

APPENDIX E

Noise Data and Environmental Noise Assessment

Environmental Noise Assessment

Rocklin Crossings Retail Center

Rocklin, California

BAC Job # 2006-004

Prepared For:

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INTRODUCTION

The proposed Rocklin Crossing commercial project is located at the southeast quadrant of Interstate 80 and Sierra College Boulevard in the City of Rocklin, California. The project proposes commercial uses including a large retail / grocery store and home improvement store, as well as smaller pads for other commercial uses. This report discusses the existing noise environment in the project vicinity, and noise impacts associated with the project. Figure 1a shows a conceptual the project site plan consistent with the building envelope proposed.

BACKGROUND AND TERMINOLOGY

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz). Definitions of acoustical terminology are shown in Appendix A.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in decibel levels correspond closely to human perception of relative loudness. Figure 2 illustrates common noise levels associated with various sources.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels.

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq). The Leq is the foundation of the day/night average noise descriptor, Ldn, and shows very good correlation with community response to noise.

Figure 1a
Rocklin Crossings Retail Center
Rocklin, California

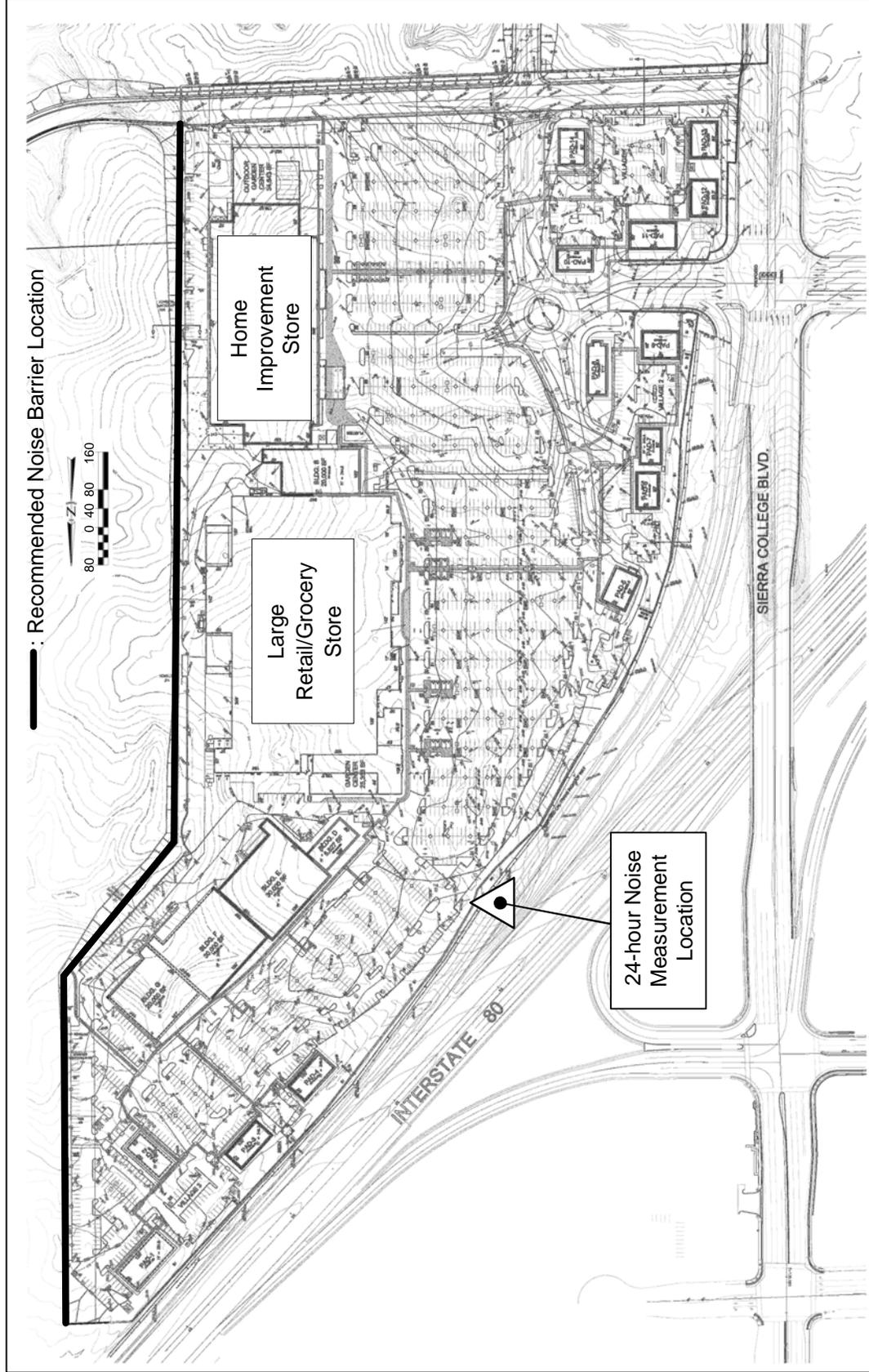


Figure 1b
 Rocklin Crossings Retail Center
 Rocklin, California

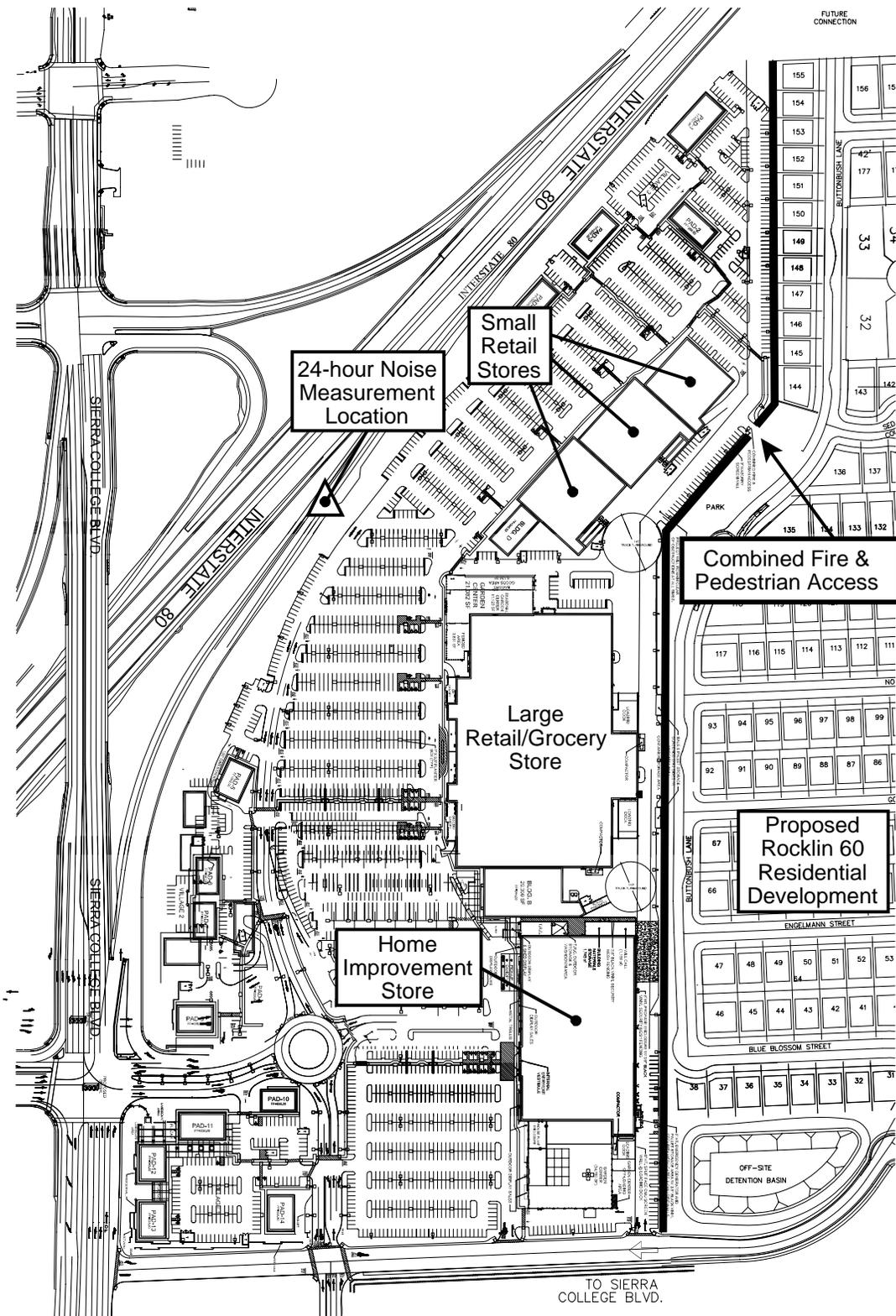
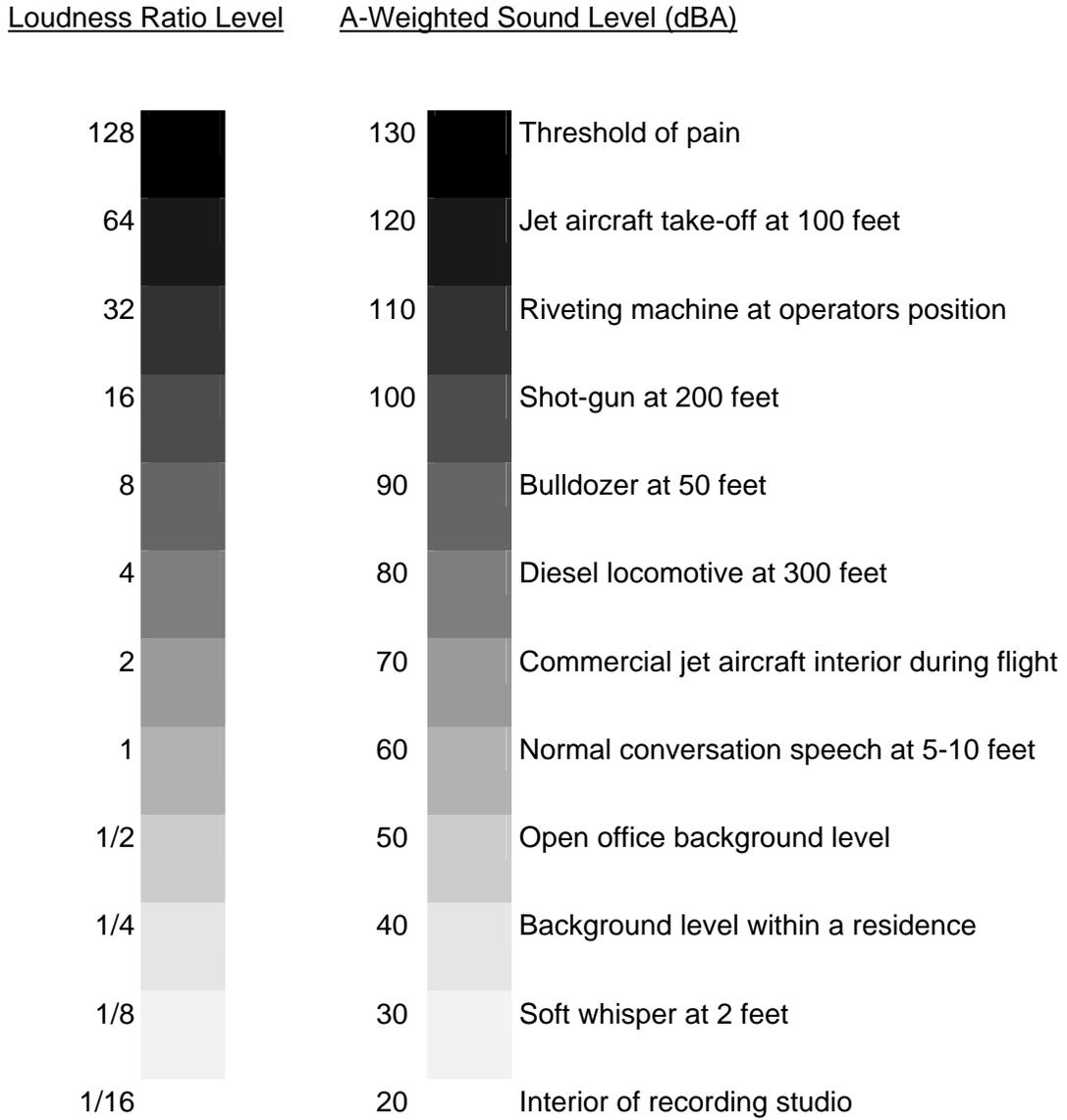


Figure 2
Typical A-Weighted Sound Levels of Common Noise Sources



The Day-night Average Level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

PROJECT DESCRIPTION

The project consists of 2 1proposed buildings totaling approximately 543,500 square feet. The primary noise generating aspects of the project will consist of on-site truck circulation and unloading activities, heating, ventilating and air conditioning (HVAC) equipment, and project construction. The large retail/grocery store is proposed to be located near the center of the eastern project site border and the home improvement store will be located immediately to the south, also near the eastern project site boundary. The project site layout is provided in Figure 1a.

EXISTING LAND USES IN THE PROJECT VICINITY

The project site is currently vacant. A small convenience center containing gas stations, a convenience store, and a fast food restaurant is located north of the project site across Interstate 80 on Sierra College Boulevard. Several existing rural residential homes are located east of the project site, as well as south of the project along Sierra College Boulevard. A community church is also located south of the project site off Sierra College Boulevard. Due to the substantial distance from the project site to these uses, noise impacts associated with the project are not anticipated.

It should be noted that the Rocklin 60 Residential Project is currently proposed on the adjacent property to the east of this project. Therefore, new residential homes are proposed to be located along the eastern property line of this development. For this reason, this report will assess potential noise impacts of the Rocklin Crossings Commercial Development on the adjacent residential development and suggest mitigation measures where appropriate.

EXISTING NOISE ENVIRONMENT IN THE PROJECT VICINITY

The ambient noise environment in the immediate project vicinity is dominated by traffic on Interstate 80. Traffic on Sierra College Boulevard also contributes to the ambient noise environment in the project vicinity, but to a far lesser extent than I-80.

To generally quantify the existing ambient noise environment in the project vicinity, continuous hourly noise level measurements were conducted on the project site for a period of 24 hours on January 19, 2006. The 24 hour noise measurement location is shown on Figure 1a.

A Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter was used for the noise level measurement survey. The meter was calibrated before and after use with an LDL Model CA200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

ENVIRONMENTAL NOISE ANALYSIS

The noise level measurement survey results are summarized below in Table 1, with the detailed results contained in Appendix B. The ambient noise monitoring survey revealed that ambient noise levels in the immediate project vicinity are elevated, as would be expected along the noise I-80 corridor.

Table 1 Existing Ambient Noise Monitoring Results Rocklin Crossings - January 19, 2006								
		Average Measured Hourly Noise Levels, dBA						
Site	Location	24-hour L _{dn}	Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm - 7 am)		
			L _{eq}	L ₅₀	L _{max}	L _{eq}	L ₅₀	L _{max}
1	On project site at I-80 right-of-way	83	79	78	85-92	76	71	83-89
Source - Bollard Acoustical Consultants, Inc.								

CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

To limit population exposure to physically and/or psychologically damaging noise levels, the State of California, various county governments, and most municipalities in the State have established standards and ordinances to control noise. The General Plan Noise Element provides standards regarding noise levels for uses relevant to the proposed project. In addition, noise thresholds can be derived from the CEQA guidelines. The following provides a general overview of the existing regulations which would be pertinent to this project.

State

The California Environmental Quality Act (CEQA) Guidelines indicate that a significant noise impact may occur if a project exposes persons to noise levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels.

Local

City of Rocklin General Plan

The existing City of Rocklin General Plan Noise Element does not contain quantitative noise level limits for commercial uses affecting residential uses. The following include the existing policies, laws, and regulations established in the 1991 City of Rocklin General Plan, as applicable to the proposed project.

ENVIRONMENTAL NOISE ANALYSIS

Goal	To protect residents from health hazards and annoyance associated with excessive noise levels.
Policy 1	To use adopted noise compatibility guidelines to evaluate compatibility of proposed new development.
Policy 2	To require noise analysis of proposed development projects as part of the environmental review process and to require mitigation measures that reduce noise impacts to acceptable levels.
Policy 3	To require noise buffering or insulation in new development along major streets and highways, and along railroad tracks.
Policy 4	To control noise sources in residential areas by restricting truck traffic to designated truck routes.
Policy 5	To monitor noise generating land uses to assure compliance with acceptable noise levels.
Policy 6	To encourage sound mitigation, including but not limited to sound walls, along existing highways where noise is determined to exceed adopted standards.

Recommended State Model Noise Ordinance Standards:

In cases where local jurisdictions do not have quantitative noise level limits which would be applicable to noise-sensitive receptors affected by non-transportation noise sources (such as the noise sources associated with the proposed commercial uses), the State of California Model Community Noise Control Ordinance can provide guidance.

The State of California Office of Noise Control (ONC) developed the Model Community Noise Control Ordinance to assist cities and counties in the development of appropriate noise standards for their jurisdictions. The ONC standards are recommended in terms of hourly levels, and include adjustments for the rural versus urban nature of the community, the time of day the noise occurs, the duration of the intrusive sound, the ambient conditions, and the characteristics of the noise (impulsive, tonal, speech or music, etc.). The ONC recommended standards which could be considered most applicable to this project are shown in Table 2.

**Table 2
State of California Model Noise Ordinance Recommended Standards
(Suburban Land Uses)**

Receiving Land Use	Duration of Intrusive Sound	Daytime Standard (7 a.m. - 10 p.m.)	Nighttime Standard (10 p.m. - 7 a.m.)
One & Two Family Residential	30 - 60 minutes per hour	55	45
	15 - 30 minutes per hour	60	50
	5 - 15 minutes per hour	65	55
	1 - 5 minutes per hour	70	60
	Less than 1 minute per hour	75	65

If the offensive noise contains a steady, audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering, or riveting, or contains music or speech, the standard limits shown shall be reduced by 5 dB.

NOISE GENERATION OF THE PROPOSED PROJECT

A combination of use of existing literature, and application of accepted noise prediction and sound propagation algorithms, were used to predict noise levels resulting from the Rocklin Crossings Retail Center project. Specific noise sources evaluated in this section include project construction, truck circulation and unloading activities, mechanical equipment, parking lot noise, parking lot sweeper truck noise, and Garden Center noise. Potential noise impacts of each of these major noise sources are described below.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet, as indicated in Table 3. Noise would also be generated during the construction phase by increased truck traffic on area roadways. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Site preparation of the project site may require blasting. If blasting is required at the project site as part of project construction, such activities would likely consist of small shots to clear boulders. Such shots are designed to transfer the energy into the rock, rather than have the shot vent to the atmosphere. As a result, noise generated by such blasting activities would sound like a muted thud, and is not expected to result in adverse public reaction at existing noise sensitive land uses in the project vicinity.

**Table 3
Construction Equipment Noise**

Type of Equipment	Maximum Level, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

Source: Environmental Noise Pollution, Patrick R. Cunniff, 1977.

Truck Delivery Noise

The proposed home improvement store, large retail/grocery store, and commercial buildings E, F & G, will all have truck deliveries in the rear of these stores. As a result, trucks will arrive, pass, stop, start, couple and decouple trailers, back into loading docks, be unloaded, and depart the site. The trailers will consist of enclosed trailers with food (some refrigerated) and merchandise for each of the commercial buildings, and flatbeds carrying lumber to the home improvement store.

According to project representatives, worst case daily truck activity at these stores will conservatively consist of approximately 15 semi-trailer trucks per day and approximately 3 semi dual trailer flatbed trucks per day for delivery of materials at the home improvement store. In addition, 6 semi-trailer trucks delivering dry grocery goods and general merchandise per day and 3 refrigerated semi-trailer truck deliveries per day at the grocery store. Approximately 15 smaller 2-axle vender trucks will also make deliveries to these stores each day. Therefore, for this analysis, it was assumed that up to 27 heavy truck deliveries and 15 small truck deliveries could occur in a given day.

Based on evaluation of the project site plan, delivery trucks will likely enter the site from the roadway proposed along the southern edge of the project site and traverse north behind the stores along the project's eastern border and then make their way the project's western site exit. The trucks will be closest to the noise-sensitive receivers during passages directly behind the stores. Specifically, truck pass-bys will be approximately 70 to 150 feet from the approximate center of the nearest residential backyards proposed to the east.

Heavy Truck pass-bys en route to the loading dock areas are expected to be relatively brief, and are estimated to produce an average Sound Exposure Level (SEL) of approximately 87 dB at a distance of 50 feet. Smaller truck pass-by's produce an average SEL of approximately 80 dB at 50 feet. Relative to the louder and greater number of heavy truck deliveries, the noise generation of the smaller (2-axle) trucks is not anticipated to appreciably affect overall truck pass-by noise levels. The typical Lmax level due to a truck pass-by has been measured to be approximately 75 dB at a distance of 50 feet.

ENVIRONMENTAL NOISE ANALYSIS

Primary noise sources associated with loading dock operations at the proposed large retail/grocery store, will most likely be heavy trucks stopping (air brakes), backing into the loading docks (back-up alarms), and pulling out of the loading docks (revving engines). In addition, if the heavy truck engines idle and/or trailer refrigeration unit's cycle on and off while the trucks are being unloaded, then these would be additional sources of noise at this location. Once the trucks have backed into the loading dock, they are unloaded from the inside of the store using a fork lift or hand cart, and most of that unloading noise is contained within the building and truck trailer.

Not all trucks are unloaded at loading docks, as beverage, bread, potato chip, and other vendors often utilize hand carts to unload their products through rear doors (as opposed to depressed dock areas). Flatbed lumber trailers will be unloaded using forklifts in the area behind the home improvement store. Noise from these operations also contributes to the overall truck delivery noise environment.

Due to the fairly intensive truck unloading operations which will occur adjacent to the eastern site boundary, it is not feasible to assess the noise of different operations (i.e. lumber unloading, loading docks, truck pass-by's, refrigeration trucks, etc.), independently. As a result, the noise generation of each of these sources was combined to arrive at a cumulative assessment of truck delivery noise. The results of this assessment indicate that a typical busy hour of overall truck activity along the eastern site boundary would generate median (L_{50}) and maximum (L_{max}) noise levels of 60 dB and 80 dB, respectively, at a reference distance of 50 feet from the effective noise center of the truck unloading activities. An exception to these levels is made for refrigeration trucks, in which median noise levels would be approximately 5 dB higher, or 65 dB L_{50} . Maximum noise levels associated with refrigeration trucks were not found to be higher than maximum noise levels for non-refrigeration trucks. This is because the maximum noise generation of heavy truck passby's are affected most by engine noise, and are not appreciably affected by the refrigeration units.

The reference noise levels cited above are propagated to the nearest proposed residences to the east assuming standard spherical spreading treating the noise source as a stationary point. This standard assumption leads to a 6 dB decrease in noise levels for each doubling of distance. For example, the reference level of 60 dB L_{50} at 50 feet from the source would decrease to 54 dB L_{50} at a distance of 100 feet, and to 48 dB L_{50} at a distance of 200 feet.

The distances from the approximate noise center of the truck delivery areas to the nearest proposed residences in the Rocklin 60 development to the east vary. For example, Lot 38 is located closer to than lots 46-47, 66-67, and 92-93. Lots 145 and 146 are located even closer to the eastern site boundary still. Table 4 shows the approximate distances from the effective noise centers of the truck delivery areas to the nearest proposed residences to the east, and the corresponding noise levels associated with the combined truck delivery operations.

Table 4 Predicted Truck Delivery Noise Levels at Nearest Proposed Residences Rocklin Crossing Project			
Lot(s)	Distance	Predicted L ₅₀ Without / With Refrigeration Trucks	Predicted L _{max}
38	70	57 / 62	77
46-47, 66-67, 92-93, 117-118	120	52 / 57	72
145-146	70	57 / 62	77

Notes:

1. Lot locations are shown on Figure 1b.
2. Distances shown are from approximately noise center of truck activity areas to backyards of nearest residences.
3. Predicted L₅₀ values based on a reference level of 60 dB at 50 feet.
4. Predicted L_{max} values based on a reference level of 80 dB at 50 feet.

The Table 4 data indicate that predicted median and maximum noise levels associated with truck deliveries would exceed both the recommended median and maximum noise level criteria shown in Table 2. As a result, a noise barrier analysis was performed for this project. The barrier analysis took into account the relative elevations of the commercial truck activity areas as well as the elevations of the proposed residences to the east. It should be noted that a noise barrier is proposed by the project applicant, and that the barrier is to be located relative to the elevation of the commercial site. This is important in that the proposed residential area will be at a lower elevation than the commercial site, thereby improving the efficiency of the noise barrier constructed at the commercial site. The results of the barrier analysis are summarized in Table 5, with the detailed results shown in Appendix C.

Table 5 Barrier Heights Required to Satisfy Exterior noise standards at Nearest Residences Rocklin Crossings Retail Center, Rocklin, California		
Lo1	Noise Barrier Height to Achieve:	
	45 dB L ₅₀ Without / With Refrigeration Trucks	65 / 75 dB L _{max}
Lot 38	7 / 16	7 / 6
Lots 46-47	6 / 11	6 / 0
Lots 66-67	6 / 11	6 / 0
Lots 92-93	6 / 11	6 / 0
Lots 117-118	6 / 13	6 / 0
Lots 145-146	9 / 16	9 / 6

1. Source, residential building pads, and barrier elevations are given in Appendix D.

The results of the noise barrier analysis indicate that, without refrigeration trucks present, noise barriers ranging in height from 6 to 9 feet along the eastern site boundary would could be utilized to reduce truck unloading activity noise to a state of compliance with the recommended 45 dB L₅₀ and 65 dB L_{max} nighttime noise level criteria shown in Table 2.

To fully mitigate all truck unloading activity noise during day and nighttime hours, it is recommended that a solid property line noise barrier 9 feet in height (relative to commercial site elevation) be constructed at the locations shown in Figure 1b. In addition, barrier walls should be constructed along the sides of the Large Grocery cold food loading dock, and refrigeration trucks required to park in those shielded areas while idling on site.

Mechanical Equipment Noise

The HVAC system for maintaining comfortable shopping temperatures within the store will consist of packaged rooftop air conditioning systems. The units will be relatively evenly distributed across the roof of the building, starting about 30 feet in from the edges of the roof. These HVAC units, which typically stand about 4-5 feet tall, would be shielded from view by the project building parapets. Such rooftop HVAC units typically generate noise levels of approximately 50 dB L₅₀ at a reference distance of 100 feet from the building, including shielding by the building. During nighttime hours, the air conditioning requirements of the facilities decrease significantly, with reference levels being reduced to less than 45 dB L₅₀. Given the distance between the rooftop HVAC units and the nearest proposed residences in the Rocklin 60 development to the east, and the shielding provided by the rooftop parapet, no additional HVAC equipment noise mitigation measures appear to be warranted for this project.

To quantify the noise emissions from food cold storage refrigeration equipment, noise level measurements conducted at a similar large grocery store were utilized. At a distance of 50 feet from the food cold storage equipment, a noise level of 66 dB L₅₀ was recorded. This equipment is proposed to be located on the roof of the large retail/grocery store, approximately 300 feet west of the nearest proposed residences. At this distance, the food cold storage equipment is predicted to generate noise levels of 50 dB L₅₀, not including shielding by the rooftop and parapet. After consideration of this shielding, cold storage equipment noise levels are predicted to be below the recommended 45 dB L₅₀ nighttime noise criteria. As a result, no additional noise mitigation measures appear to be warranted for the food cold storage equipment associated with the large retail/grocery store.

Parking Lot Noise

The majority of the on-site parking for the proposed project will be located on the west side of the buildings shown on Figure 1a, well removed from the residences to the east. Nonetheless, there is a smaller parking area and rows of parking along the eastern project boundary, as indicated in Figure 1a.

Assuming all of the approximately 200 spaces in the parking area located at the northeastern portion of the project site are filled and emptied in one hour, a total of 400 parking lot events would occur in that area during a very busy hour. The approximate center of activity of the parking area would be approximately 65 feet from the residential property line to the east and approximately 70 feet from the nearest backyard locations of the proposed residential development. A typical SEL due to automobile arrivals/departures, including car doors slamming and people conversing is approximately 70 dB and maximum parking lot noise levels are typically 63 dB, at a distance of 50 feet. At that nearest outdoor activity areas, the predicted median hourly and maximum noise levels were computed to be 49 dB L₅₀ and 51 dB L_{max}. Interior levels within the nearest proposed residences would be at least 15 dB lower, or approximately 33 dB L₅₀ and 36 dB L_{max}. The predicted levels, which include a -9 dB offset to account for the recommended property line noise

barrier for truck delivery noise, would satisfy the daytime noise level standards shown in Table 2 for this parking area, even with those standards reduced by 5 dB to account for the impulsive nature of the car doors opening and closing. Parking lot activity is not anticipated to occur during nighttime hours (10 p.m. to 7 a.m.). As a result, no additional noise mitigation measures are warranted for parking areas.

Parking Lot Sweeper Noise

As mentioned above, the majority of the on-site parking lot areas for the proposed project will be located on the west side of the buildings shown on Figure 1a, well removed from the residences to the east. In addition, parking lot sweeper noise varies and is dependent upon the actual sweeper truck equipment, as well as the truck operator. However, the proposed intervening buildings along with the recommended 9-foot tall eastern property line noise barrier are predicted to provide significant shielding of sweeper truck noise. As a result, sweeper truck noise is not expected to exceed the standards contained in Table 2. No additional noise mitigation measures would be required for this aspect of the project.

Garden Center Noise

The project includes Garden Centers at both the Large Retail/Grocery Store, as well as at the Home Improvement Store. The garden center of the Large Retail/Grocery Store is located at the northwest portion of the building, and the garden center of the Home Improvement Store is located at the southern portion of that building. The public address (P/A) system at the Garden Centers are anticipated to generate lower noise levels than the truck delivery and unloading activities, provided that the speakers face down and into the Garden Centers and away from the nearest residences to the east. As a result, no additional noise mitigation measures appear to be warranted for the Garden Center areas.

Other Noise Sources

Other noise sources located behind the commercial center could include cardboard baling and trash compaction machinery, and garbage collection. These noise sources are predicted to be less intensive than the truck delivery activities, and the noise barrier recommended for those operations would provide similar noise reduction from these ancillary noise sources.

CONCLUSIONS AND RECOMMENDATIONS

The Rocklin Crossings commercial project site is exposed to existing and future traffic noise levels due to Interstate 80 which are elevated. Because the commercial uses proposed within this project are not considered to be noise sensitive, the elevated ambient conditions at the project site are not anticipated to adversely affect this development.

Mechanical equipment and truck deliveries associated with the Rocklin Crossings commercial development will generate substantial noise levels which could affect the proposed Rocklin 60 residential development to the immediate east. As a result, the following specific noise mitigation measures are recommended for this development. These measures would also provide acoustic attenuation of project noise levels at the existing residential uses located further east of the Rocklin 60 residential development.

1. A solid noise barrier should be constructed at the locations shown on Figures 1a and 1b.
2. The barrier should be constructed of masonry block, pre-cast concrete panels, or other massive materials.
3. The recommended noise barrier height along the entire eastern boundary of the project site is 9 feet relative to the pad elevations of the nearest commercial buildings.
4. Solid noise barriers should extend along the cold food unloading area of the large retail/grocery store loading dock to further shield refrigeration trucks while being unloaded. Refrigeration trucks should be required to park within those shielded loading dock areas while on site. The barriers should be sufficiently tall to completely shield the refrigeration units of on the truck trailers.
5. All rooftop mechanical equipment should be completely screened from view of existing or proposed residences by the proposed parapet.
6. Construction activities should be limited to daytime hours to eliminate the potential for adverse noise impacts associated with nighttime construction.

These conclusions are based on the site plans shown on Figures 1a and 1b, and on the assumptions contained herein. Deviation from these site plans or assumptions could cause actual noise levels to vary. Implementation of the above-described measures is predicted to fully mitigate noise impacts associated with on-site activities at the Rocklin Crossings Commercial Project.

**Appendix A
Acoustical Terminology**

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.

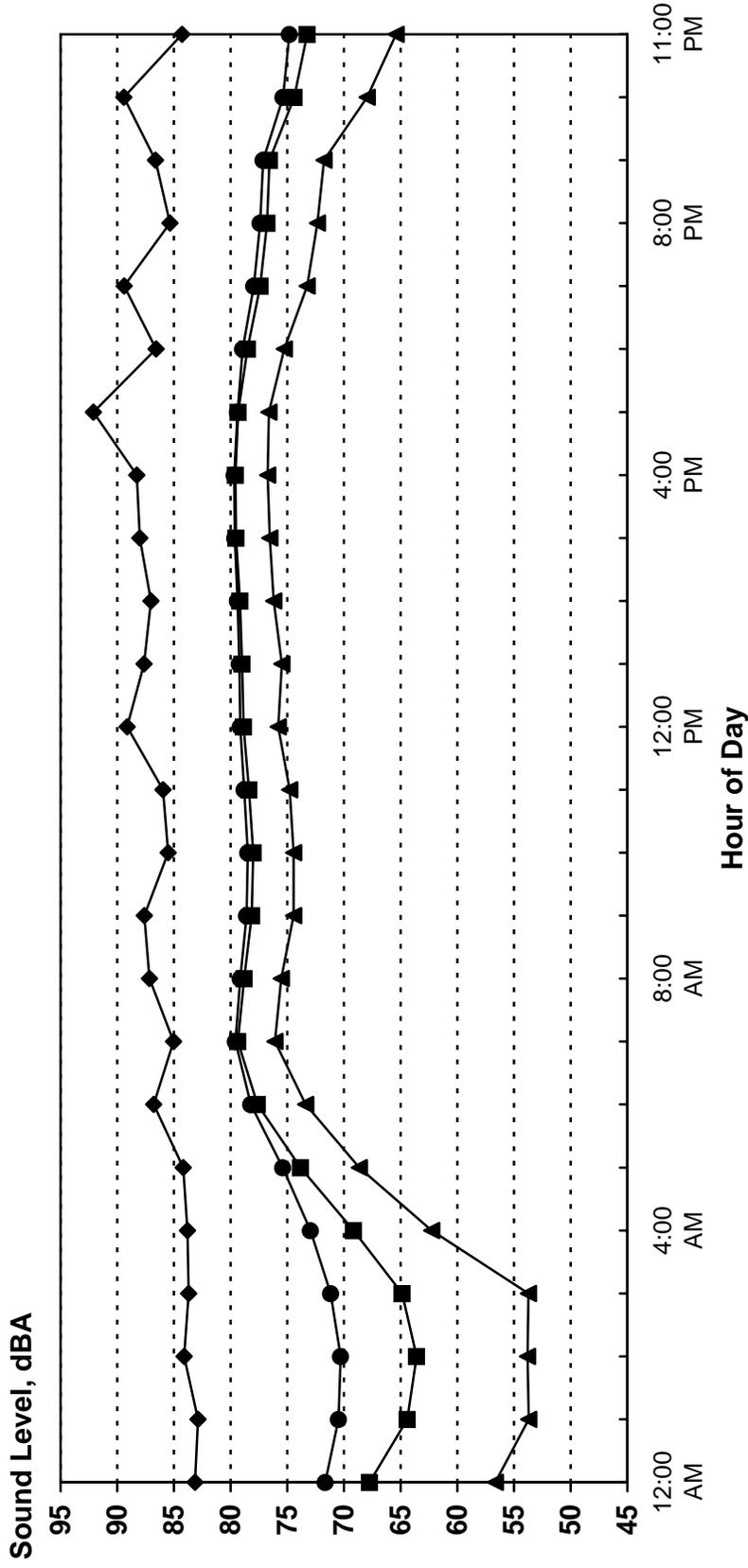
**Appendix B-1
 Rocklin Crossings Retail Center
 24hr Continuous Noise Monitoring at Site #1
 Thursday, January 19, 2006**

Hour	Leq	Lmax	L50	L90
0:00	71.7	83.1	67.8	56.7
1:00	70.5	82.9	64.4	53.7
2:00	70.3	84.1	63.6	53.8
3:00	71.2	83.7	64.9	53.7
4:00	73.0	83.8	69.2	62.3
5:00	75.4	84.2	73.8	68.7
6:00	78.2	86.8	77.6	73.4
7:00	79.6	85.0	79.4	76.1
8:00	79.1	87.2	78.8	75.5
9:00	78.6	87.6	78.1	74.4
10:00	78.5	85.5	78.0	74.4
11:00	78.8	86.0	78.4	74.8
12:00	79.2	89.1	78.9	75.8
13:00	79.2	87.6	79.0	75.5
14:00	79.4	87.0	79.2	76.2
15:00	79.6	88.0	79.5	76.6
16:00	79.7	88.3	79.6	76.7
17:00	79.4	92.1	79.3	76.6
18:00	78.9	86.6	78.5	75.3
19:00	78.0	89.4	77.4	73.3
20:00	77.4	85.3	76.8	72.3
21:00	77.1	86.6	76.6	71.8
22:00	75.4	89.4	74.4	68.0
23:00	74.8	84.3	73.3	65.4

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	79.7	77.1	78.5	79.6	70.3	75.6
Lmax (Maximum)	92.1	85.3	87.6	89.4	82.9	84.7
L50 (Median)	79.6	76.6	78.4	79.4	63.6	70.8
L90 (Background)	76.7	71.8	74.9	76.1	53.7	63.2

Computed Ldn, dB	82.6
% Daytime Energy	77%
% Nighttime Energy	23%

Appendix B-2
Rocklin Crossings Retail Center
24hr Continuous Noise Monitoring at Site #1
Thursday, January 19, 2006



—●— Average (Leq) —◆— Maximum (Lmax) —■— L50 —▲— L90

Ldn: 83 dB



Appendix C-1
Barrier Insertion Loss Calculation

Project Information: Job Number: 2006-004
 Project Name: Rocklin Crossings Retail Center
 Location(s): Lot 38

Noise Level Data: Source Description: Cumulative Truck and Loading Dock Sources
 Source Noise Level, dBA: 57
 Source Frequency (Hz): 500
 Source Height (ft): 345

Site Geometry: Receiver Description: Backyard Area
 Source to Barrier Distance (C₁): 40
 Barrier to Receiver Distance (C₂): 30
 Pad/Ground Elevation at Receiver: 330
 Receiver Elevation¹: 335
 Base of Barrier Elevation: 341
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
347	6	-11.1	45.9	Yes
348	7	-11.9	45.1	Yes
349	8	-12.8	44.2	Yes
350	9	-13.3	43.7	Yes
351	10	-13.9	43.1	Yes
352	11	-14.4	42.6	Yes
353	12	-14.6	42.4	Yes
354	13	-15.3	41.7	Yes
355	14	-15.3	41.7	Yes
356	15	-15.9	41.1	Yes
357	16	-16.3	40.7	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix C-2
Barrier Insertion Loss Calculation

Project Information: Job Number: 2006-004
 Project Name: Rocklin Crossings Retail Center
 Location(s): Lots 46-47

Noise Level Data: Source Description: Cumulative Truck and Loading Dock Sources
 Source Noise Level, dBA: 52
 Source Frequency (Hz): 500
 Source Height (ft): 346

Site Geometry: Receiver Description: Backyard Area
 Source to Barrier Distance (C₁): 50
 Barrier to Receiver Distance (C₂): 70
 Pad/Ground Elevation at Receiver: 331
 Receiver Elevation¹: 336
 Base of Barrier Elevation: 342
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
348	6	-8.8	43.2	Yes
349	7	-9.6	42.4	Yes
350	8	-10.3	41.7	Yes
351	9	-10.7	41.3	Yes
352	10	-11.3	40.7	Yes
353	11	-11.9	40.1	Yes
354	12	-12.6	39.4	Yes
355	13	-13.0	39.0	Yes
356	14	-13.6	38.4	Yes
357	15	-14.0	38.0	Yes
358	16	-14.4	37.6	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix C-3
Barrier Insertion Loss Calculation

Project Information: Job Number: 2006-004
 Project Name: Rocklin Crossings Retail Center
 Location(s): Lots 66-67

Noise Level Data: Source Description: Cumulative Truck and Loading Dock Sources
 Source Noise Level, dBA: 52
 Source Frequency (Hz): 500
 Source Height (ft): 348

Site Geometry: Receiver Description: Backyard Area
 Source to Barrier Distance (C₁): 50
 Barrier to Receiver Distance (C₂): 70
 Pad/Ground Elevation at Receiver: 334
 Receiver Elevation¹: 339
 Base of Barrier Elevation: 344
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
350	6	-8.4	43.6	Yes
351	7	-9.2	42.8	Yes
352	8	-10.0	42.0	Yes
353	9	-10.5	41.5	Yes
354	10	-11.1	40.9	Yes
355	11	-11.7	40.3	Yes
356	12	-12.3	39.7	Yes
357	13	-12.9	39.1	Yes
358	14	-13.4	38.6	Yes
359	15	-13.8	38.2	Yes
360	16	-14.3	37.7	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix C-4
Barrier Insertion Loss Calculation

Project Information: Job Number: 2006-004
 Project Name: Rocklin Crossings Retail Center
 Location(s): Lots 92-93

Noise Level Data: Source Description: Cumulative Truck and Loading Dock Sources
 Source Noise Level, dBA: 52
 Source Frequency (Hz): 500
 Source Height (ft): 348

Site Geometry: Receiver Description: Backyard Area
 Source to Barrier Distance (C₁): 50
 Barrier to Receiver Distance (C₂): 70
 Pad/Ground Elevation at Receiver: 335
 Receiver Elevation¹: 340
 Base of Barrier Elevation: 344
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
350	6	-8.1	43.9	Yes
351	7	-9.0	43.0	Yes
352	8	-9.7	42.3	Yes
353	9	-10.3	41.7	Yes
354	10	-10.9	41.1	Yes
355	11	-11.5	40.5	Yes
356	12	-12.1	39.9	Yes
357	13	-12.6	39.4	Yes
358	14	-13.2	38.8	Yes
359	15	-13.6	38.4	Yes
360	16	-14.1	37.9	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

**Appendix C-5
Barrier Insertion Loss Calculation**

Project Information: Job Number: 2006-004
Project Name: Rocklin Crossings Retail Center
Location(s): Lots 117-118

Noise Level Data: Source Description: Cumulative Truck and Loading Dock Sources
Source Noise Level, dBA: 52
Source Frequency (Hz): 500
Source Height (ft): 348

Site Geometry: Receiver Description: Backyard Area
Source to Barrier Distance (C₁): 50
Barrier to Receiver Distance (C₂): 70

Pad/Ground Elevation at Receiver: 338
Receiver Elevation¹: 343
Base of Barrier Elevation: 344
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
350	6	-7.1	44.9	Yes
351	7	-7.9	44.1	Yes
352	8	-8.8	43.2	Yes
353	9	-9.5	42.5	Yes
354	10	-10.2	41.8	Yes
355	11	-10.7	41.3	Yes
356	12	-11.3	40.7	Yes
357	13	-11.9	40.1	Yes
358	14	-12.6	39.4	Yes
359	15	-13.0	39.0	Yes
360	16	-13.5	38.5	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

**Appendix C-6
Barrier Insertion Loss Calculation**

Project Information: Job Number: 2006-004
Project Name: Rocklin Crossings Retail Center
Location(s): Lots 145-146

Noise Level Data: Source Description: Cumulative Truck and Loading Dock Sources
Source Noise Level, dBA: 56
Source Frequency (Hz): 500
Source Height (ft): 352

Site Geometry: Receiver Description: Backyard Area
Source to Barrier Distance (C₁): 50
Barrier to Receiver Distance (C₂): 20

Pad/Ground Elevation at Receiver: 345
Receiver Elevation¹: 350
Base of Barrier Elevation: 348
Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
354	6	-7.8	48.2	Yes
355	7	-9.0	47.0	Yes
356	8	-9.9	46.1	Yes
357	9	-10.7	45.3	Yes
358	10	-11.5	44.5	Yes
359	11	-12.5	43.5	Yes
360	12	-13.2	42.8	Yes
361	13	-13.8	42.2	Yes
362	14	-14.4	41.6	Yes
363	15	-14.6	41.4	Yes
364	16	-15.3	40.7	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

FHWA OUTPUT – EXISTING NO PROJECT YEAR 2006

TRAFFIC DISTRIBUTION PERCENTAGES

DAY EVENING NIGHT

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AUTOS

68.62 11.20 8.49

M-TRUCKS

7.30 1.19 0.90

H-TRUCKS

1.79 0.29 0.22

RUN NAME: TAYLOR RD BETW KING & HORSESHOE BAR RUN DATE: 022807

ADT: 17060 SPEED: 35 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 69.82

** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL 65 CNEL 60 CNEL 55 CNEL

54.5 116.8 251.3 541.2

RUN NAME: TAYLOR RD BETW HORSESHOE BAR & SIERRA COLLEGE RUN DATE: 022807

ADT: 10673 SPEED: 35 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.78

** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 85.6 183.9 396.0

RUN NAME: PACIFIC ST BETW SIERRA COLLEGE & DOMINGUEZ RUN DATE: 022807

ADT: 11578 SPEED: 35 ACTIVE HALF WIDTH (FT): 18

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.06

** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 91.8 194.7 417.9

RUN NAME: PACIFIC ST BETW DOMINGUEZ & ROCKLIN RUN DATE: 022807

ADT: 15889 SPEED: 35 ACTIVE HALF WIDTH (FT): 18

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.44

** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL 65 CNEL 60 CNEL 55 CNEL

54.6 112.5 240.0 515.8

RUN NAME: ROCKLIN RD BETW PACIFIC & GRANITE RUN DATE: 022807

ADT: 21211 SPEED: 35 ACTIVE HALF WIDTH (FT): 18

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 69.69
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

65.1 135.9 290.7 625.2

RUN NAME: ROCKLIN RD BETW I-80 & SIERRA COLLEGE RUN DATE: 022807

ADT: 9989 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.42
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 83.5 176.6 378.8

RUN NAME: ROCKLIN RD BETW SIERRA COLLEGE & BARTON RUN DATE: 022807

ADT: 5176 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.06
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 54.0 114.0 244.5

RUN NAME: BARTON RD BETW ROCKLIN & BRACE RUN DATE: 022807

ADT: 3354 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.76
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 85.2 183.2

RUN NAME: HORSESHOE BAR RD BETW I-80 & BRACE RUN DATE: 022807

ADT: 6101 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.36
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 59.1 126.8 272.8

RUN NAME: BRACE RD BETW I-80 & BARTON RUN DATE: 022807

ADT: 4006 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.53
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 95.9 206.2

RUN NAME: BRACE RD BETW I-80 & SIERRA COLLEGE RUN DATE: 022807

ADT: 3408 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.83
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 86.1 185.1

RUN NAME: SIERRA COLLEGE BLVD BETW ENGLISH COLONY & KING RUN DATE:
022807

ADT: 9600 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.32
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 79.7 171.4 369.0

RUN NAME: SIERRA COLLEGE BLVD BETW KING & TAYLOR RUN DATE: 022807

ADT: 10560 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.74
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 85.0 182.6 393.2

RUN NAME: SIERRA COLLEGE BLVD BETW TAYLOR & I-80 RUN DATE: 022807

ADT: 17566 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 69.95
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

55.5 119.1 256.3 551.9

RUN NAME: SIERRA COLLEGE BLVD BETW I-80 & DOMINGUEZ RUN DATE: 022807

ADT: 13275 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.73
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 98.9 212.7 458.0

RUN NAME: SIERRA COLLEGE BLVD BETW DOMINGUEZ & ROCKLIN RUN DATE:
022807

ADT: 13275 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.73
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 98.9 212.7 458.0

RUN NAME: GRANITE DR BETW DOMINGUEZ & SIERRA COLLEGE RUN DATE: 022807

ADT: 6178 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.34
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 61.9 128.8 275.3

RUN NAME: GRANITE DR BETW DOMINGUEZ & ROCKLIN RUN DATE: 022807

ADT: 8258 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.60
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 74.1 155.8 333.8

RUN NAME: DOMINGUEZ RD BETW TAYLOR & GRANITE RUN DATE: 022807

ADT: 2382 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.27
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 67.9 145.8

RUN NAME: KING RD BETW SIERRA COLLEGE & TAYLOR RUN DATE: 022807

ADT: 5610 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.99
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 55.9 119.9 258.0

FHWA OUTPUT – BASELINE NO PROJECT YEAR 2010

TRAFFIC DISTRIBUTION PERCENTAGES

DAY	EVENING	NIGHT
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AUTOS		
68.15	11.12	8.43
M-TRUCKS		
7.69	1.26	0.95
H-TRUCKS		
1.87	0.30	0.23

RUN NAME: TAYLOR RD BETW KING & HORSESHOE BAR RUN DATE: 030107

ADT: 17150 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 69.99
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

55.9 119.9 258.0 555.7

RUN NAME: TAYLOR RD BETW HORSESHOE BAR & SIERRA COLLEGE RUN DATE: 030107

ADT: 10973 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.05
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 89.1 191.7 412.7

RUN NAME: PACIFIC ST BETW SIERRA COLLEGE & DOMINGUEZ RUN DATE: 030107

ADT: 11868 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.32
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 95.3 202.4 434.6

RUN NAME: PACIFIC ST BETW DOMINGUEZ & ROCKLIN RUN DATE: 030107

ADT: 19459 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 69.47
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

63.0 131.4 280.8 604.0

RUN NAME: ROCKLIN RD BETW PACIFIC & GRANITE RUN DATE: 030107

ADT: 25371 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 70.62
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

74.3 156.3 335.0 720.7

RUN NAME: ROCKLIN RD BETW I-80 & SIERRA COLLEGE RUN DATE: 030107

ADT: 14599 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.22
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 108.9 232.1 498.9

RUN NAME: ROCKLIN RD BETW SIERRA COLLEGE & BARTON RUN DATE: 030107

ADT: 6646 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.29
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 64.7 137.6 295.5

RUN NAME: BARTON RD BETW ROCKLIN & BRACE RUN DATE: 030107

ADT: 3514 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.11
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 89.9 193.3

RUN NAME: HORSESHOE BAR RD BETW I-80 & BRACE RUN DATE: 030107

ADT: 6141 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.53
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 60.7 130.2 280.3

RUN NAME: BRACE RD BETW I-80 & BARTON RUN DATE: 030107

ADT: 4046 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.72
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 98.7 212.3

RUN NAME: BRACE RD BETW I-80 & SIERRA COLLEGE RUN DATE: 030107

ADT: 3408 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.98
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 88.1 189.4

RUN NAME: SIERRA COLLEGE BLVD BETW ENGLISH COLONY & KING RUN DATE:
030107

ADT: 10430 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.83
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 86.2 185.3 399.0

RUN NAME: SIERRA COLLEGE BLVD BETW KING & TAYLOR RUN DATE: 030107

ADT: 11250 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.16
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 90.6 194.9 419.6

RUN NAME: SIERRA COLLEGE BLVD BETW TAYLOR & I-80 RUN DATE: 030107

ADT: 18296 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 70.27
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

58.4 125.2 269.4 580.2

RUN NAME: SIERRA COLLEGE BLVD I-80 & DOMINGUEZ RUN DATE: 030107

ADT: 14105 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.07
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 106.5 226.9 487.6

RUN NAME: SIERRA COLLEGE BLVD BETW DOMINGUEZ & ROCKLIN RUN DATE: 030107

ADT: 14745 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 69.34
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

50.6 108.5 233.3 502.4

RUN NAME: GRANITE DR BETW DOMINGUEZ & SIERRA COLLEGE RUN DATE: 030107

ADT: 6328 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.59
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 64.1 133.8 286.1

RUN NAME: GRANITE DR BETW DOMINGUEZ & ROCKLIN RUN DATE: 030107

ADT: 8458 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.85
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 76.8 161.9 346.9

RUN NAME: DOMINGUEZ RD BETW TAYLOR & GRANITE RUN DATE: 030107

ADT: 2422 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.49
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 70.2 150.9

RUN NAME: KING RD BETW SIERRA COLLEGE & TALYOR RUN DATE: 030107

ADT: 5610 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.14
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 57.2 122.6 263.9

FHWA OUTPUT – BASELINE PLUS PROJECT (ROCKLIN CROSSINGS) YEAR 2010

TRAFFIC DISTRIBUTION PERCENTAGES

DAY	EVENING	NIGHT
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AUTOS		
68.15	11.12	8.43
M-TRUCKS		
7.69	1.26	0.95
H-TRUCKS		
1.87	0.30	0.23

RUN NAME: TAYLOR RD BETW KING & HORSESHOE BAR RUN DATE: 030107

ADT: 18110 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 70.23
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

58.0 124.3 267.6 576.2

RUN NAME: TAYLOR RD BETW HORSESHOE BAR & SIERRA COLLEGE RUN DATE: 030107

ADT: 11553 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.28
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 92.2 198.4 427.1

RUN NAME: PACIFIC ST BETW SIERRA COLLEGE & DOMINGUEZ RUN DATE: 030107

ADT: 12378 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.50
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 97.9 208.1 447.0

RUN NAME: PACIFIC ST BETW DOMINGUEZ & ROCKLIN RUN DATE: 030107

ADT: 19739 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 69.53
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

63.6 132.6 283.5 609.7

RUN NAME: ROCKLIN RD BETW PACIFIC & GRANITE RUN DATE: 030107

ADT: 25701 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 70.68
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

74.9 157.7 337.9 726.9

RUN NAME: ROCKLIN RD BETW I-80 & SIERRA COLLEGE RUN DATE: 030107

ADT: 16259 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.69
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

56.5 116.8 249.3 535.8

RUN NAME: ROCKLIN RD BETW SIERRA COLLEGE & BARTON RUN DATE: 030107

ADT: 7886 SPEED: 35 ACTIVE HALF WIDTH (FT): 12
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 66.04
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 72.3 154.1 331.1

RUN NAME: BARTON RD BETW ROCKLIN & BRACE RUN DATE: 030107

ADT: 4104 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.78
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 99.7 214.4

RUN NAME: HORSESHOE BAR RD BETW I-80 & BRACE RUN DATE: 030107

ADT: 6191 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.57
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 61.0 131.0 281.8

RUN NAME: BRACE RD BETW I-80 & BARTON RUN DATE: 030107

ADT: 4156 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.84
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 100.5 216.2

RUN NAME: BRACE RD BETW I-80 & SIERRA COLLEGE RUN DATE: 030107

ADT: 3408 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.98
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 88.1 189.4

RUN NAME: SIERRA COLLEGE BLVD BETW ENGLISH COLONY & KING RUN DATE:
030107

ADT: 12160 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.50
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 95.4 205.2 442.0

RUN NAME: SIERRA COLLEGE BLVD BETW KING & TAYLOR RUN DATE: 030107

ADT: 13550 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 68.97
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 102.5 220.6 475.0

RUN NAME: SIERRA COLLEGE BLVD BETW TAYLOR & I-80 RUN DATE: 030107

ADT: 21716 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 71.02
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

65.3 140.3 302.0 650.4

RUN NAME: SIERRA COLLEGE BLVD I-80 & DOMINGUEZ RUN DATE: 030107

ADT: 23175 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 70.23
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **

70 CNEL 65 CNEL 60 CNEL 55 CNEL

70.2 147.3 315.4 678.5

RUN NAME: SIERRA COLLEGE BLVD BETW DOMINGUEZ & ROCKLIN RUN DATE: 030107

ADT: 18465 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 70.31
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

58.7 125.9 271.1 583.7

RUN NAME: GRANITE DR BETW DOMINGUEZ & SIERRA COLLEGE RUN DATE: 030107

ADT: 6348 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.60
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 64.2 134.1 286.7

RUN NAME: GRANITE DR BETW DOMINGUEZ & ROCKLIN RUN DATE: 030107

ADT: 8519 SPEED: 35 ACTIVE HALF WIDTH (FT): 18
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.88
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 77.2 162.6 348.6

RUN NAME: DOMINGUEZ RD BETW TAYLOR & GRANITE RUN DATE: 030107

ADT: 2522 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.67
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 0.0 72.2 155.0

RUN NAME: KING RD BETW SIERRA COLLEGE & TALLYOR RUN DATE: 030107

ADT: 5610 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 65.14
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

0.0 57.2 122.6 263.9