3.45 Noise

This section summarizes the acoustical study for the Proposed Project prepared by RECON (2009). The complete technical report is included in this EIR as Appendix IJ.

3.45.1 Existing Conditions

Ambient noise in the vicinity of the Project Site is generated by traffic on SR-76 and the I-15. In addition, the Proposed Project is situated between several planned developments which will eventually contribute to the ambient noise levels: Palomar College North Education Center, Campus Park, and Campus Park West. The approved Rosemary's Mountain Rock Quarry to the south and east is also a potential noise source.

Existing Regulations

Traffic-generated Noise

Noise standards applicable to traffic-generated noise are expressed in terms of the community noise equivalent level (CNEL). The CNEL is a 24-hour A-weighted average sound level [dB(A) L_{eq}] from midnight to midnight obtained after the addition of five decibels to sound levels occurring between 7:00 P.M. and 10:00 P.M. and of 10 decibels to the sound levels occurring between 10:00 P.M. and 7:00 A.M. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise. Adding five decibels and 10 decibels to the evening and nighttime hours, respectively, accounts for the added sensitivity of humans to noise during these time periods.

The noise level standards for the County of San Diego are defined in the County of San Diego's adopted General Plan Noise Element. The County's exterior noise level standard for noise sensitive land uses (NSLU), which include residences, is 60 CNEL. If the acoustical study shows that noise levels at any NSLU will exceed CNEL equal to 60 dB(A), the development should not be approved unless the following findings are made:

A. Modifications to the development have or will be made that reduce the exterior noise levels below CNEL equal to 60 dB(A); or

B. If with current noise abatement technology it is infeasible to reduce exterior CNEL to 60 dB(A), then modifications to the development have or will be made that reduce interior noise below CNEL equal to 45 dB(A). Particular attention shall be given to noise-sensitive interior spaces such as bedrooms.

C. If finding "B" above is made, a further finding is made that there are specifically identified overriding social or economic considerations that warrant approval of the development without modification as described in "A" above.

In addition, if noise levels at any NSLU will exceed CNEL equal to 75 dB(A), the development should not be approved.

Because interior noise levels for multi-family residences are also regulated by Title 24 of the State Building Code, the County evaluates interior levels for multi-family units as part of the building permit process.

Title 24 of the State Building Code requires that:

> Residential structures to be located within an annual CNEL contour of 60 require an acoustical analysis showing that the structure has been designed to limit intruding noise to the prescribed allowable levels.

and that:

> Interior CNEL with the windows closed, attributable to exterior sources shall not exceed an annual CNEL of 45 dB(A) in any habitable room.

Construction Noise

The County has a well-defined Noise Ordinance that covers construction noise. Section 36.409 states:

> Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 dB(A) L_{eq} for an eight-hour period, between 7:00 A.M. and 7:00 P.M., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

Emergency work is defined as follows in the County's Noise Ordinance:

> Emergency Work shall mean work made necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from imminent exposure to danger or damage or work by public or private utilities when restoring utility service (Section 36.402).

Existing Noise Measurements

Ambient noise conditions were measured in and around the Project Site. In order to provide a qualitative assessment of the variability of noise throughout the study area, a series of three short-term daytime noise measurements, 20 minutes in duration, were made by RECON on July 14, 2005, throughout the study area. An additional two measurements were made by RECON on November 13, 2006. Long-term (24-hour) measurements were taken by Pacific Noise Control for the Campus Park Project located directly west of the Proposed Project. The measurement locations are shown on Figure 3.4~~5~~-1 and were chosen to obtain existing noise levels in order to characterize the existing ambient noise condition.

The first set of short-term measurements was taken by RECON between 10:40 A.M. and 12:10 P.M. on Thursday, July 14, 2005. The weather was warm and mostly cloudy with three to five mph winds from the southwest. Measurement 1 was taken on the western boundary of the Proposed Project with a relatively unobstructed view of I-15. During measurement 1, a few vehicles passed by the dirt road adjacent to the measurement; however, the primary noise source was traffic on I-15. Measurement 2 was taken near the center of the Proposed Project. Measurement 2 had only a partial line of sight to I-15. Measurement 3 was located adjacent to SR-76.

The second set of measurements was taken by RECON on November 13, 2006, between the hours of 3:00 P.M. and 4:30 P.M. The weather was clear with gentle, immeasurable winds. Measurement A was taken towards the north end of the Proposed Project and Measurement B was taken northeast of Measurement 2. There was a clear view of I-15 from both measurement locations.

Table 3.54-1 presents the results of the short-term noise measurements. As seen from Table 3.45-1, the measured short-term noise levels ranged from approximately 46 to 69 dB(A) L_{eq} with the loudest levels occurring adjacent to SR-76.

Long-term (24-hour) measurements were taken by Pacific Noise Control for the Campus Park project located directly west of the Proposed Project. The measurement was taken from August 23, 2005, at 2:00 P.M. to August 25, 2005, at 12:00 P.M. The long-term measurement location (Measurement PNC) is shown in Figure 3.45-1. This measurement was taken approximately 180 feet east of the center line of I-15. The measured hourly noise levels are summarized in Table 3.45-2. The average daytime noise level was 78.4 dB(A) L_{eq}, the average evening noise level was 76.9 dB(A) L_{eq}, and the average nighttime noise level was 74.3 dB(A) L_{eq}. The noise level during the 24-hour period was 82 CNEL. This long-term measurement results in a daytime/evening/nighttime traffic distribution of 68 percent of the traffic during the daytime hours, 12 percent during the evening hours, and 20 percent during the nighttime hours for I-15.

3.45.2 Guidelines for the Determination of Significance

For the purposes of this EIR, the basis for the determination of significance is the Guidelines for Determination of Significance, Noise, adopted January 27, 2009. A project will have a significant adverse environmental effect related to noise if a project-related component results in any of the following:

1. Project implementation would result in the exposure of any on- or off-site, existing or reasonably foreseeable future Noise Sensitive Land Use (NSLU) to exterior or interior noise (including noise generated from the project, together with noise from roads [existing and planned Circulation Element roadways], railroads, airports, heliports and all other noise sources) in excess of any of the following:

    a. Exterior Locations:

        - 60 CNEL; or
        - An increase of 10 decibels over pre-existing noise.

    b. Interior Locations:

        - 45 CNEL except for the following cases:

          Rooms which are usually occupied only a part of the day (schools, libraries, or similar facilities), the interior one-hour average sound level due to noise outside should not exceed 50 dB(A) L_{eq}.

Corridors, hallways, stairwells, closets, bathrooms, or any room with a volume less than 490 cubic feet.

2. Project implementation would generate airborne noise which, together with noise from all sources, would be in excess of either of the following:

   a. Non-Construction Noise: The limit specifies in San Diego County Code Section 36.404, Sound Level Limits, at or beyond the property line. Section 36.404 provides the following limits:

Zone	Period	Applicable Limit One-hour Average Sound Level (dB(A) L_{eq}
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-90, S-92, R-V, and R-U 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, S-86, V5, and R-V and R-U 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
S94, V4, and all commercial zones	7:00 A.M. to 10:00 P.M. 10:00 P.M. to 7:00 A.M.	60 55
V1	7:00 A.M. to 7:00 P.M. 7:00 P.M. to 7:00 A.M.	60 55
V2	7:00 A.M. to 7:00 P.M. 7:00 P.M. to 10:00 P.M. 10:00 P.M. to 7:00 A.M.	60 55 50
V3	7:00 A.M. to 10:00 P.M. 10:00 P.M. to 7:00 A.M.	70 65
M-50, M-52, and M-54	Anytime	70
S82, M56, and M58	Anytime	75

   b. Construction Noise: Noise generated by construction activities related to the project would exceed the standards listed in San Diego County Code Section 36.409, Sound Level Limitations on Construction Equipment. Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 dB(A) L_{eq} for an eight-hour period, between 7:00 A.M. and 7:00 P.M., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

3.45.3 Analysis of Project Effects and Determination as to Significance

Traffic-generated Noise (Guideline 1)

A significant impact would occur if noise levels at exterior usable areas exceed 60 CNEL or if interior noise levels exceed 45 CNEL.

Traffic volumes used for the analysis of future traffic noise were obtained from the traffic report prepared for the Proposed Project. Year 2030 plus project traffic volumes were used. Future distances to 75 and 60 CNEL contour lines were calculated for each roadway assuming flat-site conditions. Flat-site contours are shown in Figure 3.45-2 and the flat-site contour distances from each roadway are summarized in Table 3.45-3. These contours do not take into account any noise attenuation that would be provided by vegetation, buildings, or topography. This would be considered a worst-case analysis and actual future noise levels at the Proposed Project would be less than those shown in Figure 3.45-2. The County Noise Element restricts residential development in areas where noise levels exceed 75 CNEL. As shown in Figure 3.45-2, the Proposed Project would not expose residences to noise levels greater than 75 CNEL.

Noise levels were modeled for a series of receivers located throughout the Proposed Project area to determine the future noise contours over the Proposed Project due to traffic on the surrounding roadways. Unlike the flat-site noise contours, these noise contours include the effects of future grading on the property and existing topography between I-15 and the Proposed Project. These contours do not take into account any noise mitigation measures or shielding provided by the proposed buildings or vegetation.

Future traffic noise levels for I-15 were based on the noise measurements shown in Table 3.45-1. The source of noise at Measurement Location 1 was traffic on I-15. This measurement was used to predict future noise levels due to traffic on I-15 at the receivers located at the multi-family site within PA 4, the school site in PA 2, and the multi-family site within PA 1 since these uses have a similar topographic relationship to I-15. The measured noise level at Measurement Location 1 was 58.6 dB(A) L_{eq}. This results in a future daytime noise level 61.3 dB(A) L_{eq} .which is equal to 65.0 CNEL.

The source of noise at Measurement Location A was also traffic on I-15. This measurement was used to predict future noise levels due to traffic on I-15 at the receivers located at the single-family portion within PA 5 of the Project Site since these uses are in the vicinity of Location A and have a similar elevated topographic relationship to I-15. The measured noise level at Measurement Location A was 53.2 dB(A) L_{eq}. This results in a future daytime noise level 55.9 dB(A) L_{eq} which is equal to 59.6 CNEL.

STAMINA was used to calculate the noise levels due to traffic on all roadways except I-15. The noise levels due to traffic on I-15 discussed above were added to the noise levels calculated by STAMINA. The resulting noise contours at five feet above the ground are shown in Figure 3.45-3. As shown, ground-level receivers closest to the area roadways could experience future traffic noise levels greater than 60 CNEL. The multi-family area in PA 4 could experience noise levels greater than 65 CNEL and the multi-family area in PA 1 could experience noise levels greater than 70 CNEL.

Noise levels were also modeled at 137 specific receiver locations in the backyards of the units and on the school site adjacent to the roadways. The locations of these 137 receivers are shown in Figure 3.45-4. For the multi-family area within PA 1 (Receivers 1 through 22), two-story buildings were modeled as barriers. For the multi-family portion area within PA 4 (Receivers 29 through 41) the buildings closest to Horse Ranch Creek Road were modeled as barriers. The resulting projected noise levels at these receivers are shown in Table 3.45-4. Table 3.45-5 lists the affected lots that correspond to the

receivers and noise levels shown in Table 3.45-4, as well as the lot elevations and proposed barrier elevations.

As seen from Table 3.45-4, exterior noise levels adjacent to the major roadways are projected to exceed the County's standard of 60 CNEL and impacts would be **significant (N-1)**.

As seen in Figure 3.45-4 and Table 3.45-4, even after the construction of the proposed barriers, second-floor exterior noise levels at the multi-family units are projected to exceed 60 CNEL. Therefore, interior noise levels cannot be assumed to be within the 45 CNEL standard. Moreover, Eexterior noise levels on second-floor balconies may are projected to exceed 60 CNEL (Table 3.5-4). This represents a **significant** impact. **(N-2)**.

For the single-family area within PA5 of the Proposed Project, noise levels at receivers adjacent to roadways are not projected to exceed 60 CNEL after the construction of the proposed barriers. Therefore, interior noise levels are projected to be within the 45 CNEL standard. Impacts are **less than significant**.

For the school site, noise levels were refined by placing more receivers within the site. These receivers are shown in Figure 3.54-4 and the exterior noise levels for these receivers are summarized in Table 3.45-4. Assuming 20 decibels of exterior-to-interior reduction would result in interior noise levels of 50 dB(A) L_{eq} or less when exterior noise levels are 70 dB(A) L_{eq} or less. As discussed above, the average daytime noise level is approximately two decibels less than the CNEL for this analysis. As seen in Table 3.45-4, exterior noise levels are not projected to exceed 60 CNEL with constructed barriers. Therefore, interior noise levels due to exterior sources are not projected to exceed 50 dB(A) L_{eq}. Impacts are **less than significant**.

~~a **significant** impact would result. **(N-3)**. but would not exceed 75 CNEL in accordance with County regulations (Table 3.5-4). Therefore, exterior noise levels on balconies would be **less than significant**.~~

Stationary Noise (Guideline 2)

A significant impact would occur if construction noise exceeds an eight-hour average noise level of 75 dB(A) L_{eq} at a residential receptor or if stationary noise exceeds the applicable limits in the noise ordinance. These limits are summarized in Section 3.54.2 above.

Construction-generated Noise

All construction would be limited to the hours of 7:00 A.M. to 7:00 P.M. Monday through Saturday as stated in the County of San Diego's Noise Abatement and Control Ordinance. However, noise associated with the demolition, earthwork, construction, and surface preparation for the Proposed Project will result in short-term impacts to adjacent residential properties. A variety of noise-generating equipment would be used during the construction phase of the Proposed Project such as scrapers, dump trucks, backhoes, front-end loaders, jackhammers, and concrete mixers, along with others. As discussed above, construction noise that exceeds an eight-hour average noise level of 75 dB(A) L_{eq} at the property line would be significant.

Table 3.54-6 indicates the types of construction equipment typically involved in construction projects. This type of equipment can individually generate noise levels that range between 78 and 91 dB(A) L_{eq} at 50 feet from the source, as listed in Table 3.45-6. Ground-clearing activities generally generate the greatest average construction noise levels. These activities are estimated to generate average noise levels of 83 to 84 dB(A) L_{eq} 50 feet from the site of construction (Bolt, Beranek, and Newman, Inc. 1971). This value is based on empirical data on the number and types of equipment at a construction site and their average cycle of operation.

Construction noise generally can be treated as a point source and would attenuate at approximately six decibels for every doubling of distance. A grading noise level of 84 dB(A) L_{eq} would attenuate to 75 dB(A) L_{eq} at approximately 140 feet from the noise source.

As can be seen in Figure 3.45-1, the nearest residential property line is located adjacent to the southeast boundary of the Proposed Project adjacent to Rosemary's Mountain Rock Quarry. Grading activities will occur over the entire site and would not be situated at any one location for a long period of time. For a worst-case scenario, it was assumed that grading in an eight hour period would be centered in a two-acre area. Then the center of this small grading area would be located no closer than 150 feet from the property line. A noise level of 84 dB(A) L_{eq} at 50 feet would attenuate to 74 dB(A) L_{eq} at 150 feet. Therefore, construction noise levels due to grading do not have the potential to exceed County standards of 75 dB(A) L_{eq} at the property line and impacts related to on-site construction noise are **less than significant**.

Building construction would occur in phases. Residences constructed during earlier phases would be exposed to on-site building construction noise during later phases of the Proposed Project. However, construction work that could occur adjacent to newly occupied residences would primarily involve the use of hand tools and small machinery. Although the noise could be a nuisance to occupants of adjacent residences, it would not be expected to violate any standards.

Existing residences would be exposed to noise due to off-site construction that could be required as a result of the Proposed Project. A new signal would be installed at the intersection of Reche Road and Old Highway 395. This improvement would be a responsibility of the Proposed Project if the Proposed Project is constructed before the adjacent projects. The closest sensitive receptor is more than 600 feet away and installation would not generate significant noise levels. Due to the absence of sensitive receptors adjacent to the preferred connection to the Second Aqueduct and associated pipelines, construction of this required off-site infrastructure would not significantly affect residents. Therefore, noise impacts due to off-site construction are **less than significant**.

Rosemary's Mountain Rock Quarry

The future site of Rosemary's Mountain Rock Quarry is located directly east of the Proposed Project. Noise levels due to operations at Rosemary's Mountain Rock Quarry were analyzed to ensure that levels would not exceed the applicable limits in the County Noise Ordinance. The County Noise Ordinance states that the sound level limit at the property line for extractive industries, such as Rosemary's Mountain Rock Quarry, is an hourly average noise level of 75 dB(A) $L_{eq(1)}$. Noise levels are also discussed in terms of

the CNEL to ensure that levels do not exceed 60 CNEL and, therefore, comply with County Noise Element 4b. The quarry documentation includes typical weekday hours of operation between 6:00 A.M. and 10:00 P.M. with the noisier activities stopping by 4:00 P.M.

The EIR for Rosemary's Mountain Rock Quarry (Mooney & Associates 1997) includes a mitigation measure and monitoring program to ensure that future residential development does not experience an hourly noise level in excess of 60 dB(A) $L_{eq(1)}$ due to mining and processing operations. The EIR indicates the location of the worst case average hourly 60 dB(A) $L_{eq(1)}$ contour. Pursuant to the County Noise Element, CNEL measurement/calculations are required to ensure no new impacts would occur to noise sensitive land-uses on the Project Site. CNEL noise measurement is a 24 hour average. Taking into account the typical hours of operation, the CNEL was calculated by adding 10 decibels to the noise that occurs between 10:00 P.M. and 7:00 A.M. and adding 5 decibels to the noise that occurs between 7:00 P.M. and 10:00 P.M.

The 60 CNEL contour line would be located approximately 165 feet from the average hourly 60 dB(A) $L_{eq(1)}$ contour line. In addition, the average hourly 50 dB(A) $L_{eq(1)}$ contour would be located approximately 870 feet from the average hourly 60 dB(A) $L_{eq(1)}$ contour. Figure 3.45-5 shows the worst case average hourly 60 dB(A) $L_{eq(1)}$ noise contour from Rosemary's Mountain Rock Quarry EIR, an estimate of the location of the average hourly 50 dB(A) $L_{eq(1)}$ noise contour, and an estimate of the location of the 60 CNEL noise contour. The hourly 50 dB(A) $L_{eq(1)}$ contour is approximately 870 feet from the hourly 60 dB(A) $L_{eq(1)}$contour. As shown, noise levels are not projected to exceed the hourly noise level of 60 dB(A) $L_{eq(1)}$ and, therefore, Rosemary's Mountain Rock Quarry complies with the County Noise Ordinance for extractive industries. As also shown, noise levels are not projected to exceed 60 CNEL at the proposed residences and, therefore compliesy with the County Noise Element 4b and impacts would be **less than significant**.

Noise from the quarry may be considered a nuisance to future residences. Lots within the average hourly 50 dB(A) L_{eq} contour would be affected by Quarry operations. Lots near modeled receivers 42 through 44 and 48 through 73 would notice Quarry operations more because of their location and the lower traffic noise conditions. Lots near Horse Ranch Creek Road would notice noise due to Quarry operations less because of the higher traffic noise levels.

As a project design consideration, lots within the 50 dB(A) $L_{eq(1)}$ contour would receive the following notice prior to purchase:

> This property is located adjacent to Rosemary's Mountain Rock Quarry. Noise levels due to operations at the Quarry are projected to exceed 50 decibels one-hour Leq at this property, but will not exceed 60 decibels one-hour Leq.

Blasting would occur once a week at the Quarry. The duration of an individual blast is on the order seconds or less than a second. At a distance removed from the quarry, a blast would likely be heard as an indistinct rumbling sound.

With the Quarry's compliance with its mitigation and monitoring program, and notification described above, noise levels at Proposed Project residences due to quarry operations will be **less than significant**.

Wastewater Treatment Plant

The Proposed Project includes the construction and operation of a Wastewater Treatment Plant (WWTP) on an approximate one-acre site. Figure 1-7 shows the location of the proposed on-site facility. Noise associated with operation of the on-site WWTP was analyzed to ensure that noise levels would not exceed the applicable County Noise Ordinance standards of (50 dB(A) L_{eq} from 7:00 A.M. to 10:00 P.M. and 45 dB(A) L_{eq} from 10:00 P.M. to 7:00 A.M).

A noise analysis to address potential noise impacts to adjacent residential units from the WWTP was performed. A reference noise level of 70 dB(A) L_{eq} was used for the WWTP. This is based on a noise analysis done for a 25 MGD facility located in the city of Oceanside (RECON 2006). This facility is larger than the proposed WWTP. The noise producing equipment at the 25 MGD facility, which included a blower room, odor scrubbers, screens and augers, mixers, exhaust fans, air compressors, and air conditioners, is similar to the equipment that would be used at the proposed facility. This noise level does not account for noise reduction provided by locating any equipment inside enclosed buildings. This noise level is also based on data from a facility much larger than the proposed facility. Therefore, 70 dB(A) L_{eq} at 50 feet is a conservative reference noise level.

This analysis assumed that the main noise source associated with the operation of the WWTP would be located at the center of the building at the west end of the site (see Figure 1-7).The closest on-site residential property line is located approximately 95 feet north of the center of the WWTP building. Assuming six decibels reduction for every doubling of distance, 70 dB(A) L_{eq} at 50 feet would attenuate to 64 dB(A) L_{eq} at 95 feet. Therefore, should the on-site WWTP option be constructed, the noise level at the residential property line due to the WWTP would be 64 dB(A) L_{eq}. Because County noise standards limit noise levels at the property line to 50 dB(A) L_{eq} during the day and 45 dB(A) L_{eq} at night, impacts are **significant (N-3)**.

3.45.4 Cumulative Impact Analysis

Traffic-generated Noise

The Proposed Project will contribute traffic to off-site roads as well as on-site roads. An increase of three decibels is considered a perceptible increase in noise. A significant impact would occur if project implementation will expose on- or off-site, existing and planned NSLU to road noise three decibels over existing noise levels and are not to exceed 65 CNEL. The specified existing noise levels are for NSLU with site conditions greater than 58 CNEL. Additionally, a potentially cumulatively considerable impact could occur if the project is shown to produce more than a one decibel increase in noise levels.

Table 3.45-7 summarizes the existing ADT, the existing plus project ADT the existing plus cumulative ADT, the existing plus cumulative plus project ADT, the year 2030 without the project ADT, the year 2030 plus the project ADT, and the corresponding increases in noise. The year 2030 plus project ADT includes the future projected traffic

volumes as well as the buildout traffic volumes associated with this project and other pending projects in the vicinity. Traffic volumes were obtained from the traffic report prepared for the Proposed Project (LOS Engineering 2009).

As shown in Table 3.45-7, the greatest direct increase in noise resulting from adding project-related ADT to the existing ADT is 1.3 decibels and is located on SR-76 between the I-15 northbound ramps and Horse Ranch Creek Road and on Old Highway 395 between Reche Road and Stewart Canyon Road. The greatest increase in noise resulting from adding project ADT to existing plus cumulative ADT is 1.1 decibels located on Horse Creek Ranch Road between Street A and Street Q and between Street Q and Street R. The greatest increase in noise resulting from adding project ADT to year 2030 ADT is also 1.1 decibels located on Horse Creek Ranch Road between Street A and Street Q and between Street Q and Street R. The 1.1 decibel increase is not significant at this location because there are no current residential structures along this roadway segment. An increase in noise levels at all other locations is one decibel or less. Therefore, impacts are **less than significant**.

Construction-generated Noise

Construction noise due to the Proposed Project alone is not projected to exceed the noise ordinance standards. A number of projects are planned in the vicinity of the Proposed Project. The Campus Park, Campus Park West, and Palomar College projects are located adjacent to the Proposed Project. As discussed above, the nearest residential property line is adjacent to the southeast boundary of the Project Site. A grading noise level of 84 dB(A) L_{eq} at 50 feet would attenuate to 74 dB(A) L_{eq} at 150 feet. The next closest project to this residential property line is the Campus Park project more than 1,000 feet to the west. A grading noise level of 84 dB(A) L_{eq} at 50 feet would attenuate to 58 dB(A) L_{eq} at 1,000 feet. When combining cumulative noise sources, there is no change in the total noise level if a noise level is 10 decibels less than the other. Therefore, noise due to construction of the Proposed Project would not be cumulatively considerable when combined with the construction related noise of cumulative projects and impacts would be **less than significant**.

3.45.5 Mitigation Measures Proposed to Minimize the Significant Effects

M-N-1 The Proposed Project shall construct noise attenuation barriers ranging from three to ten feet along the edge of the residential pads, as shown in Figures 3.45-4 and 3.45-7. Barriers shall be free of cracks and holes. The transmission loss through a barrier should be at least 10 decibels greater than the estimated barrier attenuation (Federal Highway Administration 1979:34). If a barrier attenuates noise levels by 10 decibels at a receiver location, the barrier transmission loss must be at least 20 decibels to prevent audible noise from traveling through the barrier and adding to the acoustical environment. Examples of acceptable barrier materials include, but are not limited to, masonry block, wood frame with stucco, 0.5-inch-thick Plexiglas, or 0.25-inch-thick plate glass. If transparent barrier materials are used, no gaps shall occur between the panels.

Figure 3.45-6 shows the barriers that would be required if the Campus Park project was constructed before the Proposed Project. As shown in

Figure 3.45-6, several noise barriers at the southwest portion of Planning Area 1 as shown on Figure 3.45-4 would not be required with development of the Campus Park project.

M-N-2 A noise protection easement shall be placed on those lots where exterior noise levels exceed 60 CNEL to assure that at such time as architectural plans are available, and prior to the issuance of building permits, an interior acoustical analysis shall be conducted in accordance with the State Building Code and County standards. If interior allowable noise levels are met by requiring that windows be unopenable or closed, the design for the structure must also specify a ventilation or air-conditioning system to provide a habitable interior environment, ~~as specified~~l in the State Building Code.~~Code~~. For exterior balconies, the acoustical analysis will determine the height and make up of acoustical barriers, also in accordance with the State Building Code and County standards.

~~**M-N-3** A noise protection easement shall be placed on those lots where exterior noise levels at second floor balconies could exceed 60 CNEL to assure that at such time as architectural plans are available, and prior to the issuance of building permits, additional acoustical analysis is performed to determine the height and make up of acoustical barriers. The analysis shall be conducted in accordance with the State Building Code and County standards.~~

M-N-3 To reduce noise levels from the WWTP, the Proposed Project shall construct a ~~10~~nine-foot barrier at the property line south of Planning Area 1 and north of SR-76, and a seven-foot barrier proposed south of the WWTP site."~~.~~

3.45.6 Conclusion

Traffic generated noise at exterior receivers will be significant (N-1). M-N-1 requires the construction of noise barriers. These barriers would provide effective protection from audible intrusion. Implementation of this measure would reduce noise impacts to a level that is less than significant.

Interior noise levels of second floor receivers of the multi-family lots adjacent to the roadways could exceed allowable noise levels for both the interior and exterior (N-2). M-N-2 requires an interior analysis of those receivers to be conducted when specific building plans are available to determine whether interior noise levels will exceed 45 CNEL. This mitigation measure would be effective in identifying those units where additional noise reduction measures may be indicated allowing a reduction in interior noise to a level that is less than significant. Moreover, ~~E~~exterior noise levels on second-floor balconies may exceed 60 CNEL, ~~resulting is a significant impact (N-3). M-N-2~~3 and require additional noise analysis prior to the issuance of building permits to determine the specific height and make-up of noise attenuation requirements within the balcony areas. This mitigation measure would effectively reduce impacts because it will allow the identification of the specifications for noise barriers at the time of construction.~~, but would not CNEL in accordance with County regulations.~~\

As discussed above, the acoustic center of grading activities would be no closer than 150 feet from the property line of the closest residence. Therefore, construction noise levels due to grading do not have the potential to exceed County standards. No mitigation is required.

Additionally, because the closest sensitive receptor is more than 600 feet away from proposed off-site improvements including road construction and utility expansions, noise impacts due to off-site construction are less than significant.

Noise levels due to operations at Rosemary's Mountain Rock Quarry would not exceed an hourly noise level of 60 dB(A) $L_{eq(1)}$ at the proposed residences. With the Quarry's compliance with its mitigation and monitoring program and the project notification to prospective buyers, noise levels at Proposed Project residences due to quarry operations will be less than significant.

Noise at exterior receivers due to the WWTP will be significant (N-3). M-N-3 is the same as M-N-1 requiring the construction of a noise barrier. Specifically a 10-foot barrier proposed south of the residences in Planning Area 1 would reduce noise impacts to a level that is less than significant~~ (see Appendix I)J)~~. A noise barrier would effectively reduce the sound which enters a community by absorbing it, transmitting it, reflecting it back, or forcing it to take a longer path. The effectiveness of a barrier is dependent upon the quality of construction and the barrier material mass and acoustical properties. Barriers should be free of cracks and holes. As detailed in the Noise Analysis, the transmission loss through a barrier should be at least 10 decibels greater than the estimated barrier attenuation (Federal Highway Administration 1979:34). If a barrier attenuates noise levels by 10 decibels at a receiver location, the barrier transmission loss must be at least 20 decibels to prevent audible noise from traveling through the barrier and adding to the acoustical environment. Examples of acceptable barrier materials include, but are not limited to, masonry block, wood frame with stucco, 0.5-inch-thick Plexiglas, or 0.25-inch-thick plate glass. If transparent barrier materials are used, no gaps should occur between the panels. Overall, the proper materials and placement of noise walls are an effective barrier to noise.

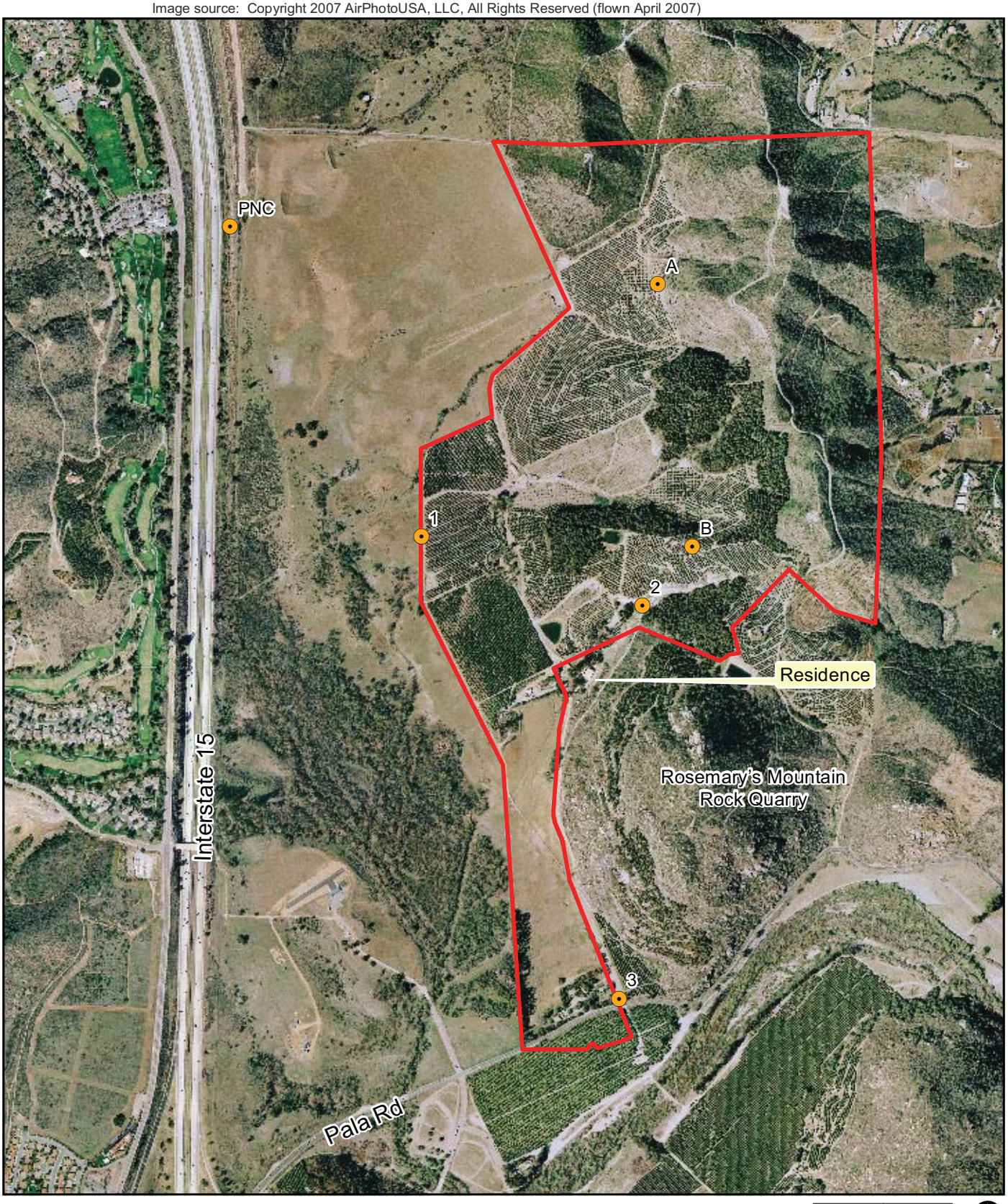

FIGURE 3.4-1
Aerial Photograph of Project and
Noise Measurements Locations

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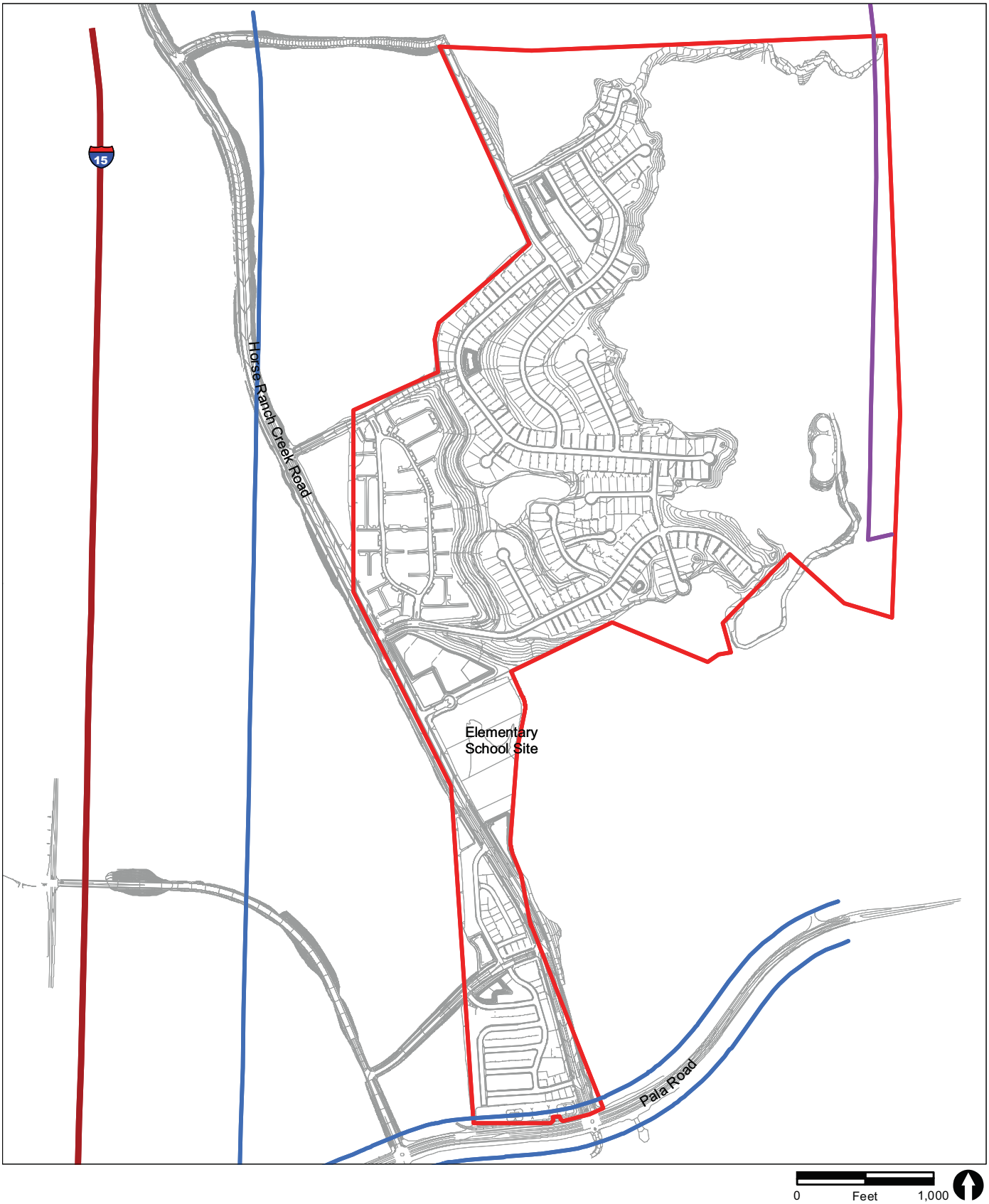

FIGURE 3.4-2

Flat-Site Roadway Noise Contours

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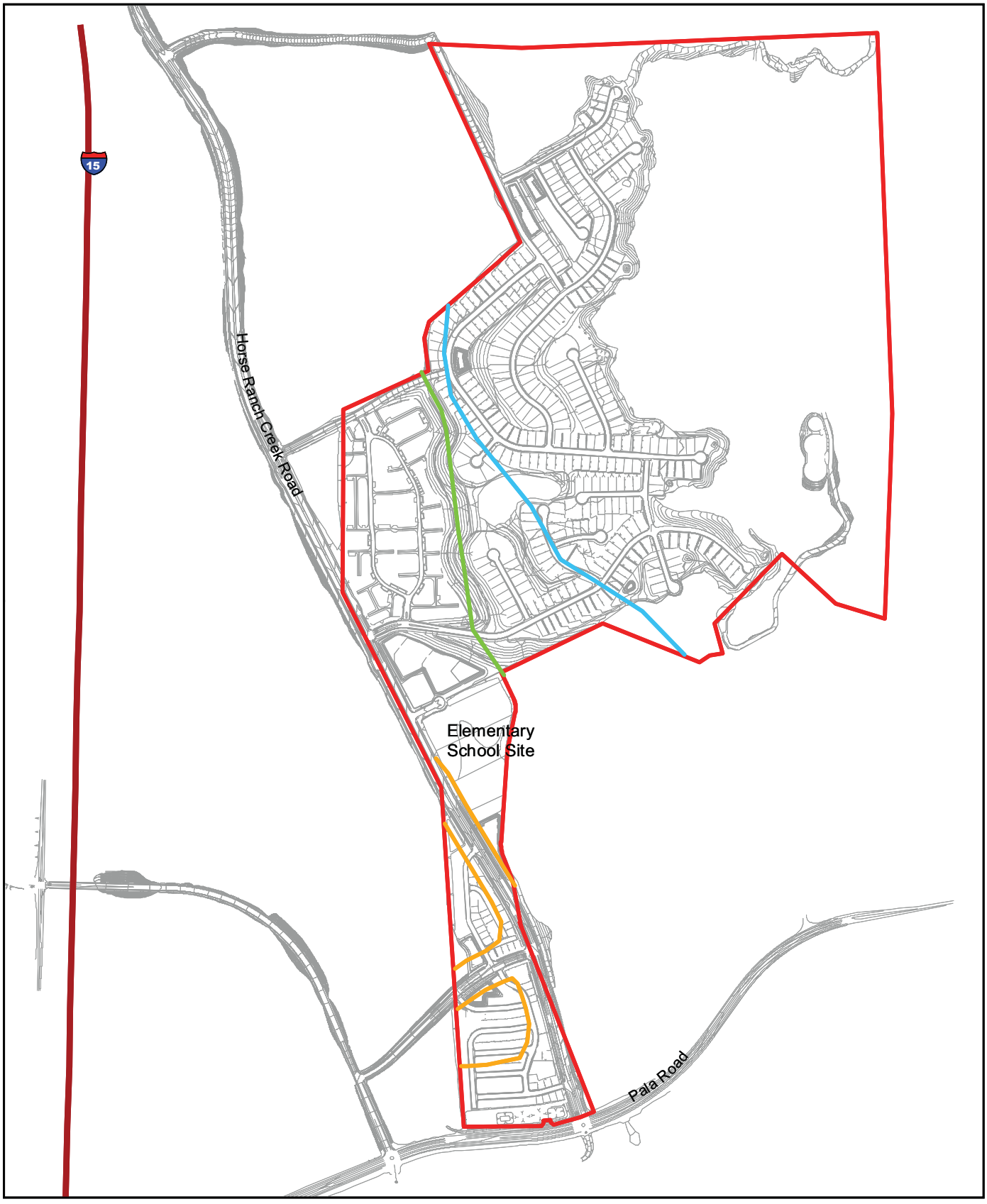

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FIGURE 3.4-3

Future Projected Noise Contours without Mitigation

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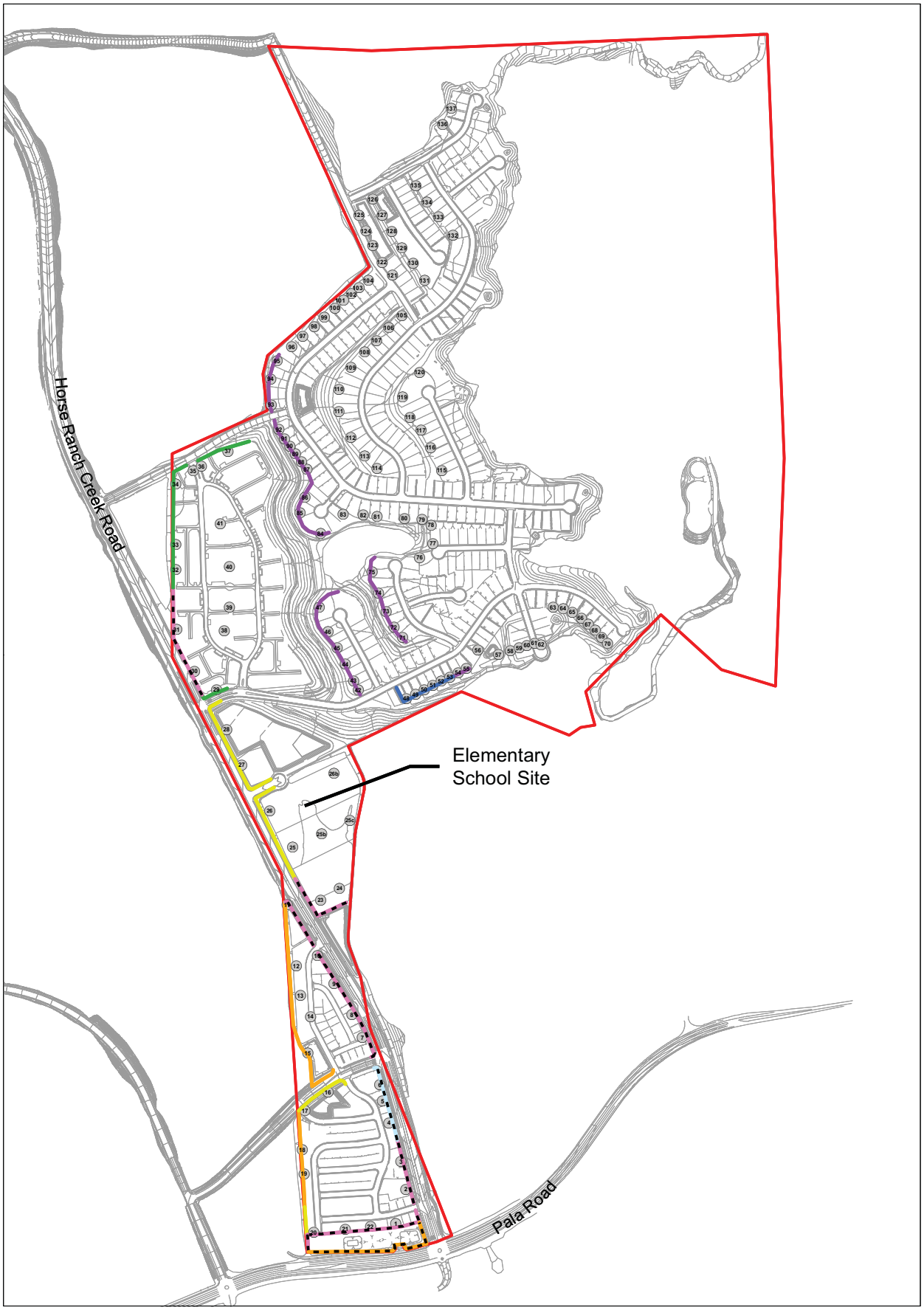

FIGURE 3.4-4

Modeled Receivers and Noise Barrier Locations

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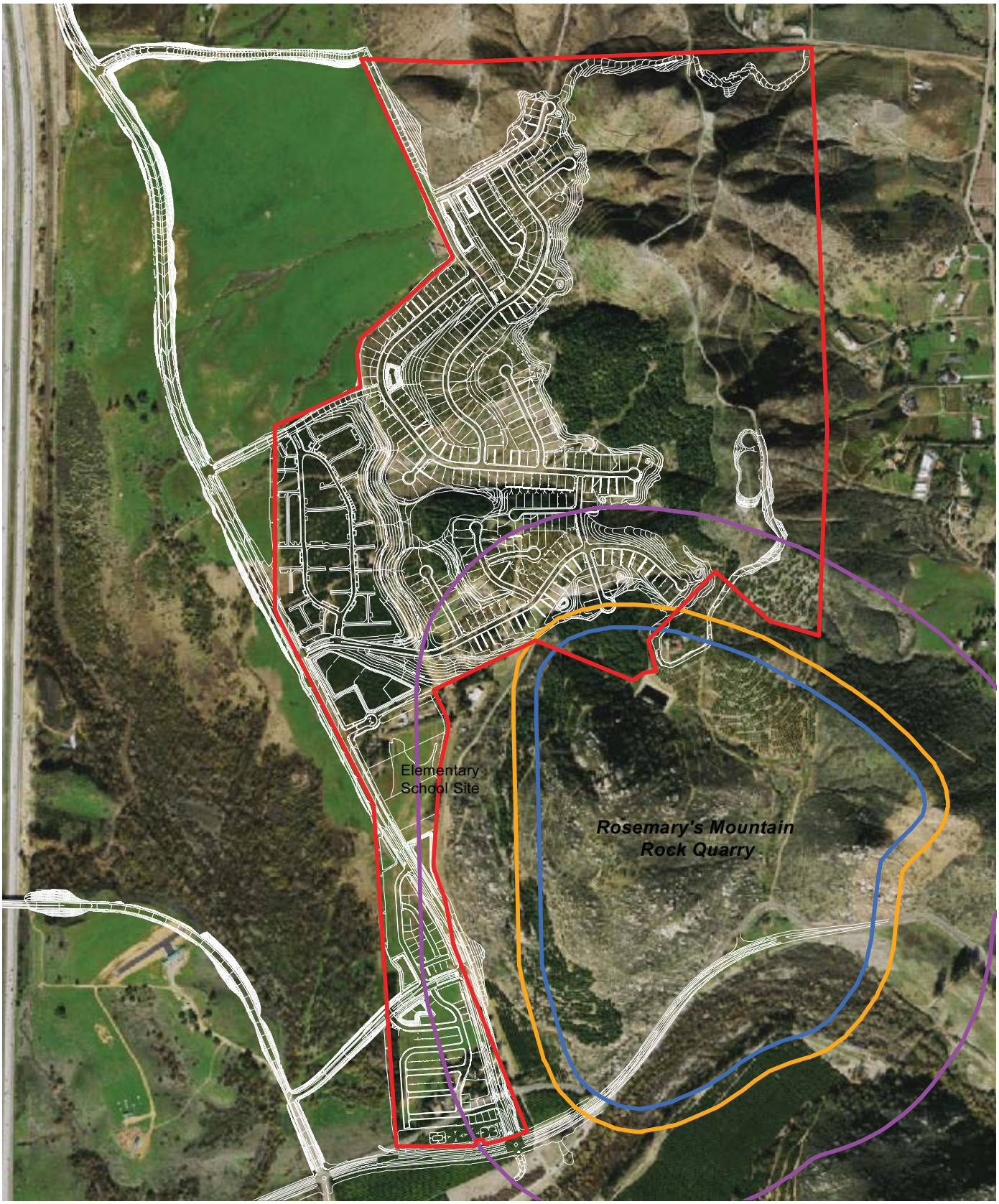

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FIGURE 3.4-5

Rosemary's Mountain Rock Quarry Noise Contours

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FIGURE 3.4-6

Proposed Noise Barriers with
Construction of Campus Park Project

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TABLE 3.4~~5~~-1
SHORT-TERM MEASUREMENT RESULTS

Location	Date	Duration (Minutes)	Average Noise Level [dB(A) L_{eq}]	Modeled Noise Level [dB(A) L_{eq}]	Traffic Noise Sources	Distance from Source
1	07/14/2005	20	58.6		I-15	N/A
2	07/14/2005	20	45.7	Not Modeled	I-15 and Pala Road	N/A
3	07/14/2005	20	68.6	Not Modeled	Pala Road	50 feet from centerline
A	11/13/2006	15	53.2		I-15	3,900 from centerline
B	11/13/2006	15	52.0		I-15	4,250 from centerline

TABLE 3.4-2
MEASUREMENT PNC HOURLY AVERAGE NOISE LEVELS

Date	Start Hour	Average Hourly Noise Level [dB(A) L_{eq}]
August 23, 2005	2:00 P.M.	79
	3:00 P.M.	79
	4:00 P.M.	80
	5:00 P.M.	80
	6:00 P.M.	79
	7:00 P.M.	78
	8:00 P.M.	77
	9:00 P.M.	76
	10:00 P.M.	76
	11:00 P.M.	74
August 24, 2005	12:00 A.M.	72
	1:00 A.M.	71
	2:00 A.M.	70
	3:00 A.M.	71
	4:00 A.M.	74
	5:00 A.M.	76
	6:00 A.M.	78
	7:00 A.M.	78
	8:00 A.M.	78
	9:00 A.M.	78
	10:00 A.M.	77
	11:00 A.M.	77
	12:00 P.M.	77
	1:00 P.M.	78
	2:00 P.M.	78
	3:00 P.M.	79
	4:00 P.M.	79
	5:00 P.M.	79
	6:00 P.M.	79
	7:00 P.M.	77
	8:00 P.M.	77
	9:00 P.M.	76
	10:00 P.M.	75
	11:00 P.M.	74
August 25, 2005	12:00 A.M.	72
	1:00 A.M.	70
	2:00 A.M.	70
	3:00 A.M.	71
	4:00 A.M.	74
	5:00 A.M.	77
	6:00 A.M.	78
	7:00 A.M.	78
	8:00 A.M.	78
	9:00 A.M.	78
	10:00 A.M.	77
	11:00 A.M.	77

TABLE 3.45-3
FLAT-SITE ROADWAY CONTOUR DISTANCES (feet)

Roadway	Distance to 75 CNEL Contour Line	Distance to 60 CNEL Contour Line
SR-76	150	2,713
Street R	18	554
Pala Mesa Drive	13	404
Horse Ranch Creek Road		
SR-76 to Street R	18	566
Street R to Street Q	30	950
Street Q to Street A	30	941
Street A to Street B	27	866
Street B to Longspur Road	21	666
Longspur Road to Baltimore Oriole Drive	15	475
I-15	1,183	5,684

TABLE 3.4-4
PROJECTED TRAFFIC NOISE LEVELS
(CNEL)

Receiver	Noise Level: No Barrier First Floor	Noise Level: No Barrier Second Floor	Noise Level: Constructed Barrier First Floor	Noise Level: Constructed Barrier Second Floor
1	72	73	60	73
2	70	71	60	69
3	71	71	60	71
4	70	70	60	69
5	70	70	59	68
6	71	71	60	71
7	70	71	60	68
8	71	71	59	70
9	71	71	59	70
10	71	71	60	71
11	71	72	60	71
12	66	66	57	66
13	66	66	58	66
14	66	66	58	66
15	66	67	57	66
16	69	71	60	69
17	69	70	60	68
18	68	68	58	68
19	67	68	58	68
20	72	72	59	72
21	72	72	60	72
22	72	72	60	72
23	68	70	60	67
24	67	67	59	66
25	68	69	60	67
26	68	70	60	67
27	69	71	59	69
28	69	70	60	68
29	67	67	60	67
30	70	71	60	69
31	70	70	60	69
32	67	67	60	67
33	67	67	59	67
34	66	66	58	66
35	65	65	56	65
36	65	65	56	65
37	65	65	56	65
38	56	57	55	56
39	56	56	55	56
40	55	56	55	55
41	55	56	55	55
42	61	62	60	62
43	61	62	60	62
44	62	62	60	62
45	61	62	60	62
46	61	62	60	62
47	61	62	60	61
48	61	61	60	61

TABLE 3.4-4
PROJECTED TRAFFIC NOISE LEVELS
(CNEL)
(CONTINUED)

Receiver	Noise Level: No Barrier First Floor	Noise Level: No Barrier Second Floor	Noise Level: Constructed Barrier First Floor	Noise Level: Constructed Barrier Second Floor
49	61	61	59	61
50	61	61	59	61
51	61	61	60	61
52	61	61	59	61
53	61	61	60	61
54	61	61	60	61
55	61	61	60	61
56	60	61	60	61
57	60	61	60	61
58	60	61	60	61
59	60	61	60	61
60	60	60	60	60
61	60	60	60	60
62	60	60	60	60
63	60	60	60	60
64	60	60	60	60
65	60	60	60	60
66	60	60	60	60
67	60	61	60	61
68	60	61	60	61
69	60	61	60	61
70	60	61	60	61
71	61	61	60	61
72	61	61	60	61
73	61	61	60	61
74	61	61	60	61
75	61	61	60	61
76	60	60	60	60
77	60	60	60	60
78	60	60	60	60
79	60	60	60	60
80	60	60	60	60
81	60	60	60	60
82	60	60	60	60
83	60	60	60	60
84	61	61	60	61
85	61	61	60	61
86	61	61	60	61
87	60	61	59	61
88	60	61	59	61
89	61	61	60	61
90	60	61	59	61
91	61	61	60	61
92	61	61	60	61
93	61	61	60	61
94	61	61	60	61
95	60	61	60	61
96	60	60	60	60
97	60	60	60	60
98	60	60	60	60

TABLE 3.4-4
PROJECTED TRAFFIC NOISE LEVELS
(CNEL)
(CONTINUED)

Receiver	Noise Level: No Barrier First Floor	Noise Level: No Barrier Second Floor	Noise Level: Constructed Barrier First Floor	Noise Level: Constructed Barrier Second Floor
99	60	60	60	60
100	60	60	60	60
101	60	60	60	60
102	60	60	60	60
103	60	60	60	60
104	60	60	60	60
105	60	60	60	60
106	60	60	60	60
107	60	60	60	60
108	60	60	60	60
109	60	60	60	60
110	60	60	60	60
111	60	60	60	60
112	60	60	60	60
113	60	60	60	60
114	60	60	60	60
115	60	60	60	60
116	60	60	60	60
117	60	60	60	60
118	60	60	60	60
119	60	60	60	60
120	60	60	60	60
121	60	60	60	60
122	60	60	60	60
123	60	60	60	60
124	60	60	60	60
125	60	60	60	60
126	60	60	60	60
127	60	60	60	60
128	60	60	60	60
129	60	60	60	60
130	60	60	60	60
131	60	60	60	60
132	60	60	60	60
133	60	60	60	60
134	60	60	60	60
135	60	60	60	60
136	60	60	60	60
137	60	60	60	60

TABLE 3.4-5
LOT AND BARRIER ELEVATIONS

Lot	Corresponding Receiver	Lot Elevation (feet)	Top of Barrier Elevation (feet)	Barrier Height (feet)
LOT A	11	281	West barrier – 288 East barrier – 290	West barrier – 7 East barrier – 9
359	10	282	291	9
360	12	281	288	7
361	12	281	288	7
362	12	280	287	7
363	12	280	287	7
364	13	279	286	7
365	13	279	286	7
366	13	278	285	7
367	13	278	285	7
368	14	277	284	7
369	14	277	284	7
370	14	276	283	7
371	14	276	283	7
372	15	276	283	7
373	15	275	282	7
374	15	275	282	7
375	15	274	281	7
376	15	274	281	7
391	10	281	290	9
392	10	280	289	9
394	9	279	288	9
395	9	279	288	9
396	9	279	288	9
397	9	279	288	9
398	9	279	288	9
399	8	279	288	9
400	8	279	288	9
401	8	279	288	9
402	8	278	287	9
403	7	277	286	9
404	7	277	286	9
415	6	281	290	9
416	6	281	290	9
418	5	283	292	9
419	5	284	293	9
420	5	285	294	9
421	4	286	295	9
422	4	287	296	9
423	4	287	296	9
424	4	287	296	9
425	3	286	295	9
426	3	286	295	9
427	3	285	294	9
428	3	285	294	9
LOT Y	2	282	291	9
434	2	279	288	9
435	2	280	289	9
436	1	280	289	9

TABLE 3.45-5
LOT AND BARRIER ELEVATIONS
(CONTINUED)

Lot	Corresponding Receiver	Lot Elevation (feet)	Top of Barrier Elevation (feet)	Barrier Height (feet)
437	1	281	290	9
438	1	282	291	9
439	1	283	292	9
440	22	283	292	9
441	22	282	291	9
442	22	282	291	9
443	22	282	291	9
444	21	281	290	9
445	21	281	290	9
446	21	280	289	9
447	21	280	289	9
448	20	279	South barrier – 288 West barrier - 287	South barrier – 9 West barrier – 8
449	20	279	287	8
450	20	278	286	8
451	19	279	286	7
452	19	279	286	7
453	19	280	287	7
454	19	280	287	7
455	19	281	288	7
456	19	281	288	7
457	19	281	288	7
458	18	282	289	7
459	18	282	289	7
460	18	282	289	7
461	18	282	289	7
462	17	283	290	7
LOT M	16	280	West barrier – 287 North barrier - 288	West barrier – 7 North barrier - 8
School	23	280	289	9
School	24	285	294	9
School	25	292	300	8
School	26	298	306	8
Park	27	305	313	8
Park	28	310	318	8
Multi-family lot	29	314	South barrier – 319 West barrier – 323	South barrier – 5 West barrier – 9
Multi-family lot	30	311	320	9
Multi-family lot	31	314	323	9
Multi-family lot	32	317	322	5
Multi-family lot	33	319	324	5
Multi-family lot	34	322.5	327.5	5
Multi-family lot	35	324	329	5
Multi-family lot	36	325.5	330.5	5
Multi-family lot	37	325.5	330.5	5
Multi-family lot	38	313	No barrier	No barrier
Multi-family lot	39	315.5	No barrier	No barrier
Multi-family lot	40	318	No barrier	No barrier
Multi-family lot	41	320	No barrier	No barrier
1	42	416.5	319.5	3
2	43	418.5	421.5	3
3	43	421.5	424.5	3

TABLE 3.45-5
LOT AND BARRIER ELEVATIONS
(CONTINUED)

Lot	Corresponding Receiver	Lot Elevation (feet)	Top of Barrier Elevation (feet)	Barrier Height (feet)
4	44	424.5	427.5	3
5	44	426.5	429.5	3
6	45	427	430	3
7	45	427	430	3
8	46	427	430	3
9	46	426.5	429.5	3
10	47	426.5	429.5	3
11	47	426.5	429.5	3
78	48	425.5	429.5	4
79	49	430.5	434.5	4
80	50	437.5	441.5	4
81	51	446	450	4
82	52	451.5	455.5	4
83	53	456.5	460.5	4
84	54	460.5	464.5	4
85	55	462.5	466.5	4
92	56	471	No barrier	No barrier
91	57	487	No barrier	No barrier
90	58	498.5	No barrier	No barrier
89	59	508	No barrier	No barrier
88	60	513.5	No barrier	No barrier
87	61	516.5	No barrier	No barrier
86	62	517.5	No barrier	No barrier
102	63	534.5	No barrier	No barrier
103	64	542	No barrier	No barrier
104	65	558	No barrier	No barrier
105	66	573.5	No barrier	No barrier
106	67	584.5	No barrier	No barrier
107	68	592.5	No barrier	No barrier
108	69	600	No barrier	No barrier
109	70	605.5	No barrier	No barrier
27	71	477	480	3
28	72	479	482	3
29	73	480.5	483.5	3
30	73	483	486	3
31	73	485	488	3
32	74	487	490	3
33	74	488.5	491.5	3
34	75	490.5	493.5	3
35	75	493	496	3
36	76	493	No barrier	No barrier
69	76	493.5	No barrier	No barrier
70	77	494	No barrier	No barrier
273	78	465	No barrier	No barrier
272	79	461	No barrier	No barrier
271	79	457.5	No barrier	No barrier
270	80	453.5	No barrier	No barrier
269	80	450	No barrier	No barrier
268	80	446.5	No barrier	No barrier
267	81	443	No barrier	No barrier
266	82	439.5	No barrier	No barrier
265	82	436.5	No barrier	No barrier

TABLE 3.45-5
LOT AND BARRIER ELEVATIONS
(CONTINUED)

Lot	Corresponding Receiver	Lot Elevation (feet)	Top of Barrier Elevation (feet)	Barrier Height (feet)
264	83	433	No barrier	No barrier
463	83	426.5	No barrier	No barrier
262	83	424.5	No barrier	No barrier
261	84	424.5	427.5	3
260	85	424.5	427.5	3
259	86	424.5	427.5	3
258	86	424.5	427.5	3
257	86	425.5	428.5	3
254	87	420	423	3
253	87	416.5	419.5	3
252	88	412.5	415.5	3
251	89	409	412	3
250	90	405.5	408.5	3
249	91	402	405	3
248	92	399	402	3
247	93	394.5	397.5	3
246	93	394	397	3
245	94	394.5	397.5	3
244	94	395	398	3
243	95	397	400	3
242	96	400	No barrier	No barrier
241	96	403.5	No barrier	No barrier
240	97	407.5	No barrier	No barrier
239	98	412	No barrier	No barrier
238	98	416.5	No barrier	No barrier
237	99	421	No barrier	No barrier
236	100	425.5	No barrier	No barrier
235	100	430	No barrier	No barrier
234	101	434	No barrier	No barrier
233	102	438	No barrier	No barrier
232	103	442	No barrier	No barrier
231	104	445.5	No barrier	No barrier
230	104	446.5	No barrier	No barrier
182	105	463.5	No barrier	No barrier
183	105	463	No barrier	No barrier
184	106	462	No barrier	No barrier
185	106	461.5	No barrier	No barrier
186	107	461	No barrier	No barrier
187	107	460.5	No barrier	No barrier
188	108	459.5	No barrier	No barrier
189	108	459	No barrier	No barrier
190	109	458.5	No barrier	No barrier
191	109	458	No barrier	No barrier
192	110	457.5	No barrier	No barrier
193	110	457	No barrier	No barrier
194	111	456.5	No barrier	No barrier
195	111	456	No barrier	No barrier
196	112	455.5	No barrier	No barrier
197	112	455	No barrier	No barrier
198	112	454.5	No barrier	No barrier
199	113	453.5	No barrier	No barrier
200	113	453	No barrier	No barrier

TABLE 3.45-5
LOT AND BARRIER ELEVATIONS
(CONTINUED)

Lot	Corresponding Receiver	Lot Elevation (feet)	Top of Barrier Elevation (feet)	Barrier Height (feet)
201	114	452.5	No barrier	No barrier
202	114	452	No barrier	No barrier
146	115	478	No barrier	No barrier
147	115	477	No barrier	No barrier
148	115	476.2	No barrier	No barrier
144	116	480	No barrier	No barrier
145	116	479	No barrier	No barrier
142	117	482	No barrier	No barrier
143	117	481	No barrier	No barrier
140	118	484	No barrier	No barrier
141	118	483	No barrier	No barrier
138	119	486	No barrier	No barrier
139	119	485	No barrier	No barrier
136	120	486	No barrier	No barrier
137	120	486	No barrier	No barrier
283	121	456.5	No barrier	No barrier
284	121	453	No barrier	No barrier
285	121	449.5	No barrier	No barrier
286	121	447	No barrier	No barrier
287	122	445.5	No barrier	No barrier
288	122	444	No barrier	No barrier
289	123	442.5	No barrier	No barrier
290	123	442	No barrier	No barrier
291	124	441.8	No barrier	No barrier
292	124	442.5	No barrier	No barrier
293	125	443.7	No barrier	No barrier
294	125	445.7	No barrier	No barrier
295	125	447.3	No barrier	No barrier
296	126	465	No barrier	No barrier
297	126	265.6	No barrier	No barrier
298	127	466.2	No barrier	No barrier
299	127	466.8	No barrier	No barrier
300	128	467.5	No barrier	No barrier
301	128	469	No barrier	No barrier
302	129	471.1	No barrier	No barrier
303	129	472.5	No barrier	No barrier
304	130	474.5	No barrier	No barrier
305	130	476	No barrier	No barrier
306	131	477.5	No barrier	No barrier
307	131	478.5	No barrier	No barrier
326	132	490.5	No barrier	No barrier
325	132	489	No barrier	No barrier
324	133	487.5	No barrier	No barrier
323	133	486.5	No barrier	No barrier
322	134	486.9	No barrier	No barrier
321	134	485.9	No barrier	No barrier
320	135	485	No barrier	No barrier
319	135	484	No barrier	No barrier
318	135	483.1	No barrier	No barrier
355	136	502.5	No barrier	No barrier
354	137	513	No barrier	No barrier
353	137	518	No barrier	No barrier

TABLE 3.4-6
MEASURED NOISE LEVELS OF
COMMON CONSTRUCTION EQUIPMENT

Equipment	Approximate Noise Level (dB(A) L_{eq})
Air compressor	81
Backhoe	85
Concrete Mixer	85
Dozer	80
Generator	78
Grader	85
Jackhammer	88
Loader	79
Paver	89
Pneumatic tool	86
Saw	78
Scraper	88
Truck	91

SOURCE: Bolt, Beranek, and Newman 1971.

NOTE: Noise levels at 50 feet from the source.

TABLE 3.45-7
TRAFFIC AND NOISE INCREASES TO OFF-SITE ROADWAYS

Roadway	Location		Existing ADT	Existing + Project ADT	Change in Noise from Existing to Existing + Project	Existing + Cumulative ADT	Existing + Cumulative + Project ADT	Change in Noise from Existing + Cumulative to Existing + Cumulative + Project	Year 2030 ADT	Year 2030 + Project ADT	Change in Noise From Year 2030 to Year 2030 + Project
	Between	And									
I-15	South of SR-76		120,000	122,261	0.1	144,343	145,252	0.0	230,091	231,000	0.0
	SR-76	Mission Road	127,000	127,904	0.0	134,408	134,560	0.0	250,849	251,000	0.0
	North of Mission Road		136,000	138,261	0.1	147,214	148,350	0.0	273,864	275,000	0.0
SR-76	South Mission Road	Via Monserate	22,025	19,722	0.2	43,970	44,500	0.1	47,470	48,000	0.0
	Via Monserate	Gird Road	20,957	22,816	0.2	43,770	44,300	0.1	45,470	46,000	0.1
	Gird Road	Sage Road	20,817	21,748	0.2	36,170	36,700	0.1	41,470	42,000	0.1
	Sage Road	Old Highway 395	24,579	21,608	0.2	38,570	39,100	0.1	42,470	43,000	0.1
	Old Highway 395	I-15 Southbound Ramps	17,274	24,805	0.0	39,349	39,500	0.0	40,849	41,000	0.0
	I-15 Southbound Ramps	I-15 Northbound Ramps	9,569	19,196	0.5	32,918	33,600	0.1	32,918	33,600	0.1
	I-15 Northbound Ramps	Pankey Road	9,439	12,960	1.3	31,288	32,500	0.2	31,288	32,500	0.2
	Pankey Road	Horse Ranch Creek Road	9,439	12,491	1.2	28,104	30,300	0.3	29,804	32,000	0.3
Old Highway 395	East Mission Road	Reche Road	5,155	6,738	1.2	18,764	19,900	0.3	18,764	19,900	0.3
	Reche Road	Stewart Canyon Road	5,646	7,681	1.3	21,861	23,300	0.3	21,861	23,300	0.3
	Stewart Canyon Road	Tecalote Lane	6,405	6,518	0.1	17,524	17,600	0.0	17,924	18,000	0.0
	Tecalote Lane	Pala Mesa Drive	6,603	6,716	0.1	19,324	19,400	0.0	19,324	19,400	0.0
	Pala Mesa Drive	SR-76	8,302	9,093	0.4	20,370	20,900	0.1	20,370	20,900	0.1
Pankey Road	Street 'R'	SR-76	0	565	N/A	8,244	8,622	0.2	8,521	8,900	0.2
	SR-76	Dulin Road	936	1,162	0.9	10,538	11,902	0.5	18,637	20,000	0.3
Horse Ranch Creek Road	Stewart Canyon Road	Baltimore Oriole	40	2,188	N/A	5,745	7,260	1.0	6,385	7,900	0.9
	Baltimore Oriole	Longspur Road	0	2,322	N/A	9,052	11,119	0.9	9,333	11,400	0.9
	Longspur Road	Harvest Glen Lane	0	2,577	N/A	13,363	16,140	0.8	13,223	16,000	0.8
	Harvest Glen Lane	Pardee South Loop	0	3,834	N/A	16,955	20,995	0.9	16,760	20,800	0.9
	Pardee South Loop	Park/School	0	5,681	N/A	16,824	21,770	1.1	17,654	22,600	1.1
	Park/School	Street R	0	5,794	N/A	16,972	21,918	1.1	17,854	22,800	1.1
	Street R	SR-76	0	3,617	N/A	9,968	12,544	1.0	11,025	13,600	0.9
Pala Mesa Road	I-15	Street R	0	1,244	N/A	6,178	7,011	0.5	6,667	7,500	0.5
Pankey Place	Pala Mesa Drive	Horse Ranch Creek Road	0	1,809	N/A	8,398	10,367	0.9	8,331	10,300	0.9

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