

July 17, 2007

J.N. 5606-01

Mr. Tom Clotfelter
Los Arbolados Ltd. Partnership
P.O. Box 444
Rancho Santa Fe, CA 92067

PROJECT: *Los Arbolados (TM 5406RPL2, ER 04-08-042)*

RE: *Environmental Noise Assessment*

Dear Mr. Clotfelter:

This report contains our assessment of the noise environment at the proposed Los Arbolados project located in the County of San Diego. In summary, the project would develop the site with six homes. The future noise level at the proposed backyards and common area would range up to approximately 58 dB CNEL. This noise level would comply with the County's 60 dB CNEL exterior noise criterion. Six-foot high noise barriers would be required to mitigate the traffic noise at the patios near the front of the homes at Units 3 and 4 as well as at the front yards of Unit 1. To comply with the County's interior noise standard, an interior noise analysis will be required for the homes prior to issuance of building permits. The homes would require air conditioning and/or a mechanical ventilation system, and could require sound-rated windows.

1.0 BACKGROUND

1.1 Project Setting

The Los Arbolados project site is located on the west side of Via de la Valle and south of Paseo Delicias within the community of Rancho Santa Fe (*Figures 1 and 2*). The project would develop the parcel with six detached condominium homes. The primary existing noise source at the site is vehicular traffic along Via de la Valle. Via de la Valle is designated as a light collector (SC 1525) road in the County's Circulation Element. The existing traffic volume is approximately 13,000 average daily traffic (ADT) along Via de la Valle (SANDAG 2004). This analysis is based on the Illustrative Site Plan Preliminary Grading/BMP Exhibit (San Dieguito Engineering, March 27, 2007).

1.2 County Noise Criteria

The County of San Diego typically describes community noise levels in terms of the Community Noise Equivalent Level (CNEL). CNEL is the average A-weighted sound level during a 24-hour day. It is obtained after adding five decibels (dB) to sound levels in the evening hours (7 p.m. to 10 p.m.) and adding ten dB to the sound levels at night (10 p.m. to 7 a.m.). The five and ten dB penalties are applied to account for increased noise sensitivity during the evening and nighttime hours. The A-weighted scale measures noise levels corresponding to the human hearing frequency response. All sound levels discussed in this report are A-weighted. The acoustical terminology used in this report is defined in *Attachment 1*.

The County has established exterior noise guidelines in the noise element of the County's adopted General Plan (County of San Diego 2006). These guidelines identify compatible exterior noise levels for various land use types. The maximum acceptable exterior noise level for new residential development is 60 dB CNEL. This criterion is applied at the outdoor noise sensitive area (i.e., typically the backyards of single family homes and common use areas of multi-family developments). In addition, the County requires that interior noise levels not exceed a CNEL of 45 dB. The County's Noise Element states the following:

“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.”

Also, if the acoustical study shows that the noise levels at any noise sensitive area will exceed 75 dB CNEL, the development should not be approved.

For single family detached dwelling projects, “exterior noise” means noise measured at an outdoor living area which adjoins and is on the same lots the dwelling, and which contains at least the following minimum area:

- (i) Net lot area up to 4,000 square feet: 400 square feet
- (ii) Net lot area 4,000 square feet to 10-acres: 10% of net lot area
- (iii) Net lot area over 10 acres: 1 acre

For all other projects, “exterior noise” means noise measured at all exterior areas which are provided for group or private usable open space purposes.

2.0 EXISTING CONDITIONS

2.1 Ambient Noise Monitoring

A noise measurement was conducted at the site to determine the existing noise level. The measurements were made with a calibrated Larson-Davis Laboratories Model 700 (S.N. 2132) integrating sound level meter equipped with a Type 2551 ½-inch pre-polarized condenser microphone with pre-amplifier. When equipped with this microphone, the sound level meter meets the current American National Standards Institute standard for a Type 1 precision sound level meter. The sound level meter was positioned at a height of approximately five-feet above the ground.

The noise measurement was conducted on April 26, 2005. The noise measurement location is depicted as Site A on *Figure 3*. This site was selected to provide a relatively unobstructed view to Via de la Valle. The measured average noise level was 70 dB at Site A. The measured average noise level and the concurrent traffic volume are depicted in *Table 1*.

TABLE 1
Measured Noise Level and Traffic Volumes

Site	Description	Date Time	L _{eq} ¹	Cars	MT ²	HT ³
A	Approximately 45 ft. to centerline of Via de la Valle	4/26/05 9:55 to 10:15 a.m.	70 dB	197	6	11

Notes: ¹ Equivalent Continuous Sound Level (Time-Average Sound Level)

² Medium Trucks

³ Heavy Trucks

Temperature 58 degrees, 60 percent relative humidity, light and variable wind, cloudy sky.

2.2 Noise Modeling

The existing CNEL was calculated for Site A based on the current traffic volume along Via de la Valle using the Federal Highway Administrations TNM 2.5 (FHWA 2004) noise model. The same traffic volume and vehicle composition ratio counted during the noise measurement was used to calibrate the model and verify the input used in the noise model. The modeled traffic speed was 50 mph along Via de la Valle. The existing truck mix used along Via de la Valle was approximately 2.8 percent medium trucks and 5.1 percent heavy trucks.

At Site A the modeled value was within one dB of the measured noise level. This generally confirms the assumptions used in the noise model. The modeled existing CNEL is approximately 72 dB at Site A.

3.0 FUTURE CONDITIONS

Via de la Valle would continue to be the primary traffic noise source in the future. The existing and future traffic volume along Via de la Valle is greater than the County Level of Service C design capacity for a Light Collector with bike lane (i.e., 7,100 ADT). The future year 2030 traffic volume along Via de la Valle is projected to be approximately 20,000 ADT (SANDAG 2006). The future year 2030 traffic volume is used to determine the future noise level associated with Via de la Valle.

3.1 Exterior Traffic Noise Impact

The site and grading plan indicate that a five to ten-foot high existing slope/berm, relative to the elevation of Via de la Valle, would be maintained along the edge of the property adjacent to Via de la Valle. The slope/berm is generally an existing feature however, there would be some minor grading near the north and south ends of the site. The proposed grading portion of the slope/berm is considered a project design feature. Within the central portion of the site would be a common outdoor use area consisting of open space around two ponds. The backyards and common outdoor use area would be located behind the first row of homes adjacent to Via de la Valle.

Without the intervening homes the noise level at the backyards and common area would be approximately 64 to 65 dB CNEL at the first floor level at the gaps between the homes at Units 1 and 2, and between Units 3 and 4 (i.e., receptor locations 3 and 7 in *Attachment 2*). A row of homes can provide approximately five dB of noise attenuation assuming the homes occupy at least 65% of the area of the row (Caltrans 1998). Thus, with the row of homes having front yards facing Via de la Valle, the noise levels at the common area and backyards would be approximately 59 to 60 dB CNEL. The areas directly behind the homes would have noise

attenuation greater than five dB. This noise level would comply with the County’s exterior noise criterion.

Patios near the front of the homes are identified at Units 3 and 4 on the illustrative site plan. The noise level at these patios would exceed 60 dB CNEL. There are two front yard areas at Unit 1. The future noise level at the front yards would be 68 dB CNEL. Thus, the noise level at the patio and front yard areas would not comply with the County’s exterior noise criterion.

The future noise level at exterior noise sensitive areas both with and without noise mitigation are depicted in Table 2. The table notes whether the noise mitigation is the result of sound walls or site plan design (i.e., shielding by intervening buildings).

TABLE 2
Future Noise Levels (dB CNEL)

Model Receptor No.	Location	Unmitigated Sound Level	Mitigated Sound Level
3	Backyard Units 1/2	65	60 or less (a)
5	Patio Unit 3	69	60 or less (b)
7	Backyard Units 3/4	64	60 or less (a)
9	Patio Unit 4	66	60 or less (b)
10	Backyard at Unit 4	65	60 or less (a)
14	Front yard Unit 1	68	60 or less (b)
15	Front yard Unit 1	68	60 or less (b)

- (a) Mitigated by shielding by proposed intervening homes
- (b) Mitigated by wall

The distances to the future 60 dB and 75 dB CNEL first floor noise contours, are approximately 290 and 45 feet, respectively, to the center line of Via de la Valle. These noise contour distances assuming proposed grading and a hard site propagation condition. The second floor 75 dB CNEL noise contour is also approximately 45 feet from the center line of Via de la Valle.

The 75 dB CNEL noise contour would not affect any of the proposed building envelope at the first or higher floor levels. The future worst-case 75 dB CNEL noise contour would extend approximately 45 feet from the center line of Via de la Valle without any intervening berms or barriers and hard site propagation.

3.2 Interior Noise Impact

The County requires that interior noise levels not exceed a CNEL of 45 dB. Typically, with the windows open, building shells provide approximately 15 dB of noise reduction. Therefore,

rooms exposed to an exterior CNEL greater than 60 dB could result in an interior CNEL greater than 45 dB. The greatest exterior noise level would occur at the second floor level. The second floor noise level would be approximately 71 dB CNEL at Units 1, 2, and 3 and 72 dB CNEL at Unit 4 adjacent to Via de la Valle. Without mitigation, the homes would exceed an interior noise level greater than 45 dB CNEL. The future noise level at Units 5 and 6 will be less than 60 dB CNEL because the intervening homes would shield Units 5 and 6 and provide adequate noise attenuation at both the first and second floor levels.

3.3 Off-site Traffic Noise Impact

The project would ultimately generate a daily traffic volume of approximately 60 ADT (Katz, Okitsu & Associates 2007). The majority of the traffic would be along Via de Santa Fe. The additional traffic would increase the noise along the adjacent roads by less than one dB CNEL. Therefore, the additional traffic volume along the adjacent roads would not substantially increase the existing noise level in the project vicinity and the traffic noise level increase is considered less than significant. The existing plus project noise level increase associated with the additional traffic volume is depicted in *Table 3*.

The cumulative traffic noise level would increase by one dB CNEL or less as shown in *Table 3*. The project’s net contribution to the cumulative noise level increase would be less than one dB CNEL along all the roads and would not noticeably change the location of the 60 dB CNEL noise contour. The project’s portion of the cumulative noise increase is not cumulatively considerable.

TABLE 3
Off-Site Traffic Noise Level Increase

Street (Segment)	Existing ADT	Existing W/ Project ADT	CNEL Increase ¹ (dB)	Cumulative W/ Project ADT	CNEL Increase ² (dB)	CNEL Increase ³ (dB)
Via de Santa Fe						
Via de la Valle and Camino Selva	4,302	4,305	<1	4,305	<1	<1
Camino Selva and Paseo Arbolado	3,709	3,721	<1	3,721	<1	<1
Paseo Arbolado and Paseo Delicias	3,709	3,758	<1	3,757	<1	<1
La Granada						
Paseo Arbolado and Paseo Delicias	5,961	6,009	<1	6,893	1	<1

Notes:

¹Existing vs. existing plus project noise increase.

²Existing vs. cumulative with project.

³Project net contribution to cumulative.

The values shown in the table are rounded to the nearest 0.1 dB which is beyond the accuracy limits of noise modeling and measurements.

4.0 MITIGATION

4.1 Exterior Traffic Noise Mitigation

With the proposed project design, the exterior noise level would be 60 dB CNEL or less at the backyards and common area. Therefore, exterior noise mitigation would not be required for these areas. Six-foot high noise barriers would be required to mitigate the traffic noise at the patios near the front of the homes at Units 3 and 4 as well as the front yard at Unit 1. The noise barriers are depicted on *Figure 4*.

As previously noted in Section 3.1, exterior noise mitigation is not required based on the proposed site design and grading plan at the backyards and common area. The County has requested information in case no intervening homes are constructed between the backyards and Via de la Valle. With this design, to mitigate the noise impact to 60 dB CNEL at the backyards and common area would require an approximate seven-foot high sound wall on top of the existing and proposed berm along Via de la Valle or increasing the height of the berm along Via de la Valle by seven-feet. This assumes the backyards, common area, and berm along Via de la Valle are located in the same general areas as currently depicted on the Illustrative Site Plan Preliminary Grading Plan, and the height of the berm is the same as currently depicted.

4.2 Interior Traffic Noise Mitigation

To comply with the County's interior noise standard, an interior noise analysis will be required for Units 1 through 4 at the site. The interior acoustical analysis will be required prior to the issuance of building permits to ensure that the interior CNEL would not exceed 60 dB. The homes would require air-conditioning or mechanical ventilation and could require sound-rated windows.

This concludes our noise assessment. If you have any questions, please call me.

Very truly yours,



Mike Komula
Acoustician

REFERENCES

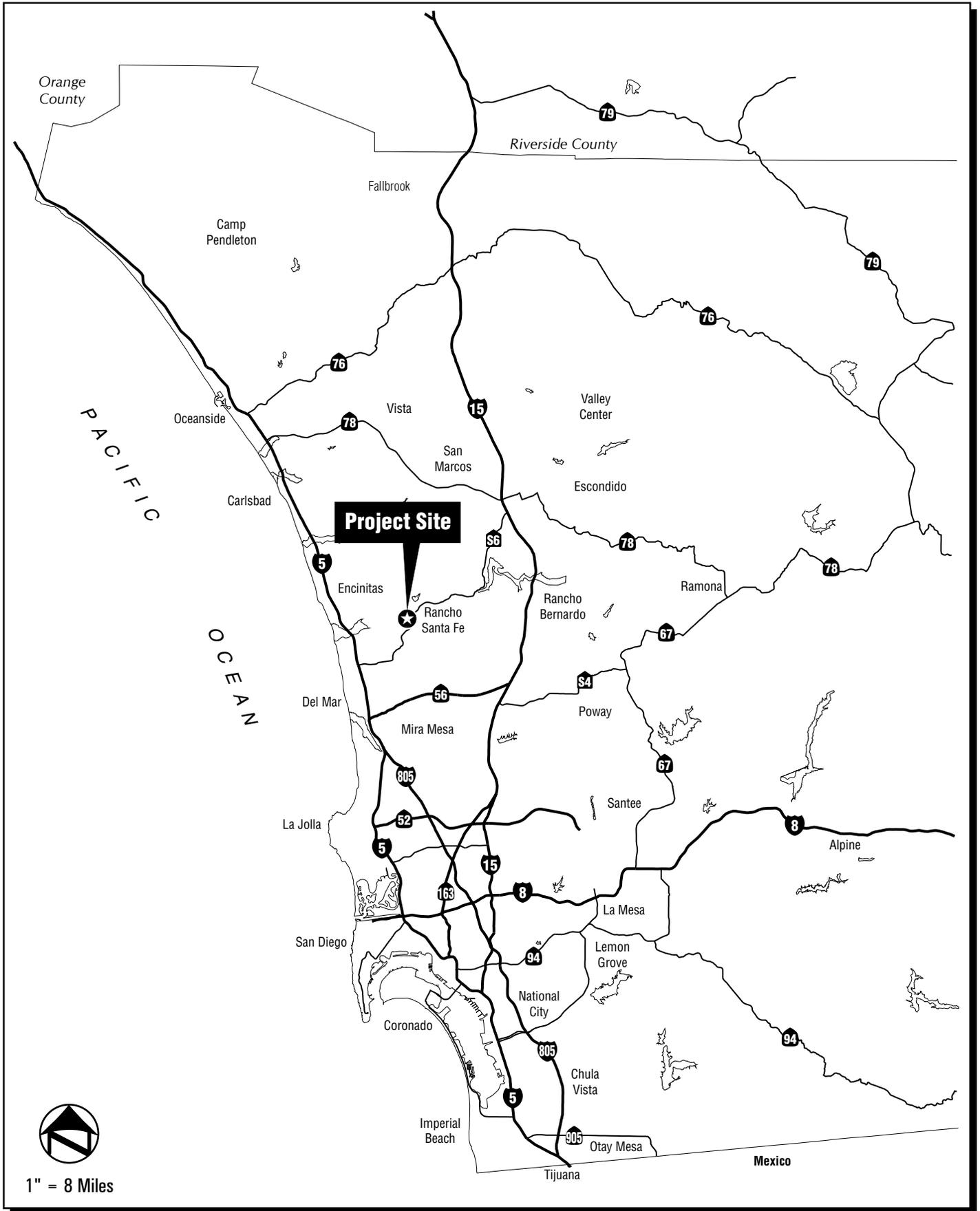
Federal Highway Administration, April 2004. *FHWA Traffic Noise Model User's Guide (Version 2.5 Addendum)*.

County of San Diego, September 27, 2006. *San Diego County General Plan Noise Element*.

San Diego Association of Governments (SANDAG), February 23, 2004. *San Diego Regional Existing Traffic Volumes*.

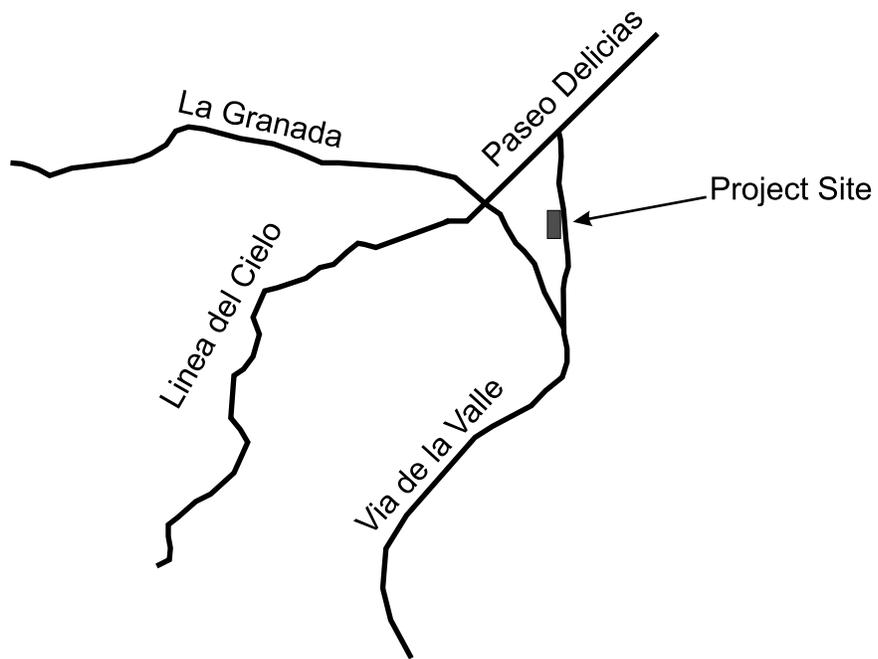
San Diego Association of Governments (SANDAG), January 2006. *San Diego Regional 2030 Traffic Forecast Volumes*.

Katz, Okitsu & Associates, April 2007. *Camino Selva Residential Project Rancho Santa Fe Traffic Impact Study*.



Los Arbolados Environmental Noise Assessment
Regional Location

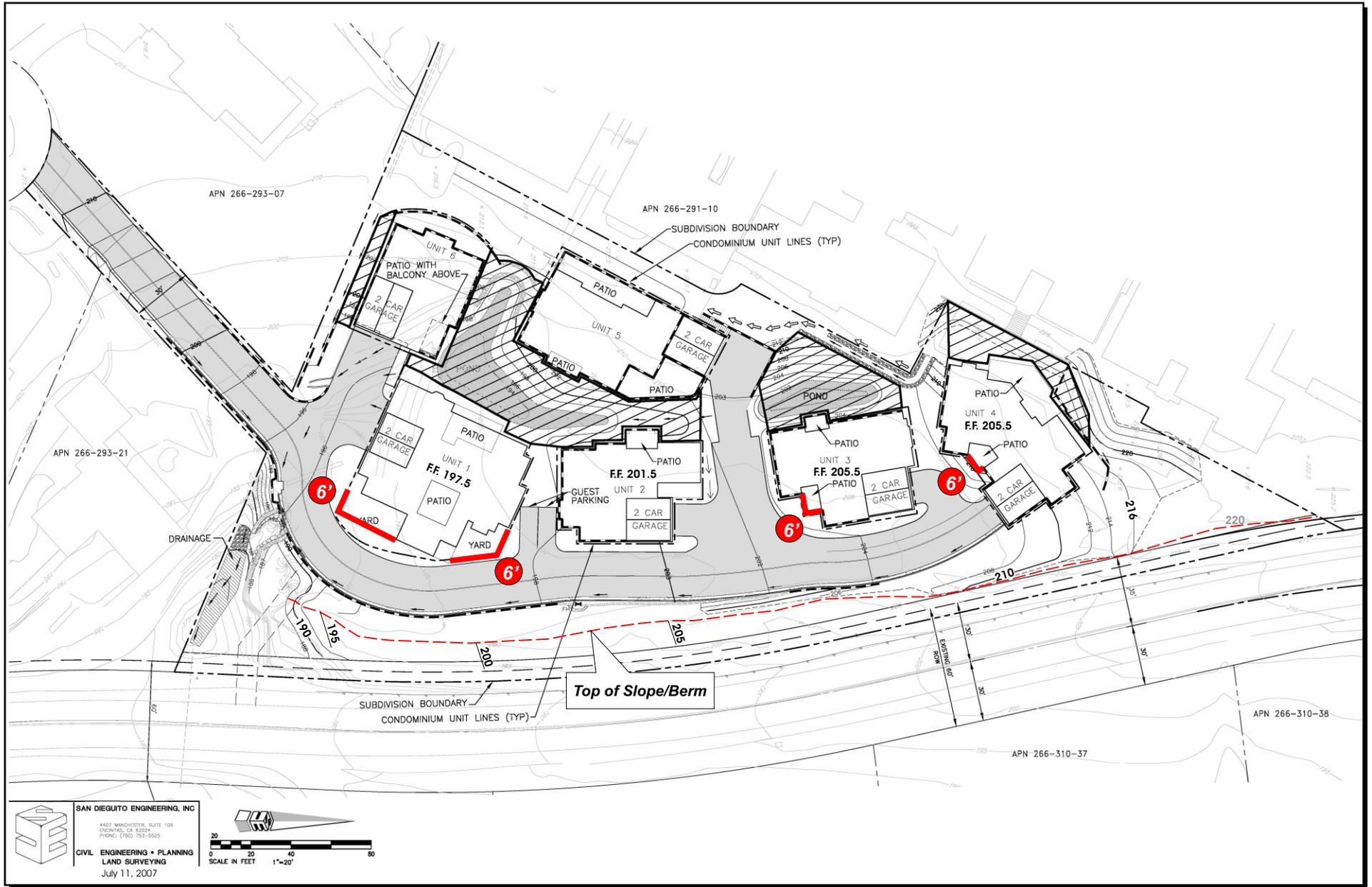
FIGURE
1



NOT TO SCALE

Los Arbolados Environmental Noise Assessment
Project Vicinity

FIGURE
2



Los Arbolados Environmental Noise Assessment
Noise Barrier Heights and Locations

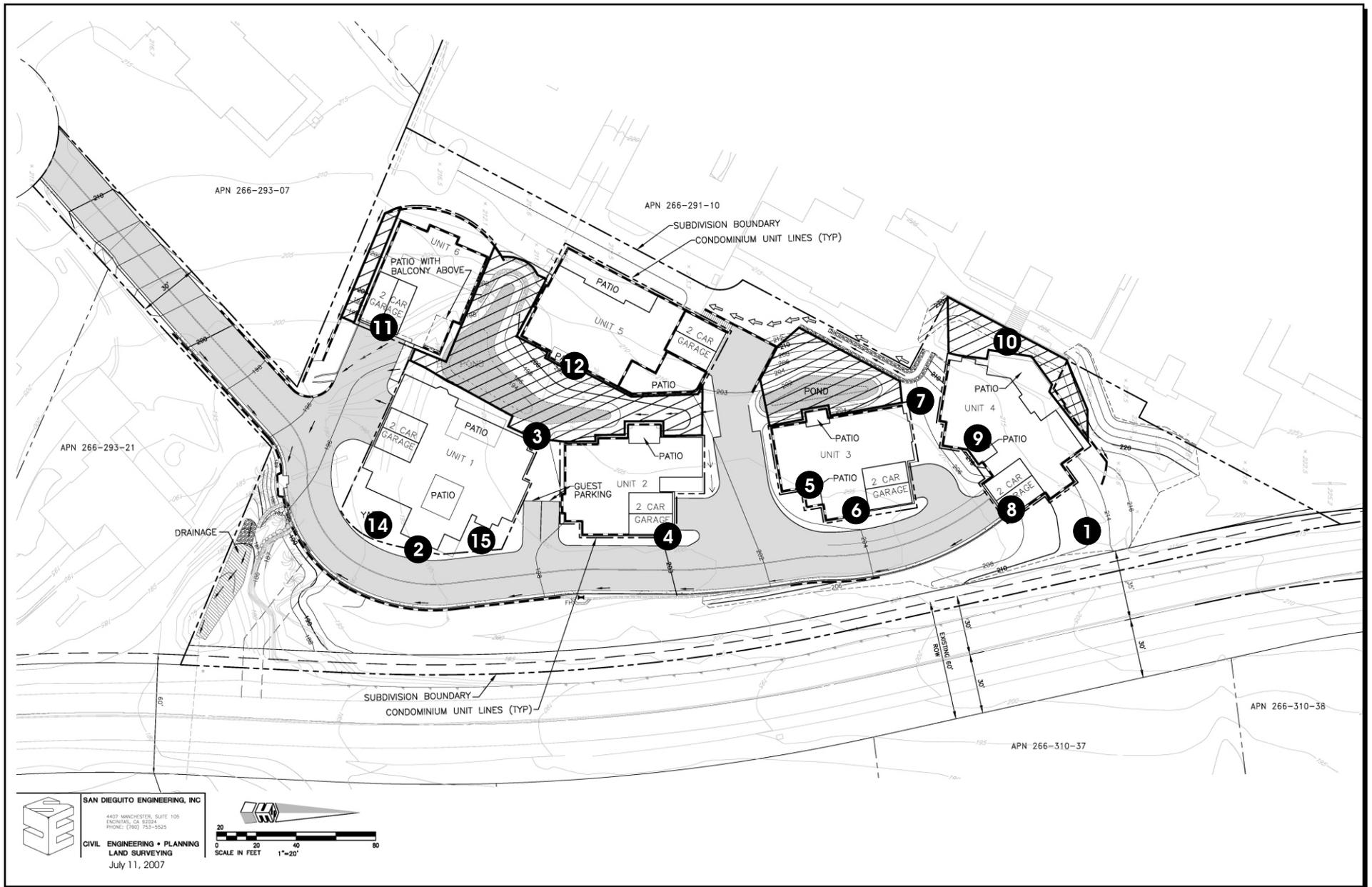
FIGURE
4

ATTACHMENT A
DEFINITIONS

ATTACHMENT 1 DEFINITIONS

<u>Term</u>	<u>Definition</u>
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
A-Weighted Sound Level	The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Community Noise Equivalent Level, CNEL	CNEL is the A-weighted equivalent continuous sound exposure level for a 24-hour period with a ten dB adjustment added to sound levels occurring during nighttime hours (10 pm to 7 am) and a five dB adjustment added to the sound levels occurring during the evening hours (7pm to 10 pm).
Decibel, dB	A unit for measuring sound pressure level and is equal to 10 times the logarithm to the base 10 of the ratio of the measured sound pressure squared to a reference pressure, which is 20 micropascals.
Equivalent Continuous Sound Level (L_{eq})	The sound level corresponding to a steady state sound level containing the same total energy as a varying signal over a given sample period. L_{eq} is designed to average all of the loud and quiet sound levels occurring over a time period.
Maximum A-weighted Sound Level, (L_{max})	The greatest sound level measured on a sound level (L_{max}) meter during a designated time interval or event using fast time-averaging and A-weighting.
Sound Transmission Class, STC	A single number rating of the noise reduction of a building element.

ATTACHMENT 2
SOUND 32 INPUT/OUTPUT



Los Arbolados Environmental Noise Assessment
Noise Modeling Locations

FIGURE
A1

INPUT: TRAFFIC FOR LAeq1h Volumes

Los Arbolados 5606

Dudek													
MJK													
INPUT: TRAFFIC FOR LAeq1h Volumes				16 July 2007									
PROJECT/CONTRACT:				TNM 2.5									
RUN:				Los Arbolados 5606									
Roadway				Future									
Name				Points									
				Name No. Segment									
				Autos		MTrucks		HTrucks		Buses		Motorcycles	
				V	S	V	S	V	S	V	S	V	S
				veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Via de la Valle (Northbound)	point1	1	921	50	28	50	51	50	0	0	0	0	
	point2	2	921	50	28	50	51	50	0	0	0	0	
	point3	3	921	50	28	50	51	50	0	0	0	0	
	point4	4	921	50	28	50	51	50	0	0	0	0	
	point5	5	921	50	28	50	51	50	0	0	0	0	
	point6	6	921	50	28	50	51	50	0	0	0	0	
	point7	7	921	50	28	50	51	50	0	0	0	0	
	point8	8	921	50	28	50	51	50	0	0	0	0	
	point9	9											
Via de la Valle (Southbound)	point27	27	921	50	28	50	51	50	0	0	0	0	
	point26	26	921	50	28	50	51	50	0	0	0	0	
	point25	25	921	50	28	50	51	50	0	0	0	0	
	point24	24	921	50	28	50	51	50	0	0	0	0	
	point23	23	921	50	28	50	51	50	0	0	0	0	
	point22	22	921	50	28	50	51	50	0	0	0	0	
	point21	21	921	50	28	50	51	50	0	0	0	0	
	point20	20	921	50	28	50	51	50	0	0	0	0	
	point19	19											

INPUT: RECEIVERS

Los Arbolados 5606

Dudek							16 July 2007					
MJK							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:		Los Arbolados 5606										
RUN:		Future										
Receiver												
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.	
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal		
			ft	ft	ft	ft	dBA	dBA	dB	dB		
Site A	1	1	250.0	545.0	217.00	5.00	0.00	66	10.0	8.0	Y	
Unit 1	2	1	259.0	208.0	198.00	5.00	0.00	66	10.0	8.0	Y	
Backyard @ Units 1 & 2	3	1	206.0	268.0	197.00	5.00	0.00	66	10.0	8.0	Y	
Unit 2	4	1	253.0	330.0	202.00	5.00	0.00	66	10.0	8.0	Y	
Unit 3 Patio	5	1	230.0	400.0	206.00	5.00	0.00	66	10.0	8.0	Y	
Unit 3	6	1	235.0	433.0	206.00	5.00	0.00	66	10.0	8.0	Y	
Backyard at Units 3 & 4	7	1	179.0	449.0	206.00	5.00	0.00	66	10.0	8.0	Y	
Unit 4	8	1	243.0	500.0	206.00	5.00	0.00	66	10.0	8.0	Y	
Unit 4 Patio	9	1	205.0	480.0	206.00	5.00	0.00	66	10.0	8.0	Y	
Backyard at Unit 4	10	1	170.0	500.0	215.00	5.00	0.00	66	10.0	8.0	Y	
Unit 6	11	1	150.0	180.0	196.00	5.00	0.00	66	10.0	8.0	Y	
Unit 5	12	1	160.0	285.0	203.00	5.00	0.00	66	10.0	8.0	Y	
Front yard (area a) at Unit 1	14	1	240.0	179.0	199.00	5.00	0.00	66	10.0	8.0	Y	
Front yard (area b) at Unit 1	15	1	253.0	230.0	199.00	5.00	0.00	66	10.0	8.0	Y	
Unit 1 2nd Floor	16	1	259.0	208.0	198.00	15.00	0.00	66	10.0	8.0	Y	
Unit 2 2nd Floor	17	1	253.0	330.0	202.00	15.00	0.00	66	10.0	8.0	Y	
Unit 3 2nd Floor	18	1	235.0	433.0	206.00	15.00	0.00	66	10.0	8.0	Y	
Unit 4 2nd Floor	19	1	243.0	500.0	206.00	15.00	0.00	66	10.0	8.0	Y	
Unit 5 2nd Floor	21	1	160.0	285.0	203.00	15.00	0.00	66	10.0	8.0	Y	
Unit 6 2nd Floor	23	1	150.0	180.0	196.00	15.00	0.00	66	10.0	8.0	Y	

RESULTS: SOUND LEVELS

Los Arbolados 5606

Dudek													16 July 2007	
MJK													TNM 2.5	
													Calculated with TNM 2.5	
RESULTS: SOUND LEVELS														
PROJECT/CONTRACT:			Los Arbolados 5606											
RUN:			Future											
BARRIER DESIGN:			INPUT HEIGHTS						Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.					
ATMOSPHERICS:			68 deg F, 50% RH											
Receiver														
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal		
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB		
Site A	1	1	0.0	74.1	66	74.1	10	Snd Lvl	74.1	0.0	8	-8.0		
Unit 1	2	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0		
Backyard @ Units 1 & 2	3	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0		
Unit 2	4	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0		
Unit 3 Patio	5	1	0.0	68.6	66	68.6	10	Snd Lvl	68.6	0.0	8	-8.0		
Unit 3	6	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	8	-8.0		
Backyard at Units 3 & 4	7	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0		
Unit 4	8	1	0.0	71.7	66	71.7	10	Snd Lvl	71.7	0.0	8	-8.0		
Unit 4 Patio	9	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0		
Backyard at Unit 4	10	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0		
Unit 6	11	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0		
Unit 5	12	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0		
Front yard (area a) at Unit 1	14	1	0.0	67.9	66	67.9	10	Snd Lvl	67.9	0.0	8	-8.0		
Front yard (area b) at Unit 1	15	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0		
Unit 1 2nd Floor	16	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0		
Unit 2 2nd Floor	17	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0		
Unit 3 2nd Floor	18	1	0.0	70.8	66	70.8	10	Snd Lvl	70.8	0.0	8	-8.0		
Unit 4 2nd Floor	19	1	0.0	72.3	66	72.3	10	Snd Lvl	72.3	0.0	8	-8.0		
Unit 5 2nd Floor	21	1	0.0	64.3	66	64.3	10	----	64.3	0.0	8	-8.0		
Unit 6 2nd Floor	23	1	0.0	63.2	66	63.2	10	----	63.2	0.0	8	-8.0		
Dwelling Units		# DUs	Noise Reduction											
			Min	Avg	Max									
			dB	dB	dB									

RESULTS: SOUND LEVELS**Los Arbolados 5606**

All Selected		20	0.0	0.0	0.0							
All Impacted		12	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: ROADWAYS

Los Arbolados 5606

Dudek					16 July 2007					
MJK					TNM 2.5					

INPUT: ROADWAYS
 PROJECT/CONTRACT: Los Arbolados 5606
 RUN: Mitigated with Patio Walls

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway	Width	Points	No.	Coordinates (pavement)			Flow Control		Segment	On	
Name		Name		X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	Struct?
	ft			ft	ft	ft		mph	%		
Via de la Valle (Northbound)	12.0	point1	1	352.0	-362.0	165.00				Average	
		point2	2	352.0	62.0	180.00				Average	
		point3	3	357.0	163.0	185.00				Average	
		point4	4	357.0	263.0	190.00				Average	
		point5	5	345.0	373.0	195.00				Average	
		point6	6	329.0	454.0	200.00				Average	
		point7	7	311.0	532.0	205.00				Average	
		point8	8	290.0	623.0	210.00				Average	
		point9	9	290.0	923.0	225.00					
Via de la Valle (Southbound)	12.0	point27	27	266.0	923.0	225.00				Average	
		point26	26	266.0	623.0	210.00				Average	
		point25	25	287.0	532.0	205.00				Average	
		point24	24	305.0	454.0	200.00				Average	
		point23	23	321.0	373.0	195.00				Average	
		point22	22	333.0	263.0	190.00				Average	
		point21	21	333.0	163.0	185.00				Average	
		point20	20	328.0	62.0	180.00				Average	
		point19	19	328.0	-362.0	165.00					

INPUT: TRAFFIC FOR LAeq1h Volumes

Los Arbolados 5606

Dudek													
MJK													
INPUT: TRAFFIC FOR LAeq1h Volumes				16 July 2007									
PROJECT/CONTRACT:				TNM 2.5									
RUN:				Los Arbolados 5606									
				Mitigated with Patio Walls									
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			V	S	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
Via de la Valle (Northbound)	point1	1	921	50	28	50	51	50	0	0	0	0	
	point2	2	921	50	28	50	51	50	0	0	0	0	
	point3	3	921	50	28	50	51	50	0	0	0	0	
	point4	4	921	50	28	50	51	50	0	0	0	0	
	point5	5	921	50	28	50	51	50	0	0	0	0	
	point6	6	921	50	28	50	51	50	0	0	0	0	
	point7	7	921	50	28	50	51	50	0	0	0	0	
	point8	8	921	50	28	50	51	50	0	0	0	0	
	point9	9											
Via de la Valle (Southbound)	point27	27	921	50	28	50	51	50	0	0	0	0	
	point26	26	921	50	28	50	51	50	0	0	0	0	
	point25	25	921	50	28	50	51	50	0	0	0	0	
	point24	24	921	50	28	50	51	50	0	0	0	0	
	point23	23	921	50	28	50	51	50	0	0	0	0	
	point22	22	921	50	28	50	51	50	0	0	0	0	
	point21	21	921	50	28	50	51	50	0	0	0	0	
	point20	20	921	50	28	50	51	50	0	0	0	0	
	point19	19											

INPUT: RECEIVERS

Los Arbolados 5606

Dudek							16 July 2007				
MJK							TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		Los Arbolados 5606									
RUN:		Mitigated with Patio Walls									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Site A	1	1	250.0	545.0	217.00	5.00	0.00	66	10.0	8.0	Y
Unit 1	2	1	259.0	208.0	198.00	5.00	0.00	66	10.0	8.0	Y
Backyard @ Units 1 & 2	3	1	206.0	268.0	197.00	5.00	0.00	66	10.0	8.0	Y
Unit 2	4	1	253.0	330.0	202.00	5.00	0.00	66	10.0	8.0	Y
Unit 3 Patio	5	1	230.0	400.0	206.00	5.00	0.00	66	10.0	8.0	Y
Unit 3	6	1	235.0	433.0	206.00	5.00	0.00	66	10.0	8.0	Y
Backyard at Units 3 & 4	7	1	179.0	449.0	206.00	5.00	0.00	66	10.0	8.0	Y
Unit 4	8	1	243.0	500.0	206.00	5.00	0.00	66	10.0	8.0	Y
Unit 4 Patio	9	1	205.0	480.0	206.00	5.00	0.00	66	10.0	8.0	Y
Backyard at Unit 4	10	1	170.0	500.0	215.00	5.00	0.00	66	10.0	8.0	Y
Unit 6	11	1	150.0	180.0	196.00	5.00	0.00	66	10.0	8.0	Y
Unit 5	12	1	160.0	285.0	203.00	5.00	0.00	66	10.0	8.0	Y
Front yard (area a) at Unit 1	14	1	240.0	179.0	199.00	5.00	0.00	66	10.0	8.0	Y
Front yard (area b) at Unit 1	15	1	253.0	230.0	199.00	5.00	0.00	66	10.0	8.0	Y
Unit 1 2nd Floor	16	1	259.0	208.0	198.00	15.00	0.00	66	10.0	8.0	Y
Unit 2 2nd Floor	17	1	253.0	330.0	202.00	15.00	0.00	66	10.0	8.0	Y
Unit 3 2nd Floor	18	1	235.0	433.0	206.00	15.00	0.00	66	10.0	8.0	Y
Unit 4 2nd Floor	19	1	243.0	500.0	206.00	15.00	0.00	66	10.0	8.0	Y
Unit 5 2nd Floor	21	1	160.0	285.0	203.00	15.00	0.00	66	10.0	8.0	Y
Unit 6 2nd Floor	23	1	150.0	180.0	196.00	15.00	0.00	66	10.0	8.0	Y

Dudek	16 July 2007
MJK	TNM 2.5
INPUT: BARRIERS	
PROJECT/CONTRACT:	Los Arbolados 5606
RUN:	Mitigated with Patio Walls

Barrier									Points										
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	\$ per	\$ per	Top	Run:Rise	\$ per			X	Y	Z	at	Seg	Ht	Perturbs	On	Important
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft			ft	ft	ft	ft	ft				tions?
Berm	B	0.00	99.99		0.00	0.0	2.0:1.0	0.00	point1	1	190.0	0.0	205.00	0.00	0.00	0	0		
									point2	2	294.0	0.0	190.00	0.00	0.00	0	0		
									point3	3	294.0	47.0	185.00	0.00	0.00	0	0		
									point4	4	296.0	72.0	180.00	0.00	0.00	0	0		
									point5	5	297.0	90.0	183.00	0.00	0.00	0	0		
									point6	6	298.0	127.0	185.00	0.00	0.00	0	0		
									point7	7	299.0	138.0	190.00	0.00	0.00	0	0		
									point8	8	299.0	159.0	194.00	0.00	0.00	0	0		
									point9	9	300.0	174.0	196.00	0.00	0.00	0	0		
									point10	10	300.0	239.0	200.00	0.00	0.00	0	0		
									point11	11	295.0	319.0	202.00	0.00					
Berm 2	B	0.00	99.99		0.00	0.0	2.0:1.0	0.00	point12	12	295.0	319.0	202.00	0.00	0.00	0	0		
									point13	13	280.0	410.0	205.00	0.00	0.00	0	0		
									point14	14	267.0	469.0	207.00	0.00	0.00	0	0		
									point15	15	258.0	507.0	209.00	0.00	0.00	0	0		
									point16	16	251.0	538.0	212.00	0.00	0.00	0	0		
									point17	17	245.0	570.0	216.00	0.00	0.00	0	0		
									point18	18	237.0	600.0	220.00	0.00	0.00	0	0		
									point19	19	229.0	633.0	224.00	0.00	0.00	0	0		
									point20	20	229.0	680.0	224.00	0.00	0.00	0	0		
									point21	21	189.0	680.0	227.00	0.00					
Wall at Unit 3 Patio	W	0.00	99.99	0.00				0.00	point22	22	225.0	410.0	211.00	6.00	0.00	0	0		
									point23	23	240.0	410.0	211.00	6.00	0.00	0	0		
									point24	24	240.0	390.0	211.00	6.00	0.00	0	0		
									point25	25	225.0	390.0	211.00	6.00					
Wall at Unit 4 Patio	W	0.00	99.99	0.00				0.00	point26	26	200.0	490.0	211.00	6.00	0.00	0	0		
									point27	27	215.0	490.0	211.00	6.00	0.00	0	0		
									point28	28	215.0	470.0	211.00	6.00	0.00	0	0		
									point29	29	200.0	470.0	211.00	6.00					
Wall at Unit 1 Front Yard area a	W	0.00	99.99	0.00				0.00	point30	30	225.0	169.0	199.00	6.00	0.00	0	0		
									point31	31	236.0	167.0	199.00	6.00	0.00	0	0		
									point32	32	250.0	191.0	199.00	6.00	0.00	0	0		
									point33	33	240.0	197.0	199.00	6.00					
Wall at Unit 1 Front Yard area b	W	0.00	99.99	0.00				0.00	point34	34	250.0	227.0	199.00	6.00	0.00	0	0		
									point35	35	258.0	225.0	199.00	6.00	0.00	0	0		

INPUT: BARRIERS**Los Arbolados 5606**

									point36	36	256.0	240.0	199.00	6.00	0.00	0	0		
									point37	37	250.0	245.0	199.00	6.00					

RESULTS: SOUND LEVELS**Los Arbolados 5606**

All Selected		20	0.0	0.0	0.0							
All Impacted		9	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							