noise standard of 45 dBA CNEL.

4.2 Noise Ordinance Criteria

Section 36.404 of the San Diego County noise ordinance provides performance standards and noise control guidelines for determining and mitigating non-transportation, or stationary, noise source impacts to residential properties. The purpose of the noise ordinance is to protect, create and maintain an environment free from noise and vibration that may jeopardize the health or welfare, or degrade the quality of life.

According to the stationary source exterior noise standards, no person shall operate any source of sound at any location within the County or allow the creation of any noise on a property which causes the noise levels to exceed the exterior noise limits at the property boundary within all zones. The noise ordinance sets an exterior noise limit for noise sensitive land uses adjacent to the property zoned S-88 of 50 dBA Leq for daytime hours of 7 a.m. to 10 p.m. and 45 dBA Leq during the noise sensitive nighttime hours of 10 p.m. to 7 a.m.

Section 36.410 of the County of San Diego ordinance controls construction equipment noise. Except for emergency work, it shall be unlawful for any person, including the County of San Diego, to operate construction equipment at any construction site, except as outlined in subsections (a) and (b) below:

(a) It shall be unlawful for any person to operate construction equipment between the hours of 7 p.m. of any day and 7 a.m. of the following day.

(b) It shall be unlawful for any person to operate construction equipment on Sundays, and days appointed by the President, Governor, or the Board of Supervisors for a public fast, Thanksgiving, or holiday, but a person may operate construction equipment on the above-specified days between the hours of 10 a.m. and 5 p.m. at his residence or for the purpose of constructing a residence for himself, provided that the average sound level does not exceed 75 decibels during the period of operation and that the operation of construction equipment is not carried out for profit or livelihood.

(c) It shall be unlawful to operate any construction equipment so as to cause at or beyond the property line of any property upon which a legal dwelling unit is located an average sound level greater than 75 decibels between the hours of 7 a.m. and 7 p.m.

For temporary activities, the County considers the 75 decibel (A) average to be based on a period of one hour.

In 1991, the U.S. Fish and Wildlife Service (USFWS) recommended that noise levels not exceed 60 dBA to protect the Gnatcatcher and other bird species. The County of San Diego has adopted this standard for all sensitive species. Therefore, the 60 dBA Leq will be used as the noise criteria to assess noise impacts on sensitive wildlife both on and off site.

5.0 NOISE LEVEL MEASUREMENTS

To determine the existing noise level environment and to assess potential noise impacts, measurements were taken at a worse-case location adjacent to Mission Road. The noise measurement was recorded by Urban Crossroads, Inc. between the hours of 9:15 a.m. and 9:30 a.m. on October 18, 2007. Appendix "B" includes study area photos and Appendix “C” includes a summary of the monitoring data.

5.1 Measurement Procedure and Criteria

Noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 150B.

5.2 Noise Measurement Locations

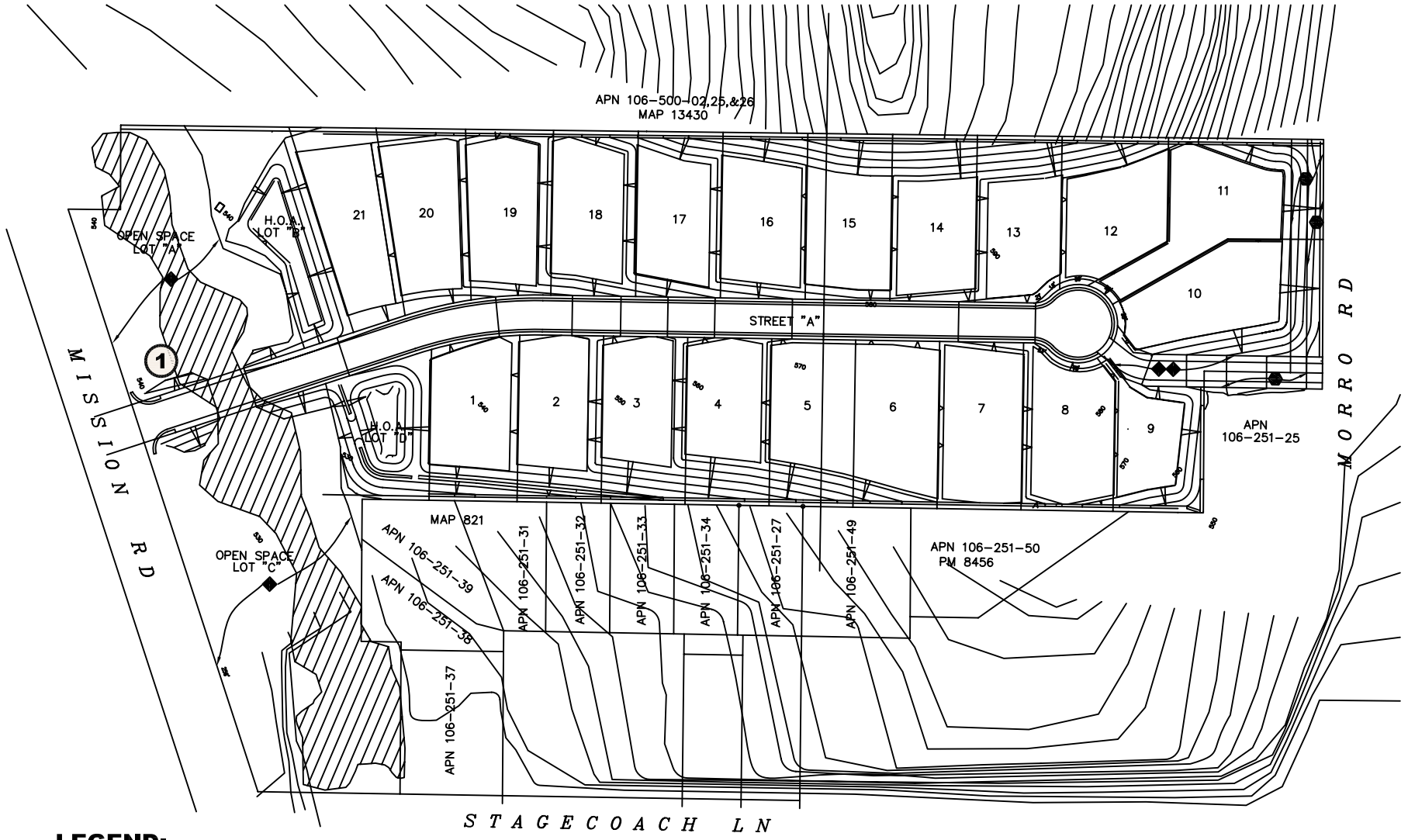
The noise monitoring location was selected based on the respective impact potential. The site is currently vacant and is surrounded on all sides by residential uses. Monitoring location 1 was located approximately 100 feet from the centerline of Mission Road. The noise monitoring location is provided in Exhibit 5-A.

5.3 Noise Measurement Results

The results of the noise level measurements are presented in Table 5-1. The noise measurements were monitored for a minimum time period of 10 minutes. The existing ambient Leq noise levels measured in the area of the project during the afternoon hour were found to be 62.2 dBA Leq at monitoring location 1. The project site is mostly vacant and the existing noise levels in the project area consist primarily of vehicle traffic from Mission Road. The speed limit used in the analysis is 55 miles per hour on Mission Road.

EXHIBIT 5-A

NOISE MONITORING LOCATION



LEGEND:

(1) = NOISE MONITORING LOCATION

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TABLE 5-1

EXISTING (AMBIENT) NOISE LEVEL MEASUREMENTS[1]

OBSERVER LOCATION[2]	DESCRIPTION[3]	TIME OF MEASUREMENT	PRIMARY NOISE SOURCE	MEASURED NOISE LEVELS (dBA Leq)
1	100 feet from the centerline of Mission Road	9:15 AM	Vehicle noise from Mission Road	62.2

[1] Noise measurement taken for a minimum period of 10 minutes by Urban Crossroads Inc on October 18, 2007

[2] See Exhibit 5-A for the location of the monitoring site, and Appendix "B" for Study Area Photos.

[3] Weather Conditions on October 18, 2007: Temperature =73°F; Wind = 7mph.

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6.0 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future noise environment.

6.1 FHWA Traffic Noise Prediction Model

The expected roadway noise impacts from Mission Road and Stage Coach Lane was projected using Sound32, Caltrans' version of the FHWA's STAMINA 2.0/OPTIMA Traffic Noise Prediction Model. Sound32 is a peak hour Leq based traffic noise prediction model. The results of this analysis are based on the Caltrans *Highway Design Manual* California Vehicle Noise Emission Levels (Calveno Curves). These curves more accurately reflect motor vehicle noise characteristics in the project area, and use of the Calveno curves is required by Section 1103.1 of the *Highway Design Manual*. The key input parameters, which determine the projected impact of vehicular traffic noise, include the lane travel speed, the percentages of automobiles, medium trucks and heavy trucks in the roadway volume, the site conditions ("hard" or "soft") and the peak hour traffic volumes.

All roadways were modeled with hard site conditions to predict the worse case future noise environment for both first and second floor receptors based on the topography in the area and the monitoring results.

Since the Sound32 traffic noise model calculates the peak hour Leq dBA noise level, it is necessary to convert the results into CNEL values. The Leq to CNEL calculations are based on a typical vehicle distribution of over a twenty-four hour period with the appropriate noise penalties for the evening and nighttime periods. For the purpose of this analysis 80% of all vehicles were assigned during the daytime hours of 7 a.m. to 7 p.m., 7% during the evening hours of 7 p.m. to 10 p.m. and 13% during the nighttime hours of 10 p.m. to 7 a.m. Section N-2231 of the Caltrans Technical Noise Supplement outlines the procedures to calculate the CNEL values using the peak hour Leq.

6.2 Sound 32 Model Setup

To obtain the necessary coordinate information required by the Sound32 traffic noise prediction model, input data was taken using the grading plans. The preliminary grading plans provided by RBF Consulting received on September 21, 2007 were used to identify the relationship between the roadway centerline elevation, the pad elevation and the centerline distance to the noise barrier, the backyard observer and at the building façade to predict the future noise environment. For modeling purposes, traffic was consolidated into a single lane located along the centerline of the road. Lane consolidation is considered an acceptable practice since the amount of error introduced by this simplification is negligible. The lanes were then subdivided into a series of contiguous segments for analysis. The nodes points on each road segment were then manually assigned an elevation using either the roadway centerline elevation or the elevation provided on the vertical roadway profile. The edges of roadway on Mission Road were included in this analysis.

For the purpose of this analysis, the roadway segments extend a minimum of 500 feet beyond any observer location. A calibration factor was used for all receptors located behind a row of existing buildings along Stage Coach Lane. Typically, three decibels of attenuation is allowed for the first row of buildings when they block 40 to 65% of the line of sight to the noise source, and three to five decibels of attenuation is allowed when the buildings obstruct more than 65% of the line of sight (*Source: CALTRANS Technical Noise Supplement Section N-5515)*. A conservative factor of 3 dBA was taken into account for the appropriate lots on the proposed project site. No grade correction (according to Caltrans Policy TAN-02-01 dated January 17, 2002) were included as part of the Sound32 traffic noise prediction model analysis.

To assess the study noise impacts with the development of the proposed project the outdoor observers located in noise sensitive land use areas were placed five

(5) feet above the pad elevation and approximately ten (10) feet from the top of slope. All first floor observers were placed five (5) feet above the proposed finished floor elevation at the building façade with all second floor observers located fifteen (15) feet above the proposed finished floor elevation.

6.3 Traffic Noise Prediction Model Inputs

The roadway parameters including the average daily traffic volumes and vehicle speeds used for this study are presented in Table 6-1. To assess the peak hour traffic noise conditions, 10% of the ADT was used for all the study area roadways. Table 6-2 presents the hourly traffic flow distribution (vehicle mix) used for this analysis. The vehicle mix provides the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model. The future traffic noise model utilizes a conservative vehicle mix of 95% Autos, 3% Medium Trucks and 2% Heavy Trucks for Mission Road. The future traffic noise model utilizes a typical vehicle mix of 96% Autos, 2% Medium Trucks and 2% Heavy Trucks for Stage Coach Lane.

6.4 Sound32 Modeled Scenarios

The existing conditions were modeled to compare against the noise measurements described in Section 5 of this report. It is expected that the primary source of noise impacts to the site will be traffic noise from Mission Road and Stage Coach Lane. The Buildout scenario includes the future Year 2030 traffic volume forecasts provided by the San Diego Association of Governments (SANDAG). An estimated traffic speed of 55 mph was utilized for Mission Road based upon the roadway classification of major arterial. An estimated traffic speed of 35 mph was used for Stage Coach Lane based upon the roadway classification of rural collector, the design of the roadway and intersection and the nearby school.

TABLE 6-1

ROADWAY PARAMETERS

CONDITION	(ADT)[1]	PEAK HOUR TRAFFIC VOLUMES[2]			MODELED/ OBSERVED VEHICLE SPEED[3]	POSTED VEHICLE SPEED
		AUTOS	MEDIUM TRUCKS	HEAVY TRUCKS		
MISSION ROAD						
EXISTING	12,600	1,224	18	18	55	55
BUILDOUT	21,000	1,995	63	42	55	55
STAGE COACH LANE						
BUILDOUT	21,000	2,016	42	42	35	35

[1] Average Daily Traffic (ADT) for buildout condition was based on SANDAG 2030 conditions, existing ADT was based on the traffic counts taken by Urban Crossroads Inc. on October 18, 2007.

[2] Worst case scenario assuming 10% of the ADT.

[3] Vehicle speeds were observed in the study area.

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TABLE 6-2

HOURLY TRAFFIC FLOW DISTRIBUTION[1]

MOTOR-VEHICLE TYPE	DAYTIME (7 AM TO 7 PM)	EVENING (7 PM TO 10 PM)	NIGHT (10 PM TO 7 AM)	TOTAL % TRAFFIC FLOW
MISSION ROAD				
Automobiles	77.5%	12.9%	9.6%	95.00%
Medium Trucks	84.8%	4.9%	10.3%	3.00%
Heavy Trucks	86.5%	2.7%	10.8%	2.00%
STAGE COACH LANE				
Automobiles	77.5%	12.9%	9.6%	96.00%
Medium Trucks	84.8%	4.9%	10.3%	2.00%
Heavy Trucks	86.5%	2.7%	10.8%	2.00%

[1] Conservative vehicle mix used for Mission Road, typical vehicle mix used fro Stage Coach Lane

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7.0 ON-SITE NOISE ANALYSIS

Using the FHWA traffic noise prediction model and the input parameters described in Section 6 of this report, calculations of the expected future noise impacts were completed. An analysis has been performed to determine the acoustical shielding which may be used to reduce the expected roadway noise impact for the affected noise sensitive land uses. Key input data for these barrier performance equations include the relative source-barrier-receiver horizontal separations, the relative source-barrier-receiver vertical separations, the typical noise source spectra and the barrier transmission loss. The exterior noise levels were analyzed for the existing conditions and buildout conditions.

7.1 Existing Conditions

Section N-5440 of the Caltrans Technical Noise Supplement provides detailed procedures for calibrating the Sound32 traffic noise prediction model to actual noise level measurements. The comparison is made to ensure the predicted traffic noise levels accurately reflect the actual measured noise levels. Section N-5460 suggests that model calibration should not be performed when calculated and measured noise levels agree within 1 dBA. Differences of 3.0 to 4.0 dBA may routinely be calibrated.

The modeled existing noise levels are shown on Table 7-1. Monitoring locations were modeled to compare with the noise monitoring locations presented in Table 5-1. The model is predicting the noise levels within 0.2 dBA when using hard-site conditions. Therefore, all roadways were modeled with hard site conditions to predict the worse case future noise environment for both first and second floor receptors. The calibration factor based on the noise measurement data described in Chapter 5 was not included as part of the buildout analysis. The model input parameters for calibration can be seen in Appendix “D”.

TABLE 7-1

EXISTING NOISE LEVELS (MODELED)

RECEPTOR	RECEPTOR DESCRIPTION	dBA Leq	dBA CNEL
1	Monitoring Location 1	62.3	62.4

[1] Noise monitoring locations included in the model for existing conditions to compare with the measured noise results presented in Table 5-1.

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7.2 Traffic Noise Contours

Noise contours are lines that drawn around a noise source indicating a constant or equal level of noise exposure. Noise contour boundaries are generally used as a planning tool to assess the need for additional analysis.

The noise contour boundaries were developed for unmitigated future Buildout conditions. No barriers were included as part of the noise contour analysis. The Sound32 traffic noise prediction model was used to calculate a reference noise level for observers perpendicular to Mission Road and Stage Coach Lane. Exhibit 7-A provides the location of the first and second floor 75 and 60 dBA CNEL noise contour boundaries.

The noise contours shown on Exhibit 7-A show that the 75 dBA CNEL contours are all located along the edge of roadway. Portions of the proposed site may exceed the County of San Diego 60 dBA CNEL exterior noise standard for unmitigated conditions. Based on this finding, additional detailed exterior noise analysis was performed for each parcel. The distances to the 60 dBA CNEL contour from each roadway to the first and second floors are provided in Table 7-2.

7.3 Buildout Scenario Exterior Noise Analysis

The buildout analysis was modeled assuming future Year 2030 traffic volumes along Mission Road and Stage Coach Lane. An estimated traffic speed of 55 mph was utilized for Mission Road based upon the roadway classification of major arterial. An estimated traffic speed of 35 mph was used for Stage Coach Lane based upon the roadway classification of rural collector, the design of the roadway and intersection and the nearby school. The edge of slope for Mission Road was also included in the model for this scenario. The exterior noise levels will meet the County of San Diego 60 dBA CNEL standard for residential developments at all proposed lots without mitigation. Modeled observer locations for the project

EXHIBIT 7-A

NOISE CONTOURS

LEGEND:

= LOCATION OF 1ST AND 2ND FLOOR 60 DBA CONTOUR

= LOCATION OF 1ST AND 2ND FLOOR 75 DBA CONTOUR

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TABLE 7-2

LOTS LOCATED WITHIN 60 dBA CNEL CONTOUR[1]

LOCATION	DISTANCE TO FIRST FLOOR 60 dBA CONTOUR (FEET)	DISTANCE TO SECOND FLOOR 60 dBA CONTOUR (FEET)	AFFECTED LOTS REQUIRING MITIGATION
MISSION ROAD CENTERLINE	330	330	NONE
STAGE COACH LANE CENTERLINE	390	390	

[1] Graphic provided as Exhibit 7-A

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are presented in Exhibit 7-B. The results of the unmitigated noise sensitive land uses are shown in Table 7-3. Noise levels at the second floors of all lots were found to comply with the General Plan Noise Element Standard, of 60 dBA CNEL. Therefore, interior mitigation for these is not required to obtain an interior level of 45 dBA CNEL for all lots on the proposed project site. The Sound32 input decks for first and second floor future year 2030 conditions are provided in Appendix “E”.

7.4 Airstrip Activity

The Fallbrook Community Airpark is located at Airpark Road approximately .5 miles northwest of the proposed project site. The future noise contours are provided as Appendix “F”. The project site boundary is beyond the noise contours; therefore no additional analysis from the Fallbrook Community Airpark is necessary.

EXHIBIT 7-B

MODELED OBSERVER LOCATIONS

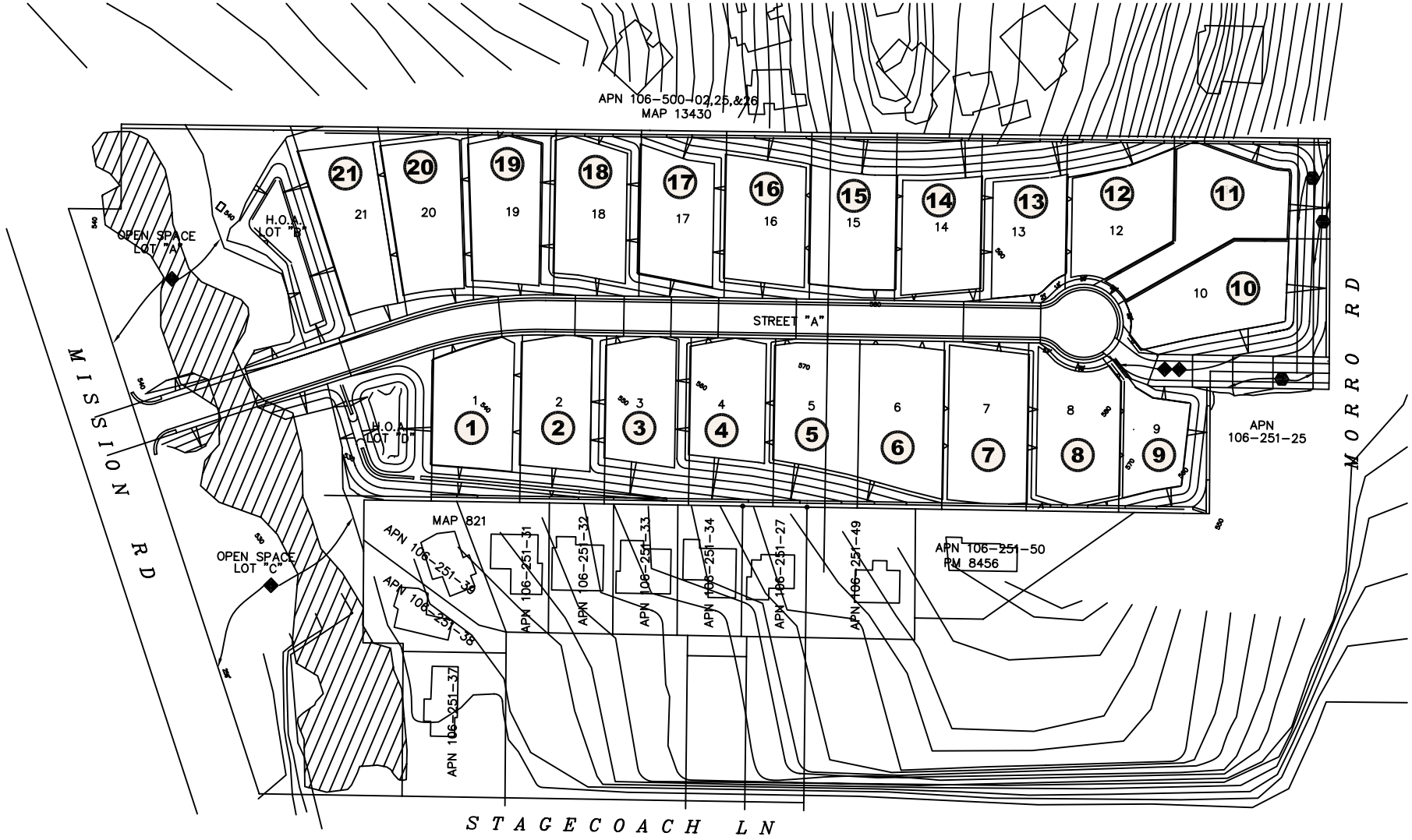

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TABLE 7-3

BUILDOUT CONDITIONS EXTERIOR NOISE LEVELS (dBA CNEL)

RECEPTOR NUMBER	RECEPTOR LOCATION	UNMITIGATED GROUND FLOOR EXTERIOR NOISE LEVEL	SECOND FLOOR UNMITIGATED EXTERIOR NOISE LEVEL
1	LOT 1	59.3	60.4
2	LOT 2	59.2	60.0
3	LOT 3	58.9	59.8
4	LOT 4	58.6	59.4
5	LOT 5	58.2	58.8
6	LOT 6	57.7	58.1
7	LOT 7	57.5	57.8
8	LOT 8	57.1	57.2
9	LOT 9	57.0	56.9
10	LOT 10	54.7	54.5
11	LOT 11	53.8	53.6
12	LOT 12	54.4	54.1
13	LOT 13	54.9	54.7
14	LOT 14	55.1	55.5
15	LOT 15	55.7	56.3
16	LOT 16	56.2	57.0
17	LOT 17	56.4	57.3
18	LOT 18	56.7	57.6
19	LOT 19	57.6	57.7
20	LOT 20	58.2	59.1
21	LOT 21	60.2	59.9

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8.0 SHORT-TERM CONSTRUCTION NOISE IMPACTS

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, loaders and scrapers can reach high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours. The project site will be mass graded prior to the construction of any residences. According to the project applicant, a total of two dozers, two loaders, two excavators, two scrapers, one water truck and two dump trucks during grading activities will be required to complete the proposed grading operations. The noise levels utilized in this analysis are shown in Table 8-1.

8.1 Construction Related Noise Levels

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from approximately 60 dBA to noise levels in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 68 dBA measured at 50 feet from the noise source to the receptor would be reduced to 62 dBA at 100 feet from the source to the receptor, and would be further reduced to 56 dBA at 200 feet from the source to the receptor.

8.2 Grading Activities Noise Level Impact Analysis

Using a point-source noise prediction model, calculations of the expected construction noise impacts were completed. Key input data for these barrier performance equations include the relative source to receiver horizontal separations, the relative source to receiver vertical separations, the typical noise source spectra and any barrier transmission loss.

TABLE 8-1

CONSTRUCTION EQUIPMENT NOISE LEVELS

EQUIPMENT TYPE	SOURCE LEVEL AT 50 FEET (dBA) [1]
Dozer	75
Loader	70
Excavator	75
Scraper	75
Water Truck	70
Dump Truck	70

1 Reference Levels Provided by Environmental Protection Agency (EPA), 1971.

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The nearest property lines are located at the adjacent residences to the north and south and are a minimum of 100-feet or more from the proposed grading operations. The project site will be mass graded in one phase. The project plans to utilize two dozers, two loaders, two excavators, two scrapers, one water truck and two dump trucks. As can be seen in the Table 8-2, at a distance of 100-feet the point source noise attenuation from construction activities and the nearest property line is 6.0 dBA. Given this, the noise levels will comply with the County of San Diego's 75 dBA standard at all project property lines. The equipment is expected to be spread around the site and no impacts are anticipated.

8.3 Biological Impacts

In 1991, the U.S. Fish and Wildlife Service (USFWS) recommended that noise levels not exceed 60 dBA to protect the Gnatcatcher and other bird species. The County of San Diego has adopted this standard for all sensitive species. Therefore, the 60 dBA Leq will be used as the noise criteria to assess noise impacts on sensitive wildlife both on and off site. Construction activities will occur during the sensitive habitat nesting/breeding season in both 2007 and 2008. If construction activities occur within 575 feet of any sensitive habitat location the noise level may be above 60 dBA Leq and impacts could occur. As a design measure the proposed project applicant may be required to install a temporary noise barrier along any property line where the construction equipment is located within 575 feet. The proposed noise barrier will need to be of solid non-gapping wood construction to comply with the County of San Diego's 60 dBA standard for sensitive habitats.

If the construction equipment is located within 575 feet of any sensitive habitat, it is recommended that a specific mitigation plan based upon the location of the identified habitat and corresponding construction schedule be identified by a County certified acoustical engineer. This mitigation plan would determine the height and location of a temporary barrier, if one is necessary. The height of this

TABLE 8-2

PHASE 5 CONSTRUCTION NOISE LEVELS

EQUIPMENT TYPE	QUANTITY	SOURCE LEVEL AT 50 FEET (dBA) [1]	CUMULATIVE LEVEL AT 50 FEET (dBA)
Dozer	2	75	78.0
Loader	2	70	73.0
Excavator	2	75	78.0
Scraper	2	75	78.0
Water Truck	1	70	70.0
Dump Truck	2	75	78.0
CUMULATIVE LEVELS AT 50 FEET (dBA)			81.4
DISTANCE TO PROPERTY LINE			100
NOISE REDUCTION DUE TO DISTANCE			-6.0
PROPERTY LINE NOISE LEVEL			**75.3**

[1] Reference Levels Provided by Environmental Protection Agency (EPA), 1971.

T:\Carlsbad_Jobs_05100\05111\Excel\[05111-02 Revised Tables.xls]T8-2

barrier would be based on the topography in the area, the location of the habitat and also the location of the equipment. The biological mitigation plan should include noise monitoring prior to and during the beginning of the nesting/breeding season by the acoustical engineer in coordination with the Project Biologist to ensure compliance with applicable standards.

APPENDIX A

COUNTY OF SAN DIEGO NOISE STANDARDS

Policy 4b

Because exterior community noise equivalent levels (CNEL) above 60 decibels and/or interior CNEL above 45 decibels may have an adverse effect on public health and welfare, it is the policy of the County of San Diego that:

1. Whenever it appears that new development may result in any (existing or future)noise sensitive land use being subject to noise levels of CNEL equal to 60 decibels *(A)* or greater, an acoustical analysis shall be required.

2. If the acoustical analysis shows that noise levels at any noise sensitive land use will exceed CNEL equal to 60 decibels, modifications shall be made to the development which reduce the exterior noise level to less than CNEL of 60 decibels *(A)* and the interior noise level to less than CNEL of 45 decibels *(A).*

3. If modifications are not made to the development in accordance with paragraph 2 above, the development shall not be approved unless a finding is made that there are specifically identified overriding social or economic considerations which warrant approval of the development without such modification; provided, however, if the acoustical study shows that sound levels for any noise sensitive land use will exceed a CNEL equal to 75 decibels (A) even with such modifications, the development shall not be approved irrespective of such social or economic considerations.

Definitions, Notes & Exceptions

"Decibels (A)" refers to A-weighted sound levels as noted on page VIII-2 of this Element.

"Development" means any physical development including but not limited to residences, commercial, or industrial facilities, roads, civic buildings, hospitals, schools, airports, or similar facilities.

"Exterior noise":

(a) For single family detached dwelling projects, "exterior noise" means noise measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum area:

(i) Net lot area up to 4,000 sq. ft.:	400 square feet
(ii) Net lot area 4,000 sq. ft. to 10 ac.:	10% of net lot area
(iii) Net lot area over 10 ac.:	1 ac.

(b) For all other projects, "exterior noise" means noise measured at all exterior areas which are provided for group or private usable open space purposes.

(c) For County road construction projects, the exterior noise level due to vehicular traffic impacting a noise sensitive area should not exceed the following values:

(i)	Federally funded projects:	The Noise standard contained in applicable Federal Highway Administration Standards.
(ii)	Other projects:	60 decibels *(A),* except if the existing or projected noise level without the project is 58 decibels *(A)* or greater, a 3 decibel *(A)* increase is allowed, up to the maximum permitted by Federal Highway Administration Standards.

"Group or Private Usable Open Space" shall mean: Usable open space intended for common use by occupants of a development, either privately owned and maintained or dedicated to a public agency, normally including swimming pools, recreation courts, patios, open landscaped areas, and greenbelts with pedestrian walkways and equestrian and bicycle trails, but not including off-street parking and loading areas or driveways (Group Usable Open Space); and usable open space intended for use of occupants of one dwelling unit, normally including yards, decks and balconies (Private Usable Open Space).

"Interior noise": The following exception shall apply: For rooms which are usually occupied only a part of the day (schools, libraries, or similar), the interior one-hour average sound level, due to noise outside, should not exceed 50 decibels (A).

"Noise sensitive land use" means any residence, hospital, school, hotel, resort, library or any other facility where quiet is an important attribute of the environment.

Action Program 4b1 Recommend programs to soundproof buildings or redevelop areas where it is impossible to reduce existing source noise to acceptable levels.

Action Program 4b2 Study the feasibility of extending the application of Section 1092, California Administrative Code dealing with noise insulation standards to single-family dwellings, and incorporating higher standards for reduction of exterior noise intrusion into structures.

Action Program 4b3 Require present and projected noise level data to be included in Environmental Impact Reports. Designs to mitigate adverse noise impacts shall also be used.

(2) any sound or noise exceeding criteria standards, or levels as set forth in this chapter.

(t) Water Craft shall mean any boat, ship, barge, craft or floating thing designed for navigation in the water which is propelled by machinery, whether or not such machinery is the principal source or propulsion, but shall not include a vessel possessing a valid marine document issued by the United States Bureau of Customs or any federal agency successor thereto.

(u) Supplementary Definitions of Technical Terms - definitions of technical terms not defined herein shall be obtained from the American National Standard, "Acoustical Terminology" S1. 1-1961 (R-1971) or the latest revision thereof.

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

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

SEC. 36.403. SOUND LEVEL MEASUREMENT.

(a) Any sound or noise level measurement made pursuant to the provisions of this ordinance shall be measured with a sound level meter using the A-weighting and "slow" response pursuant to applicable manufacturer's instructions.

(b) The sound level meter shall be appropriately calibrated and adjusted as necessary by means of an acoustical calibrator of the coupler-type to assure meter accuracy within the tolerances set forth in American National Standards ANSI-SI. 4-1971.

(c) For outside measurements, the microphone shall be not less than four (4) feet above the ground, at least four (4) feet distant from walls or other large reflecting surfaces and shall be protected from the effects of wind noises by the use of appropriate wind screens and the location selected shall be at any point on the affected property. In cases when the microphone must be located within ten (10) feet of walls or similar large reflecting surfaces, the actual measured distances and orientation of sources, microphone and reflecting surfaces shall be noted and recorded. In no case shall a noise measurement be taken within five (5) feet of the noise source.

(d) For inside measurements, the microphone shall be at least three (3) feet distant from any wall, ceiling or partition, and the average measurement of at least three (3) microphone positions throughout the room shall be determined.

SEC. 36.404. SOUND LEVEL LIMITS.

Unless a variance has been applied for and granted, it shall be unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level, at any point on or beyond the boundaries of the property on which the sound is produced, exceeds the applicable limits set forth below, except that:

(1) Construction noise level limits shall be governed by Section 36.410 of this chapter; and

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

Zone		APPLICABLE LIMIT ONE-HOUR AVERAGE SOUND LEVEL (DECIBELS)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, and R-U Use Regulations with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
R-RO, R-C, R-M, C-30, S-86, R-V AND R-U Use Regulations with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
S-94 and all other commercial zones.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
M-50, M-52, M-54	Anytime	70
S-82, M-58, and all other industrial zones.	Anytime	75

If the measured ambient level exceeds the applicable limit noted above, the allowable one hour average sound level shall be the ambient noise level. The ambient noise level shall be measured when the alleged noise violation source is not operating.

The sound level limit at a location on a boundary between two (2) zoning districts is the arithmetic mean of the respective limits for the two districts; provided however, that the one-hour average sound level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be

75 decibels at the property line regardless of the zone where the extractive industry is actually located.

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 this section, measured at or beyond six (6) feet from the boundary of the easement upon which the equipment is located.

(Amended by Ord. No. 7094 (N.S.), effective 3-25-86; amended by Ord. No. 9478 (N.S.), effective 7-19-02)

SEC. 36.405. MOTOR VEHICLES.

(a) Repairs of Motor Vehicles. It shall be unlawful for any person within the County to repair, rebuild, or test any motor vehicle in such a manner as to cause disturbing, excessive or offensive noises as defined in Section 36.402(s) of this chapter.

(b) On-Highway. Violations for exceeding applicable noise level limits as to persons operating motor vehicles on a public street or highway in the County shall be prosecuted under applicable California Vehicle Code provisions and under Federal Regulation adopted pursuant to 42 U.S.C. 4905(a)(1)(A), (B), and (C)(ii), (iii) for which enforcement responsibility is delegated to local governmental agencies.

(c) Off-Highway. Except as otherwise provided for in this ordinance, 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 a manner so as to cause noise in excess of those noise levels permitted for On-Highway motor vehicles as specified in the table "35 miles per hour or less speed limits" contained in Section 23130 of the California Vehicle Code.

(d) Emergency Vehicles. Nothing in this section shall apply to authorized emergency vehicles when being used in emergency situations.

(e) Urban Transit Buses. Buses as defined in the California Vehicle Code shall at all times comply with the requirements of this section.

SEC. 36.406. POWERED MODEL VEHICLES.

It shall be unlawful for any person to operate any powered model vehicle except between the hours of 7 a.m. and 9 p.m. and then only in such a manner so as not to emit noise in excess of those levels set forth in Section 36.404; however, if powered model vehicles are operated in public parks at a point more than 100 feet from the property line, the noise level shall be determined at a distance of 100 feet from the noise source instead of at the property line, and

noises from powered model vehicles measured at that distance in excess of the noise limits specified in Section 36.404 are prohibited.

SEC. 36.407. REFUSE VEHICLES & PARKING LOT SWEEPERS.

No person shall operate, or permit to be operated, a refuse compacting, processing, or collection vehicle or parking lot sweeper between the hours of 10 p.m. to 6 a.m. in or adjacent to any residential zone unless a variance has been applied for and granted pursuant to this chapter.

(Amended by Ord. No. 7428 (N.S.), effective 2-4-88)

SEC. 36.408. WATERCRAFT.

Violations for excessive noise of watercraft operating in waters under the jurisdiction of the County of San Diego shall be prosecuted under applicable provisions of the California Harbors and Navigation Code.

SEC. 36.409. AIRPORTS.

All noise emanating from airport activities other than that produced by aircraft shall be subject to all of the regulations contained in this ordinance.

SEC. 36.410. CONSTRUCTION EQUIPMENT.

Except for emergency work, it shall be unlawful for any person, including the County of San Diego, to operate construction equipment at any construction site, except as outlined in subsections (a) and (b) below:

(a) It shall be unlawful for any person, including the County of San Diego, to operate construction equipment at any construction site on Sundays, and days appointed by the President, Governor, or the Board of Supervisors for a public fast, Thanksgiving, or holiday. Notwithstanding the above, a person may operate construction equipment on the above-specified days between the hours of 10 a.m. and 5 p.m. in compliance with the requirements of subdivision (b) of this Section at his residence or for the purpose of constructing a residence for himself, provided such operation of construction equipment is not carried on for profit or livelihood. In addition, it shall be unlawful for any person to operate construction equipment at any construction site on Mondays through Saturdays except between the hours of 7 a.m. and 7 p.m.

(b) No such equipment, or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of seventy-five (75) decibels for more than 8 hours during any twenty-four (24) hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes.

In the event that lower noise limit standards are established for construction equipment pursuant to State or Federal law, said lower limits shall be used as a basis for revising and amending the noise level limits specified in subsection (b) above.

SEC. 36.411. CONTAINERS AND CONSTRUCTION MATERIAL.

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

SEC. 36.412. SIGNAL DEVICE FOR FOOD TRUCKS.

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

SEC. 36.413. MULTIPLE FAMILY DWELLING UNITS.

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

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

(> greater than)

(less than or equal to)

The monitoring procedures outlined under Section 36.403 shall be followed in enforcing this section.

SEC. 36.414. GENERAL NOISE REGULATIONS.

APPENDIX B

STUDY AREA PHOTOS

Monitoring Location 1

Western View to Mission Rd.

Western View to Mission Rd.

Eastern View from Mission Rd.

APPENDIX C

SPECTRAL NOISE READING PRINTOUTS

Sound Level Meter / RTA Settings
Translated: 18-Oct-2007 13:55:56

File Translated:
Model Number: 824
Serial Number: A2629
Firmware Rev: 4.272
Software Version: 3.120
Name: Urban Crossroads
Descr1: Enter Address Line 1
Descr2: Enter Address Line 2
Setup: SLM&RTA.ssa
Setup Descr: SLM & Real-Time Analyzer
Location: Pacifica Estates
Note 1: 100 ft. from the centerline
Note 2:

Sound Level Meter / RTA Settings
Bandwidth: 1/3
Detector: Slow
Weighting: A
Peak-1 Weighting: Flat
Second Display: TWA
Gain: +0
RTA Detector: Fast
RTA Weighting: Flat
AC Output Control: AC-1 AC-2

Calibration
Calibrator S/N: not set
Calibrator Level: 114.0dB
Auto. Calibration: No
Calibration Time: 23:59

Transducer: Condensor
Noise Floor: 8.00 dB
Rand. Inc Correction: Disabled

824 Calibration Settings
Translated: 18-Oct-2007 13:55:56

Calibration Offset: -45.17
Calibration Date: 18-Oct-2007 Calibration Time: 07:00:46
Calib Check Date: 18-Oct-2007 Calib Check Time: 07:00:46
Calib Check Level: 114.00

SLM & RTA Summary
Translated: 18-Oct-2007 13:55:56

Overall Any Data
Start Time: 18-Oct-2007 07:16:10
Elapsed Time: 00:10:02.6

	A Weight	C Weight	Flat
Leq:	62.2 dBA	71.8 dBC	72.4 dBF
SEL:	90.0 dBA	99.6 dBC	100.2 dBF
Peak:	87.2 dBA	95.8 dBC	96.0 dBF
	18-Oct-2007 07:21:43	18-Oct-2007 07:19:36	18-Oct-2007 07:19:36
Lmax (slow):	72.6 dBA	86.4 dBC	86.7 dBF
	18-Oct-2007 07:19:38	18-Oct-2007 07:19:37	18-Oct-2007 07:19:37
Lmin (slow):	42.9 dBA	55.3 dBC	56.8 dBF

ML1

	18-Oct-2007 07:26:04	18-Oct-2007 07:26:03	18-Oct-2007 07:26:03
Lmax (fast):	74.1 dBA	88.2 dBC	88.5 dBF
	18-Oct-2007 07:19:37	18-Oct-2007 07:19:36	18-Oct-2007 07:19:36
Lmin (fast):	42.5 dBA	54.0 dBC	55.4 dBF
	18-Oct-2007 07:26:02	18-Oct-2007 07:25:57	18-Oct-2007 07:26:03
Lmax (impulse):	74.5 dBA	88.8 dBC	89.1 dBF
	18-Oct-2007 07:19:37	18-Oct-2007 07:19:36	18-Oct-2007 07:19:36
Lmin (impulse):	42.8 dBA	56.7 dBC	58.0 dBF
	18-Oct-2007 07:26:03	18-Oct-2007 07:26:02	18-Oct-2007 07:26:02

Spectra
Start Time: 18-Oct-2007 07:16:10 Run Time: 00:10:02.6

Freq	Leq 1/3	Leq 1/1	Max 1/3	Max 1/1	Min 1/3	Min 1/1
12.5 Hz	51.4		54.2		25.6	
16.0 Hz	52.6	57.2	62.5	64.8	33.6	39.3
20.0 Hz	53.0		59.9		37.7	
25.0 Hz	55.5		57.4		38.7	
31.5 Hz	57.1	63.3	60.3	64.8	39.8	45.2
40.0 Hz	61.1		61.4		42.1	
50.0 Hz	59.8		64.6		40.5	
63.0 Hz	65.8	69.0	75.7	77.0	40.8	45.4
80.0 Hz	65.1		70.1		40.7	
100 Hz	65.2		84.5		39.8	
125 Hz	60.8	67.0	68.0	84.7	38.0	42.5
160 Hz	57.1		66.2		32.9	
200 Hz	54.6		72.9		30.5	
250 Hz	52.5	57.5	63.9	73.9	29.2	34.8
315 Hz	49.9		64.4		30.3	
400 Hz	51.0		64.8		31.5	
500 Hz	52.8	57.9	66.8	71.5	33.5	37.3
630 Hz	54.7		68.0		32.4	
800 Hz	55.9		66.0		34.2	
1000 Hz	55.4	59.7	63.3	68.7	33.0	37.8
1250 Hz	52.9		61.1		31.3	
1600 Hz	50.0		59.1		27.8	
2000 Hz	46.4	52.3	56.2	61.7	23.8	29.9
2500 Hz	44.4		54.0		21.4	
3150 Hz	42.8		52.9		19.6	
4000 Hz	40.2	45.4	49.6	55.2	23.6	26.1
5000 Hz	37.0		46.5		19.2	
6300 Hz	34.3		45.8		19.4	
8000 Hz	32.0	37.2	47.0	51.0	19.7	24.4
10000 Hz	29.6		45.9		19.9	
12500 Hz	26.7		44.1		20.4	
16000 Hz	24.5	30.1	39.2	45.5	21.9	26.8
20000 Hz	24.4		32.3		23.4	

Ln Start Level: 15 dB

L (1.00)	0.0
L (5.00)	0.0
L (50.00)	0.0
L (90.00)	0.0
L (95.00)	0.0
L (99.00)	0.0

Detector: Slow
Weighting: A

SPL Exceedance Level 1:	85.0 dB	Exceeded:	0 times
SPL Exceedance Level 2:	120.0 dB	Exceeded:	0 times
Peak-1 Exceedance Level:	105.0 dB	Exceeded:	0 times

ML1

Peak-2 Exceedance Level: 100.0 dB Exceeded: 0 times
Hysteresis: 2
Overloaded: 0 time(s)
Paused: 0 times for 00:00:00.0

APPENDIX D

EXTERIOR ANALYSIS PREDICTION MODEL INPUTS AND CALCULATIONS FOR EXISTING CONDITIONS

```
Pacifica Estates Existing
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 1224 , 55 , 18 , 55 , 18 , 55
L-MISSION ROAD, 1
N,3004.,5475,530,
N,2950.,5626,536,
N,2792.,6082,544,
N,2699.,6348,550,
N,2577.,6728,556,
N,2507.,6942,558,
B-Mission Rd. Road Edge, 1 , 1 , 0 ,0
2986.,5637,534,534,
2831.,6096,542,542,
2743.,6360,548,548,
2613.,6740,554,554,
2541.,6953,556,556,
R, 1 , 67 ,500
2873,6167,538.,ML1
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
Pacifica Estates Existing

BARRIER DATA
****

BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	484.5	BERM
2	-	0.*							B1 P2	278.3	BERM
3	-	0.*							B1 P3	401.7	BERM
4	-	0.*							B1 P4	224.8	BERM
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	ML1	67.	500.	62.3

APPENDIX E

EXTERIOR ANALYSIS PREDICTION MODEL INPUTS
AND CALCULATIONS FOR BUILDOUT SCENARIO

```
Pacifica Estates Unmitigated First Floor
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 1995 , 55 , 63 , 55 , 42 , 55
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 2016 , 35 , 42 , 35 , 42 , 35
L-MISSION ROAD, 1
N,3004.,5475,530,
N,2950.,5626,536,
N,2792.,6082,544,
N,2699.,6348,550,
N,2577.,6728,556,
N,2507.,6942,558,
L-STAGE COACH LANE, 2
N,2956.,5614,530,
N,4218.,5616,530,
N,4691.,5617,530,
B-Mission Rd. Road Edge, 1 , 1 , 0 ,0
2986.,5637,534,534,
2831.,6096,542,542,
2743.,6360,548,548,
2613.,6740,554,554,
2541.,6953,556,556,
R, 1 , 65 ,500
3245,6094,555.,LOT 1
R, 2 , 67 ,500
3342,6083,560.,LOT 2
R, 3 , 67 ,500
3449,6088,569.,LOT 3
R, 4 , 67 ,500
3554,6092,577.,LOT 4
R, 5 , 67 ,500
3660,6087,582.,LOT 5
R, 6 , 67 ,500
3765,6076,582.,LOT 6
R, 7 , 67 ,500
3874,6056,583.,LOT 7
R, 8 , 67 ,500
3985,6063,577.,LOT 8
R, 9 , 67 ,500
4081,6064,575.,LOT 9
R, 10 , 67 ,500
4195,6279,575.,LOT 10
R, 11 , 67 ,500
4187,6415,577.,LOT 11
R, 12 , 67 ,500
4042,6407,579.,LOT 12
R, 13 , 67 ,500
3923,6392,580.,LOT 13
R, 14 , 67 ,500
3811,6391,587.,LOT 14
R, 15 , 67 ,500
3708,6396,590.,LOT 15
R, 16 , 67 ,500
3603,6404,588.,LOT 16
R, 17 , 67 ,500
3497,6415,581.,LOT 17
R, 18 , 67 ,500
3388,6421,573.,LOT 18
R, 19 , 67 ,500
3281,6429,564.,LOT 19
R, 20 , 67 ,500
3174,6429,559.,LOT 20
R, 21 , 67 ,500
```

```
3087,6420,554.,LOT 21
K,-3
2  ,ALL
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
Pacifica Estates Unmitigated First Floor

BARRIER DATA
****

BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	484.5	BERM
2	-	0.*							B1 P2	278.3	BERM
3	-	0.*							B1 P3	401.7	BERM
4	-	0.*							B1 P4	224.8	BERM
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	LOT 1	65.	500.	59.3
2	LOT 2	67.	500.	59.2
3	LOT 3	67.	500.	58.9
4	LOT 4	67.	500.	58.6
5	LOT 5	67.	500.	58.2
6	LOT 6	67.	500.	57.7
7	LOT 7	67.	500.	57.5
8	LOT 8	67.	500.	57.1
9	LOT 9	67.	500.	57.0
10	LOT 10	67.	500.	54.7
11	LOT 11	67.	500.	53.8
12	LOT 12	67.	500.	54.4
13	LOT 13	67.	500.	54.9
14	LOT 14	67.	500.	55.1
15	LOT 15	67.	500.	55.7
16	LOT 16	67.	500.	56.2
17	LOT 17	67.	500.	56.4
18	LOT 18	67.	500.	56.7
19	LOT 19	67.	500.	57.6
20	LOT 20	67.	500.	58.2
21	LOT 21	67.	500.	60.2

```
Pacifica Estates Unmitigated Second Floor
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 1995 , 55 , 63 , 55 , 42 , 55
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 2016 , 35 , 42 , 35 , 42 , 35
L-MISSION ROAD, 1
N,3004.,5475,530,
N,2950.,5626,536,
N,2792.,6082,544,
N,2699.,6348,550,
N,2577.,6728,556,
N,2507.,6942,558,
L-STAGE COACH LANE, 2
N,2956.,5614,530,
N,4218.,5616,530,
N,4691.,5617,530,
B-Mission Rd. Road Edge, 1 , 1 , 0 ,0
2986.,5637,534,534,
2831.,6096,542,542,
2743.,6360,548,548,
2613.,6740,554,554,
2541.,6953,556,556,
R, 1 , 65 ,500
3245,6094,565.,LOT 1
R, 2 , 67 ,500
3342,6083,570.,LOT 2
R, 3 , 67 ,500
3449,6088,579.,LOT 3
R, 4 , 67 ,500
3554,6092,587.,LOT 4
R, 5 , 67 ,500
3660,6087,592.,LOT 5
R, 6 , 67 ,500
3765,6076,592.,LOT 6
R, 7 , 67 ,500
3874,6056,593.,LOT 7
R, 8 , 67 ,500
3985,6063,587.,LOT 8
R, 9 , 67 ,500
4081,6064,585.,LOT 9
R, 10 , 67 ,500
4195,6279,585.,LOT 10
R, 11 , 67 ,500
4187,6415,587.,LOT 11
R, 12 , 67 ,500
4042,6407,589.,LOT 12
R, 13 , 67 ,500
3923,6392,590.,LOT 13
R, 14 , 67 ,500
3811,6391,597.,LOT 14
R, 15 , 67 ,500
3708,6396,600.,LOT 15
R, 16 , 67 ,500
3603,6404,598.,LOT 16
R, 17 , 67 ,500
3497,6415,591.,LOT 17
R, 18 , 67 ,500
3388,6421,583.,LOT 18
R, 19 , 67 ,500
3281,6429,574.,LOT 19
R, 20 , 67 ,500
3174,6429,569.,LOT 20
R, 21 , 67 ,500
```

```
3087,6420,564.,LOT 21
K,-3
2  ,ALL
C,C
```

SOUND32 - RELEASE 07/30/91

TITLE:
Pacifica Estates Unmitigated Second Floor

BARRIER DATA
****

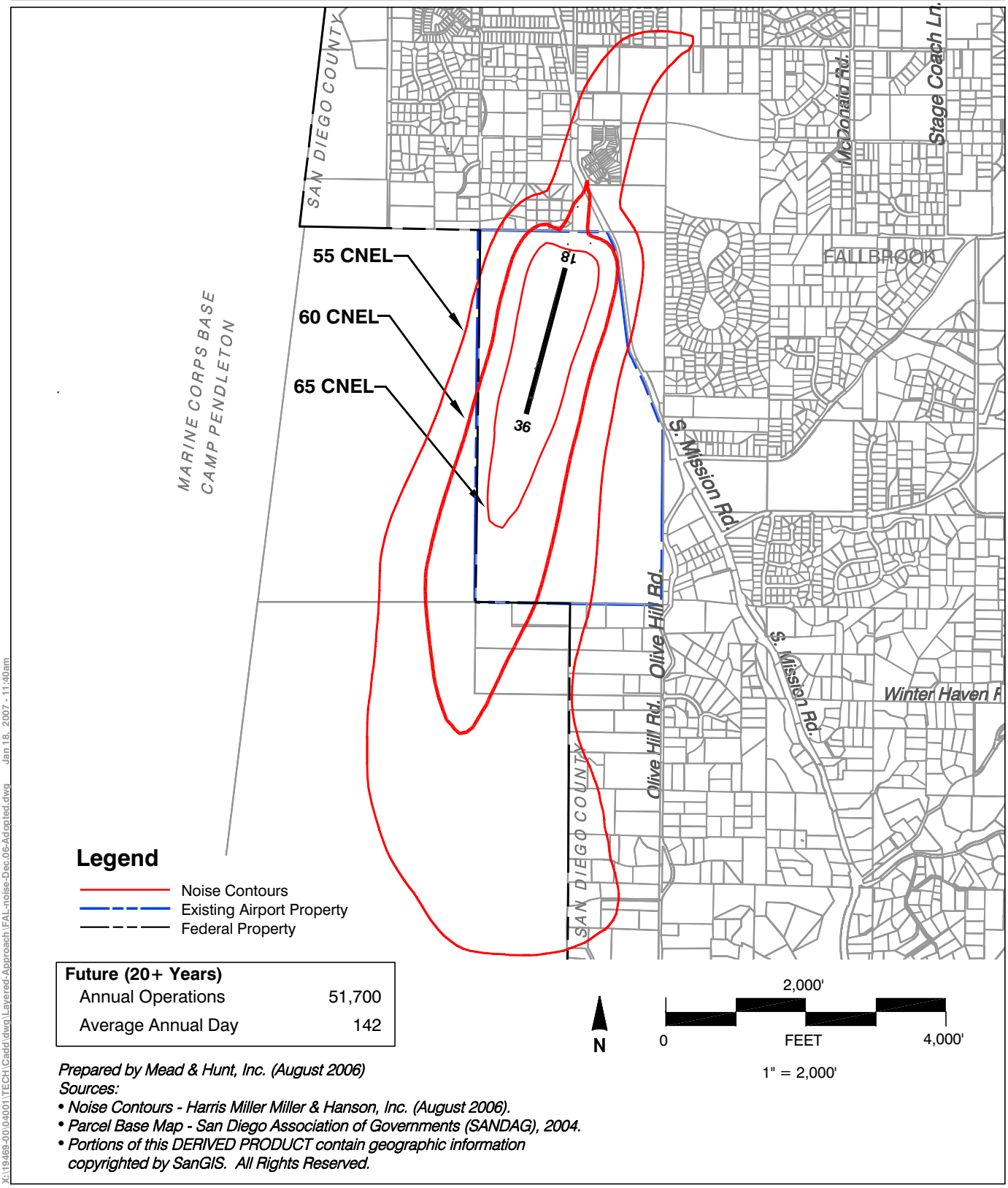
BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	484.5	BERM
2	-	0.*							B1 P2	278.3	BERM
3	-	0.*							B1 P3	401.7	BERM
4	-	0.*							B1 P4	224.8	BERM
	0	1	2	3	4	5	6	7			

1

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	LOT 1	65.	500.	60.4
2	LOT 2	67.	500.	60.0
3	LOT 3	67.	500.	59.8
4	LOT 4	67.	500.	59.4
5	LOT 5	67.	500.	58.8
6	LOT 6	67.	500.	58.1
7	LOT 7	67.	500.	57.8
8	LOT 8	67.	500.	57.2
9	LOT 9	67.	500.	56.9
10	LOT 10	67.	500.	54.5
11	LOT 11	67.	500.	53.6
12	LOT 12	67.	500.	54.1
13	LOT 13	67.	500.	54.7
14	LOT 14	67.	500.	55.5
15	LOT 15	67.	500.	56.3
16	LOT 16	67.	500.	57.0
17	LOT 17	67.	500.	57.3
18	LOT 18	67.	500.	57.6
19	LOT 19	67.	500.	57.7
20	LOT 20	67.	500.	59.1
21	LOT 21	67.	500.	59.9

APPENDIX F

FALLBROOK COMMUNITY AIRPORT NOISE CONTOURS



Prepared by Mead & Hunt, Inc. (August 2006)
Sources:
- *Noise Contours - Harris Miller Miller & Hanson, Inc. (August 2006).*
- *Parcel Base Map - San Diego Association of Governments (SANDAG), 2004.*
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X:\19469-00\040011\TECH\Cadd\dwg\Layered-Approach\FAL-noise-Dec.06-Adopted.dwg Jan 18, 2007 - 11:40am

Exhibit FAL-6

Noise Impacts — Future

Fallbrook Community Airpark